ORDINATION AND COGNITIVE COMPLEXITY AS RELATED TO ENDOGENOUS AND EXOGENOUS DEPRESSION

DISSERTATION

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Personal construct psychology, as formulated by George Kelly (1955), contributed substantial knowledge to the study of psychopathology. The small amount of research in the area of depression has focused generally on the content of self-constructs and the cognitive complexity characteristic. The purpose of this study was to examine the construct system of the depressed patient specifically by investigating the endogenicity, exogenicity, and severity of depressive symptoms in relationship to construct content as applied to others, cognitive complexity, and ordination.

This study's population was composed of 3 groups of 25 subjects each. The depressed group (25) suffered from either a major depressive episode or dysthymic disorder; the psychiatric-control group (25) suffered from nonaffective psychological disorders; the normal-control group (25) were hospital employees who exhibited no signs of psychological distress.

Results indicate that there are no differences among the three groups on cognitive complexity. However, the normal-control group exhibits a significantly higher degree of
ordination than either of the two patient groups. Other results indicate that the depressed and psychiatric-control groups utilize ambiguous constructs to a greater extent than normal subjects. Finally, endogenous loadings and severity of symptoms within the depressed group are significantly related to the utilization of ambiguous and undesirable constructs.

On the basis of these results and those from past research, a "two-level" explanation of depression is presented that is based on a personal construct viewpoint. On a comprehensive level, ordination and the use of ambiguous constructs are viewed as relating to a general level of psychological adaptation. On a more specific level, negative self-construing (and perhaps ambiguous construing) are viewed as relating more directly to depression, particularly more severe, endogenous symptomatology. Therapeutic implications and directions for future research are discussed.
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ORDINATION AND COGNITIVE COMPLEXITY AS RELATED TO ENDOGENOUS AND EXOGENOUS DEPRESSION

A substantial amount of research within the realm of personal construct theory has dealt with the examination of the construct systems of patients who exhibited a variety of psychological symptoms. Investigators have sought to clarify the nature of disorders that were characteristic of anorexia nervosa (Fransella & Crisp, 1979), alcoholism (Hoy, 1973), stuttering (Fransella, 1968, 1971), the hysteroid-obsessional personality (Caine & Smail, 1969), obsessional neurosis (Makhlof, Jones, & Norris, 1970), manic behavior (Mellsop, 1971), and schizophrenia (e.g., McPherson, Bardon, & Buckley, 1970; McPherson, 1972; Williams & Quirk, 1972; Haynes & Phillips, 1973). Although this is by no means an exhaustive list, it serves as an example of the range of psychological dysfunctions that have been studied through construct theory. Until recently, the examination of depression from the viewpoint of personal construct theory was virtually ignored. This oversight is surprising because cognitive conceptions of the phenomena of depression are certainly not new.

One of the major tenets of a cognitively based psychology is that individuals organize their experiences in manners which exert an influence on future adaptation. In
recent years proponents of cognitive-behavioral theory, as exemplified by A. T. Beck (1964, 1967, 1979), have written and researched voluminously on cognitive organization, content, and processes—especially with regard to depression.

Beck's theory was based on the rationale that an individual's emotions as well as his behavior are largely a consequence of the manner in which he structures his world (Beck, 1964). He stated that the depressed affect is the result of erroneous conceptualizations. For example, if the client perceived himself as incompetent, he was prone to experience such affects as sadness or guilt (Beck, 1967). In his 1967 work, Beck described a study in which he compared one group of patients who had diagnoses of depression and who had been in psychotherapy with a group of nondepressed patients who were also in psychotherapy. He discovered that the depressed group differed from the nondepressed group in several ways. For one, the depressed group exhibited themes of low self-regard, deprivation, self-criticism and self-blame, overwhelming problems and duties, self-commands and injunctions, and escapist and suicidal wishes.

Beck (1967) was able to differentiate the groups further on the basis of the types of cognitive distortions (as opposed to the above stated themes or content) that were categorized according to the manner in which they departed from logical thought. He noted that the depressed group exhibited stylistic (exaggeration), paralogical
(arbitrary inference, selective abstraction, and generalization), and semantic (inexact labeling) distortions with regard to ideational material that contained depressive content. Finally, Beck described characteristics of the cognitions of the depressive group. He noted that for the most part depressive cognitions were experienced as automatic, involuntary responses which were readily accepted by the individual. Further, Beck stated that the depressed patient will tend to perseverate. Such a patient is likely to interpret or construe a great deal of experience within the context of a few stereotyped ideas; thus, the same type of cognition would be elicited by very different situations.

Seligman (1975) also has addressed the role of cognitions in depressive states. It is his contention that a class of depressions, termed helpless depression, result from outcome being noncontingently related to the responses of the individual. Abramson, Seligman, and Teasdale (1978) stress, however, that it is not merely the noncontingent relationship between responses and outcome that results in the symptoms of helplessness. Rather, the individual's perception and attribution for present and past noncontingencies, as well as his anticipation of future noncontingency, is paramount in the production of the symptoms of a helpless depression.

Personal construct psychology, as formulated by George Kelly (1955), resembles the cognitive-behavioral orientation
in that it placed a major focus upon the role of experiential organization and its consequences in the individual's life. Once again, how the individual structures his world will have an influence upon future adaptation. In spite of these similarities, differences also exist. For one, personal construct theory focuses on the totality of experience of the individual; it is the experiences of the individual that comprise the elements of the construct. Such a system is active and in constant flux. On the other hand, cognitive-behavioral theory focuses on the labeling of such experience, which is a rather static system. Second, Beck (1964) and Abramson et al. (1978) among others, focused on the content (themes) of the depressive cognitions, as well as the processes and schemas (Beck, 1964) through which the individual misinterprets his circumstances. While not ignoring these ideas, personal construct psychology also seeks to explore some aspects of the conceptual framework or structure within which such ideas operate. That is, personal construct psychology asks if the cognitive structure is relatively simple or complex, and it seeks to discover what is the nature of the relationship between and within components (constructs) of the individual's cognitive structure.

In the present study, these issues were dealt with in order to understand more fully the general phenomena of depression and the dimensions of endogenicity, reactivity, and severity as applied to that symptomatic picture.
Specifically, it was the intention of this research to investigate thought content as one area of study. Other factors of depression that were investigated included cognitive complexity and hierarchial organization of the construct system of the depressed patient, as well as the examination of the relationships of these variables to the dimensions of endogenicity, reactivity, and severity of depression.

The rationale behind research which has dealt with cognitive complexity is that a measure of the organization of an individual's social constructs can be gleaned from the interrelationships between his constructs (Landfield & Barr, 1976). Thus, the individual who structures his experience so that many of his constructs are independent of each other would be described as having a relatively complex system. On the other hand, the individual whose constructs are tightly related exhibits a relatively simple system.

The term cognitive complexity was coined by Bieri (1955), who felt that cognitive complexity could be more or less defined as the degree of differentiation of the construct system. It is Bieri's feeling that the greater the degree of differentiation among the constructs, the more enhanced the predictive ability of the individual. The importance of predictive power within a construct system was stressed by Kelly (1955). In fact, the fundamental postulate of Kelly's basic theory was that "a person's
processes are psychologically channelized by the ways in which he anticipates events." In Kelly's model of "man the scientist," man will seek to anticipate and predict future events. Bieri (1955) concluded that the cognitively complex person has flexibility in both simple and complex circumstances, while the cognitively simple individual has versatility only in the simple domain. Clearly, the implication was that a complex system is more adaptive than a simple system (Landfield & Barr, 1976).

Landfield and Barr (1976) objected to what they termed the "uni-dimensional approach to cognitive complexity" as espoused by Bieri (1955) and others. They felt a need for assessing cognitive integration as well as differentiation. Their argument was based on their disagreement with the contention that a system largely dominated by unrelated constructs (a complex system) necessarily correlates positively with psychological adaptation.

Kelly (1955) made a similar point when he stated that while it might seem desirable to have the characteristic of propositionality in one's constructs (a complex system), it would be rather difficult for an individual to survive on a day-to-day basis if he employed propositional constructs exclusively. In short, it was both Kelly's (1955) and Landfield and Barr's (1976) contention that a highly complex individual may encounter significant problems in his dealings with the world because of the relative absence of relationships
between constructs; that is, the individual would not be able to think in a systematic, ordered fashion. The system would be complex, yet lacking in the integrative ability to enact effective thought processes. Thus, cognitive complexity would not imply cognitive integration. Whereas complexity refers to the degree of differentiation reflected by the number of unrelated constructs, integration refers to the use of acquaintances and constructs at different levels of meaningfulness, addressing the ability to make discriminations within constructs; whereas complexity pertains to relationships between constructs, integration pertains to differentiation within a construct. Landfield and Barr (1976) used the term ordination to refer to the latter concept.

It was the hypothesis of Landfield and Barr (1976) that the ability to make discriminations within one's complexities leads to the enhanced probability of systematic thought and effective decision making. In order to test this hypothesis, they assigned subjects to one of four groups of ten. Two of the groups consisted of college students, and two groups consisted of individuals who had been arrested for driving while intoxicated. Group members interacted primarily in dyads, rotating so that each person conversed with every other group member. Subjects were directed to "share an important value." Subjects rated all group members, including themselves, on scales that were
derived by Landfield (1971) from a modification of Kelly's Role Repertory Test (1955). Gathered from these scales were measures of cognitive complexity and ordination, as well as three measures of the subject's understanding of others: personal meaningfulness, ability to predict the views of others accurately within their construct systems, and positivity of regard toward self and others.

Group members were divided into quadrants on the basis of complexity and ordination scores. Quadrant 1 consisted of subjects who appeared, on the basis of the analysis of the scales, to be low on both dimensions. Quadrant 2 consisted of subjects with high integration and low complexity scores. Quadrant 3 consisted of subjects with low integration and high complexity scores. Quadrant 4 subjects were high on both dimensions. The authors predicted the relationship of the measures of "understanding others" to the quadrant in which each individual was placed. Results indicated that subjects in quadrant 3 exhibited less interpersonal understanding in terms of the three measures mentioned above. Second, it was discovered that subjects in quadrant 4 were able to predict other group members most accurately; in descending order of accuracy were the subjects in quadrants 2, 1, and 3. Third, subjects in quadrant 1 were predicted most accurately; subjects in quadrant 2 were second on this parameter, followed by quadrants 4 and 3. Combining the latter two findings, the
authors note that the possession of both integration and complexity results in superior prediction, while simplicity is best predicted.

From the point of view of personal construct theory, these findings are significant. Once again, Kelly's fundamental postulate stated that man seeks to predict; "his structured network of pathways leads toward the future so that he may anticipate it . . . man ultimately seeks to anticipate real events" (Kelly, 1955). The implication is that the individual who is unable to anticipate, may be prone to develop maladaptive behavior as a function of such failure. This recalls the important role that Abramson et al. (1978) places upon the expectation or anticipation of noncontingency in the production of depressive symptoms. The results of the Landfield and Barr (1976) study support the role of a lack of construct integration in the inefficient predictions of some group members.

In further analyses, clinical observations of all subjects were made by taping group sessions and from commentary of group leaders. Subjects in quadrant 1 were generally described as "lacking in richness of perspective." Quadrant 2 subjects were characterized as being "well structured and able to relate well." Quadrant 3 subjects were described as "antagonistic, fussy, scattered, confused and suspicious." Quadrant 4 subjects were described as "strong, level-headed, and well-organized." It was
concluded that the most maladjusted subjects were those in quadrants 1 and 3, who were confused and unable to communicate effectively with others. Although subjects in quadrant 3 seemed to experience more types of meaning, the authors stressed that a high degree of complexity must be balanced with a high capacity to integrate within their construct system.

As mentioned previously, the research has been minimal on depression in relation to personal construct theory and cognitive complexity. Since suicidal individuals generally experience severe depression (Hipple & Cimbolic, 1979), studies involving cognitive complexity or integration within this population would seem to be very relevant. In one study, Lester (1969) attempted to discover if suicidal and nonsuicidal students could be differentiated on the dimension of resentment. Of particular interest is the fact that Lester assessed his subjects on their degree of cognitive complexity. His sample consisted of six individuals who had attempted suicide, eight who had threatened suicide, and 30 who had not considered suicide. The first two groups were combined for the purpose of data analysis. The non-suicidal group was divided into two subgroups of "high and low neuroticism" on the basis of performance on the Maudsley Personality Inventory. Subjects were administered Kelly's (1955) Situation Resources Repertory Test (RES Test) from which eight measures of cognitive complexity were taken.
The results indicated that none of the measures differentiated between the groups, although the nonsuicidal group (which scored low on neuroticism) tended to be the most complex.

Lester (1971) also specifically addressed the question of cognitive complexity with regard to suicide. He administered the RES Test to a group of suicidal and nonsuicidal students; 14 of these students had threatened or attempted suicide, but the control group of 15 students had never threatened or attempted suicide. Both groups had similar neuroticism scores. Eight measures of cognitive complexity were taken, and none was able to differentiate between the groups. Lester reported, however, that the subjects who had the greatest suicide potential, as measured by the Devries Scale, tended to have a greater degree of cognitive complexity. Although these results appeared to be clearly at odds with those obtained in his previous study, Lester made no attempt to explain this discrepancy.

Landfield (1976) interpreted suicide in terms of the personal construct theory. It was his opinion that when the construct system of the individual breaks down, he will be prone to commit suicide, since he can no longer impose order on the world in which he lives. Landfield stated that the suicidal individual anticipates chaos and the breakdown of the system he utilizes to construe future events. The act of taking one's own life may preempt man's journey into
total chaos by preserving his ways of interpreting, valuing, and living. He clings to his values by not exposing them to further invalidation." It was Landfield's hypothesis that the construct system of the suicidal individual would reflect disorganization in the form of an exceedingly high degree of cognitive complexity; that is, the suicidal individual could be viewed as having a large number of unrelated constructs that could result in a lack of ability to interpret and react to his environment.

Landfield's subjects for this study consisted of several groups. The SA5 group was composed of students who had made (in the opinions of "experienced psychologists") serious suicide attempts via drug overdose; the SG6 group was composed of six students who were considered to have made less significant gestures as defined by the fact that they had ingested smaller quantities of drugs than the students in the first group; the SI5 group was an ideational group that consisted of five students who had previously discussed suicide; the LT24 group was composed of 24 students who had experienced at least 12 and 13 weeks of psychotherapy [this group was subdivided into two groups on the basis of showing high (MM group) or low (LM) group degrees of maladjustment by experienced judges]; the BA10 group was composed of 11 students who were considered to be relatively well adjusted on the basis of individual 25-minute interviews.
All subjects were administered a modification of Kelly's (1955) REP Test. The results indicated that the SA5 group exhibited the highest degree of cognitive complexity. Their rank average was significantly higher than that of the SG6, LML2, and BA10 groups, and approached significance for the SI5 and LT24 groups. These results were consistent with the trend reported by Lester (1971), and they raised speculation about Landfield and Barr's (1976) conclusions concerning the combination of high cognitive complexity with a low degree of hierarchal integration. It might have been predicted that the suicidal individual would come from quadrant 3 in the schema presented by the latter authors.

The practice of using suicidal individuals in studies on depression can be rather precarious. As noted by Landfield (1976), although the suicidal individual is usually depressed, not all depressed people commit suicide. Landfield hypothesized that the depressed patient who is not suicidal is likely to be less disorganized (less cognitively complex). Landfield had not yet written about ordination in his 1976 publication, thus this latter dimension was not discussed. However, extrapolating from Landfield's statement concerning the relative amount of cognitive complexity in suicidal and nonsuicidal depressed individuals, it appears likely that the difference would be a matter of degree, with the acutely suicidal individual exhibiting a higher level of cognitive complexity.
and a lower level of ordination than the nonsuicidal depressed individual. This is an empirical question that warrants research at a future time.

From a depression-related study, Rowe (1971) reported on the case of a 38-year-old woman who had complained of depression following a hysterectomy. The patient was given a variant of the REP Test (Bannister & Mair, 1968). Rowe reported that this subject had a very simple construct system, which divided the people in her world into bad and good. Obviously, generalizability was difficult with a sample of one, but it would have been helpful if a measure of integration had been taken on the patient. Recalling Landfield and Barr's (1976) results, this woman could have fallen in quadrant 1 or 2, depending on her ordination score.

In what seemed to be the most direct application of the personal construct theory to depression, Space and Cromwell (1980) compared depressed patients, psychiatric controls, and normal controls with measures of cognitive complexity, self-ideal discrepancy, and negative self-construing, among others. In order to be included in the depressed group, patients had to meet criteria established by DSM-II and Feighner, et al. (1972). Furthermore, none of the depressed patients showed evidence of schizophrenia, anxiety neurosis, phobic neurosis, hysteria, alcoholism, drug dependency, anti-social personality, sexual deviations, homosexuality, mental retardation, organic brain syndrome, or an
incapacitating mental illness preceding or concurrent with the depression. Subjects were eligible for inclusion in the psychiatric control group if they were currently in psychotherapy, were low in depression as judged by their therapists, gave no indication of any psychotic process or organicity, were not in therapy for treatment of sexual deviation or antisocial personality, and were not dependent on drugs. Subjects in the normal control group had never had psychiatric treatment and gave no indication of mental retardation. All subjects were administered the Beck Depression Inventory (BDI) "to insure that the subjects had been selected according to a single independent variable." All subjects also took the REP Test. Results indicated that self-ideal discrepancy as well as negative self-construing scores were highest for the depressed group. The psychiatric control group scored second highest on both measures. Three measures of cognitive complexity were taken, and none of the three was able to significantly differentiate between the three groups.

The authors acknowledged that their results regarding negative self-construing were in strong agreement with past research (Sperlinger, 1971). As for the findings of no difference on the dimensions of cognitive complexity, the authors argued that perhaps the constriction that was noted in depressed patients was the result of "slot movement," whereby depressed patients responded in terms of the negative
self attributes within a mixed factor, rather than the positive self attributes. The authors felt that the two less viable alternatives to account for the lack of complexity differences were that perhaps depressed patients do not have a constricted view of the world, and thus have a less complex structure, or that the REP Test is inadequate in tapping this variable.

Other possibilities, not mentioned by the authors, are that perhaps the depressed group represented a wide range of cognitive complexity, in that both simple and complex structures were included. As a result, the overall average may not differ from that of the control groups. Evidence for this statement is weak. However, the findings of Rowe (1971) and Landfield (1976) reported previously, gave some credence to the idea that depressives are not a homogeneous group with regard to cognitive complexity. A hypothesis which might be entertained is that some aspects of depression (e.g., severity and agitation) might correlate with a higher degree of complexity than that experienced by someone less severely depressed. Furthermore, one has to wonder what would be the status of these three groups with regard to a measure of ordination. In short, the findings of no difference with regard to cognitive complexity were important. Yet, in light of the findings of Landfield and Barr (1976), the status of an individual's conceptual structure may be
viewed more completely when measures are taken of complexity and integration.

The present research sought to study the viability of some of the ideas presented above. As mentioned previously, aspects of cognitive complexity and cognitive integration were examined. That we might expect a rather low level of within-construct differentiation (ordination) within depression and psychiatric control groups is suggested by Beck's (1964) observation that maladaptive individuals are unable to differentiate various degrees of negative feedback; mild rebuke is interpreted as being equal to the most crushing catastrophe. There is no "more or less" within the realm of incompetency, failure, or self-worth. Beck termed this phenomenon as polarization. Conceptually, this process seems almost identical to that of low ordination. When the individual cannot use his constructs at different levels of significance or meaningfulness, this would be reflected in a low ordination score (Landfield & Barr, 1976). The depressed patient who uses the process of polarization seems to be unable to discriminate different levels of meaningfulness within such constructs as good-bad, competency-incompetency, and success-failure. Applying this rationale, one might expect the depressed individual to produce a rather low ordination score.

A second area of focus for this research was the dimensions within the domain of depression. Specifically, these
dimensions were examined with regard to conceptual structure and content analysis. Of particular interest were the dimensions of endogenicity, reactivity, and severity of depression. Thus, evaluations were made for the relationship of endogenous and exogenous loadings, as well as the degree of severity to cognitive complexity, ordination, and construct content. Space and Cromwell (1980) performed subsequent data analyses on their findings and discovered nothing that could point to differential results within diagnostic categories of depression. The authors noted, however, that "the positive nature of the present findings now justify that separate diagnostic categories of depression be studied in more detail."

Before discussing the concepts of endogenicity and reactivity, one must address the question of whether these terms have any real meaning. Do these concepts reflect symptom clusters that can be reliably observed and that can be used as a basis for prediction? There are varying opinions on this question. For example, Beck et al. (1979) stated that the initial distinction between endogenous and exogenous depression was based upon whether the affective symptoms were caused by adverse environmental occurrences in one's life or the lack of such circumstances. They noted that recent research points to the fact that individuals who initially reported no precipitating trauma tended to cite such stresses at a subsequent time. Beck et al. quoted evidence gathered by Klein (1974) and Akiskal et al. (1978)
that the existence of a precipitating stressor is not of significant import in predicting patients' response to antidepressant medication or cognitive therapy.

Other researchers in the area of psychopharmacology (e.g., Bassuk & Schoonover, 1977; Cimbolic, 1980) are in agreement with Beck et al. (1979). They stressed that an endogenous depression may be precipitated by an environmental event; that is, the meaning or definition of endogenicity versus reactivity is not totally contingent upon whether there was a clear precipitating stress. Rather, this diagnosis was based upon the current symptom picture along with relevant demographic and historical data. Therefore, a depression that began as a reaction to an aversive external event may persist and become less and less contingent upon the event that originally triggered it so that the depression, eventually, may take on the signs and symptoms of an endogenous depression. At this point, the depression could be described as endogenous, regardless of the presence of a clear precipitating event.

Another point—one that will be dealt with in more detail further on—is that the majority of depressions are neither totally endogenous or exogenous, "but rather load towards the exogenous or endogenous end of the continuum. It is the extent that they 'load' that would determine the course of treatment, particularly with respect to medication implications" (Hipple & Cimbolic, 1979).
Much of the problem that existed in the delineation and clarification of dimensions within the realm of depression was the result of semantics. For example, Kendall (1976) noted that some authors (e.g., Buss, 1966; Kendall, 1968) tended to regard the terms psychotic and endogenous and being synonymous. Similarly, the terms reactive and neurotic were equated by these same authors. More recently, authors (e.g., Bassuk & Schoonover, 1977; Hippie & Cimbolic, 1979) have defined these terms more narrowly, so that psychosis and neurosis are independent of endogenicity and exogenicity, respectively. Although it was not a purpose of this study to resolve such controversy, it was hoped that a clarification could be attempted. Kendall (1976) sums up quite well,

For the foreseeable future . . . different workers are going to be using different classifications, and we must reconcile ourselves to this. We must, however, insist that each of these classifications is accompanied by unambiguous operational criteria of the terms employed, so that anyone can use them and repeat other peoples' work if they wish to.

A single definition for endogenous and exogenous depression probably will not be found in the near future. However, authors have come to some agreement as to the behavioral, demographical, and historical descriptions that are relevant. A vast quantity of literature, much of it factor analytic research, has pointed to the
conclusion that there are clusters of symptoms and demographi-cal data that relate to and lend credence to the concepts of endogenous and exogenous. Kiloh and Garside's (1963) review of genetic studies, which dealt with physiological responses and tests (e.g., sedation threshold) and pharmacological response, supported this contention.

Rosenthal and Klerman (1966) stated that the concept of endogenous depression implies a relationship among three aspects of depression. (1) A particular pattern of symptoms is expected. This pattern includes lack of reactivity to environmental changes, a severely depressed affect, feelings of guilt, middle of the night insomnia accompanied by early morning awakening, diurnal variation with more severe depression in the morning, thought and motor retardation, motor restlessness and agitation, visceral symptoms such as constipation and loss of appetite, loss of libido, and loss of interest. (2) The premorbid personality is expected to be stable and nonneurotic. (3) An environmental or physiological precipitant is less likely to be discovered. Hippie and Cimbolic (1979) add that endogenous depressions are often characterized by a history of family depression along with a family history of favorable response to tricyclic antidepressants, suggesting that there is a biochemical deficit involved (Bassuk & Schoonover, 1977; Honigfeld & Howard, 1978).
As will be further discussed in the course of this introduction, the definition of exogenous depression is not as well developed as that of endogenous depression. With exogenous depression, the depression is more likely to owe its existence to an environmental cause. Furthermore, the degree of melancholia is characteristically not as deep as is evidenced with endogenous depression (Buss, 1966), and the individual's mood tends to get progressively worse as the day wears on. Finally, exogenous depression is usually less persistent than the endogenous type (Hipple & Cimbolic, 1979).

It was the purpose of Kiloh and Garside (1963) to examine the distinction between neurotic and endogenous depression further. This study was given impetus by an earlier study (Kiloh, Ball, & Garside, 1962) in which a discriminant function analysis was performed on quality of response data from six depressed patients who were being treated with imipramine. There were 97 subjects, 38 of whom were felt to be exhibiting evidence of endogenous depression, with 59 showing the signs and symptoms of exogenous depression. The analysis revealed that several items could be used to discriminate between those who did and those who did not respond favorable to imipramine. The items that correlated positively with what was judged to be a favorable drug outcome were age over 40 years, a qualitative difference of the subjective experience from "normal" depression,
weight loss of 7 pounds or more, insidious onset, duration of under 1 year, and early awakening. Those items which were negatively correlated with favorable responses were the presence of precipitants, a more intense depression, self-pity, subjective retardation, history of a suicide attempt, irritability, failure of concentration, hypochondriasis, hysterical features, and restless sleep. Kiloh and Garside (1963) concluded that the features which are associated with a positive response to imipramine are those which are characteristic of what is commonly referred to as endogenous depression. Conversely, those features with a less favorable outcome are characteristic of what these authors term "neurotic" depression.

In the Kiloh and Garside (1963) study, 46 patients who were believed to be suffering from endogenous or neurotic (exogenous) depression were added to the 97 patients who were studied in the previous research. A factor analysis was performed on 35 items that fell under the headings of "personal details, personality traits, previous history, and present illness." The analysis yielded two factors. Each of the 35 items was correlated with the diagnosis of the patients, whether it was neurotic or endogenous depression. Features which correlated significantly with neurotic depression were reactivity of depression, precipitation, self-pity, variability of illness, hysterical features, inadequacy, initial insomnia, reactive depression, depression
worse in the evening, sudden onset, irritability, hypochondriasis, and obsessionality. Features which correlated significantly with endogenous depression were early morning awakening, depression worse in the morning, retardation, duration of 1 year or less, age 40 or above, depth of depression, failure of concentration, weight loss of 7 pounds or more, and previous attacks. The authors concluded that two separate entities, which conformed with the conditions known as endogenous and neurotic or reactive depression, clearly existed. Further, after a discussion of the literature on the topic, Kiloh and Garside (1963) concluded that their survey revealed that a large body of research supported the traditional dichotomy of depression into endogenous and neurotic types.

Rosenthal and Klerman (1966) performed a factor analysis in order to identify the symptom clusters that related to endogenous and exogenous types of depression. The subjects were 50 female inpatients who had what was felt to be moderate to severe depressions. Patients who showed evidence of organic brain syndrome or schizophrenia were excluded. The analysis was performed on 25 symptoms and signs characteristically evidenced to some extent in depression. The data revealed that five factors accounted for most of the variance. This study dealt with the first factor, which accounted for 35% of the variance. The authors noted that items which loaded heavily on this factor (.40 or greater) were those
which are commonly associated with what they termed as the classical pattern of endogenous depression. These items were middle of the night and early morning insomnia, severity of depressed affect, retardation, guilt and self-reproach, weight loss, visceral symptoms, agitation, and loss of interest. Items which exhibited moderate loadings on this factor (.20 - .40) were early insomnia, insidious onset, long duration, and obsessive and compulsive symptoms. Items with moderate negative loadings were reactivity, self-pity, and irritability. It was further discovered that factor scores correlated negatively (-.21) with the presence of an apparent triggering event. The authors concluded that the lack of a precipitant was more likely to be the case in an endogenous depression. However, they noted that it is not a prerequisite.

Rosenthal and Klerman (1966) compared their factor I with an endogenous factor that was obtained in a study by Hamilton and White (1959), and which was identified by Kiloh and Garside (1963). Rosenthal and Klerman stated that the items with heavy loadings were quite similar on each of the three factors. These authors also scored the subjects in their study on each of the three factors, and the results indicated what were termed as highly significant correlations and concordance among the three sets of factor scores. On these bases, Rosenthal and Klerman contended that their
principal factor replicated both Hamilton and White's (1959) and Kiloh and Garside's (1963) primary factors.

Rosenthal and Gudeman (1967a) undertook a similar study using a sample of 100 acutely depressed females. Chosen for the analysis were 30 items descriptive of symptoms and signs of depression. This study dealt with only the first factor, which accounted for 16.8% of the total variance. Items which loaded heavily on the first factor were lack of reactivity, worthlessness, quality of depression, retardation, loss of concentration, guilt, sad affect, visceral symptoms, middle of the night insomnia, agitation, loss of interest, suicidal symptoms, morning insomnia, and obsessive and compulsive symptoms. The authors compared their results to those of studies by Hamilton and White (1959), Kiloh and Garside (1963), and Rosenthal and Klerman (1966) in order to see if similar symptom clusters would be observed. They found this to be so. Specifically, seven items, which had loaded at least .40 in the Hamilton (1959) study, were included in the Rosenthal and Gudeman (1967a) study, in which the same items had loaded at least .39. In addition, three items that had loaded at least .40, and three items that had loaded at least −.40 in the Kiloh (1963) study were included in the Rosenthal and Gudeman (1967a) study. All positive items also loaded positively in this research, with an average of .37; all negative items loaded negatively again, with an average of −.35. Finally, 11 items in the
Rosenthal and Klerman (1966) study loaded at .40 or more. All items once again loaded positively with nine being greater than .40.

Rosenthal and Gudeman (1967a) averaged the factor loading in the four studies and discovered that the items with the highest loadings were retardation (.59), sad affect (.58), morning insomnia (.51), lack of reactivity (.51), guilt (.49), loss of interest (.46), and visceral symptoms (.42). The authors concluded that their replication was successful, especially because the studies that were compared were performed with different patient populations. They also reaffirmed a conclusion of the Rosenthal and Klerman (1966) study which stated that endogenous depression sometimes developed when there was a rather clear precipitant. For this reason, Rosenthal and Gudeman (1967a) advocated the use of the term autonomous rather than endogenous, since the latter term had been classically associated with the lack of a precipitant.

Rosenthal and Gudeman (1967b) also reported findings regarding the second factor that was obtained in their previous study (1967a). They stated that there were five symptom items on their second factor which had loaded at .40 or greater. These items were hypochondriasis, psychic anxiety, demanding and complaining behavior, self-pity, blaming the environment, and somatic anxiety. Items with the highest negative loading were retardation (-.35),
guilt (-.34), suicidal symptoms (-.26) and worthlessness (-.20).

Rosenthal and Gudeman (1967b) compared these findings with those of Hamilton and White (1959) and Rosenthal and Klerman (1966), and reported that the factor scores which were derived from their first two factors, correlated with factor scores from the Rosenthal and Klerman (1966) study at .90 for factor I and .78 for factor II. Correlations with factor scores from the Hamilton and White (1959) study were .78 and .54, respectively. It had been accepted that factor I referred to the endogenous symptom picture; Rosenthal and Gudeman (1967b) described the second factor as consisting of symptoms that "reproach the environment rather than the self." This was readily evidenced in the symptom items that exhibited the highest positive factor loadings. Rosenthal and Gudeman (1967b) concluded that although two symptom clusters were consistently observed, these findings did not mean that two distinct and mutually exclusive patient types exist. They stressed that an individual who exhibited a high score on one factor did not necessarily have to score low on the second factor; rather, the two factors seemed to operate independently.

The study by Kay, Garside, Beamish, and Roy (1969) utilized a broader range of depressions than had been employed in past factor analytic research. Patients were included whose symptom pictures resembled not only
endogenous or exogenous types of depression; the authors sought to include an even representation of four groups of subjects. These groups were defined by clinical picture characteristics of endogenous depression, neurotic depression, involuntional melancholia, and a paranoid state with marked depressive features. The analysis extracted a bipolar factor, interpreted as endogenous versus neurotic as the first factor, accounting for 20% of the variance. Examination of the factor scores made it possible to differentiate about two-thirds of the sample as exhibiting endogenous or neurotic types of depression.

Pilowsky, Levine, and Boulton (1969) objected to certain aspects of the methodology that were employed in factor analytic studies of depression. Since most studies had been based on the analysis of the ratings of clinicians, who have well formed ideas concerning the nature of different types of depressions (e.g., endogenous, exogenous), these authors stated that "what is obstensibly an analysis of patients' symptoms may in fact constitute an analysis of the psychiatrists' biases."

To remedy this situation, Pilowsky et al. (1969) constructed their own questionnaire from statements that were related to endogenous and neurotic depression in "standard psychiatric text books." The questionnaire was given consecutively to 200 patients during their initial contact with the psychiatric facility. Subjects were symptomatically
heterogeneous; both depressed and nondepressed individuals were represented in the sample. Classes of patients were identified on the basis of their responses to the questionnaire. Results indicate that when what was termed observer bias was removed, a group of patients were identified whose patterns of response were characteristic of endogenous depression. Pilowsky et al. (1969) interpreted this finding as solid evidence to support the concept of endogenous depression. However, results indicated that a class of patients did not emerge whose symptom picture corresponded to what previous research had described as neurotic or exogenous depression. The authors concluded that there arose a class of patients whose syndrome may have represented a "non-specific stress reaction of a depressive type, which is common to a wide spectrum of patients, regardless of diagnosis."

In sum, it appears that there has been a great deal of interest generated in differentiating endogenous and reactive-neurotic types of depression. Although the great majority of this research succeeded in extracting factors that are characteristic of classical patterns of endogenicity and exogenicity, there is still confusion. This confusion centers about the factor that has been termed the neurotic or reactive factor. In a review of the literature, Kendall (1976) stated that few studies in the past 20 years have been able to produce "a factor
identifiable with any confidence with the type B (reactive-neurotic) syndrome." Kendall's argument was that endogenous depression is a much tighter, cohesive group of symptoms, whereas the reactive type is much more loosely defined (characterized, as it is, by a lack of endogenous signs and assorted symptoms common to other disorders as well). Mendels and Cochrane (1968) stated that the factor associated with endogenous depression is a "pure or classic" depressive entity. These authors felt that this factor represented the essence of the syndrome, while the neurotic-reactive factor contained aspects of disorders other than depression which contaminate the pure endogenous form of depression.

Kiloh, Andrews, Neilson, and Bianchi (1972) attempted to replicate the earlier research of Kiloh and Garside (1963). A factor analysis was performed on 35 items relating to depressive symptomatology. Rotation resulted in the appearance of distinct factors that were characteristic of endogenous and neurotic depression. Factor analyses were then performed on patients who revealed symptoms and demographic data that were consistent with endogenous and reactive depression. The authors concluded that endogenous depression was more likely to be a "categorical illness with a restricted range of clinical manifestations," while neurotic depression was viewed as a "diffuse entity encompassing some of the ways in which the patient utilizes his defense mechanisms to cope with his own neuroticism and
concurrent environmental stress." Such a view was clearly consistent with those of Mendels and Cochrane (1968) and Kendall (1976).

It was the opinion of Klein (1974) that the endogenous and reactive syndromes were independent dimensions. It was the intent of Lewinsohn et al. (1977) to investigate this hypothesis. Three samples of depressive subjects were employed. Subjects in sample 1 were paid participants who were recruited through public announcements, while samples 2 and 3 were composed of individuals who were currently in psychotherapy at a university clinic for treatment of depression. Ten symptom items, which had been repeatedly loaded on endogenous and reactive factors, were chosen for the study of endogenicity and reactivity. Factor analyses were performed on these items for each depressive group. Results indicated that distinct endogenous and reactive factors had emerged. The authors interpreted these results as providing strong support for Klein's (1974) orthogonal hypothesis.

In order to examine the factor loadings of the individual items, Lewinsohn et al. (1977) concluded that in order for an item to be considered as clearly identified with a factor, the item had to have a loading of .40 or greater in at least one sample, and at least .30 in the remaining two samples. As a result, the items which were viewed as consistent with the endogenous factor were feeling helpless and
powerless, considering self to be lazy, feeling unable to act, retarded, lacking in reactivity to environmental changes, showing no interest in life, and perceiving depression as qualitatively different from ordinary sadness. The two items that were consistent with the negative factor were the feeling that the individual was bearing troubles and the lack of a precipitating stress. Items that did not meet the stated criterion but which were able to meet a less stringent criterion (loadings of at least .30 in two samples, and a loading in the same direction in the remaining sample) were expressing concern for the welfare of family and friends, feeling at the end of one's rope, crediting problems to excessive family or job responsibilities, having visceral symptoms, middle of the night insomnia, and not showing self-pity. Lewinsohn et al. (1977) stated that the content of these items consistently dealt with the effect of an aversive occurrence on the individual or a family member.

On the basis of these results, Lewinsohn et al. (1977) suggested a method for differentiating endogenous and reactive subjects for research purposes. On the strength of the independence of dimensions, the authors stated that a researcher could assess a subject's endogenicity and reactivity scores by summing the items which consistently load on each of these factors. They further suggested the use of median splits to divide the total sample into the four subgroups of low-low, low-high, high-low, and high-high.
Support for the conclusions of Lewinsohn et al. (1977) and Klein (1974) was not hard to find. As previously stated, Rosenthal and Gudeman (1967) stated a similar position. Eysenck (1970) stated that

The existence of two independent and separate factors of depression does not preclude the existence of patients suffering from both endogenous and reactive depression, and showing symptoms of both . . . the only proper solution to the diagnostic problem is to give each patient two scores, representing his or her position on the two dimensions. Nothing less will do justice to the theoretical model, or in affording the optimum guidance to treatment and prediction of outcome.

Perhaps the most systematic attempt to remedy this situation was undertaken by Spitzer et al. (1978). It was their intent to develop a "consistent set of criteria for the description or selection of samples of subjects with functional psychiatric illnesses." The result of their work was an operational criteria for psychiatric diagnoses which was termed the Research Diagnostic Criteria (RDC).

With regard to the reactive-endogenous continuum, these authors were in agreement with Mendels and Cochrane (1968), Kendall (1976), and Akiskal et al. (1978) in their belief that the term neurotic depression involved too many diverse meanings to be valid. Thus, the depressive disorders were divided into several nonmutually exclusive
categories that were based on salient characteristics of the depressive episode. The categories that resulted include the diagnoses of situational and endogenous depression, as well as other subtypes that are based on the history and course of the disorder (i.e., primary, secondary, and unipolar).

With regard to endogenous depression, Spitzer et al. (1978) referred to a "separate class of patients who manifest the constellation of negative symptoms regardless of the presence or absence of precipitating events." Situational depression referred to a disorder that develops following a set of circumstances which appear likely to have contributed to the inception of the depressive episode at that particular time. The authors noted that they used the term situational instead of reactive, since the latter term was often used to describe a dysphoria that occurs in response to environmental stress, and it implied the absence of endogenous signs.

The work of Spitzer et al. (1978) appears to have been quite fruitful since it generated further research into the endogenous-reactive question. Nelson and Charney (1980) utilized the RDC to designate patients in their study as endogenous or reactive based upon whether the symptoms were autonomous or responsive to environmental changes. They reported that psychomotor change (retardation or agitation), self-reproach, and decreased concentration distinguished
the autonomous from the reactive subtype. They also noted that although decreases in the areas of appetite, sleep, and energy were commonly found in patients with a reactive type of depression, it appeared likely that these symptoms "represent a nonspecific response to stress, which can occur in autonomous depressive states and in reactive depression as well."

Pursoff et al. (1980) employed the RDC to predict patient response to treatment of depression. They noted that while both reactive and endogenous depressives responded to a combined regimen of short-term interpersonal therapy (IPT) and amitriptyline, patients who manifested the endogenous pattern did not respond to IPT alone. Situational or reactive depression was responsive to either IPT or tricyclic medication alone. On these bases, the authors concluded that the RDC had therapeutic utility and should be utilized in future research.

To summarize, it seems to be the overwhelming consensus that dimensions exist within the realm of depression that correspond to the classic descriptions of endogenous and exogenous-reactive depression. Symptoms that appear to characterize these dimensions varied within each study, and yet some commonalities were observed across studies. These similarities were much more evident for the endogenous factor. The exogenous factor was not so neatly defined. Several reasons were discussed that might account for this
situation; (1) few studies utilized the same criteria, (2) there was a lack of consensus as to exactly what phenomena were being described by the factors extracted (in particular, the European authors appeared to equate the terms psychotic and endogenous, as well as the terms reactive, exogenous, and neurotic, whereas North American researchers generally used the terms reactive and exogenous to refer to one factor and endogenous to denote another), and (3) the possibility that perhaps endogenous represents a categorical dimension, whereas exogenous depression is more dimensional, and as such, would encompass a wider range of symptomatology and complaints.

Despite these circumstances, the fact remains that these symptom clusters have been consistently identified. Furthermore, the typology of depression into exogenous and endogenous has exhibited practical utility in terms of therapeutic implications and outcome. It was well documented that the preferred mode of treatment for a depression that loads highly on the endogenous factor included a tricyclic antidepressant regimen usually in combination with psychotherapy, while a more exogenous depression dictated either psychotherapy alone or in concert with a medication other than a tricyclic antidepressant (Ball & Kiloh, 1959; Kiloh & Ball, 1961; Bassuk & Schoonover, 1977; Honigfeld & Howard, 1978; Hipple & Cimbolic, 1979).
To conclude, there is considerable uncertainty and disagreement concerning the reliability, validity, and clinical utility of the classification of depressive syndromes. Kendall (1976) believed that the attempt to resolve these shortcomings via statistical analyses had failed and may continue to fail; it was his feeling that research was needed to clarify and strengthen our understanding of the physiological and psychological underpinnings of depression. Studies performed in the area of psychopharmacology, which generally aimed at differential response to tricyclic medication, seemed to be an attempt to uncover the physiological substrate of depression; results in this area led to the conclusion that depressions which load heavily on the endogenous factor have a biochemical basis that was not so much in evidence in those depressions which were seen as more exogenous (Bassuk & Schoonover, 1977; Hippie & Cimbolic, 1979).

Research that is aimed at investigating the psychological substrates of these dimensions is practically nonexistent. Factor analytic research has concentrated on the symptom pictures. Cognitive theories of depression have dealt with the processes involved in depressive states, while denying that the endogenous-exogenous dimension has practical utility (Beck, et al., 1979). Neither of the above areas of research focused on the cognitive structure of the depressed individual.
It was the intention of this research to investigate the psychological substrate of depression through an examination of both the conceptual content and the cognitive structure of patients who were diagnosed as depressed. By comparing the structural aspects of cognitive complexity and ordination as gathered from three groups of subjects, it was hoped that some insights would appear regarding the manner in which the depressed individual structures his world. Furthermore, the dimensions of endogenicity and exogenicity were investigated as they relate to cognitive complexity, ordination, and constructural content.

In this study, depression was assessed from several points of view. For one, self-reports of depression were gathered from patients' complaints, the Beck Depression Inventory, and the endogenous-reactive checklist of Angelillo and Cimbolic (1980). The degree of association of these measures with the concepts of content and structure was a major focus of this research.

It was the purpose of this study to test the following hypotheses.

1. It is hypothesized that there will be a significant difference among the groups employed with regard to the measure of cognitive complexity;

2. Within the depressed group, it is hypothesized that there will be a significant difference in the relationship of endogenicity and cognitive complexity and the relationship of exogenicity and cognitive complexity;
3. It is expected that there will be a significant relationship between cognitive complexity and the severity of depression; specifically, it is expected that high levels of cognitive complexity will be shown to be characteristic of depressions of a severe nature, with lower levels of cognitive complexity more characteristic of moderate to low levels of depression [this hypothesis is based primarily on the findings of Lester (1971) and Landfield (1976) in their work with suicidal patients];

4. It is hypothesized that there will be a significant difference among groups with regard to the ordination measure;

5. Within the depressed group, it is hypothesized that there will be a significant difference in the relationship of endogenicity and ordination, and the relationship of exogenicity and ordination;

6. It is hypothesized that there will be a significant relationship between ordination and the severity of depression; specifically, it is expected that low levels of ordination will be characteristic of depressions of a severe nature, with higher levels of ordination being characteristic of moderate to low levels of depression;

7. It is hypothesized that there will be a significant difference in the construct content among the groups employed; specifically, it is expected that the depressed group will exhibit a significantly greater degree of
undesirable constructs than either of the control groups, and furthermore, it is expected that the psychiatric control group will exhibit a significantly greater degree of undesirable constructs than the normal control group [these hypotheses are based on the findings of Space and Cromwell (1980)];

8. Within the depressed group, it is hypothesized that there will be significant differences in the relationship of endogenicity and the number of socially undesirable constructs, and in the relationship of exogenicity and the number of undesirable constructs;

9. It is hypothesized that there will be a significant relationship between the number of undesirable constructs and the severity of depression.

Method

Subjects

Depressed group. Twenty-five patients were selected on the basis of order of intake appearance. That is, the first 25 patients who met the criteria established for this group were chosen. Subjects were selected from an inpatient and a day hospital facility at a Veterans Administration hospital. Approximately half of the subjects were taken from each facility. Subjects ranged in age from 24 to 61 years; 38.2 years was the average age. Criteria for inclusion in the depressed group were established by DSM-III as necessary for the diagnosis of major depressive episodes or dysthymic disorders. Further, conditions not in evidence among the
subjects were alcoholism, drug dependency, obvious sign of mental retardation or organic brain syndrome, or serious medical illness either preceding or concurrent with the depression. These criteria, although less stringent, were similar to the guidelines employed by Space and Cromwell (1980). Finally, subjects were not, at the time of selection, taking any kind of psychotropic medication. These limitations were placed on the patient population because it was the purpose of this research to examine the construct system that is characteristic of depression; the presence of the excluded conditions mentioned above could serve to confound or confuse the interpretation of the results.

**Psychiatric control group.** Subjects in this group were 25 male patients who were selected on the basis of intake appearance. Subjects were recruited from the same facilities as the depressed group; approximately one-half of the subjects in this group came from each facility. Subjects ranged in age from 19 to 66 years; 43.3 years was the mean age. Similar criteria were employed for this group as by Space and Cromwell (1980). The criteria were that the subjects were not diagnosed as suffering from an affective disorder, showed no obvious sign of mental retardation or organicity, were not dependent on alcohol or drugs, and were not, at the time of selection, taking any kind of psychotropic medication. The diagnoses of the subjects in this group were generalized anxiety disorder (8), adjustment
disorder with anxious mood (4), antisocial personality disorder (3), avoidant personality disorder (2), narcissistic personality disorder (2), intermittent explosive disorder (1), paranoid personality disorder (1), acute post-traumatic stress disorder (1), compulsive personality disorder (1), acute paranoid disorder (1), and pathological gambling (1).

Normal (nonpsychiatric) control group. This group consisted of 25 males who were employed at the hospital in a variety of occupations. Individuals in this group were not in psychotherapy at the time the study took place. The criteria also specified that these individuals should not be suspected of being mentally retarded, dependent upon drugs or alcohol, or on any kind of psychotropic medication. Ages ranged from 18 to 58; 39.7 years was the average age. All subjects in this group volunteered their participation.

Instruments

Role Construct Reperatory Inventory (REP Test). This instrument (see Appendix A) was developed by Landfield (1980); it is a modification of Landfield's Role Construct Reperatory Test (1971). The test consists of (1) a response sheet, (2) a role specification sheet, and (3) an instruction sheet. Completion of the test results in a 15 x 15 matrix. The columns of the test signify the individuals in the subject's life who most closely conform to the descriptors provided on the instruction sheet. The rows indicate descriptions and contrasts of the individuals who are listed
in the columns, and represent the personal constructs of the subject. The constructs and significant people listed by the subject comprise the basis for further data analysis. This instrument yields the data base for arriving at a measure of construct content. In terms of content, the measures of relevance in this study are the number of socially undesirable, socially desirable, and ambiguous constructs that are used to describe the individuals listed on the response sheet of the REP Test. Two independent raters classified all constructs into one of these three categories. The interrater reliability was .85 for this measure. For those constructs on which the raters disagreed (15%), a third rater made the determination of construct content.

Construct Meaningfulness Scale. This instrument (see Appendix A) is a part of the response sheet of the REP Test, and it consists of 15 13-point scales. The scales are anchored by the constructs provided by the Role Construct Repertory Inventory. One scale is completed for each of the people listed on the latter instrument. The Construct Meaningfulness Scale provides the data base for arriving at measures of cognitive complexity and ordination.

The measure of cognitive complexity that is used in this study is Landfield's Functionally Independent Construction (FIC) score. This measure was described in detail by Landfield (1971), who perceived this concept in terms of
the quantity of "functionally different dimensional units of meaning." In arriving at this score, every row pattern is related to all other row patterns. The same procedure is followed for the column patterns. This results in two matrices of relationship which are used in computing the FIC score. Landfield and Barr (1976) reported that .82 is the FIC test-retest reliability.

A high FIC score, as described by Landfield (1971), denotes that construct dimensions are used independently of each other, and such a score has been used by Landfield and Barr (1976) as an indication of high cognitive complexity. A low FIC score means that the construct dimensions are very dependent upon each other, and such a score is an indication of low cognitive complexity.

The concept of ordination was first described by Landfield and Barr (1976) as a reflection of hierarchial organization, construct integration, and meaningfulness. A high ordination score indicates that the individual is able to differentiate levels of "more or less" within construct dimensions, thus functioning at a high level of integration. A low ordination score is indicative of less construct differentiation or lower integration. Both FIC and ordination scores are obtained through the use of a computer program which was developed by Landfield (1980). Landfield and Barr (1976) report that .78 is the test-retest reliability for ordination.
Beck Depression Inventory (BDI). This instrument (see Appendix B) was utilized to assess severity of depression and as a check to verify that the groups differed on the variable of depression. The test consists of 21 groups of statements. The subject responds by indicating which of the statements best describes his feelings at the present time. The BDI is designed to measure the degree of severity of 21 depressive symptoms, with the higher scores denoting higher levels of depression. Beck has reported that the test has a .93 split-half reliability, and that it correlates highly with clinical ratings of severity (.67) and the depression scale of the Minnesota Multiphasic Personality Inventory (.75).

Endogenous-Reactive Checklist. This scale (see Appendix C) was constructed by Angelillo and Cimbolic (1980) for the purpose of determining the extent to which an individual can be described as endogenously and exogenously-reactively depressed. This instrument yields a separate score for each dimension, and consists of items that have been found to load moderate-to-high on factors which are characteristic of endogenous and reactive depression (Hamilton & White, 1959; Kiloh et al., 1962; Kiloh & Garside, 1973; Rosenthal & Klerman, 1966; Rosenthal & Gudeman, 1967a, 1967b; Lewinsohn et al., 1977; Bassuk & Schoonover, 1977; Hippie & Cimbolic, 1979). There are 36 items on the scale, some of which pertain to endogenicity, some to reactivity, and
several which might indicate either dimension depending upon the manner in which the item was answered. Each item has a value of 1, 2, or 3 points. The higher the point value, the more it is felt that the item is indicative of endogenicity or exogenicity. The determination of point values is based on the consistency and strength of each item as indicated by past research. The point values and directions (endogenous, exogenous, or both) are explained in Appendix C. The range of scores for the endogenicity dimension is 0 to 76, and the range for the exogenicity dimension is 0 to 51. Two scores are obtained for each subject; one for endogenicity, and one for exogenicity. Scores are correlated with measures of severity, quantity of negative constructs, cognitive complexity, and ordination. Test-retest reliability was determined to be .75 over a 4-week period (Cimbolic, 1980).

Evidence for validity of the scale was gathered after the completion of data collecting. It was found that endogenous scores and degree of patient improvement (as determined by the patient's primary care physician), following a regimen of tricyclics, were significantly correlated ($r = .58$, $p = .006$, $df = 12$). The correlation between exogenous scores and degree of improvement was not significant ($r = .24$, $p = .20$, $df = 12$). Such results are consistent with the research that addressed the efficacy of tricyclic medication on the treatment of patients who
manifested a high endogenous loading (e.g., Bassuk & Schoonover, 1977; Honigfeld & Howard, 1978; Hippie & Cimbolic, 1979; Pursoff et al., 1980).

In order to refine the scale, further work is being done at the present time. Specifically, an attempt is being made to discover those items that are most predictive of positive therapeutic response to psychotherapy, tricyclics, and other psychotropic medications.

Procedure

Two full-time day hospital staff (a Ph.D. clinical psychologist, and a master's level clinical specialist) served as co-investigators for the purpose of patient-subject diagnosis. For the purpose of establishing reliability of diagnosis, 10-day hospital intake summaries were presented to these investigators at weekly patient review conferences. The intakes that were presented were simply the first 10, following the inception of data collection, that were scheduled for review at the weekly conferences. Each co-investigator then made independent DSM-III diagnoses on the basis of impressions gleaned from the summaries. They agreed on their diagnoses in 9 of 10 cases.

Following the establishment of reliability, all diagnostic impressions took place in the context of the day hospital facility. Intake summaries were presented to one of the two co-investigators, who studied the summary, and then made a diagnostic decision. Each co-investigator made
half of the diagnoses. The intake summaries were prepared by one of the full-time day hospital staff (if the patient was being evaluated for the day hospital program), or a full-time inpatient staff member (if the prospective subject was a patient on the inpatient facility used).

If the patient met the diagnostic criteria established for this research, he was contacted by the principle investigator, and an interview appointment was made. All appointments were scheduled and conducted within 2 weeks of the time of the intake. At this time, the BDI, Role Construct Reporatory Inventory, Construct Meaningfulness Scale, and endogenicity-exogenicity scale (used only with the depressed group) were administered by the principle investigator.

Procedure for the nonpsychiatric control group was identical to that utilized for the patient groups, with the exception that the control group did not go through the same diagnostic screening procedure as did the patient groups. Instead, this group of subjects was recruited by a memorandum, which was prepared by the Assistant Chief of Psychology at the veterans hospital, that asked for volunteers to participate in a research study. Copies of the memo were sent to all psychiatric wards, the director of nursing, the director of psychiatric aides, the director of social work, and the director of rehabilitative therapy. If an individual agreed to participate, and met the criteria established for inclusion for this group, an appointment was
scheduled and an interview conducted within 2 weeks of the time of first contact.

Results

The first hypothesis states that a significant difference will exist with regard to cognitive complexity among the normal control, psychiatric control, and depressed groups. A simple analysis of variance (McNemar, 1969) was computed between the FIC scores of the three groups in order to investigate the hypothesis. The result of this analysis is not significant (see Table 1); no differences were found among groups with regard to cognitive complexity.

The second hypothesis states that within the depressed group there will be significant differences between the relationship of endogenicity and cognitive complexity, and the relationship of exogenicity and cognitive complexity. Pearson product-moment correlations (McNemar, 1969) were computed to assess the relationship between exogenous and FIC scores ($r = .01, p = .49, df = 23$), and between endogenous and FIC scores ($r = .05, p = .41, df = 23$). Neither correlation is significant. Since the relationships between cognitive complexity, endogenicity, and exogenicity are nonsignificant, there is no need to investigate the difference between these relationships.

The third hypothesis states that a significant positive relationship will exist between cognitive complexity and the severity of depression within the normal control, psychiatric
control, and depressed groups. Pearson product-moment correlations were computed between PIC and BDI scores for each group and no significant correlations were observed (see Table 2). Thus, no significant relationships are found between cognitive complexity and the severity of depression in any of the three groups.

The fourth hypothesis states that a significant difference will exist with regard to ordination among the normal control, psychiatric control, and depressed groups. A simple analysis of a variance was computed on the ordination scores of these groups (see Table 3), which indicates that a significant difference exists ($F = 8.88, p = .004, df = 2, 72$). A Scheffe test (Winer, 1971), performed in order to assess differences between individual groups with regard to ordination, shows that a significant difference exists between the normal control group and both psychiatric control and depressed groups ($p < .05$); there is, however, no significant difference between the latter groups ($F_{crit} = 6.99, df = 2, 72$). Therefore, the group of normal subjects exhibits a significantly higher level of ordination than both of the patient groups, while the two patient groups cannot be discriminated from each other on this dimension.

The fifth hypothesis states that there will exist significant differences within the depressed group between the relationship of endogenicity and ordination, and between the relationship of exogenicity and ordination. Pearson
product-moment correlations were computed to assess the relationship between exogenous and ordination scores ($r = -0.18, p = 0.19, df = 23$), and between endogenous and ordination scores ($r = -0.13, p = 0.26, df = 23$). This procedure yields nonsignificant negative correlations in both cases. Since the relationships between ordination, endogenicity, and exogenicity are nonsignificant, there is no need to investigate differences between these relationships.

The sixth hypothesis stated that a significant negative relationship will exist between ordination and the severity of depression within the normal control, the psychiatric control, and the depressed groups. Pearson product-moment correlations were computed on ordination and BDI scores for each group in order to assess this hypothesis. No significant correlations are found (see Table 4). Thus, there are nonsignificant relationships between ordination and depressive severity within all these groups employed in this study.

The seventh hypothesis states that there will exist significant differences with regard to construct content among the normal control, the psychiatric control, and the depressed groups. Three chi squares were computed in order to assess this hypothesis (McNemar, 1969). The first chi square was performed in order to assess differences among the three groups with regard to the number of subjects who employ a "low" (13 or less), "medium" (14 to 15), or "high"
(16 or greater) number of undesirable constructs on the REP grid. The results of this analysis are nonsignificant ($X^2 = 2.97$, $p = .63$, $df = 4$). The second chi square was computed in order to assess differences among the three groups regarding the number of subjects using a "low" (12 or below), "medium" (13 to 14), or "high" (15 or greater) number of socially desirable constructs. The results of this analysis are also nonsignificant ($X^2 = 8.79$, $p = .08$, $df = 4$). Finally, the third chi square was performed to assess differences among the three groups with regard to the number of subjects using a "low" (0 to 1), "medium" (2 to 3), or "high" (4 or greater) number of ambiguous constructs. The results of this analysis are significant ($X^2 = 10.74$, $p = .04$, $df = 4$). Thus, the proportion of subjects who employ low, medium, and high numbers of socially desirable and socially undesirable constructs is independent of diagnostic categorization (see Tables 5 and 6). However, the proportion of subjects using low, medium, and high numbers of ambiguous constructs is a function of diagnostic group. Table 7 data indicate that the normal control group exhibits the greatest tendency to use a low number of ambiguous constructs, while the two patient groups show the greater tendency to utilize a higher number of ambiguous constructs.

The eighth hypothesis states that within the depressed group, significant differences will exist between the relationship of exogenicity and undesirable constructs, and
the relationship of endogenicity and undesirable constructs. Pearson product-moment correlations were computed between endogenous scores and the number of undesirable constructs and between exogenous scores and the number of undesirable constructs. The correlation between endogenous scores and undesirable constructs is significant ($r = .37, p = .04, df = 23$), while the correlation between exogenous scores and undesirable constructs is not ($r = -.07, p = .37, df = 23$). Thus, for the depressed patient, the greater the amount of endogenicity, the lesser the likelihood for employment of an undesirable construct. However, exogenicity and the use of undesirable constructs are not significantly related.

When the $t$ test for differences between Pearson product-moment correlations (nonindependent groups) was computed (McNemar, 1969), a significant difference is found between these correlation coefficients ($t = 2.59, p = .05, df = 22$). Thus, the relationship between endogenicity and undesirable constructs is significantly greater than the relationship between exogenicity and the use of undesirable constructs.

The relationships between exogenicity, endogenicity, the use of desirable constructs, and the use of ambiguous constructs were also investigated within the depressed group. Pearson product-moment correlations were computed between exogenous scores and the number of desirable constructs used ($r = -.03, p = .44, df = 23$), and between exogenous scores and the number of ambiguous constructs employed ($r = .29, p = .07, df = 23$). Neither correlation
is significant; therefore, exogenicity and the utilization of desirable and ambiguous constructs are not significantly related.

Pearson product-moment correlations were performed to assess the relationships between endogenous scores and the number of desirable constructs, and between endogenous scores and the number of ambiguous constructs used. A nonsignificant correlation is found between endogenous scores and desirable constructs ($r = -0.18, p = .19, \text{df} = 23$), while a significant correlation is found between endogenous scores and the use of ambiguous constructs ($r = 0.42, p = .014, \text{df} = 23$). Thus, the greater the degree of endogenicity, the greater the tendency to employ ambiguous constructs. Table 8 exhibits all correlations between endogenous loadings, exogenous loadings, and the three dimensions of construct content (undesirable, desirable, ambiguous), within the depressed group.

The ninth hypothesis states that within the normal control, the psychiatric control, and the depressed groups, a significant relationship will exist between the use of undesirable constructs and the severity of depression. Pearson product-moment correlations were computed between the number of undesirable constructs and BDI scores for each of the three groups. The results indicate nonsignificant correlations between these variables in the normal group ($r = -0.16, p = .22, \text{df} = 23$), and the psychiatric
control group ($r = -0.01, p = 0.49, df = 23$). However, the correlation in the depressed group is significant ($r = -0.48, p = 0.005, df = 23$). Thus, for the depressed group, the more severe the depression, the less likelihood for utilization of undesirable constructs.

The relationships of depressive severity, desirable constructs, and ambiguous constructs were also investigated in both the depressed and the psychiatric control groups. Within each group, Pearson product-moment correlations were computed between the number of desirable constructs and BDI scores, and between the number of ambiguous constructs and BDI scores. For the psychiatric control group, the results indicate nonsignificant correlations between the number of desirable constructs and BDI scores ($r = 0.11, p = 0.30, df = 23$), and the number of ambiguous constructs and BDI scores ($r = -0.02, p = 0.46, df = 23$). For the depressed group, however, the correlations are significant between the number of desirable constructs and BDI scores ($r = -0.34, p = 0.05, df = 23$), and between the number of ambiguous constructs and BDI scores ($r = 0.59, p < 0.001, df = 23$). Thus, in the depressed group, the greater the severity of depression, the greater the likelihood for employment of ambiguous constructs, and the lesser the likelihood for using a desirable or an undesirable construct.
Additional Analysis

In order to discover if the normal control, the psychiatric control, and the depressed groups differ on the dimension of severity of depression, a simple analysis of variance was computed. The results indicate that there is a significant difference among groups ($F = 61.39, p < .001$, $df = 2, 72$). Table 9 data indicate that the depressed group exhibits the highest degree of severity, followed by the psychiatric control group and the normal control group, respectively.

In order to assess the relationship between the dimensions of endogenicity and the severity of depression within the depressed group, a Pearson product-moment correlation was computed between BDI and endogenous scores. The results indicate that there is a significant correlation between the two measures ($r = .45, p = .01, df = 23$). As such, the greater the degree of endogenicity, the more severe the depressive symptomatology. A partial correlation (McNemar, 1969) was computed in order to assess the relationship of endogenicity and the number of undesirable constructs with the effects of severity of depression partialed out. The results indicate that there is a nonsignificant correlation between endogenous scores and the number of undesirable constructs when BDI scores are partialed out ($r = -.19, p = .17, df = 23$). Thus, when the effect of depressive severity is removed from the relationship between endogenicity
and the use of undesirable constructs, this relationship is no longer significant.

Finally, the distributions of endogenous and exogenous scores within the depressed group were examined on a post hoc basis. The standard deviation is 9.2 for endogenous scores, while the standard deviation is 6.8 for exogenous scores. Chi squares were computed in order to test for goodness of fit between endogenous scores and the normal distribution \( X^2 = 1.96, \ p = .61, \ df = 3 \), and exogenous scores and the normal distribution \( X^2 = 1.68, \ p = .65, \ df = 3 \). Since neither chi square is significant, neither endogenicity or exogenicity deviate significantly from the normal curve distribution.

Discussion

It is the intent of the present study to investigate several aspects of construct organization, and to examine their relationship to some salient dimensions of depression. In the present study, Landfield's (1980) FIC score is employed in order to measure cognitive complexity. The findings of the present study indicate that the group of normal subjects exhibits the highest mean FIC score, and the depressed group exhibits a slightly higher score than the psychiatric control group. However, these differences are not significant. Such findings are contrary to those of Lester (1971) and Landfield (1976) in their research with suicidal individuals. However, the present findings are in
agreement with those of Lester (1969) and Space and Cromwell (1980). It is important to note that the latter study is the only one to date that deals with clinically depressed patients. Thus, in the two studies that directly address the relationships of cognitive complexity and depression, the former measure is unable to significantly differentiate depressed patients from patients with other disorders or from a group of "normal" individuals. Together, these studies lend support to Landfield and Barr's (1976) objection to a "unidimensional" approach to cognitive complexity; that is, by itself, a measure of between-construct differentiation seems to be an insufficient correlate of mental health in general. Thus, while an individual with a high degree of cognitive complexity may perhaps exhibit a great deal of flexibility in his thinking, and while the individual with a low degree of complexity may be more rigid, such conditions do not seem to be directly related to the ability to adapt to the world in a psychologically healthy manner.

The present study predicts, but does not find, a significant relationship between the severity of depression and cognitive complexity. In light of the results discussed above (hypothesis 1), this finding does not seem surprising. Specifically, since a measure of cognitive complexity is unable to significantly distinguish between groups of patients who have a variety of psychological disorders and a group of "normal" individuals, there is little reason to
expect the PIC score to correlate strongly with a measure of the amount of psychological discomfort experienced (BDI). Once again, the amount of flexibility or rigidity in one's thinking does not seem to be strongly related to whether a disorder exists or to the degree of depression one may experience along with that disorder.

The present research also predicts a significant difference among groups with regard to ordination scores. This hypothesis is confirmed. Post hoc analysis indicates that the "normal" group exhibits a significantly higher level of ordination than both of the patient groups, while the latter groups do not differ significantly. These findings clearly support those of Landfield and Barr (1976), in whose study those subjects with higher ordination scores are judged to be more psychologically adjusted than those subjects who were lower on this variable. The results of the present research also indicate that ordination may be sensitive to the individual's ability to adapt, in a general way, to his environment. That is, while ordination seems to be able to differentiate patient from nonpatient groups, this measure is not effective in differentiating the depressed from the more heterogeneous psychiatric control group. In short, the ability to distinguish different degrees of "meaningfulness" within constructs may be seen to correlate with a general level of psychological adaptation.
A hypothesis of this study proposes that within the two patient groups there would exist a significant negative correlation between ordination and the severity of depression, but this hypothesis is not confirmed. In fact, the findings indicate a nonsignificant positive correlation between these variables. Thus, while the ordination measure may be effective in differentiating between patient and nonpatient groups, it does not appear to indicate the degree of discomfort experienced within these groups.

Another hypothesis of this study proposes that between-group differences will exist with regard to the content of constructs. In the area of socially desirable and undesirable constructs, this hypothesis is not confirmed because the number of patients who exhibit low, medium, and high numbers of such constructs is independent of the existence of psychological distress or normality. In the area of ambiguous constructs, however, differences are observed. Specifically, the number of patients who use low, medium, and high numbers of these constructs is dependent upon the presence of psychological dysfunction. It is important to note that subjects in the two patient groups exhibit the greatest usage of medium and high numbers of ambiguous constructs, while most subjects in the normal control group employ a low number of such constructs.

Such a finding is significant, particularly from a personal construct point of view. Kelly (1955) stressed
that man is constantly proposing and testing hypotheses in order to predict and confirm life events. If he is relatively successful in this quest, the individual is able to anticipate and exert control in his life. However, the process of hypothesis testing is hindered when the constructs that one utilizes to view and communicate with are ambiguous. In this instance, the individual may find it difficult to receive social and environmental validation of perceptions, thoughts, and feelings. As a result, he may also find it difficult to confirm hypotheses, which makes prediction of future events somewhat precarious.

The importance of hypothesis testing and confirmation is noted by Kelly (1955), who states that all psychological symptoms are a result of a breakdown of the construct system, making for inefficient prediction. In essence, the individual may not know what to expect, nor when to expect it. Abramson et al. (1978) present a similar argument with regard to learned helplessness; they note that when an individual does not have sufficient expectations of contingencies in his life, he may begin to behave in a helpless manner which is characterized by social withdrawal and depressed affect. In short, significant ambiguity in one's thoughts or constructs makes it difficult to exert control over various aspects of life.

This study further proposes that within patient groups, a significant positive correlation will exist between the
number of undesirable constructs employed and the severity of depression. This hypothesis is not confirmed, and in fact, a significant negative correlation is observed in the case of the depressed group. Thus, it seems that the construct system of the more severely depressed patient is characterized by less negativity.

The severity of depression within this study's two patient groups is also examined with regard to the frequency of desirable and ambiguous construct utilization. Again, significant relationships are observed only in the depressed group. Specifically, it appears that the more severe the discomfort experienced by this individual, the less apt he is to employ socially desirable constructs. Conversely, a significant positive relationship is evidenced between the severity of depression and the frequency of ambiguous constructs. In short, it seems that the more severe the depressed patient's reported experience of discomfort, the more likely he is to employ ambiguous constructs, and the less likely he is to use both positive and negative constructs. The relevance of such a finding, in terms of psychopathology from a personal construct viewpoint, is addressed above.

A brief discussion is warranted because of the significant relationship between the severity of psychological discomfort and construct content in the depressed group, which are not found in the psychiatric control group. Table 7 data
indicate that subjects in the psychiatric control group use a high number of ambiguous constructs more often than subjects in the depressed and normal control groups. Further, subjects in the psychiatric control group exhibit the greatest overall frequency of ambiguous construct usage. Yet, neither this process, nor the amount of negative or positive construing, is related to the amount of psychological discomfort reported by these individuals.

A number of explanations are possible to account for this occurrence, two of which are presented. First, and most obvious, is that perhaps the relationship between construct content and severity of discomfort is specific to depression and not characteristic of other disorders. The second explanation is related to the instrument (BDI) utilized to measure discomfort; although this test targets the symptoms of a depressive disorder quite specifically, it is not nearly as sensitive to the symptomatology of other psychological dysfunctions. For example, the BDI does not give a reliable indication of how anxious the patient is who has an anxiety disorder, nor how paranoid the patient is who suffers from a paranoid disorder. As such, it seems probable that some information regarding the severity of disorders other than depression is not tapped with the use of the BDI. Thus, the absence of significant relationships in the area of severity and construct content may be, at least in part, the result of
the instrument employed to measure the former variable. Perhaps this question can be addressed in future research.

This study also proposes several hypotheses concerning the relationships of endogenous and exogenous depression to FIC and ordination scores. In this area, all correlations and differences between correlations are nonsignificant. Thus, neither FIC nor ordination scores seem to be related to the degree of endogenous and exogenous symptomatology experienced by the depressed patient. These findings may be viewed in light of those concerning ordination and cognitive complexity that have already been discussed. Specifically, while the ordination measure is successful in discriminating patient and nonpatient groups, the FIC score is not; however, neither of these measures significantly correlates with the degree of psychological discomfort reported (BDI). The interpretation of these findings is that ordination seems to be related to a rather general aspect of psychological adaption, as both ordination and FIC scores are nonsignificant discriminators of anything more specific. As such, the failure to discover significant relationships between the depressive (endogenicity, exogenicity) and the cognitive structural dimensions seems consistent with the "general adaption" view of ordination that is stated above.

This research also attempts to discover the relationships within the depressed group between undesirable
constructs and endogenous and exogenous depression. It is hypothesized that there will be significant differences in the relationship of endogenicity and the number of undesirable constructs, and the relationship between exogenicity and the number of undesirable constructs. This hypothesis is confirmed. Specifically, the results indicate that a slight, nonsignificant negative correlation exists between undesirable constructs and exogenous scores, while a significant negative relationship is observed between the number of undesirable constructs and endogenous scores. Thus, individuals who had higher endogenous loadings also had fewer socially undesirable constructs.

The present study further addresses the relationships within the depressed group between socially desirable constructs, ambiguous constructs, and the dimensions of endogenous and exogenous depression. In these areas, nonsignificant negative relationships are observed between exogenous loadings and the frequency of desirable constructs, and between endogenous loadings and the use of desirable constructs. A nonsignificant relationship is observed between exogenous scores and the number of ambiguous constructs. However, a significant positive relationship exists between endogenous scores and the number of ambiguous constructs employed. Thus, the patient with a high endogenous loading tends to use a greater amount of ambiguous
constructs, while exhibiting a decreased likelihood of undesirable constructs.

Because of the similarity of the dimensions of severity and endogenicity of depression with regard to construct content, the relationship between the former variables is examined on a post hoc basis. As reported, the analysis indicates a significant positive correlation between these variables. Such a finding is not surprising in that several BDI items relate to rather "classic" endogenous symptoms (e.g., guilt, self-reproach, weight loss, middle and terminal insomnia). The fact that endogenous and BDI scores share a common source of variance reflects the situation where indicators of severe depression (e.g., weight loss of greater than 10 pounds, self-hate, severe insomnia, extreme fatigue) are also indicators of a high endogenous loading.

Taken together, the results of this research point to a "two-level" explanation of depression, particularly endogenous depression, from a personal construct point of view. At one level, it seems that ordination is a correlate of a rather general factor of psychological adaption. On a second level, however, ordination does not seem to be a significant variable with regard to the "type" of pathology manifested. The findings of the present study, and the research of Sperlinger (1971) and Space and Cromwell (1980), point to the possibility that the second level may be better understood in terms of the content of patient
constructs. In both of the cited studies, depressed patients exhibited a significantly greater level of negative self-constructs than either the nondepressed psychiatric or the normal subjects. Thus, it seems that depressed patients tend to view themselves more negatively than do either the patients who have other psychological dysfunctions or the individuals who have a relative lack of symptomatology.

As mentioned, the present research does not employ the use of constructs as applied to self, but rather asks the patient to apply his construct system to others. However, the role of this "type" of construct content in the proposed bilevel explanation is not totally clear at this time. The fact that both patient groups exhibit a greater amount of ambiguous constructs than the normal control group suggests that this factor may also operate on the first, more general level. However, it is important to recall the findings regarding the increasing usage of ambiguous constructs and the decreasing usage of negative and positive constructs, as they coincide with increasing degrees of endogenicity and severity of depression. This situation suggests that perhaps construct content, as measured in this study, is more relevant to depression than other manifestations of psychological disorder. Thus, it is possible that the content of a patient's constructs, as applied to others, may operate on two levels—the more general first level and the more specific second level.
An interesting possibility, with regard to the role of ambiguous constructs, has to do with what might be termed a defensive function of such construing. Kelly (1965) spoke of the protective role of ambiguity in the construct system; specifically, Kelly says that when the individual is faced with a system that does not allow for effective prediction and anticipation, he is likely to experience some degree of psychic discomfort. One means of dealing with such pain is the employment of an increasing amount of ambiguous constructs. As previously discussed, the result of such a process is that social validation is apt to suffer. For the individual who is experiencing significant psychological distress, however, this may be a desirable end product; that is, validation of one's constructs is not always a pleasant experience. For example, life's occurrences may continually serve to confirm one's feelings of unworthiness, misery, and failure. In defense from such feedback, the individual may impose ambiguity so as to avoid the terrible certainty of accurate prediction. In effect, he may be sheltering himself from what he fears to be an alarming truth. In cases such as these, ambiguity may provide a retreat to safety.

The development of such a protective system may occur over a prolonged period of time, since the individual's initial reactions to stress often entail the search for more accurate, rather than more ambiguous, construing (Kelly,
1955). As such, it might be speculated that ambiguity as a defensive measure is a manifestation of a process type of disorder, as opposed to a more reactive dysfunction.

Further, the results of this study suggest that this phenomenon may cross diagnostic categories. Specifically, it is well documented that endogenous depression is considered to be a process type of dysfunction (Buss, 1966); the same might be said with regard to most personality disorders (Coleman et al., 1980). Thus, a common link between these categories is, perhaps, the usage of ambiguous constructs as reflective of the similar nature of both disorders. This hypothesis is particularly relevant to the present study, given the high incidence of personality dysfunction in the psychiatric control group.

The acceptance of ambiguity as a process oriented phenomenon might help to explain the somewhat homogeneous nature of the endogenous syndrome, as compared with the more reactive types of depression. Specifically, in the latter case, the individual's response to a stressful situation seems to be more variable; the individual often may be seen as frantically searching for relief from his plight, and the search is often harried and unsystematic. However, the more process-oriented endogenous depressive has had more time to deal with psychological distress, and perhaps this length of time has allowed him to develop a more specific and common means of handling his pain. What
is being hypothesized here is that at least part of the commonality is the tendency to use ambiguous constructs in a defensive, protective role.

Etiologically, it seems possible that the employment of ambiguous constructs may be in response to what Kelly (1955) termed a dilated field. In this circumstance, the individual is faced with an exceedingly wide array of environmental occurrences; problems are seen to arise when the person lacks the cognitive structure with which to interpret, predict, and control these events. According to Kelly, psychic turmoil (in the forms of anxiety, threat, and fear) is likely to occur as a result.

In responding to a dilated field, the obvious need is for expansion of cognitions or constructs in order to meet the demands of the environment. One means of doing so is to use more ambiguous ways of construing experience. Because the parameters of such constructs are less well-defined, the constructs are able to admit a wide range of stimuli within their limits of interpretation. However, the use of ambiguous constructs does not readily solve the problem. Although more events may be applicable to the range of interpretation (convenience) of a given construct, the inherent lack of clarity makes for inefficient prediction and anticipation. And, as previously discussed, the outcome of this process is further psychological turmoil. In
essence, the individual attempts to plug the holes in his construct system with a sieve.

Kelly (1955) addressed the presence of inadequate structure, coupled with a dilated field, from a developmental point of view. It is his feeling that the predisposed child learns to use only a few constructs in attempting to understand a wide variety of events. For example, the child may believe that God or his parents will care for all of his needs. Such situations may be seen to occur in families where autonomy and independence are stifled in favor of blind conformity and noncontingent reinforcement. Psychological trouble may develop when the all-encompassing conceptual structure fails; that is, events and experiences may no longer be validated through the employment of these constructs. This may occur when the child enters a developmental phase (e.g., adolescence) during which he perceives that God and parents are no longer capable of serving all needs. If some degree of restructuring has not taken place prior to this time, the adolescent may encounter new experiences when he has little support to fall back on. It is perhaps during such a period, or at a later time, that the individual may resort to ambiguity as a means of restructuring his concepts in order to meet the demands of his environment. Thus, the tendency to use ambiguous constructs is viewed as the consequence of a long and painful
developmental process. Such a view is consistent with the process nature of endogenous depression.

In short, it appears that both low ordination and the usage of ambiguous constructs are related to the existence of psychological dysfunction; on the other hand, it seems clear that negative self-construing is related most specifically to depression (Sperlinger, 1971; Space & Cromwell, 1980). However, whether the content of constructs, especially ambiguous constructs, is more specifically related to depression than other manifestations of psychological illness, is a question for future research.

The findings of this study may be viewed as relevant in so far as they have practical value. Perhaps the most significant finding is in regard to the differences in ordination among groups. The fact that the normal group exhibits a significantly higher mean ordination score than both patient groups may have some therapeutic and diagnostic import. This knowledge may be useful to the therapist from the standpoint of how he views and deals with individuals who are experiencing difficulty in adapting to their environment. As mentioned above, Beck (1964) described the maladjusted patient as one who is unable to differentiate levels of meaning in his thinking; that is, this individual often gets "stuck," construing many events as being catastrophic. In short, this type of individual seems to have difficulty in viewing occurrences as having differing
implications in his life. The findings of this research seem to confirm this hypothesis.

The therapist may use this knowledge advantageously by getting an initial indication of the client's facility with regard to ordination. While the REP test (and the corresponding measure of ordination) is one means of measurement, the therapist might also gain an indication from the clinical interview. If the client exhibits such suspect patterns of thinking, one goal of treatment might be to challenge such beliefs and thoughts. The cognitive-behavioral school of psychotherapy, as epitomized by Beck (1976) and Ellis and Greiger (1977), bases much of its emphasis on challenging and correcting irrational thinking. The findings of this research, and those of Landfield and Barr (1976), reveal that one aspect of maladjusted thinking patterns might be a relative shortcoming in the ability to distinguish levels of meaning within one's constructs or thoughts.

A second area of therapeutic import seems to be in regard to how ordination relates to the negative self-constructs that are generally observed in depressive patients (Sperlinger, 1971; Space & Cromwell, 1980). The results of this research might afford the therapist a more comprehensive view of the problems that are inherent with this disorder. Part of the patient's view of himself as "unworthy" and a "failure" may stem from his construing many of the occurrences in his life as equally bad and catastrophic. Since this
individual may possess a limited ability to comprehend that there are different levels of such qualities as good and bad, he is less likely to move from his negative view of himself. As such, the depression is more apt to persist.

Therapeutically, this presents a difficult problem. The patient maintains his negative self-view because it is continually validated by self and others. As a result, he will be hesitant to give it up unless something exists to take its place. Exactly what this "something" is may have to do with a more differentiated construct system. Kelly (1955) addressed this therapeutic process with regard to the issue of extreme dependency; he stated that "what the therapist has to do is to bring out more clearly during the therapy sessions the varying aspects of the client's dependency." Kelly continued to stress that dependency must not be eliminated, but "rather differentiation and appropriate distribution of dependency . . . must be achieved." In short, the client must be aided in his development of a higher degree of differentiation or ordination.

Greater facility at ordination is viewed as desirable, whether the construct deals with dependency, unworthiness, failure, or anything else. As such, it is not the construct (e.g., success-failure) itself that should be eliminated. Rather, as stated above, what is desired is a greater degree of differentiation. Enhancing the differentiating abilities of the patient will give him an expanded capacity for
organized, ordered thought and decision making (Landfield & Barr, 1976). Thus, the individual (in this case the depressed client) is less likely to construe life's experiences as equally bad, harmful, and depressing. As a result, the symptom is less likely to persist at a profound level, and the prognosis is seen to be brighter.

There are various means of addressing the undifferentiated construct system. For example, Ellis and Griege r's (1977) Rational-Emotive approach focused on the catastrophic nature of the patient's belief system. In so doing, the client is forced to see that adverse circumstances will not result in the end of the world. The implosive approach (Corey, 1982) exposes the client to the most feared stimuli. If therapy is successful, the client discovers that although anxieties may occur, they are not nearly as severe as anticipated. In both instances, the client learns that there are differing levels of negative emotion, many of which are far from catastrophic. Such insight is viewed as an important component in the alleviation of symptoms.

A final area of therapeutic relevance seems to be related most directly to the more severe, endogenous depressive. As mentioned, the construct system of such patients is characterized by a relatively high number of ambiguous constructs, as well as a decreasing likelihood of employing socially desirable and undesirable constructs. Since it is more difficult to receive social validation when one's
constructs are ambiguous (as opposed to socially desirable or undesirable), the patient faces the increased possibility of ambiguous feedback. As such, a vicious circle may be set up that leaves the patient somewhat helpless in his dealings with the environment. In working with this patient, the task of the clinician may be viewed as one of addressing the lack of clarity in the construct system; the hope is to facilitate movement that would enable the patient to define more clearly some ambiguous constructs. In so doing, however, it may mean that some ambiguous constructs would move into the socially desirable or socially undesirable realm. Kelly's (1955) Fixed Role Therapy presented one method of implementing this process. In this style of intervention, the patient is asked to play-act roles generated by his construct system. The patient is thereby afforded an opportunity to see the ambiguity in his construct system, and he is given the chance to try out new, more adaptive ways of construing his world.

The therapeutic task that is involved with the clarification of constructs also may be a difficult one. As mentioned, the client may be using ambiguous concepts in order to meet the demands of a dilated perceptual field. As such, this process has an important function in the patient's life, albeit one which is rather pathological. It seems logical to assume that if the perceptual field can be somewhat constricted, the patient will have less need to employ
ambiguity. Perhaps this is one reason why psychotropic medication, particularly tricyclic antidepressants, prove to be effective in the treatment of endogenous depression (consider the sedating effects of such tricyclics as amitriptyline). In addressing the question of chemical treatment in depression, Kelly (1955) noted that the increased rest periods "may have some tendency to restore the regularity and predictability of bodily processes. It therefore alleviates anxiety in the area served by . . . core structures." Thus, if nothing else, sedation provides more clarity in some somatic components; the patient's world becomes at least somewhat more predictable.

Once some degree of constriction has occurred, it is desirable that psychotherapeutic intervention proceed. Since the patient is now encumbered with less aversive stimuli, he is likely to be in a better position to benefit from such help. Kelly's (1955) Fixed Role Therapy is one method of dealing with the patient's construct system. Within this mode, the patient is asked to play-act roles that encompass some of his expressed ambiguous constructs. However, the client is guided by the therapist into playing the role with more clarity than had been evidenced prior to therapy. This is done through adherence to rather specific "scripts," which may emphasize the use of clearer, more precise modes of conceptualizing and communicating. If the script is well-written, and if the client is at least
somewhat motivated, there is a good chance that the use of well-defined constructs will beget a higher rate of social validation. If this occurs, a more positive cycle will be set into motion; that is, social validation will lead to enhanced predictability and control, which, in turn, will lead to decreased usage of ambiguous constructs because clear, well-defined constructs will result in superior prediction. Once this process is firmly entrenched, the therapist may choose to decrease or withdraw medication since the patient's experiences can now be handled adequately by his construct system.

Finally, it seems obvious that addressing the patient's negative self-view, as well as his lack of facility in the area of construct meaningfulness, can be fruitful. Perhaps this is what is being done, at least in some cases (e.g., RET). Future research might be aimed at examining this area empirically; that is, does one's facility at determining meaningfulness (ordination) change as a result of successful psychotherapy? Such research has been done in the area of cognitive complexity (Landfield, 1971). However, the findings of the present research suggest the importance of ordination as a correlate of mental health. As such, it warrants further consideration.

The importance of continued research in the area of constructs and depression cannot be stressed too strongly. As mentioned previously, this study is one of only a handful
that have applied personal construct theory to the realm of depression. Further, the population sampled in the present research is somewhat limited in terms of sex, age, and socio-economic statuses. If significant diagnostic and therapeutic benefit is to be gained from this research, further study must be done with both similar and more expanded populations.
Appendix A

The Rep Test

Instruction Sheet

This questionnaire is comprised of three sheets: (1) the Response Sheet, (2) the Role Specification Sheet, and (3) the Instruction Sheet. Read all directions before beginning. If the directions are not completely clear ask for more information.

Start with the Role Specification Sheet. Beginning with your mother's name, write the first names of the people described. Write their names on the Response Sheet in the numbered blanks in the upper left-hand corner. If you know two people with the same name, use a last initial as well. If you cannot remember a person's first name write his/her last name, or something about him/her which will clearly bring to your mind the person's identity.

Take your Response Sheet. Note that two cells in Row 1 have circles in them. This means that you are first to consider the two people whose names appear on diagonals 1 and 7. Think about these two people. Are the two people alike in some one way? Or are the two people different in some one way? If the two people are alike, is one of your listed acquaintances different from the two who are alike?

If you first see that the two people are alike in some one way, write under Column 1, Row 1, the one way in which these two people are alike. Then, if you can think of a person on your list who can be contrasted with the two people who are alike, write under Column 2 the way in which this person is different from the two who are alike. Place the number of the different acquaintance after the contrasting description.

Example:

<table>
<thead>
<tr>
<th>Row 1</th>
<th>Sal</th>
<th>Pete</th>
<th>Bill</th>
<th>Phil</th>
<th>Jill</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
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RESPONSE SHEET

non-honest  religious-3
-6-5-4-3-2-1  0+1+2+3+4+5+6
If you first see that the two people are alike in some one way but cannot find a person on your list who can be contrasted with these two similar people, fill in Column 1 but leave Column 2 blank.

Example:

<table>
<thead>
<tr>
<th></th>
<th>Sal</th>
<th>Pete</th>
<th>Bill</th>
<th>Phil</th>
<th>Jill</th>
<th>Column 1</th>
<th>Column 2</th>
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<tbody>
<tr>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-6-5-4-3-2-1</td>
<td>0+1+2+3+4+5+6</td>
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</tbody>
</table>

If you first see that the two people are different in some way, write under Column 1 the description of the person in the left circle and under Column 2 the different description of the person in the right circle.

Example:

<table>
<thead>
<tr>
<th></th>
<th>Sal</th>
<th>Pete</th>
<th>Bill</th>
<th>Phil</th>
<th>Jill</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-6-5-4-3-2-1</td>
<td>0+1+2+3+4+5+6</td>
</tr>
</tbody>
</table>

If you cannot see a similarity or a difference between the two people designated in Row 1, leave blanks. After you have finished with Row 1 consider the two people to be compared in Row 2. Follow the instructions given above.

After you have completed each of the 15 comparisons start with Row 1. This time consider each of the 15 people with regard to the descriptions you have written in Column 1 and Column 2 for Row 1. Now rate your perception of each of these 15 people using the 13-point rating scale between Column 1 and Column 2. For instance, using the above example, consider Person 1 (Sal): If Sal is extremely formal, you might rate him with -6 or -5; if he's moderately formal, you might rate him with -4 or -3; if he's a little formal, you might use -2 or -1. Considering Person 7 (Phil), you might rate him +6 or +5 if you perceive him as "not caring" to the extreme; if he moderately "doesn't care", you might choose to rate him +2 or +1. If a person in the row cannot be accurately described by a rating on either description, put a 0 in the appropriate box. Now go through
each person in Row 1 and rate him/her according to your rating scale, putting your rating in the box below each person's name. If there is no characteristic under column 2 for a row, no +1 to +6 rating can be done in this row.

After finishing your ratings in Row 1, proceed to Row 2, etc.

Examples:

<table>
<thead>
<tr>
<th></th>
<th>Sal</th>
<th>Pete</th>
<th>Bill</th>
<th>Phil</th>
<th>Jill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>-5</td>
<td>+2</td>
<td>+4</td>
<td>-6</td>
<td>0</td>
</tr>
<tr>
<td>Row 2</td>
<td>-3</td>
<td>-6</td>
<td>0</td>
<td>-2</td>
<td>-3</td>
</tr>
<tr>
<td>Row 3</td>
<td>+6</td>
<td>-2</td>
<td>-5</td>
<td>+2</td>
<td>+2</td>
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<table>
<thead>
<tr>
<th>Column 1</th>
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<tbody>
<tr>
<td>formal</td>
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<td>-6-5-4-3-2-1</td>
<td>0+1+2+3+4+5+6</td>
</tr>
<tr>
<td>honest</td>
<td>humorous</td>
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<tr>
<td>-6-5-4-3-2-1</td>
<td>0+1+2+3+4+5+6</td>
</tr>
<tr>
<td>humorous</td>
<td>serious</td>
</tr>
<tr>
<td>-6-5-4-3-2-1</td>
<td>0+1+2+3+4+5+6</td>
</tr>
</tbody>
</table>

Role Specification Sheet

Do the best you can to find people who fit the descriptions below. If you have to depart too far from the type designated in order to fill every diagonal, star those names which do not fit very well.

1. Write the first name of your mother or the person who has played the part of your mother on the first diagonal on the Response Sheet (after number 1).

2. Write the first name of your father or the person who has played the part of your father on the second diagonal.

3. Write the name of your brother nearest your own age, or the person who has played the part of such a brother.

4. Write the name of your sister nearest your own age, or the person who has played the part of such a sister.

5. Your wife (or husband) or closest present girl- (boy-) friend. Do not repeat the name of anyone listed above.

6. Your closest present friend of the same sex as yourself. Do not repeat names.
Appendix A—Continued

7. A person with whom you have worked or associated who, for some unexplainable reason, appeared to dislike you. Do not repeat names.

8. The person with whom you usually feel most uncomfortable. Do not repeat names.

9. The person you have met whom you would most like to know better.

10. The teacher whose point of view you have found most acceptable. Do not repeat names.

11. The teacher whose point of view you have found most objectionable. Do not repeat names.

12. The most unsuccessful person you know personally. Do not repeat names.

13. The most successful person you know personally. Do not repeat names.

14. The happiest person you know personally. Do not repeat names.

15. The unhappiest person you know personally. Do not repeat names.
Appendix B

Beck Inventory

Name __________________________ Date __________

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and I can't snap out of it.
   3 I am so sad or unhappy that I can't stand it.

2. 0 I am not particularly discouraged about the future.
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failure.
   3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
   1 I don't enjoy things the way I used to.
   2 I don't get real satisfaction out of anything anymore.
   3 I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
   1 I feel guilty a good part of the time.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. 0 I don't feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.
7. 0 I don't feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.

8. 0 I don't feel I am any worse than anybody else.
   1 I am critical of myself for my weaknesses or mistakes.
   2 I blame myself all the time for my faults.
   3 I blame myself for everything bad that happens.

9. 0 I don't have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself.
   3 I would kill myself if I had the chance.

10. 0 I don't cry anymore than usual.
    1 I cry more now than I used to.
    2 I cry all the time now.
    3 I used to be able to cry, but now I can't cry even though I want to.

11. 0 I am no more irritated now than I ever am.
    1 I get annoyed or irritated more easily than I used to.
    2 I feel irritated all the time now.
    3 I don't get irritated at all by the things that used to irritate me.

12. 0 I have not lost interest in other people.
    1 I am less interested in other people than I used to be.
    2 I have lost most of my interest in other people.
    3 I have lost all of my interest in other people.

13. 0 I make decisions about as well as I ever could.
    1 I put off making decisions more than I used to.
    2 I have greater difficulty in making decisions than before.
    3 I can't make decisions at all anymore.

14. 0 I don't feel I look any worse than I used to.
    1 I am worried that I am looking old or unattractive.
    2 I feel that there are permanent changes in my appearance that make me look unattractive.
    3 I believe that I look ugly.

15. 0 I can work about as well as before.
    1 It takes an extra effort to get started at doing something.
2. I have to push myself very hard to do anything.
3. I can't do any work at all.

16. 0 I can sleep as well as usual.
1. I don't sleep as well as I used to.
2. I wake up 1 to 2 hours earlier than usual and find it hard to get back to sleep.
3. I wake up several hours earlier than I used to and cannot get back to sleep.

17. 0 I don't get more tired than usual.
1. I get tired more easily than I used to.
2. I get tired from doing almost anything.
3. I am too tired to do anything.

18. 0 My appetite is no worse than usual.
1. My appetite is not as good as it used to be.
2. My appetite is much worse now.
3. I have no appetite at all anymore.

19. 0 I haven't lost much weight, if any lately.
1. I have lost more than 5 pounds.
2. I have lost more than 10 pounds.
3. I have lost more than 15 pounds.

I am purposely trying to lose weight by eating less. Yes ____ No ____

20. 0 I am no more worried about my health than usual.
1. I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2. I am very worried about physical problems and it's hard to think of much else.
3. I am so worried about my physical problems, that I cannot think about anything.

21. 0 I have not noticed any recent change in my interest in sex.
1. I am less interested in sex than I used to be.
2. I am much less interested in sex now.
3. I have lost interest in sex completely.
Appendix C

Endogenous-Reactive Checklist

Do you often feel: 

Yes No

1. A loss of interest in life in general
2. That you are bearing troubles
3. Concern for the welfare of family and friends
4. Slow, extremely tired and worn out with no apparent reason
5. That you cannot concentrate no matter how hard you try
6. That your present mood is qualitatively different from ordinary sadness or downcast spirits
7. Lazy
8. Irritable
9. Anxious, tense, nervous
10. Helpless and powerless
11. Unable to experience any pleasure in your life at all
12. That you are very demanding
13. That you complain a great deal
14. That your body (muscles) are tight and tense
15. Guilty or angry at yourself
16. Unable to react to changes in your life
17. Sorry for yourself
18. That you persist in thinking about unpleasant events
19. That you have a great deal of physical concerns.

20. That your problems are due to excessive and/or job responsibilities

Concerning your present feelings:

1. How long have you felt depressed? __________

2. Do you find that your present mood:
   (check appropriate answer)
   ___ (a) Is best in the morning and gets worse as the day goes on?
   ___ (b) Is worst in the morning and gets somewhat better as the day goes on?
   ___ (c) Is pretty much the same throughout the day?
   ___ (d) If other than a, b, or c, please explain.

3. Did your current feelings of depression:  
   (check appropriate answer)
   ___ (a) Occur all of a sudden
   ___ (b) Occur after a brief period (up to 2 weeks) during which you felt progressively worse
   ___ (c) Occur after a long period (longer than 2 weeks) during which you felt progressively worse

4. Do you often have difficulty falling asleep?
   Yes ____  No ____

5. Do you often wake up before you'd like to, and are unable to get back to sleep? Yes ____  No ____
6. Has there been any change in your weight during the period in which you have felt depressed?
   Yes _____ No _____
   If so, describe this change. ________________________________________________

7. During the period that you have felt depressed, have you experienced frequent bouts of constipation?
   Yes _____ No _____

8. Have you experienced severe depression before?
   Yes _____ No _____
   If so, approximately how many times? __________________________

9. Have you ever seen a psychologist, psychiatrist, or general practitioner for the treatment of depression or any other emotional problems? Yes _____ No _____

10. If you have been depressed before, how long does the depression usually last?
    (check appropriate answer)
    _____ (a) Less than one week
    _____ (b) A couple of weeks
    _____ (c) About a month
    _____ (d) About two months
    _____ (e) Longer than two months
    _____ (f) Other

11. Have you ever received antidepressant medication, or any other type of treatment for depression or any other emotional problems? Yes _____ No _____
    If so, please explain what your response was to the medication or treatment. ________________________________________________
    ________________________________________________
    ________________________________________________
Appendix C—Continued

Family history:

1. Has anyone in your family ever experienced severe depression? Yes ___ No ___
   If so, who were they? Were the depressions recurrent? Please explain.

2. To the best of your knowledge, has anyone in your family ever attempted suicide? Yes ___ No ___

3. To the best of your knowledge, has anyone in your family ever been treated by a psychologist, psychiatrist or general practitioner for depression? Yes ___ No ___

4. Do you know if they were prescribed antidepressant medication or any other type of treatment? Yes ___ No ___

5. Do you remember what the medication or treatment was, and what their response was?

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
Scoring for Endogenous-Exogenous Checklist

Page 1 of checklist: The following are the point loadings for a "yes" response to each item.

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<th>Endogenous Loading</th>
<th>Exogenous Loading</th>
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Pages 2 and 3 of checklist:

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Page 4 of checklist:

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Appendix D

Informed Consent

The purpose of this research project is to examine some of the ways in which people think about other people. If you should decide to participate in this project, you will be asked to fill out four questionnaires.

The questionnaires that you fill out will be coded with a number so that your name is not necessary. These codes help us keep all the materials organized. In addition, your privacy and confidentiality are assured. A master list matching each name to each patient's code will be kept under lock and key by the researcher.

Thank you very much for your time and effort in assisting us.

JOSEPH ANGELILLO, M.A.          JOEL W. CHAPMAN, Ph.D.
Psychology Intern          Clinical Psychologist

I, ____________________________, have been informed of the purpose and procedure of this research and do hereby volunteer my participation. I understand that I may refuse to participate or withdraw from the study at any time without jeopardizing my treatment at this VAMC.

I understand that I will be given a code number that will be used to identify information and test data that I supply in order to protect my identity.

I also understand that any information I provide will be used for research purposes only and that I may or may not derive any benefit from the study. I understand that this information will not be shared with any other hospital personnel, excluding the project's assistants, who will use the information for statistical analysis.

_____________________________  ____________________________
SIGNATURE                        WITNESS

__________
Date
## Appendix E

### Table 1

Means and Standard Deviations for FIC Scores in Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Control</td>
<td>10.76</td>
<td>5.70</td>
<td>25</td>
</tr>
<tr>
<td>Psychiatric Control</td>
<td>8.48</td>
<td>6.22</td>
<td>25</td>
</tr>
<tr>
<td>Depressed</td>
<td>9.08</td>
<td>6.40</td>
<td>25</td>
</tr>
</tbody>
</table>

Simple Analysis of Variance for FIC Scores Among Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>69.84</td>
<td>34.92</td>
<td>.934</td>
<td>.40</td>
</tr>
<tr>
<td>Within Groups</td>
<td>72</td>
<td>2692.64</td>
<td>37.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>2762.48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2

Pearson Product-Moment Correlations Between Beck Depression Inventory Scores and FIC Scores within Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Diagnostic Group</th>
<th>FIC Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Control</td>
<td>-.02</td>
</tr>
<tr>
<td>Psychiatric Control</td>
<td>-.27</td>
</tr>
<tr>
<td>Depressed</td>
<td>.10</td>
</tr>
</tbody>
</table>
Appendix G

Table 3

Means and Standard Deviations for Ordination Scores in Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Control</td>
<td>40.71</td>
<td>9.23</td>
<td>25</td>
</tr>
<tr>
<td>Psychiatric Control</td>
<td>31.07</td>
<td>9.07</td>
<td>25</td>
</tr>
<tr>
<td>Depressed</td>
<td>30.04</td>
<td>11.20</td>
<td>25</td>
</tr>
</tbody>
</table>

Simple Analysis of Variance for Ordination Scores Among Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1734.34</td>
<td>867.17</td>
<td>8.88</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>Within Groups</td>
<td>72</td>
<td>7030.40</td>
<td>97.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>8764.74</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H

Table 4

Pearson Product-Moment Correlations Between Beck Depression Inventory Scores and Ordination Scores within Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Diagnostic Group</th>
<th>Ordination Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Control</td>
<td>.03</td>
</tr>
<tr>
<td>Psychiatric Control</td>
<td>.18</td>
</tr>
<tr>
<td>Depressed</td>
<td>.21</td>
</tr>
</tbody>
</table>
Appendix I

Table 5
Chi Square for Independence Between Depressed, Psychiatric Control, and Normal Control Groups, and the Number (Percentage) of Subjects Using Low, Medium, and High Numbers of Socially Undesirable Constructs

<table>
<thead>
<tr>
<th></th>
<th>Psychiatric Control</th>
<th>Normal Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(13 and less)</td>
<td>4 (.16)</td>
<td>8 (.32)</td>
<td>20 (.27)</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>12 (.48)</td>
<td>12 (.48)</td>
<td>35 (.47)</td>
</tr>
<tr>
<td>(14 to 15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>9 (.36)</td>
<td>5 (.20)</td>
<td>20 (.27)</td>
</tr>
<tr>
<td>(16 and greater)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25 (1.00)</td>
<td>25 (1.00)</td>
<td>75</td>
</tr>
</tbody>
</table>

\[ X^2 = 2.97 \]
\[ \pi = .63 \]
\[ df = 4 \]
### Table 6

**Chi Square for Independence Between Depressed, Psychiatric Control, and Normal Control Groups and the Number (Percentage) of Subjects Using Low, Medium, and High Numbers of Socially Desirable Constructs**

<table>
<thead>
<tr>
<th></th>
<th>Depressed</th>
<th>Psychiatric Control</th>
<th>Normal Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>12 (.48)</td>
<td>11 (.44)</td>
<td>4 (.16)</td>
<td>27 (.36)</td>
</tr>
<tr>
<td>(12 and less)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>8 (.32)</td>
<td>12 (.48)</td>
<td>17 (.68)</td>
<td>37 (.49)</td>
</tr>
<tr>
<td>(13 to 14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>5 (.20)</td>
<td>25 (1.00)</td>
<td>25 (1.00)</td>
<td>75</td>
</tr>
<tr>
<td>(15 and greater)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25 (1.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ x^2 = 8.79 \]

\[ p = .03 \]

\[ df = 4 \]
### Appendix K

**Table 7**

Chi Square for Independence Between Depressed, Psychiatric Control, and Normal Control Groups, and the Number (Percentage) of Subjects Using Low, Medium, and High Numbers of Ambiguous Constructs

<table>
<thead>
<tr>
<th></th>
<th>Psychiatric Control</th>
<th>Normal Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong> (0 to 1)</td>
<td>7 (.28)</td>
<td>3 (.12)</td>
<td>13 (.52)</td>
</tr>
<tr>
<td><strong>Medium</strong> (2 to 3)</td>
<td>11 (.44)</td>
<td>12 (.48)</td>
<td>9 (.36)</td>
</tr>
<tr>
<td><strong>High</strong> (4 or greater)</td>
<td>7 (.28)</td>
<td>10 (.40)</td>
<td>3 (.12)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25 (1.00)</td>
<td>25 (1.00)</td>
<td>25 (1.00)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.74 \]

\[ p = .04 \]

\[ df = 4 \]
Appendix L

Table 8

Pearson Product-Moment Correlations Between Endogenous and Exogenous checklist Scores, and the Number of Socially Undesirable, Socially Desirable, and Ambiguous Constructs Used in the Depressed Group

<table>
<thead>
<tr>
<th>Type of Construct</th>
<th>Socially Undesirable Constructs</th>
<th>Socially Desirable Constructs</th>
<th>Ambiguous Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endogenous Score</td>
<td>( r = -0.37^* )</td>
<td>( r = -0.18 )</td>
<td>( r = 0.42^* )</td>
</tr>
<tr>
<td>Exogenous Score</td>
<td>( r = -0.7 )</td>
<td>( r = 0.03 )</td>
<td>( r = 0.29 )</td>
</tr>
</tbody>
</table>

\( ^* p < 0.05 \)
\( ^{**} p < 0.01 \)
## Appendix M

### Table 9

**Means and Standard Deviations for Beck Depression Inventory Scores in Normal Control, Psychiatric Control, and Depressed Groups**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Control</td>
<td>4.32</td>
<td>5.20</td>
<td>25</td>
</tr>
<tr>
<td>Psychiatric Control</td>
<td>14.80</td>
<td>9.05</td>
<td>25</td>
</tr>
<tr>
<td>Depressed</td>
<td>27.16</td>
<td>7.13</td>
<td>25</td>
</tr>
</tbody>
</table>

### Simple Analysis of Variance for Beck Depression Inventory Scores Among Normal Control, Psychiatric Control, and Depressed Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>653554.30</td>
<td>326777.20</td>
<td>61.39</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Within Groups</td>
<td>72</td>
<td>383278.80</td>
<td>5232.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>1036833.10</td>
<td>14011.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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