

THE UNIVERSITY OF CALGARY

The Relationship Between
the Circumplex Model of Interpersonal Behavior
and Personality Disorders

by

Jordan P. Sim

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ABSTRACT

The purpose of the study was to test certain theoretical propositions made about the relationship between the circumplex model of interpersonal behavior and personality disorders. These propositions were that individuals with diagnosed DSM-III personality disorders have more intense and rigid interpersonal behavior and that there is a greater discrepancy between their own ratings of their interpersonal behavior (self-report) and the ratings of their interpersonal behavior made by others (other-report) than would be the case for subjects from a non-clinical sample.

A clinical sample composed of 90 inpatients diagnosed with at least one DSM-III personality disorder from a short-term psychiatric unit at an urban Western Canadian hospital was given the Millon Clinical Multiaxial Inventory and the Interpersonal Check List (ICL) to complete. A non-clinical sample composed of 97 university students from an urban Western Canadian university was given the ICL to complete. In addition, the interpersonal behavior of subjects in both samples was rated with the ICL by individuals who interacted with them for a relatively brief duration of time. The clinical sample members were rated by their prime nurses on the unit and the non-clinical sample members were rated by fellow discussion

group members.

The results from the study supported the propositions that the interpersonal behavior of individuals with diagnosed personality disorders are more intense, rigid, and their self-other ratings more discrepant than individuals from the non-clinical sample ($p < .01$). The results also showed some degree of empirical support for theoretical propositions made about the relationship between specific interpersonal circumplex categories and specific DSM-III personality disorder categories. The ratings provided by the clinical sample subjects themselves appeared to support these propositions better than the ratings made by others. The results are discussed with reference to previous research on personality disorders and the interpersonal circumplex. The implications of the results for personality disorder classification and treatment are also discussed. Suggestions are made regarding future research involving the interpersonal circumplex and personality disorders.

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Chapter 1: Introduction

Maladjusted interpersonal behavior is considered by some prominent personality theorists to be an important determinant in personality disorders. Personality theorists, such as Thomas Widiger and Allan Frances (1985, p. 620) have stated, "Each personality disorder has a characteristic and dysfunctional interpersonal style that is often the central feature of the disorder". Another personality theorist Theodore Millon (1981) speaks of maladaptive interpersonal coping strategies which are characteristic of the 11 personality disorders listed in the third edition of the Diagnostic and Statistics Manual of Mental Disorders or DSM-III (American Psychiatric Association [APA], 1980). Related to the issue of the presence of maladjusted interpersonal behavior in personality disorders, personality theorists have proposed that personality disorder is an exaggeration of normal personality traits and is characterized by intense and rigid interpersonal behavior (Kiesler, 1986a; Millon, 1981; Widiger & Frances, 1985). In addressing this issue, Kiesler (1986a, p. 572) stated:

[Personality disorder] consists of rigid, constricted, and extreme pattern of interpersonal behaviors by which the abnormal person, without any clear awareness, engages others who are important in his or her life. The abnormal person, rather than possessing the flexibility of the normal individual to use the broad range of interpersonal behaviors warranted by different social situations,

is locked into a rigid and extreme use of limited classes of interpersonal actions. As a result, the abnormal individual, through verbal and non-verbal messages, continually elicits or pulls from others a rigidly constricted range of intense and predominantly aversive responses. Finally, the abnormal person assumes little responsibility for continuing rejections by others, since he or she does not understand how these aversive effects occur and does not "intend" them.

Therefore, theorists have proposed that individuals who exhibit personality disorder have personality traits which are an exaggeration of normal personality traits. These maladaptive personality traits are reflected in intense and rigid types of interpersonal behavior.

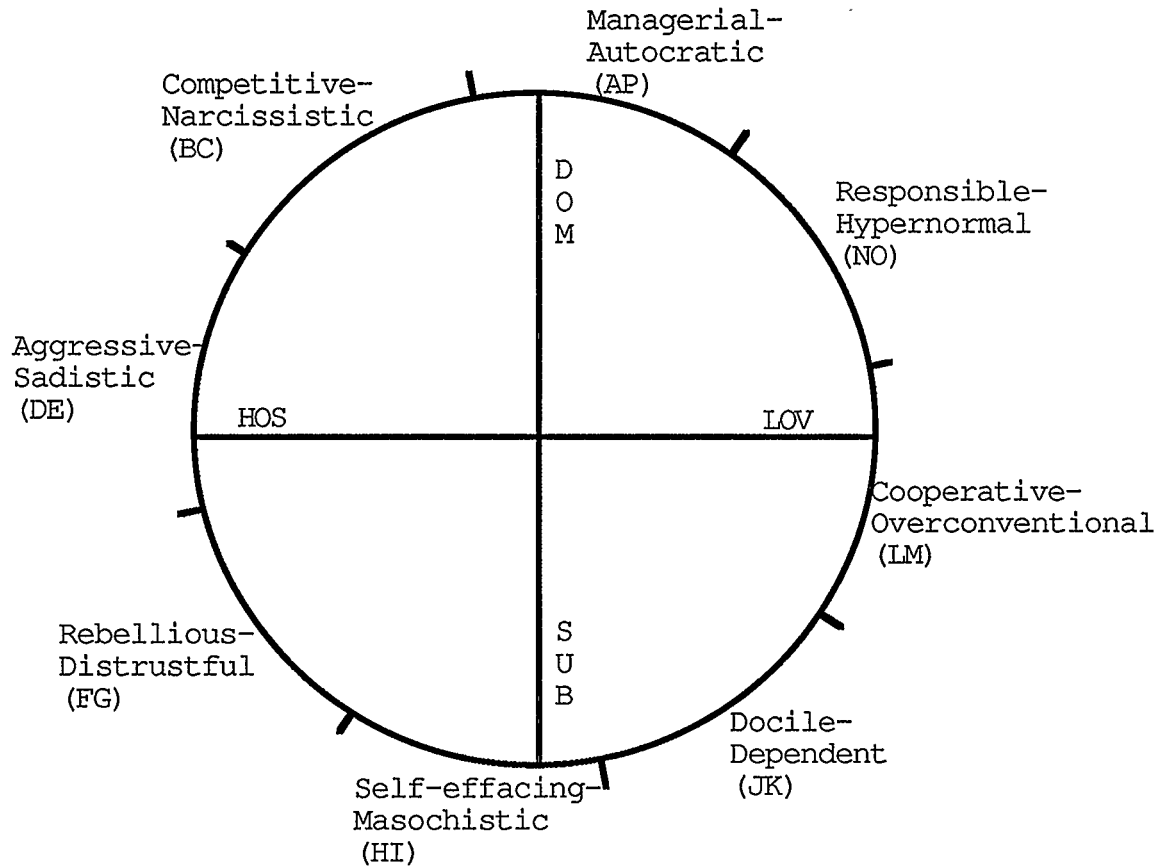
A model developed by psychologists which can be used to study interpersonal behavior is the circumplex model of interpersonal behavior or interpersonal circumplex (Freedman, Leary, Ossorio, & Coffey, 1951; Kiesler, 1983; LaForge, Leary, Naboisek, Coffey, & Freedman, 1954; LaForge & Suczek, 1955; Leary, 1957; Wiggins, 1980; 1982). Figure 1 shows the original interpersonal circumplex postulated by Leary over 30 years ago. The model contains eight interpersonal categories arranged in a circular order. Each category is a blend of two underlying dimensions distributed on two bipolar axes which are orthogonal. The vertical axis represents dominance versus submission (control axis), and the horizontal axis represents love versus hostility (affiliation axis). The distance scored from the origin of these coordinates represents an intensity metric so that the further away from the center the more

intense the behavior. The first part of each hyphenated category in Figure 1 describes interpersonal behavior at a moderately intense level, the second term describes this type of behavior at an extremely intense level.

Proponents of the interpersonal circumplex have suggested that interpersonal behavior and mental disorders are related in three major ways: 1) using a type of interpersonal behavior or behaviors to an extreme degree (Kiesler, 1983; Leary, 1957), 2) adhering rigidly to one or a few types of interpersonal behavior (Kiesler, 1983; Leary, 1957), and 3) having discrepant ratings of an individual's interpersonal functioning between the individual (self-report) and others (other-report) (Leary, 1957). To date, no empirical studies have verified these hypothesized relationships with respect to personality disorders. Hence, it is the purpose of this thesis research to test these theoretical propositions empirically.

Regarding the hypotheses to be tested in this thesis research, the first one is that the interpersonal behavior of individuals, with diagnosed DSM-III personality disorders, will be rated as more intense than individuals from a non-clinical population. Intense interpersonal behavior is present when an individual is exhibiting an interpersonal behavior or behaviors at an extreme degree as opposed to a moderate degree.

Figure 1: The Interpersonal Circumplex



Adapted from: Leary, T. F. (1957). Interpersonal diagnosis of personality. New York: Ronald.

The second hypothesis to be tested is that individuals with diagnosed DSM-III personality disorders will exhibit a more rigid pattern of interpersonal behaviors than individuals from a non-clinical population. Rigid interpersonal behavior is present when an individual adheres rigidly to one or a few types of interpersonal behavior to the exclusion of other possibly adaptive forms of interpersonal behavior.

The third hypothesis to be investigated is that individuals with diagnosed DSM-III personality disorders will have more discrepant ratings of their interpersonal behavior between their own ratings (self-report) and others (other-report) than individuals from a non-clinical population.

These theoretical propositions which interpersonal theorists have put forth were influenced by the works of Harry Stack Sullivan and Karen Horney (Kiesler, 1983; Leary, 1957), whom Monte (1980) refers to as social psychoanalytic theorists.

For both theorists the motive force of personality is the avoidance of anxiety. For Sullivan (1953), anxiety is interpersonal in nature and is experienced in the early stages of an individual's life. It occurs when significant others disapprove of the infant's actions. This disapproval produces a state of tension in the infant. In response to this tension, the infant constructs interpersonal strategies to avoid anxiety, which Sullivan referred to as "self-dynamism". Sullivan proposed that this process of others responding to an

individual's interpersonal behavior and the individual, in turn, constructing interpersonal strategies to avoid anxiety takes place continuously from infancy into adulthood. In addition, these interpersonal strategies are what is kept from awareness rather than the instincts as Freud had proposed. Indeed, Sullivan defined personality as "... the relatively enduring pattern of recurrent interpersonal situations which characterize human life" (Sullivan, 1953, pp. 110-111). Therefore, Sullivan, in his formulations, proposed that personality is to be understood and examined in the interpersonal realm, because the way others perceive and respond to an individual influences what that individual will do and think.

For Karen Horney (1945), the behavior associated with the disordered personality has a "compulsive" nature to it in order to cope with anxiety. She mentioned two classes of compulsive behavior: 1) cravings for affection and 2) cravings for power, which drive the disordered personality. It is of interest to note that Horney's identification of the two classes of compulsive behavior corresponds with the two axes of the interpersonal circumplex: affiliation and dominance. These behaviors "... are born of feelings of isolation, helplessness, fear, and hostility, and represent ways of coping with the world despite these feelings; they aim not at satisfaction but at safety; their compulsive character is due to the anxiety

lurking behind them" (Horney, 1945, p.11). The compulsive behaviors are considered to be an exaggeration of normal behaviors and needs but are different in four respects: they are disproportionate in intensity, indiscriminate in application to all other persons, evidence an extreme disregard for reality, and show a tendency to provoke anxiety when they remain unsatisfied (Horney, 1942).

Although these two theorists made reformulations of traditional psychoanalytic theory when developing their own theories, this is not to say that Freud did not consider the role of interpersonal factors in mental disorders. In his essay, "Instincts and Their Vicissitudes", Freud (1915/1957) described the development of mental disorders as a process involving rapid changes between activity and passivity and between love and hostility. These dimensions are equivalent to those in the interpersonal circumplex.

Hence, in regard to the three hypotheses to be tested in this research, these theorists proposed that the intense and rigid interpersonal behavior of the maladjusted individual takes place in an attempt to regulate disturbing emotions. Discrepant appraisals of interpersonal behavior occur because the maladjusted individual is dysfunctional at appraising how others perceive and respond to her or him.

The results either confirming or disconfirming these hypotheses have relevance for the objectification of personality disorder diagnosis. The introduction of the multi-axial diagnostic system in the DSM-III included separation between Axis I clinical syndromes and Axis II personality disorders (APA, 1980). This separation was brought about in order to encourage clinicians to consider the contributing effects of the patient's personality on the presentation, course, and treatment of Axis I clinical syndromes (Frances, 1982; Widiger & Frances, 1985). Overall, the DSM-III classification system is superior, in terms of diagnostic reliability, to its predecessors (Spitzer, Forman, & Nee, 1979). However, the diagnostic reliability of Axis II still lags behind Axis I. A major reason cited for this lower reliability is that more inference is required on the part of the clinician in making an Axis II diagnosis than for making an Axis I diagnosis (Livesley, 1985; Widiger & Frances, 1985). It is proposed that the circumplex model can assist in solving this problem with Axis II diagnostic reliability because this model objectively defines and systematizes interpersonal behavior, thus reducing the reliance on inference.

Another reason cited for this lower degree of reliability is that personality disorders may be explained best by a prototypic classification system as opposed to a categorical classification system (Frances, 1980, 1982; Widiger & Frances,

1985; Widiger & Kelso, 1983). The prototypical system of classification proposes that membership in a class is heterogeneous and boundaries separating classes overlap. The prospective members share some but not necessarily all the same features for class membership. A categorical system of classification uses discrete classes of data or the essential features of the phenomenon for classification purposes. These discrete classes are homogeneous, mutually exclusive, and jointly exhaustive. All the criteria for class membership must be met completely by all qualifying members. Each defining attribute is always totally present or totally absent, never partially expressed, and members must meet the criteria for placement into one, and only one, class. The interpersonal circumplex provides a prototypic model which can chart the overlap among interpersonal behavior (Kiesler, 1983). For each octant in the interpersonal circumplex, Kiesler (1983) and Wiggins (1982) have proposed that the center of the octant category describes a particular interpersonal behavior in its prototypic form, but as the interpersonal behavior becomes located toward the boundaries of the octant, it begins to overlap with the adjacent octants to form a "fuzzy set" or a mixture of two interpersonal behaviors.

Besides the issue of low diagnostic reliability, another problem encountered in personality disorder classification which the interpersonal circumplex could help address is the

distinction between normal and abnormal personality traits. Personality disorders are considered to be severe variants of normal personality traits (Frances, 1980; Millon, 1981; Widiger & Frances, 1985). In comparison, organic, schizophrenic, and major affective disorders covered in Axis I are fairly discontinuous from each other and discrete from normality. These disorders can be put into categories with greater ease than personality disorders (Frances, 1980; Widiger & Frances, 1985). The circumplex model can be used to distinguish between normal and abnormal interpersonal behaviors. For each category in the interpersonal circumplex, there are items describing interpersonal behaviors which are statistically frequent indicating that the behavior is adaptive and normal by the statistical frequency of its usage. Moreover, there are terms describing interpersonal behavior which are statistically rare. This tends to indicate that the behavior is maladaptive and abnormal because of the statistical infrequency of its usage. Thus, the circumplex model can help to address some problem issues in the area of personality disorder diagnosis, namely, the objectification of personality disorder diagnosis; the classification of personality disorders by a prototypical system; and the differentiation between normal and abnormal interpersonal behavior.

Not only do the findings on these three hypotheses have relevance for personality disorder diagnosis and classification, they also have implications for linking diagnosis with treatment of personality disorders. According to Benjamin (1987), the philosophy behind the multi-axial approach of the DSM-III system is one which emphasizes observable behaviors and events and de-emphasizes intrapsychic and phenomenological factors in abnormal behavior. Although the multi-axial approach has improved diagnostic reliability (Spitzer et al., 1979), Benjamin (1987) has argued that it has done so at the expense of being a purely descriptive approach to classification with no theoretical implications for the etiology and treatment of personality disorders. Benjamin (1982) goes on to propose that the phenomenological factors in making a diagnosis are an important source of information in formulating a treatment plan for the patient. By understanding the meaning of the patient's symptoms, the therapist can begin to understand how they are adaptive in the context of the patient's network of interpersonal relationships. Items contained in the interpersonal circumplex can be used to provide both a phenomenological self-report measure and an other-report measure of interpersonal behavior which could be used in both diagnostic and therapeutic contexts.

Moreover, regarding the treatment of personality disorders, Vaillant and Perry (1985) make the point that the successful treatment of individuals with personality disorders depends on the therapist focussing on the patient's behavior and not attempting to explain that behavior. This includes focussing on behaviors within the immediate context of the client-therapist relationship and on the client's other interpersonal relationships. As mentioned previously, it has been proposed by theorists that personality disorders, as measured by the DSM-III system, are to a large extent interpersonal disorders (Kiesler, 1983; Millon, 1981; Widiger & Frances, 1985). As will be discussed in the literature review to follow, theorists, such as, Kiesler (1983, 1986b) have taken concepts derived from the interpersonal circumplex and applied them in psychotherapeutic work. Therefore, this research not only has a relevant bearing on the diagnosis of personality disorders, it also has a bearing on their treatment as well.

To reiterate, the purpose of this research is to test empirically certain theoretical propositions which have been made about the relationship between interpersonal behavior and personality disorders. Namely that individuals with diagnosed personality disorders have more intense and rigid interpersonal behaviors than individuals from a non-clinical population and also have more discrepant ratings of their interpersonal behavior than the non-clinical population. The results either

confirming or disconfirming these hypotheses have relevance for personality disorder diagnosis and treatment.

Chapter 2: Literature Review

This research focuses on personality disorders from an interpersonal perspective. Hence, in order to provide the reader with background information on the interpersonal perspective, viz., the interpersonal circumplex, basic concepts of the interpersonal circumplex, the major interpersonal measures which are used to operationalize the circumplex model, and the behaviors represented by the categories of the interpersonal circumplex will be discussed in this chapter. Research relating psychiatric diagnosis, especially personality disorder, to the interpersonal circumplex will be discussed. Following from this, the application of interpersonal circumplex concepts to psychotherapy will be discussed.

Concepts of the Interpersonal Circumplex

The interpersonal circumplex consists of: 1) 16 (or 8) interpersonal behavior categories which are arranged in a circular continuum or circumplex. The arrangement of the categories in this fashion serves to express the degree of correlation a category has with the other 15 (or 7) categories and to show that there is no beginning or end point in the interpersonal system. 2) Each category is a blend of two underlying dimensions distributed on two bipolar axes which are orthogonal. These two dimensions are, for the vertical axis, dominance versus submission (control axis), and for the

horizontal axis, love versus hostility (affiliation axis). Each of the 16 (or 8) categories represents a blend of these underlying dimensions and, in turn, represents mathematically weighted combinations of control and affiliation. 3) The distance scored from the origin of the coordinates represents an intensity metric of interpersonal functioning. This section will provide a more in depth discussion on each of these characteristics of the interpersonal circumplex.

Each interpersonal behavior category in the interpersonal circumplex contains a prototypic example of the interpersonal behavior being described and, the closer this prototypic behavior is situated to the border of an adjacent category, the more it begins to overlap with the behavior described by the adjacent category resulting in a "fuzzy" set or a mixture of two interpersonal behaviors (Kiesler, 1985, 1986a; Wiggins, 1982). As mentioned above, the 16 (or 8) categories are arranged in a circumplex to express the degree of correlation a category has with the other 15 (or 7) categories and to show that there is no beginning or end point in the interpersonal system. Theoretically, adjacent categories correlate the highest and as one progresses in both directions around the circular continuum the degree of correlation decreases. The opposite category in the circular continuum has the highest negative correlation. Figure 2 contains an idealized matrix representing this pattern of intercorrelations. The restriction

$r_1 > r_2 > r_3 > r_4$ defines such a matrix as one in which correlations decline from the principal diagonal to a minimum value and then increase again to the same level as the corners are approached (Guttman, 1954).

Not only can this arrangement be detected mathematically, it can also be detected semantically by inspecting the changes in the terms used to describe interpersonal behavior in each category. Like the mathematical properties of the circumplex, the adjacent categories contain terms which are the most similar to that category and, as one progresses around the circumplex, the similarity decreases whereby the opposite category contains its semantic opposite.

Researchers disagree over whether the 16 categories should be used to analyse interpersonal behavior (LaForge, 1977) or collapsed into octants (Leary, 1957) or quadrants (Carson, 1969). Leary (1957) and Leary and Coffey (1955) suggested that, for clinical purposes, collapsing the categories into octants makes it easier for the clinician to conceptualize interpersonal behavior. In discussing the Interpersonal Check List (ICL), LaForge (1977b) stated that social desirability is correlated equally with the categories of the interpersonal circumplex. Therefore, the 16 categories do not have to be collapsed into larger units to obviate this problem. Carson (1969) proposed quadrants because it delineates more distinctly the different types of complementary and anticomplementary

Figure 2: Representation of a Circumplex Correlation Matrix

	1	2	3	4	5	6	7	8
1	1							
2	r1	1						
3	r2	r1	1					
4	r3	r2	r1	1				
5	r4	r3	r2	r1	1			
6	r3	r4	r3	r2	r1	1		
7	r2	r3	r4	r3	r2	r1	1	
8	r1	r2	r3	r4	r3	r2	r1	1

Note: $r1 > r2 > r3 > r4$

interpersonal interactions than a greater number of categories. Hence, the disagreement which centers on how many categories to use in analysing interpersonal functioning for research and clinical purposes concerns the optimal degree of refinement of the interpersonal themes. What is required is the appropriate number of categories which will adequately explain each interpersonal theme under study, while, simultaneously, excluding other information from each category which is better explained by other interpersonal categories in the circumplex.

This research will analyse the scores on the circumplex model by collapsing the 16 categories into octants. The major reasons being that, first of all, Paddock and Nowicki (1986) in their research on the ICL found only octant scales had acceptable internal consistencies and showed relatively good approximation to the idealized model when compared to sixteenths. In addition, there is a preexisting set of interpersonal themes having relevance to both clinical and non-clinical populations which correspond with the octants of the circumplex model (Leary, 1957) and it has also been suggested that these themes as represented by the octants correspond with particular personality disorders (Widiger & Kelso, 1983; Wiggins, 1982). Moreover, as will be discussed in greater detail later, more than one rater for both the clinical and non-clinical samples will be rating the interpersonal behavior of a particular subject in the study. By using octants

instead of sixteenths, the degree of agreement should improve.

Developers of the interpersonal circumplex found that items describing interpersonal behavior could be charted within a two-dimensional space (Leary, 1957). They found that all items describing interpersonal behavior had some reference to a control factor and an affiliation factor both being bipolar in nature. With dominance versus submission being used as the vertical axis and love versus hostility being used as the horizontal axis, all the terms describing interpersonal behavior could be expressed as combinations of these four nodal points. The control and affiliation dimensions can be expressed mathematically. For example, in the 1982 Interpersonal Circle, each category reflects a mathematically weighted combination of the control (-4 through 0 to +4) and affiliation (-4 through 0 to +4) axes (Kiesler, 1983). For instance, category H contains a weighted combination of -3 for the control axis and -1 for the affiliation axis, whereas, category B contains +3 for the control axis and -1 for the affiliation axis.

There appears to be a substantial amount of evidence to support the claim that interpersonal behavior involves a blend of these two underlying dimensions. In research on interpersonal behavior not involving the circumplex model, Carter (1954) analysed the factor analytic results of five separate studies of interpersonal behavior in small groups (e.g., college students and military personnel). Carter

concluded that three factors could account for a major portion of the variance in all of the studies: 1) individual prominence and achievement, 2) aiding attainment by the group, and 3) sociability (establishment of cordial satisfying relationships). The individual prominence and achievement factor appears to have much in common with the control dimension of the interpersonal circumplex, while factor 3, sociability, seems to be related to the affiliation dimension. A series of factor analytic studies by Borgatta and his colleagues attempted to replicate Carter's (1954) findings. In the first of these, Borgatta, Cottrell, and Mann (1958) factor analysed the personality trait and interpersonal behavior rankings made by graduate students of their fellow graduate students meeting in small groups. Two factors accounted for major portion of the variance and three additional factors were of relatively minor significance. The two major factors were individual assertiveness and sociability, which are similar to factors 1 and 3 found in Carter's (1954) research and the control and affiliation dimensions of the interpersonal circumplex, respectively. The three minor factors reported by Borgatta et al. (1958) were: manifest intelligence, manifest emotionality, and task interest. Carter's (1954) second factor, aiding attainment by the group, was not observed by Borgatta et al. (1958) which was attributed to this factor being specific to the task-group situation. Following up on this research,

Borgatta (1960) conducted a similar study with college students who met together in newly formed small groups (four times, each 20 minutes in duration). Each subject was ranked on the trait and behavior variables by each member of their group and ranked themselves as well. The results showed that the individual assertiveness and sociability factors again accounted for a major portion of the variance for both the self-rankings and group-rankings. In the final study of this series Borgatta (1964), following up on Campbell and Fiske's (1959) multi-trait multi-method approach, used five different methods of rating an individual's personality and behavior. As in the earlier studies, the same two major factors emerged, assertiveness and sociability.

Maternal behavior appears to have circumplex ordering. Schaefer (1959) reanalysed three sets of data from earlier studies on maternal behavior and found that these ratings did indeed exhibit circumplex ordering. The ratings could be interpreted in terms of two bipolar dimensions which were labeled autonomy versus control and love versus hostility. The first dimension was represented by autonomy at one pole and anxiety of the mother, intrusiveness, concern about health, fostering dependency, and so forth at the other pole. The positive pole of the second dimension was represented by positive evaluation of the child, expression of affection, etc., whereas, the negative pole was represented by ignoring,

punitiveness, and so forth (see Schaefer, 1959, p. 232). Becker and Krug (1964) had trained observers rate both the maternal and paternal behavior for parents of five-year-olds. They concluded that these ratings exhibited circumplex ordering in terms of two major dimensions: strictness-permissiveness and negative emotionality-warmth. These dimensions appear to be similar to those observed in Schaefer's (1959) research. Becker and Krug (1964) also factor analysed the ratings made by the parents and the kindergarten teacher of each child in the study. The two major factors which emerged were: stability-instability and introversion-extraversion. According to Carson (1969), the stability-instability factor is related to the affiliation dimension of the circumplex model and the introversion-extraversion factor to the control dimension.

In research involving the circumplex model, psychologists have reviewed the literature and concluded that interpersonal behavior involves a blend of these two underlying dimensions. Foa (1961) conducted a literature review and statistical analysis of previous research on the interpersonal circumplex and concluded that these two dimensions are sufficient for describing the results. Carson (1969), in his review of the literature, concluded the same thing as did both Wiggins (1982) and Kiesler (1983). With recent empirical work not covered in these reviews, Conte and Plutchik (1981) used two different methods, direct similarity scaling and semantic differential

profile similarity, to determine whether or not the circumplex model would be valid to represent the structure of interpersonal personality traits. Their conclusions were that an almost identical ordering of the 233 interpersonal terms used in the research was obtained by these two independent methods, thus "... providing strong evidence for the construct validity of the circumplex structure of interpersonal personality traits" (Conte & Plutchik, 1981, p. 706).

Regarding the third characteristic of the circumplex model of interpersonal behavior, the distance a score is from the origin of the coordinates for the control and affiliation axes represents an intensity metric of interpersonal functioning. Developers constructed the interpersonal circumplex in such a manner as to include items which tap both extreme and moderate forms of interpersonal behavior (Kiesler, 1983; LaForge & Sucjek, 1955; Leary, 1957). The items which tap moderate forms of interpersonal behavior are used a statistically frequent number of times, whereas, the items which tap extreme behaviors are used a statistically infrequent number of times. Researchers, such as, Kiesler (1983), Leary (1957), and Wiggins (1982) have suggested that an extreme score tends to be indicative of abnormal behavior.

Interpersonal Measures

According to Kiesler (1983) there are four major adult interpersonal measures. A brief description of each measure

will be given.

Interpersonal Check List

The Interpersonal Check List (ICL) was the first interpersonal measure to emerge on the psychology scene based on work done at the Kaiser Foundation Hospital in Oakland, California during the early fifties (Freedman et al., 1951; LaForge et al., 1954; LaForge & Suczek, 1955; Leary, 1957). The impetus for the development of the ICL was to enable the objective study of interpersonal interaction in dyads and small groups (Wiggins, 1982).

Developers of the ICL found that all the terms in the English language describing interpersonal behavior could be subsumed under 16 interpersonal behavior categories. The pooled ratings of five judges were used to assign the terms to the categories and their intensity. On each subsequent revision, the frequency with which samples checked each of the terms for each octant, sixteenth, and intensity was used to attain a more accurate measure of the interpersonal categories. The ratings of judges were used to revise the terms as well. Four revisions of the ICL were made with the fourth and final revision appearing in LaForge and Suczek's (1955) paper.

A major methodological limitation which had to be dealt with during this revision process concerned reducing the effects of social desirability. It was found that subjects tended to check more items on the right side of the

interpersonal circumplex rather than the left side (LaForge & Suczek, 1955). To correct this bias, adjustments to the intensity values were made with respect to how statistically frequent subjects used them. For instance, interpersonal adjectives like, appreciative and cooperative, were checked by nearly everyone in the samples and, so were scaled down in intensity value from 2 to 1. Furthermore, some items on the right side of the affiliation axis were worded in a socially undesirable manner. For instance, in Category K, one of the terms at an intensity level of 2 was, "Very anxious to be approved of". Whereas, some items on the left side were worded in a socially desirable manner. For example, in Category D, one of the items at an intensity level of 2 was, "Firm but just".

Eight items are used to assess each of the 16 interpersonal categories, making the total number of items 128 in the ICL (6 items are also included in the check list but are not used making the total 134 items). The items in each sixteen are divided into four degrees of intensity as determined from their frequencies of endorsement. The least intense items are checked about 90% of the time, intensity 2 items are checked 67% of the time, intensity 3 items are checked 33% of the time, and intensity 4 items, the most intense, are checked about 10% of the time.

ICL data can be summarized in two ways. In the profile method, the relative emphases on each of the octants (or sixteenths) is determined from the number of items checked per octant. In the point summary method, the projections upon the control and affiliation axes are computed by formulas derived from trigonometric relationships, and a description of a person is represented by a single point on the interpersonal circle.

The Leary interpersonal circumplex (see Figure 1) is the model which is most often operationalized by the ICL (Paddock & Nowicki, 1986). This model contains eight interpersonal categories arranged in a circular continuum. The control (vertical) and affiliation (horizontal) axes are also contained in the model. For each category, the first part of the hyphenated term describes the adaptive or moderate form of the behavior (e.g., managerial) and the second part describes the maladaptive or intense form (e.g., autocratic).

Interpersonal Behavior Inventory

The Interpersonal Behavior Inventory (IBI) is an 140 item questionnaire containing statements which describe interpersonal behavior overtly. Instead of using a trait attributive approach for describing interpersonal behavior as done in the ICL, the IBI was constructed by using a behavior analytic approach which describes the act directly. As Lorr and McNair (1965, p. 823) state,

...adjectives such as those in the Interpersonal Check List (ICL), have quite diverse connotations and thus lack the precision of meaning necessary for the definition of the dimensions of interpersonal behavior. It thus seemed useful and important to establish rigorously a set of overlapping interpersonal categories on the basis of rated manifest behavior statements, and to test for the presence of a circular rank ordering.

They attempted to establish these categories by, first of all, asking other psychologists for descriptions of overt behaviors for 13 interpersonal categories. They came up with statements which described the behaviors in each of the 13 categories and gave them to a group of therapists and asked them to rate their clients with these items. These ratings were intercorrelated, and based on these intercorrelations, 9 of the thirteen categories exhibited circumplex ordering (Lorr & McNair, 1963).

Subsequently, Lorr and McNair (1965) attempted to expand their nine category circumplex to include the full set of 16 categories. They added new items to the list and asked therapists to rate their clients with the items from this list. They were able to account for an additional three categories, making the total 12. The third and final revision used the same procedure, with the exception of replacing the "Yes-No" format with a Likert rating scale format, accounted for an additional three categories, making the total 15 (Lorr & McNair, 1965). By the final revision, only one interpersonal category was not represented on the IBI, that being category P

(managerial-autocratic). The circumplex model which the IBI is based upon can be found in Lorr and McNair (1965, p.828). Moreover, Lorr and McNair (1965) found that this circumplex arrangement also applied for a normal sample, where college students rated fellow college students.

In comparison to the ICL, the IBI does not use an intensity metric for interpersonal behavior. Instead, Lorr and McNair approached the issue of differentiating normal from abnormal interpersonal behavior by studying the location of the scores in the circumplex rather than the degree of deviation from the center of the circumplex. They regarded scores in the upper half of the circumplex to be indicative of active interpersonal behavior and scores in the lower half to be indicative of passive interpersonal behavior. Scores in the right half of the circumplex is indicative of normal interpersonal functioning, whereas, scores in the left half indicated interpersonal maladjustment. Therefore, individuals scoring in the upper left section of the interpersonal circumplex would be behaving in an active maladjusted manner; individuals scoring in the lower left section would be behaving in a passive maladjusted manner; individuals scoring in the lower right section would be behaving in a passive adaptive manner; and individuals scoring in the upper right section would be behaving in an active adaptive manner.

Impact Message Inventory

The Impact Message Inventory (IMI) measures the rater's cognitive and affective reactions toward the individual she or he is interacting with. Kiesler (1979) used the items from the 15 categories of the IBI and had judges record their reactions to these items. From content analysis of these reactions, three general categories of reactions were derived: 1) direct feelings, 2) action tendencies, and 3) perceived evoking message. The best six items which distinguished each of the 15 interpersonal behavior categories were selected with two items each coming from the three general reaction categories.

The intercorrelations for 12 of the 15 categories exceed .80. Intercorrelations this high imply that the IMI does not exhibit a clear circumplex structure (Wiggins, 1982).

Like the IBI, the IMI assesses interpersonal adjustment not by the intensity with which an interpersonal behavior is exhibited, but by the location of scores in the interpersonal circumplex. Kiesler (1979) asserted that scores in the left half of the interpersonal circumplex, when measured by the IMI, were indicative of maladjustment.

Interpersonal Adjective Scales

The Interpersonal Adjective Scales (IAS) was developed in order to taxonomize the trait-descriptive terms of the English language (Wiggins, 1979). Its prime use is to distinguish interpersonal personality traits from other trait categories,

such as, temperament, mood, cognition and so forth by serving as a semantic marker (Wiggins, 1979). It was not developed for the purposes of clinical assessment. However, there has been recent research done in which a revised version of the IAS is used to chart intense interpersonal behavior (Wiggins, Phillips, & Trapnell, 1989).

This measure was developed by using a previously established list of trait terms and having judges rate whether each term fell within a preestablished operational definition for an interpersonal trait. The terms which fit the operational definition were distributed by judges across the 16 interpersonal categories described by Leary (1957) with unanimous agreement among raters. The eight items for each of the 16 interpersonal categories which provided the best circumplex structure were selected. Subsequently, Wiggins (1979) found that collapsing these terms into octant categories produced superior circumplex structure. The circumplex model which the IAS is based upon can be found in Wiggins (1979, p. 399).

Additional Interpersonal Systems

In addition to these four measures of interpersonal behavior there are additional interpersonal circumplex models and other interpersonal systems which have been devised for conceptualizing and studying interpersonal behavior. Some of these models are the Structural Analysis of Social Behavior

(SASB; Benjamin, 1974; McLemore & Benjamin, 1979), the Fundamental Interpersonal Relations Orientation Scale (FIRO-B; Schultz, 1958), the 1982 Interpersonal Circle (Kiesler, 1983).

The SASB, in an attempt to integrate the circles of Leary (1957) and Schaefer (1959), has three circumplexes or planes to organize interpersonal behavior. The three planes systematize: 1) interpersonal behaviors directed toward others which is considered to be the parent-like active plane, 2) interpersonal behaviors directed toward the self which is considered to be the child-like reactive plane, and 3) the introjection of the interpersonal behavior of the other to the self. The active plane is constructed around the vertical axis of power versus autonomy. The reactive plane is constructed around the vertical axis of individualism versus submission. The horizontal axis of hostility versus affection is the same for both planes. The third plane of the SASB deals with what happens when a person takes the behavior that others are exhibiting and turns it inward on herself or himself. Benjamin (1974), borrowing from Sullivan's (1953) notion of self-dynamism, considers this introjection to be an important consequence of interpersonal relations because the attitudes toward the self are determined by the way one is treated by others. The three planes of the SASB can be viewed in Benjamin (1974, p. 394). By having three separate planes, the SASB system allows for comparison of interpersonal behavior both within each plane and among the

three planes as well.

The FIRO-B is an instrument designed to assess complementarity in interpersonal relationships. Instead of using a two-dimensional circumplex model to chart interpersonal behavior, developers of the FIRO-B used a three-dimensional model. The underlying dimensions of this instrument are: affection, control, and inclusion. The affection and control dimensions are like those found in the interpersonal circumplex, whereas, the inclusion dimension refers to the degree to which an individual feels she or he belongs and desires to continue the relationship. Another difference between these two measures involves complementarity, developers of the FIRO-B proposed that three different types of complementarity can be observed in interpersonal relationships (Schultz, 1958), whereas, one type of complementarity is identified in the interpersonal circumplex. These three types are: 1) reciprocal complementarity; 2) originator complementarity, and 3) interchange complementarity (Schultz, 1958). Reciprocal complementarity takes place when subject's level of "expressed" behavior matches the other's level of "wanted" behavior for the three dimensions. Originator complementarity describes complementarity in regard to who originates and who receives behaviors for each of these three interpersonal dimensions. For example, if both participants prefer to originate behaviors, "competitive" complementarity

develops; if both prefer to receive, "apathetic" complementarity occurs. Interchange complementarity designates the degree of similarity between participants with respect to ranking the importance of the three need areas. The FIRO-B measures each of these three types of complementarity.

The 1982 Interpersonal Circle developed by Kiesler (1983) integrates the content domains of the four major adult measures of interpersonal behavior discussed previously. In addition, it also attempts to correct for some of the deficiencies encountered in these earlier measures. First of all, the synonyms and antonyms for each item contained in the ICL, IBI, IMI, and IAS were collected. The items from the IAS served as the initial marker variables for the 16 categories because of their superior circumplex structure (Kiesler, 1983). The items from these four measures were arranged into the 16 categories of the circumplex and into a mild-moderate or extreme intensity level. Then, the items which showed a bipolar relationship (semantic or behavioral opposites) were selected. As a result the 1982 Interpersonal Circle contains 350 bipolar (700 unipolar equivalents) interpersonal items which served to describe and operationalize each of the 16 categories at both mild-moderate and extreme levels (see Kiesler, 1983, p. 189). Like the IAS, the 1982 Interpersonal Circle is meant to be used as a semantic marker for other interpersonal measures. As Kiesler (1983, p. 186) states, "The 1982 Circle thus serves as a comprehensive

taxonomy of the domain of two-dimensional interpersonal behavior to which extant and future measures or constructs may be compared, contrasted, and/or anchored".

Interpersonal Behavior Descriptions

The various types of interpersonal behavior represented by the interpersonal circumplex and measured by the interpersonal instruments just discussed will be described in this section. Furthermore, these descriptions will be provided with psychiatric classification systems taken into consideration. Researchers have proposed that certain types of interpersonal behavior represented by the octants of the interpersonal circumplex correspond with certain mental disorders. Therefore, by integrating these two sources of information, relevance will be shown for the use of the interpersonal circumplex as a classification tool for personality disorders.

Originally, Leary and Coffey (1955), using the DSM-I classification system, proposed that specific interpersonal behaviors represented by the octants of the interpersonal circumplex correspond with specific psychiatric disorders. Following up on this idea, Wiggins (1982) proposed that specific interpersonal behaviors correspond with specific DSM-III Axis II personality disorders. Moreover, Widiger and Kelso (1983) proposed a correspondence existed between interpersonal behavior and personality disorders in much the same manner as Wiggins (1982) proposed with the exception being

that all 11 personality disorder categories were represented in their model. The proposed DSM-I equivalent, in the case of Leary and Coffey (1955), and DSM-III Axis II equivalent, in the case of Wiggins (1982) and Widiger and Kelso (1983), for each octant of the interpersonal circumplex is presented in Table 1 for comparison purposes.

Another model for linking the interpersonal circumplex with psychiatric diagnosis was developed by Kiesler (1986a; 1986b). Using the 1982 Interpersonal Circle, Kiesler, like the theorists mentioned above, proposed that certain interpersonal categories correspond to certain Axis II personality disorders. However, instead of using octants, Kiesler (1986a; 1986b) used 16 categories and combinations of these categories to analyse the relationship between these two systems. The proposed 1982 Interpersonal Circle segments which correspond to each Axis II personality disorder along with a brief description of the interpersonal behavior represented by these segments is presented in Table 2.

As mentioned earlier in this literature review, the octant categories of the interpersonal circumplex will be used in this research. Brief description of the interpersonal behavior patterns represented by the octants will be given. Both the adaptive and maladaptive forms of each behavior pattern will be described along with additional information of clinical relevance and each octants' proposed DSM-III Axis II

Table 1: Proposed Interpersonal/Psychiatric Diagnostic Equivalents

Interpersonal Behavior	Leary & Coffey's (1955) Proposed DSM-I Equivalent	Wiggins' (1982) Proposed DSM-III Equivalent	Widiger & Kelso's (1983) Proposed DSM-III Equivalent
Managerial-Autocratic (AP)	none	Compulsive	none
Competitive-Narcissistic (BC)	none	Narcissistic	Narcissistic, Paranoid
Aggressive-Sadistic (DE)	Psychopathic	Paranoid	Antisocial, Paranoid
Rebellious-Distrustful (FG)	Schizoid	Schizoid	Schizoid, Avoidant, Schizotypal
Self-effacing-Masochistic (HI)	Obsessive, Psychasthenic	Passive-aggressive	Passive-aggressive, Borderline
Docile-Dependent (JK)	Hysteria, Neurasthenic	Dependent	Dependent, Borderline
Cooperative- Overconventional (LM)	Hysteria	Histrionic	Histrionic, Borderline
Responsible- Hypernormal (NO)	Psychosomatic	?Hypomanic?	Compulsive, Borderline

Table 2: Proposed 1982 Interpersonal Circle/Psychiatric Diagnostic Equivalents

DSM-III Personality Disorder	1982 Interpersonal Circle Segment
<hr/>	
"Segment" Prototypes	
Antisocial	E: Hostile
Schizoid	F: Escapistic-autistic/eccentric
"Octant" Prototypes	
Histrionic	NO: Frenetically gregarious-histrionic
Narcissistic	OP: Histrionic-arrogant/rigidly autonomous
Dependent	HI: Unassured-submissive
Compulsive	FG: Aloof-inhibited
Passive-aggressive	EF: Antagonistic/harmful-alloof
"Triad" Prototypes	
Paranoid	CDE: Rivalrous/disdainful-cold/punitive-antagonistic/ harmful
Avoidant	FGH: Aloof-taciturn-self-doubting/dependent
"Mixed Quadrant" Prototypes	
Schizotypal	C <-> F: Suspicious/resentful <-> Detached
Borderline	B <-> J: Rivalrous/disdainful <-> Ambitionless/flattering
	E <-> M: Rancorous/sadistic <-> Devoted/indulgent

Adapted From: Kiesler, D. J. (1986b). Interpersonal methods of diagnosis and treatment.
In J. O. Cavenar (Ed.), Psychiatry (Vol. 1, p. 6). Philadelphia: Lippincott.

equivalent. The Leary circumplex model (Leary, 1957) will be used to describe these interpersonal behavior patterns. The reason for the selection of the Leary model is that this research is using the Interpersonal Check List to measure interpersonal behavior. This measure most often operationalizes the Leary circumplex model (Paddock & Nowicki, 1986). A representation of the arrangement of the octants in the Leary circumplex model is presented in Figure 1. To discuss the relationship between interpersonal octants and Axis II personality disorders, Wiggins' (1982) model will be used. Even though Widiger and Kelso (1983) put forth a model quite similar to Wiggins' (1982) model, it will not be discussed in this section of the thesis. The major reason being that, of the 11 different personality disorder categories, the seven categories which Wiggins (1982) selected emphasize interpersonal behavior rather than symptoms or social evaluations, and these categories appear to have face validity as they bear close resemblance to the octants of the interpersonal circumplex.

Managerial-Autocratic

For categories A and P, the adaptive form of this interpersonal behavior was called by Leary (1957) "managerial". Persons who exhibit this behavior express strength, force, energy, and deference. Social status and prestige are perhaps the most effective means of exerting these qualities over other people. In comparison, the maladaptive form of this

interpersonal behavior was termed by Leary (1957) "autocratic". Persons who exhibit an autocratic interpersonal behavior tend to overorganize their life and the lives of those around them. They tend to become anxious when they observe weakness and a lack of competence in themselves. As a result, they engage in an "compulsive endeavor to appear competent, organized, and authoritative" (Leary, 1957, p. 324). The complementary interpersonal response to categories A and P tend to be those subsumed under categories I and J, that is, obedience, deference, and respect.

According to Leary (1957), individuals who use this interpersonal behavior in a maladaptive manner tend to have the following clinical features: 1) their most common complaint tends to be psychosomatic in nature, 2) their MMPI profile, in relation to other interpersonal behavior patterns, tends to have higher scores on the Subtle Defensiveness (K) and Mania (Ma) scales and lower scores on the Depression (D) and Psychasthenia (Pt) scales, 3) they tend not to remain in therapy for long durations of time when compared to other interpersonal behavior patterns, 4) in relation to other interpersonal patterns, they tend to be closely identified with their parents, whereas their spouses tend to be perceived as passive and agreeable, and 5) they tend to misperceive the interpersonal behavior of others by attributing too much weakness to others.

As for a correspondence between autocratic behavior and Axis II personality disorders, Wiggins (1982) proposed that this behavior tends to be indicative of compulsive personality disorder. In describing the compulsive personality disorder, the DSM-III manual describes the interpersonal relations of individuals with this type of personality disorder in a manner quite similar to the autocratic interpersonal behavior pattern described by Leary (1957). For instance, the manual states:

Individuals with this disorder are always mindful of their relative status in dominant-submissive relationships. Although they resist the authority of others, they stubbornly insist that people conform to their way of doing things.

Work and productivity are prized to the exclusion of pleasure and the value of interpersonal relationships. When pleasure is considered, it is something to be planned and worked for.

...Individuals with this disorder tend to be excessively conscientious, moralistic, scrupulous or judgmental of self or others.... Frequently there is extreme sensitivity to social criticism, especially if it comes from someone with considerable status or authority.

(APA, 1980, pp. 326-327)

Hence, the descriptions provided by these two sources are similar in the sense that both describe an individual's compulsive attempt to organize and establish control in their personal life and over others as well.

Competitive-Narcissistic

For categories B and C, Leary (1957) termed the adaptive form of this interpersonal behavior "competitive". This type of interpersonal behavior is manifested as self-confidence and independence from others. In its maladaptive form, Leary (1957) termed this interpersonal behavior "narcissistic". Individuals who manifest a narcissistic interpersonal behavior pattern engage in social maneuvers to attain self-confidence and independence by attempting to reject and triumph over others. As Leary (1957, p. 334) states, "The maxim of this form of maladjustment is: "How can I establish superiority over this person? How can I defeat him? How can I use him for my selfish enhancement?". The complementary interpersonal behaviors this octant tends to "pull" are those from categories G, H, I, and J or envy, distrust, and respectful admiration. The difference between this interpersonal behavior pattern and the autocratic pattern involves the pull of negative emotion. The autocratic pattern is designed to provoke "loving respect and obedience", whereas, the narcissist provokes envy and inferiority from others (Leary, 1957).

According to Leary (1957), individuals with a narcissistic interpersonal behavior pattern rarely seek psychiatric or psychological assistance. However, when they do seek assistance, Leary (1957) noted there are generally three reasons which motivated them to do so: 1) psychosomatic

symptoms, 2) current injuries to their narcissism, and 3) a desire to display their personality and talk about themselves. In relation to other interpersonal behaviors represented in the interpersonal circumplex, individuals exhibiting narcissistic behavior tend to have lower MMPI scores on the Depression (D) and Psychasthenia (Pt) scales and higher scores on the Mania (Ma) scale. They also tend to be disidentified with their parents by perceiving them as somewhat more hostile. Their spouses tend to be perceived as agreeable and admiring. Outside the immediate family, they tend to misperceive the interpersonal behavior of others by attributing too much passivity and hostility towards other people.

Regarding the correspondence between narcissistic interpersonal behavior and Axis II personality disorders, Wiggins (1982) proposed this type of behavior matches up with the narcissistic personality disorder. The DSM-III manual describes the interpersonal behavior of individuals with this type of personality disorder in a manner quite similar to the narcissistic interpersonal behavior pattern described by Leary (1957). For instance, the manual states, "Interpersonal exploitiveness, in which others are taken advantage of in order to indulge one's own desires or for self-aggrandizement, is common, and the personal integrity and rights of others are disregarded" (APA, 1980, p. 316). Hence, the descriptions made by these two sources appears to be similar in that the

interpersonal behavior consists of competing with and triumphing over others in order to gratify an inflated self-image.

Aggressive-Sadistic

For categories D and E of the interpersonal circumplex, Leary (1957) termed the adaptive form of this interpersonal behavior "aggressive". The person who can be stern and critical when the situation calls for it gains the respect of other group members because social disapproval cements group relationships. When this behavior becomes maladaptive, Leary (1957) termed it "sadistic". Persons who manifest a sadistic interpersonal behavior pattern consistently maintain a punishing attitude toward others, or a sarcastic attitude, or a guilt provoking attitude. These individuals tend to be least anxious when exhibiting a tough, stern coldness toward others and are made anxious in situations which pull tender, docile, and agreeable feelings within them. The type of complementary interpersonal behaviors that this behavior tends to "pull" is from categories F, G, and H or resentment, distrust, fear or guilt. As Leary (1957, p. 344) states,

Most individuals can tolerate, and even appreciate, the function of an adjusted critic. They cannot tolerate potential or actual hostile coercion in others. This is to say that when extreme D behavior pulls adaptive withdrawal and bitter disaffiliation from "others", the interaction terminates.

Hence, hostile, aggressive interpersonal behavior will tend to provoke hostility and disaffiliation in others.

According to Leary (1957), individuals with a sadistic interpersonal behavior pattern tend not to seek psychiatric or psychological assistance. However, when they do seek assistance, it tends to be due to interpersonal difficulties they are experiencing instead of emotional difficulties (Leary, 1957). Usually, these individuals are poorly motivated for psychotherapy, but Leary (1957) noted that, occasionally, some of these individuals will stay in therapy for extremely long durations of time. In relation to other interpersonal behaviors represented in the interpersonal circumplex, individuals with a sadistic interpersonal style tend to have higher MMPI scores on scales Fake Bad (F), Schizophrenia (Sc), and Psychopathic Deviate (Pd) scales. They tend to be disidentified with their parents by perceiving them as somewhat weaker. Their spouses tend to be perceived as rebellious and resentful individuals. Outside the immediate family, they tend to misperceive the interpersonal behavior of others by attributing too much hostility toward them.

As for the correspondence between sadistic interpersonal behavior and Axis II personality disorders, Wiggins (1982) proposed that this behavior corresponds with the paranoid personality disorder. The DSM-III describes the interpersonal behavior in this personality disorder the following way:

The essential feature is a Personality Disorder in which there is a pervasive and unwarranted suspiciousness and mistrust of people, hypersensitivity, and restricted affectivity.... They are often viewed by others as guarded, secretive, devious and scheming....

These individuals' affectivity is restricted, and they may appear "cold" to others. They have no true sense of humor and are usually serious. They may pride themselves on always being objective, rational, and unemotional. They usually lack passive, soft, sentimental and tender feelings.

Individuals with this disorder are... viewed as hostile, stubborn and defensive. They tend to be rigid and unwilling to compromise. They often generate uneasiness and fear in others. Often there is an inordinate fear of losing independence or the power to shape events in accord with their own wishes.

(APA, 1980, pp. 307-308)

Hence, the descriptions of sadistic interpersonal behavior and paranoid personality disorder provided by Leary and DSM-III appear to be similar in the sense that there is a pervasive mistrust and stern coldness toward others which tends to provoke uneasiness and fear in others.

Rebellious-Distrustful

For categories F and G of the interpersonal circumplex, Leary (1957) termed the adaptive form of this interpersonal behavior "rebellious". An individual who behaves in this manner takes a healthy, critical approach to the accepted conventions and norms of social relationships. This type of interpersonal behavior can play an important role in group behavior by breaking the cycle conformity and the pressure to be liked and

accepted which can create a stultifying atmosphere. In its maladaptive form, Leary (1957) termed this interpersonal behavior "distrustful". Individuals who exhibit this type of interpersonal style do so to alienate themselves from others and to avoid tender feelings of love and closeness. As Leary (1957, p. 270) states:

The essence of this security operation is a malevolent rejection of conventionality. Trust in others, cooperation, agreeability, and affiliation seem to involve a certain loss of individuality... Inevitable ties and responsibilities go with an agreeable, conventional adjustment. For the person who avoids this way of life there are certain rewards- a rebellious freedom, a retaliatory pleasure in rejecting the conventional, a delight in challenging the taboos, commitments, and expectations which are generally connected with a durable affiliative relationship.

The complementary interpersonal behaviors this type of interpersonal behavior tends to "pull" is from categories B,C, and D. In other words, a sullen, distrustful behavior pattern will tend to establish distance from others, provoking them to disaffiliate.

Individuals with a distrustful interpersonal style tend to have the following clinical features: 1) in relation to other interpersonal behaviors covered in the interpersonal circumplex, they tend to have higher MMPI scores on the Depression (D), Fake Bad (F), Schizophrenia (Sc), and Psychopathic Deviate (Pd) scales, 2) they tend to be motivated

for therapy and will engage in it for relatively long durations of time, 3) they tend to be disidentified with their parents and spouses, 4) in comparison to the other groups represented on the interpersonal circumplex, they tend to misperceive the behavior of others by attributing too much hostility toward them, 5) this group tends to have a high proportion of unmarried individuals.

Regarding the relationship between Axis II personality disorders and distrustful interpersonal behavior, Wiggins (1982) proposed that this type of interpersonal behavior is exhibited in schizoid personality disorder. The DSM-III describes the interpersonal behavior of individuals with schizoid personality disorder in the following manner:

The essential feature is a Personality Disorder in which there is a defect in the capacity to form social relationships, evidenced by the absence of warm, tender feeling for others and indifference to praise, criticism, and the feelings of others....

The individuals with this disorder show little or no desire for social involvement, usually prefer to be "loners", and have few, if any, close friends. They appear reserved, withdrawn, and seclusive and usually pursue solitary interests or hobbies. Individuals with this disorder are usually humorless or dull and without affect in situations where an emotional response would be appropriate. They usually appear "cold", aloof, and distant.

(APA, 1980, p. 310)

Hence, the interpersonal behavior exhibited in schizoid personality disorder and distrustful interpersonal behavior are

similar in that the individual alienates himself or herself from others and shows an absence of warm, tender feelings.

Self-effacing-Masochistic

For categories H and I of the interpersonal circumplex, Leary (1957) termed the adaptive form of this interpersonal behavior "self-effacing" which is manifested as "modest, unpretentious reserve". The term "masochistic" was used by Leary (1957) to describe this behavior at a maladaptive level. The person who displays masochistic behavior wards off anxiety by being self-deprecating, weak, and inferior in order to avoid the appearance of strength and pride (Leary, 1957). The complementary interpersonal behaviors that categories H and I "pull" tend to come from categories B, C, D, and E. As Leary (1957, p. 284) states, "Self-effacement pulls depreciation and patronizing superiority from others... That is to say, if a person acts in a glum, guilty, withdrawn, and weak manner, he will tend to train others to look down on him and to view him with varying amounts of contempt".

According to Leary (1957), individuals who exhibit this type of maladaptive interpersonal style, in relation to other interpersonal behaviors covered by the interpersonal circumplex, tend to have higher MMPI scores on the Psychasthenia (Pt), Depression (D), and Masculinity-Femininity (MF) scales. These individuals tend to be motivated for therapy and remain in it for relatively long durations of time. They

tend to be disidentified with both their parents and their spouses.

Regarding the relationship between Axis II personality disorders and masochistic interpersonal behavior, Wiggins (1982) proposed that this behavior corresponds with the passive-aggressive personality disorder. This personality disorder is described in the DSM-III the following way:

The name of this disorder is based on the assumption that such individuals are passively expressing covert aggression.

Individuals with this disorder habitually resent and oppose demands to increase or maintain a given level of functioning. This occurs most clearly in work situations, but is also evident in social functioning. The resistance is expressed indirectly, through such maneuvers as procrastination, dawdling, stubbornness, intentional inefficiency, and "forgetfulness"...

Often individuals with this disorder are dependent and lack self-confidence. Typically, they are pessimistic about the future but have no realization that their behavior is responsible for their difficulties.

(APA, 1980, p. 328)

Hence, a parallel can be drawn between the passive-aggressive personality disorder and the masochistic interpersonal behavior described in the DSM-III and Leary (1957) respectively, as both describe the tendency to display interpersonal behaviors which are submissive and hostile.

In the appendix of the revised edition of the Diagnostic and Statistics Manual, the DSM-III-R (American Psychiatric Association [APA], 1987), the self-defeating personality

disorder was included to stimulate further study and research.

A person who exhibits this personality disorder:

...repeatedly enters into relationships with persons or places himself or herself in situations that are self-defeating and have painful consequences even when better options are clearly available.... Characteristically, people with this disorder act in such a way as to cause others to be angry and to reject them.

(APA, 1987, p. 372)

Thus, although there have been no parallels drawn in the literature between the self-defeating personality disorder and the masochistic interpersonal style, it would seem reasonable that such a parallel could be drawn since both are characterized by a submissive behavior pattern. Moreover, others respond to this behavior pattern in a similar way namely, with contempt.

Docile-Dependent

For categories J and K of the interpersonal circumplex, Leary (1957) termed the adaptive form of this interpersonal behavior "docile" which is manifested as "respectful or poignant or trustful conformity" when interacting with others. The maladaptive form of this interpersonal behavior was called by Leary (1957) "dependent". The individual who is dependent attempts to reduce anxiety and maintain self-esteem by displaying helpless dependency in order to avoid the expression of hostility, independence, and power (Leary, 1957).

Interpersonal behaviors representative of categories J and K tend to "pull" interpersonal behaviors from categories N, O, P, and A: dependence provokes nurturance. Or as Leary (1957, p. 293) puts it, "These subjects tell others by means of their (interpersonal) reflexes that they are weak-and-friendly. They thereby provoke others to be strong-and-friendly".

Individuals who exhibit this type of maladaptive interpersonal behavior, in relation to other interpersonal behaviors covered by the interpersonal circumplex, tend to have higher MMPI scores on the Depression (D), Hysteria (Hy), and Psychasthenia (Pt) scales. They tend to be well motivated for therapy. They tend to be identified with their parents and spouses by describing both parties as nurturant. Compared to other interpersonal behavior patterns, they tend to be the most accurate in interpersonal perception.

Regarding the relationship between dependent interpersonal behavior and Axis II personality disorders, Wiggins (1982) proposed that this behavior pattern corresponds with the dependent personality disorder. The DSM-III describes this personality disorder in the following terms:

The individual passively allows others to assume responsibility for major areas of his or her life because of a lack of self-confidence and an inability to function independently; the individual subordinates his or her own needs to those of others on whom he or she is dependent in order to avoid any possibility of having to be self-reliant.
(APA, 1980, p. 324)

Thus, the dependent personality disorder and dependent interpersonal behavior are similar in the sense that both describe an individual who relies on others to make personal decisions for her or him by shunning self-reliance.

Cooperative-Overconventional

For categories L and M of the interpersonal circumplex, Leary (1957) termed the adaptive form of this interpersonal behavior "cooperative". When an individual exhibits this behavior, she or he is striving to be liked and accepted by others. The maladaptive form of this behavior was called by Leary (1957) "overconventional". Individuals who exhibit an overconventional behavior pattern, "...continually strive to please, to be accepted, to establish positive relations with others and forfeit their individuality..." (Leary, 1957, p. 304). The behavior that this particular interpersonal behavior tends to "pull" is from categories M and N of the interpersonal circumplex: LM pulls MN. Or as Leary (1957, p. 305) puts it, "...friendly agreeability tends to provoke approval and friendliness from others".

Individuals who manifest an overconventional behavior pattern, in relation to other behaviors covered by the interpersonal circumplex, tend to have higher MMPI scores on the Hysteria (Hy) and Subtle Defensiveness (K) scales and low scores on the Schizophrenia (Sc) and Fake Bad (F) scales. These

individuals tend not to be well motivated for therapy as they remain in therapy for relatively short durations of time. They tend to be closely identified with their parents describing them as friendly and agreeable. Their spouses, on the other hand, are described in more hostile terms. They tend to misperceive the interpersonal behavior of others by attributing too much friendliness and affiliation toward them.

Regarding the relationship between the overconventional interpersonal behavior and Axis II personality disorders, Wiggins (1982) proposed that this behavior matches that found in histrionic personality disorder. The DSM-III describes the histrionic personality disorder in the following terms:

There are characteristic disturbances in interpersonal relations. Initially people with this disorder are apt to be perceived by others as shallow and lacking in genuineness, even if superficially charming and appealing. Although frequently quick to form friendships, once the relationship is established, they often become either demanding, egocentric, and inconsiderate ... or dependent and helpless, constantly seeking reassurance.

(APA, 1980, p. 313)

Hence, the histrionic personality disorder and overconventional interpersonal style describe, in a similar manner, individuals who compulsively seek to please and establish positive relations with others.

Responsible-Hypernormal

For categories N and O of the interpersonal circumplex, Leary termed the adaptive form of this interpersonal behavior "responsible" whereby, the individual attempts to present herself or himself as a "normal" person. This individual:

...presents himself as strong-but his power and self-confident independence are used in an affiliative way. He strives to be close to others-to help, counsel, support, and sympathize. He wants to be seen as tender with his intimates, reasonable and responsible with his acquaintances.

(Leary, 1957, p. 315)

The maladaptive form of this type of interpersonal behavior was termed by Leary "hypernormal" in which individuals cannot take a passive or aggressive or bitter role, even when the situation requires it. As Leary (1957, p. 316) stated:

These individuals "knock themselves out" to be popular. Their attempts to be helpful and responsible are often inappropriate. They may overextend themselves in promises to others- offers of help and sympathy which they cannot fulfill. They may desperately attempt to maintain the facade of normality when the situation and their own private feelings involve other reactions. They are often driven by relentless ideals of service and contribution to others.

The complementary behaviors that this type of behavior tends to "pull" is from categories K and L. Or responsible, protective behaviors tend to pull dependence and respect from others.

According to Leary (1957), individuals who manifest a hypernormal behavior pattern, in relation to other interpersonal behaviors tend to have higher MMPI scores on the Subtle Defensiveness (K), Hypochondriasis (Hs), and Hysteria (Hy) scales and relatively low scores on the Fake Bad (F), Depression (D), Psychasthenia (Pt), and Schizophrenia (Sc) scales. They tend not to be well motivated for therapy and usually seek psychological assistance for somatic complaints. They tend to identify closely with their parents and spouses. In relation to other interpersonal behaviors, they tend to misperceive the interpersonal behavior of others by attributing too much strength, cooperativeness, and friendliness toward them.

Regarding the relationship between Axis II personality disorders and hypernormal interpersonal behavior, Wiggins (1982) noted that the DSM-III does not have an Axis II category which corresponds to this type of behavior. Yet, he proposed that the Axis I category of chronic hypomanic disorder has a similar pattern of interpersonal behavior to the hypernormal pattern and may warrant consideration as an Axis II personality disorder. The DSM-III (APA, 1980) states this disorder is characterized by extreme gregariousness (uninhibited people-seeking), talkativeness, extreme optimism, hypersexuality, inappropriate laughing and joking, high energy level, and an elevated, expansive mood. Romney and Bynner (in

press) in their research on the circumplexity of DSM-III personality disorders observed a gap in this octant of their circumplex model which appears to fit the description of hypomanic disorder. They propose that a diagnostic category of hypomanic personality disorder is warranted in future classification systems.

The Interpersonal Circumplex and Psychopathology

Empirical studies and results relating the interpersonal circumplex to psychiatric diagnosis, especially personality disorder diagnosis, will be discussed in this section.

In his book, Leary (1957) presented data from research conducted at the Kaiser Foundation Hospital on the percentages of interpersonal behavior summary scores falling into the interpersonal circumplex octants for various cultural samples. Among these samples were 537 individuals admitted to a psychiatric clinic, 38 individual psychotherapy patients, 49 hypertensive patients, 100 middle class obese patients (female), and 41 medical control patients. Members in each of these groups provided a self-rating of their interpersonal behavior. For comparison purposes, the results from these five groups are presented in Table 3. The percentages in this table show that the psychiatric clinic admission sample is distributed evenly among the interpersonal circumplex octant categories. The individual psychotherapy patients tend to cluster in the submissive-affiliative octants. The remaining

samples tend to cluster in the dominant- affiliative octants of the circumplex.

Moreover, Leary (1957) reported the interpersonal ratings for different clinical groups. For instance, individuals diagnosed as psychotic rated their interpersonal behavior as being distributed evenly among the octants. For a sample of individuals exhibiting psychosomatic disorder, their self-ratings tended to cluster in the dominant octants (categories P, A, B, and C).

Researchers have studied mental disorder based on the location of summary scores in the interpersonal circumplex. Baumrind (1960) proposed that scores in the upper right half of the interpersonal circumplex (dominant-affiliative) reflect normal psychological functioning. Whereas scores in the other quadrants occur more frequently in the clinical population. As mentioned previously, Lorr and McNair (1963; 1965) proposed an IBI score which fell in the left half of the interpersonal circumplex was indicative of maladaptive behavior. Lorr, Bishop, and McNair (1965) conducted a study where they had therapists rate the interpersonal behavior of their clients, whereby 48% were previously diagnosed as psychoneurotic, 37% previously diagnosed as personality disorder, and 16% previously diagnosed otherwise. Using a set of standardized procedures, Lorr, Bishop, and McNair were able to classify these clients into four distinct groups on the basis of

Table 3: Percentages of Interpersonal Types (Self-report) Found in Various Institutional or Symptomatic Samples

Sample	N	Octant								Total
		AP	BC	DE	FG	HI	JK	IM	NO	
Psychiatric Clinic Admissions	207	12	10	18	10	9	11	15	15	100
Individual Psychotherapy Patients	38	8	11	8	5	21	18	18	11	100
Hypertensive Patients	49	33	12	4	0	0	6	12	33	100
Middle Class Obese Patients (Female)	100	32	12	4	0	3	2	11	36	100
Medical Control Patients	41	7	10	17	7	5	5	22	27	100

Adapted From: Leary, T.F. (1957). Interpersonal diagnosis of personality (p. 152).
New York: Ronald.

interpersonal behavior. The interpersonal behavior of group I was characterized by the interpersonal categories: inhibition, abasiveness, and submissiveness. Group II was characterized by the interpersonal categories: agreeableness, nurturance, affection, and sociability. Group III was characterized by the interpersonal categories: hostility, mistrust, and detachment. Group IV was characterized by the interpersonal categories: exhibition, dominance, and hostility. Lorr, Bishop, and McNair (1965) found that psychiatric diagnosis did not differentiate group I from group III. Moreover, individuals falling into group II tended to be classified as psychoneurotic or left unclassified. Group IV members, compared to the other groups, tended to be classified as having a personality disorder. Hence these results suggest that correspondence exists between the interpersonal circumplex and various nosological groups of the then current DSM-I system.

Mapping the correspondence between the interpersonal circumplex and various nosological groups has also been attempted by Morey (1985). Subjects in the study were administered the ICL and the Millon Clinical Multiaxial Inventory, an instrument which attempts to link Millon's (1981) theory of personality with DSM-III diagnostic categories. The MCMI contains 11 personality disorder scales corresponding with the 11 Axis II categories and 9 clinical syndrome scales tapping Axis I categories along with 2 validity scales. In

looking at the correlation between the MCMI personality disorder categories and the ICL results, Morey found that primary differentiation among the personality disorder categories was made on the control axis, whereas, the affiliation axis did not differentiate as extensively. Some of the correlations between the MCMI personality disorder scale results and the ICL results did conform to the theoretical propositions of Wiggins (1982) and Widiger and Kelso (1983). These personality disorders are: narcissistic, antisocial, compulsive, passive-aggressive, borderline, and dependent. The other personality disorder scale results did not correspond to the interpersonal measure in the manner proposed (see Morey, 1985, p. 362). Morey also performed a canonical redundancy analysis i.e., the amount of variance of one variable set which is explained by the variance of another variable set, by using the results from these two questionnaires. When the MCMI data was given, the amount of variance which could have been explained from the ICL variables was 36%. When the ICL data was given, the amount of variance which could have been explained from the MCMI variables was 48%. The findings from the canonical redundancy analysis suggested, according to Morey (1985), that the interpersonal variables were somewhat more useful in predicting MCMI scores than was true of the reverse. Overall, Morey's (1985) research gives some empirical support to the proposition that interpersonal behavior is an important

feature in personality disorders.

Other studies have been conducted which investigate the relationship of personality disorders and personality traits. Research has also been conducted on the structure of personality disorders. These areas are considered to be pertinent topics for discussion. The reason being that interpersonal behavior has been proposed by some researchers as being an important source of information for understanding and classifying personality disorders (Kiesler, 1986a; Millon, 1981; Widiger & Frances, 1985). Therefore, if a relationship can be demonstrated to exist between the interpersonal circumplex and the DSM-III personality disorder classification system, in terms of the two systems having a similar relationship among categories and a similar structure, then this would give further credence to the propositions made by Wiggins (1982) and Widiger and Kelso (1983).

The relationship among diagnostic constructs, personality traits, and emotions was investigated by Schaefer and Plutchik (1966). They had clinicians and students rate the extent with which a set of diagnostic constructs is associated with a representative sample of traits and emotions. A high degree of consensus was found in the ratings provided by clinicians, but not for the students. The clinicians' ratings between emotions and diagnostic constructs and between traits and diagnostic constructs were intercorrelated and factor analysed. From these

results they concluded that "the data support the hypothesis that emotion, traits, and diagnostic signs form a conceptually differentiated but highly integrated system of signs" (Schaefer & Plutchik, 1966, p. 409). Plutchik and Platman (1977) had psychiatrists indicate the personality traits which were associated with DSM-II personality disorders. They factor analysed the results and found that the seven personality disorder categories could be plotted in a two-dimensional space showing circumplex ordering (Plutchik & Platman, 1977, p. 421). This arrangement suggests that the paranoid, schizoid, and the passive-aggressive personalities are relatively similar, and that they are descriptively opposite the well-adjusted personality. The hysterical and cyclothymic personalities are relatively more like the well-adjusted personality than they are like the schizoid types. The personality type of the sociopath is distinct from the other personality disorders.

The relationship among DSM-III personality disorders and the underlying structure of these personality disorders has been researched. Blashfield, Sprock, Pinkston, and Hodgin (1985) performed multidimensional scaling on the ratings of prototypic cases made by clinicians. They were able to plot their results in a two-dimensional space and suggested that these two dimensions be called, for the vertical axis, acting out, and for the horizontal axis, interpersonal involvement (Blashfield et al., 1985, p. 16). Their conclusions were that

this multidimensional scaling solution suggests a circumplex ordering of personality disorders. In addition, the circumplex ordering observed by these researchers appears to support the theoretical propositions of Wiggins (1982) and his placement of seven personality disorder categories on the interpersonal circumplex. Widiger, Trull, Hurt, Clarkin, and Frances (1987) evaluated the covariation among DSM-III personality disorders using the ratings of trainee interviewers. Multidimensional scaling of the correlation matrix identified three dimensions. The first dimension reported by Widiger et al. (1987) was desire for (or degree of) social involvement, with the schizoid and paranoid categories at one end and the dependent, avoidant, borderline, and histrionic at the other end. The second dimension reported was assertiveness (dominance or power) dimension, with the narcissistic and histrionic categories at one end and the schizoid, passive-aggressive, avoidant, and dependent at the other. The third dimension reported was a continuum from internal anxious rumination (schizotypal, compulsive, paranoid, and avoidant) to external behavioral "acting out" (antisocial, passive-aggressive, schizoid, and borderline). The degree of social involvement dimension appears to be related to the affiliation axis of the interpersonal circumplex and the assertiveness dimension appears to be related to the control axis. The third dimension, internal anxious rumination, appears to have a fairly strong cognitive

component.

The prevalence of personality disorders and traits and their interrelationships was studied by Kass, Skodal, Charles, Spitzer, and Williams (1985). During a 14-month period at a psychiatric outpatient clinic, the researchers had trainees make ratings on a four-point severity scale for all 11 DSM-III personality disorder categories for each patient. Kass et al. (1985) factor analysed these ratings and derived four factors with eigenvalues exceeding 1.0; these factors accounted for 59 percent of the total variance. Each of the 11 personality disorders loaded highly on one of the four factors. The loadings were: Factor 1) paranoid, schizoid, and schizotypal personality disorders, Factor 2) avoidant, dependent, and passive-aggressive personality disorders, Factor 3) histrionic, narcissistic, antisocial, and borderline personality disorders, Factor 4) compulsive personality disorder. The groupings, with the exception of compulsive personality disorder, are similar to the groupings proposed in the DSM-III. Hyler and Lyons (1988) attempted to replicate the results reported by Kass et al. (1985) with the exception that a nationwide sample of psychiatrists were used instead of trainees. In addition, the ratings were made during ongoing therapy involving the psychiatrist as opposed to the rating being based on initial diagnostic intake. Moreover, the ratings were made on patients typically seen in private practice as opposed to an urban

public clinic. The findings of Hyler and Lyons (1988), in terms of which DSM-III personality disorders loaded highly on a factor, replicated those of Kass et al. (1985). In another study, the factorial structure of behaviors judged to be associated with DSM-III personality disorders was investigated by Livesley and Jackson (1986). Unlike the approaches taken by Blashfield et al. (1985), Widiger et al. (1987), Kass et al. (1985), and Hyler and Lyons (1988), Livesley and Jackson asked both psychiatrists and lay subjects to nominate specific behaviors associated with each personality disorder category. The behaviors nominated were organized into lists of approximately 75 behaviors for each category. These lists were mailed to a random sample of psychiatrists who were asked to rate how prototypical each behavior was of the personality disorder in question. These responses were factor analysed and three factors with eigenvalues exceeding 1.0 emerged: Factor 1) avoidant, passive-aggressive, schizoid, and paranoid personality disorder (interpersonal and cognitive dysfunction factor), Factor 2) histrionic, narcissistic, and antisocial personality disorder (impulsivity and deviant socialization factor), Factor 3) compulsive personality disorder. Three personality disorder categories, dependent, borderline, and schizotypal, did not load highly on any one of these three factors.

The results from these studies appear to be somewhat inconclusive regarding the underlying structure of personality disorders. Studies using the DSM-II personality disorder classification system have been able to arrive at two-factor models to account for major portions of the total variance. In comparison, studies using the DSM-III classification system appear to require three to four factors to explain an adequate proportion of the total variance. A major reason for this apparent lack of consistency in the findings appears to be due to the different methods which are used to collect the data. When raters were asked to rate the correspondence between personality traits or behaviors and diagnostic constructs fewer factors tended to emerge when compared to raters who were asked to rate the observed behaviors or symptoms of subjects. Also, fewer factors tend to emerge when multidimensional scaling is used instead of factor analysis (Shepard, 1972).

Romney and Bynner (in press) took the intercorrelation matrices reported in the research of Hyler and Lyons (1988), Kass et al. (1985), and Livesley and Jackson (1986) and reanalysed them using structural equation modelling in order to assess how well Wiggins' (1982) model of DSM-III personality disorder categories fit the data collected from these studies. Romney and Bynner (in press) reported that Wiggins' (1982) model did not provide a good fit for the data collected from Livesley and Jackson's (1986) study which they proposed could

have been due to Livesley and Jackson's (1986) data being collected from a non-clinical sample. However, Romney and Bynner (in press) found that a subset of the personality disorders mentioned in Wiggins' (1982) model did fit the data collected from clinical samples in research conducted by Hyler and Lyons (1988) and Kass et al. (1985). The subset of personality disorders which did show a circumplex ordering were the narcissistic, paranoid, schizoid, dependent, and histrionic personality disorders. Furthermore, as identified previously by Wiggins (1982) in his model, Romney and Bynner (in press) also observed a gap in their circumplex model which appeared to describe the hypomanic personality. Based on their results, they suggested that a category of hypomanic personality disorder should be recognized in DSM-IV.

The Interpersonal Circumplex and Psychotherapy

Research has shown that, of the complaints made by psychotherapy patients, the majority are interpersonal in nature as opposed to symptom based. Horowitz, Weckler, and Doren (1983) submitted the complaints made by psychotherapy patients who were subjects in their study to a multidimensional scaling procedure which yielded three dimensions: control, nature of involvement (ranging from friendly to hostile), and degree of psychological involvement. A clustering procedure grouped the problems further into five thematic clusters concerning intimacy, aggression, compliance, independence, and

socializing. The first two dimensions, control and nature of involvement, appear to correspond with the two axes of the interpersonal circumplex. Therefore, it is proposed that, with the systematic arrangement of interpersonal behavior on a circular continuum, the interpersonal circumplex and its related concepts have important implications for dealing with interpersonal problems encountered in psychotherapy.

As discussed in the section of this literature review which described the various types of interpersonal behavior represented by the interpersonal circumplex, Leary (1957) noted that each interpersonal behavior represented in the circumplex systematically tended to "pull" or elicit interpersonal behaviors from other sectors of the circumplex. Other interpersonal theorists have discussed this phenomenon as well, most notably Carson (1969) and Kiesler (1983). When an interpersonal behavior is met with its reciprocal or complementary response, this tends to be mutually reinforcing for both participants and serves to strengthen the original action (Carson, 1969; Leary, 1957). In describing this process by use of the circumplex model, for the two axes of the interpersonal circumplex, complementarity tends to occur in a reciprocal manner for the control axis (dominance tends to pull submission, and vice versa), and tends to occur in a correspondent manner for the affiliation axis (hostility tends to pull hostility, and love tends to pull love) (Carson, 1969).

The interpersonal categories in the circumplex reflect different combinations or weightings of these two variables. Indeed, Wiggins (1980) described the process involved in interpersonal relations as one involving the exchange of resources between two people. The resources exchanged are status and affection and can both vary depending on the type of interpersonal behavior exhibited. Hence, while the concept of complementary interactions have validity on a conceptual level, they also contain certain mathematical properties which can be measured and graphed by the interpersonal circumplex. A figure showing the complementary response for each interpersonal circumplex octant is presented in Figure 3. For instance, docile-dependent interpersonal behavior tends to pull managerial-autocratic behavior, and vice-versa.

In addition to complementary interactions, Kiesler (1983) also discussed anticomplementary and acomplementary interactions. An anticomplementary interaction takes place when an individual responds to a person's interpersonal behavior with behavior both nonreciprocal in terms of control and noncorresponding in terms of affiliation. A figure graphically showing the anticomplementary response for each interpersonal circumplex octant is presented in Figure 4. For example, docile-dependent behavior tends to pull self-effacing behavior in anticomplementary interactions, and vice-versa. An acomplementary interaction exists when an individual reacts to

Figure 3: 'Complementary Octants of the Interpersonal Circumplex

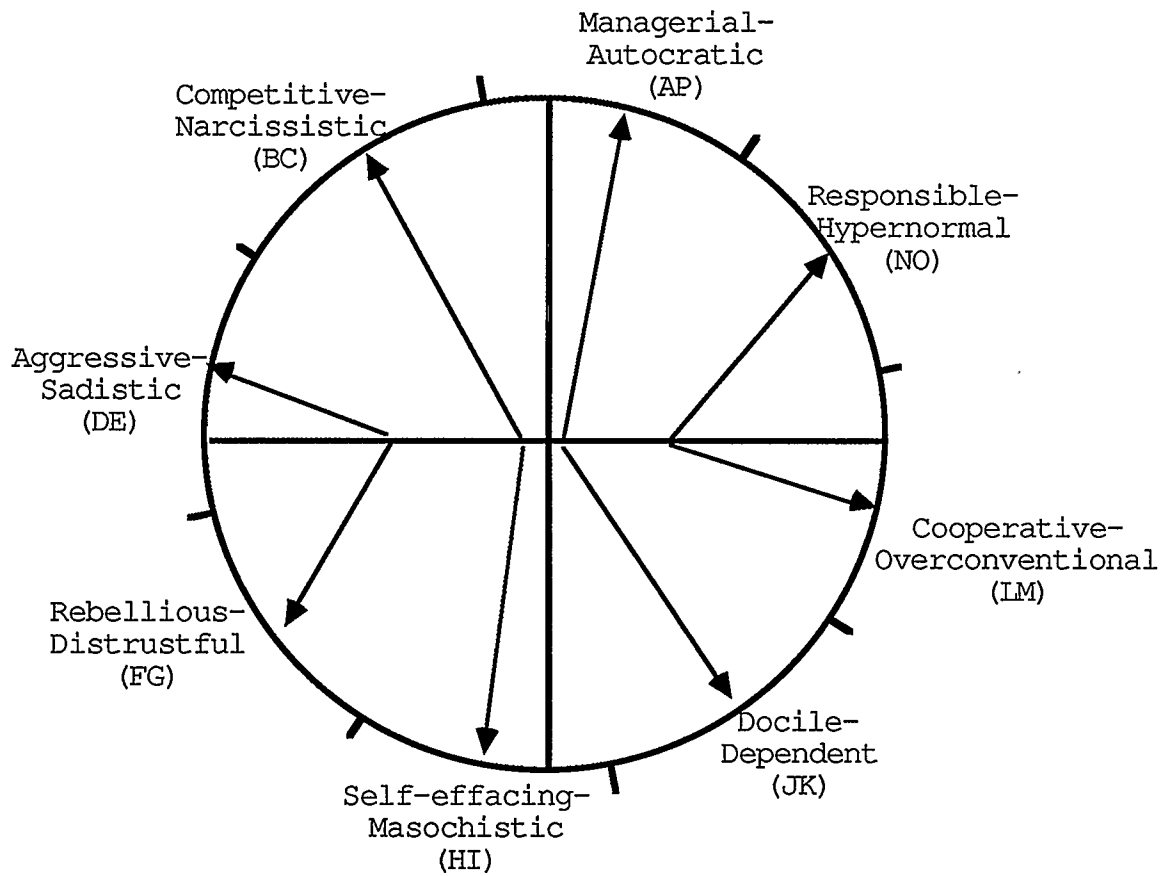
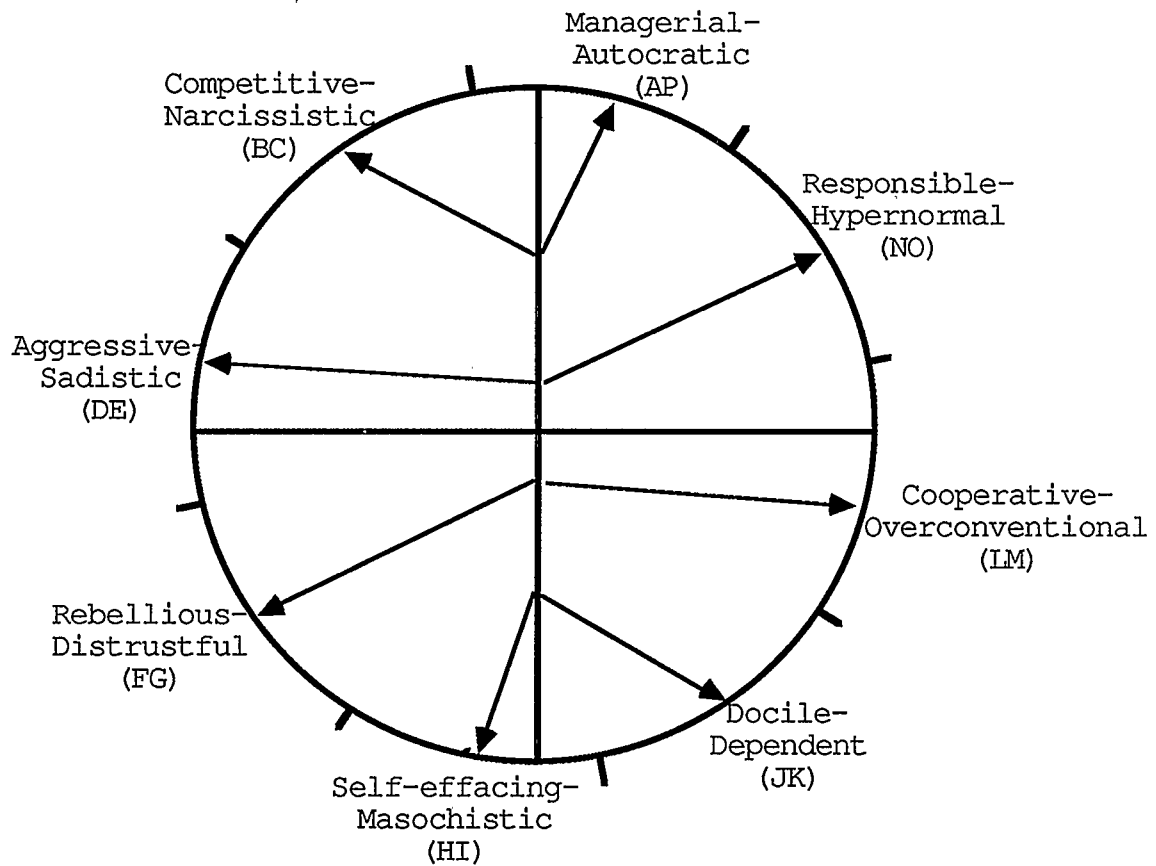


Figure 4: Anticomplementary Octants of the Interpersonal Circumplex



the person's interpersonal behavior with actions either reciprocal in control or corresponding in affiliation, but not both. When the individual is reciprocal in control and noncorresponding in affiliation, this is an semimorphic interaction. A figure showing the semimorphic response for each interpersonal circumplex octant is presented in Figure 5. For instance, docile-dependent behavior is responded to by competitive-narcissistic behavior in an semimorphic interaction pattern, and vice-versa. When the individual is nonreciprocal in control and corresponding in affiliation, this is an isomorphic interaction. A figure showing an isomorphic response for each interpersonal circumplex octant is presented in Figure 6. For example, docile-dependent behavior is responded to by docile-dependent behavior.

A central tenet of this thesis research is that the interpersonal behavior of individuals with diagnosed personality disorders is more intense and more rigid than the behavior of individuals from a non-clinical population. Interpersonal therapy systematically attempts to alter the client's self-defeating interpersonal behavior pattern by using complementary, anticomplementary, and acomplementary responses in the therapy session.

Kiesler (1986b) has outlined five principles which describe the process of interpersonal psychotherapy and strategies used in modifying a client's maladaptive interpersonal behavior

Figure 5: Acomplementary (Semimorphic) Octants of the Interpersonal Circumplex

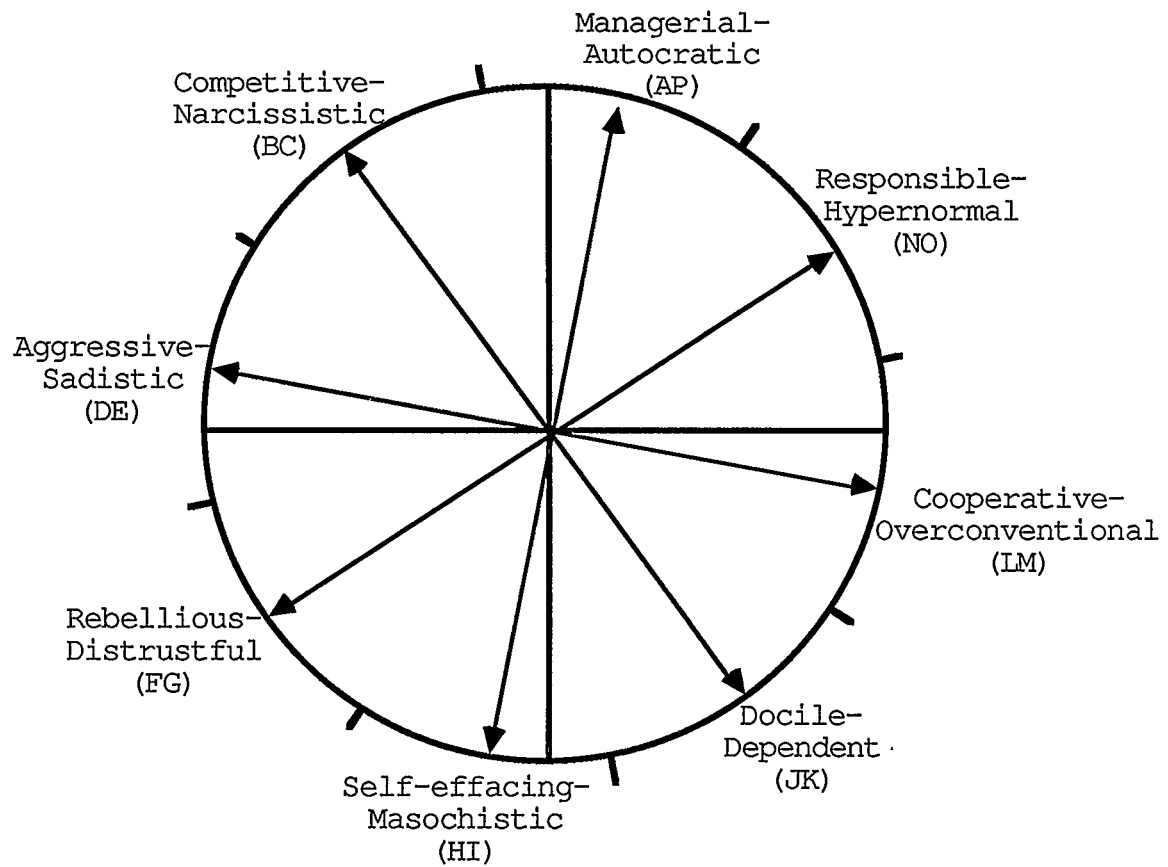
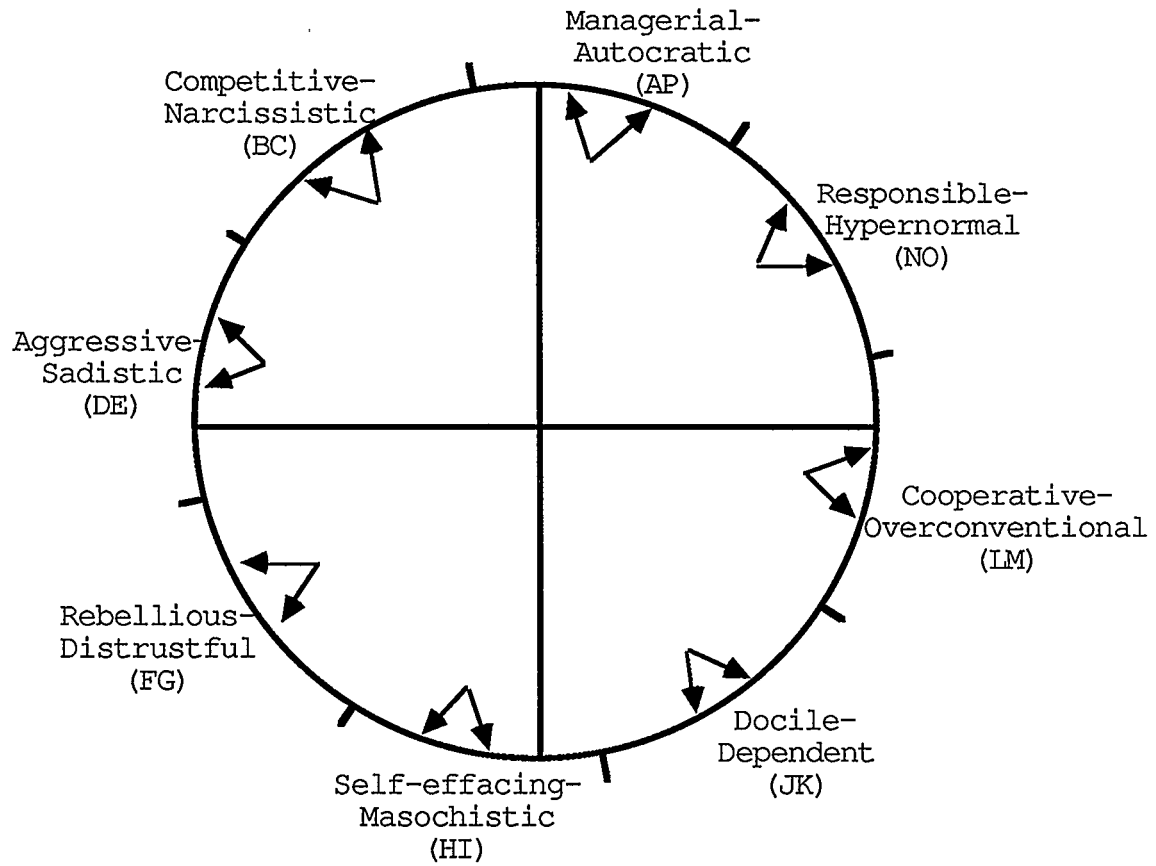


Figure 6: Acomplementary (Isomorphic) Octants of the Interpersonal Circumplex



pattern. One principle Kiesler cites is that the goal of therapy is to get the client to behave in ways which are semimorphic to their maladaptive interpersonal style. In doing this, the client begins emitting interpersonal behaviors which are outside their narrow, constricted range. As a result, their behavior becomes less intense and less rigid and they are able to adjust their actions appropriately to different interpersonal situations.

A second principle is that, in early sessions especially, the client will tend to pull complementary responses from the therapist in order to avoid experiencing anxiety.

Related to this principle, a third principle is that the therapist must disengage him or herself from the client's attempt to establish complementarity in the relationship. Through the process of disengagement, the therapist prevents the relationship from ending in alienation. She or he remains supportive, yet, she or he discontinues responding in a complementary manner and is cognizant of the client's maladaptive interpersonal strategies. Breaking the mutually reinforcing cycle of complementarity appears to have a role in successful psychotherapeutic outcome. Dietzel and Abeles (1975) compared successful and unsuccessful outcome groups on client-therapist complementarity. Comparisons between outcome groups showed no differences in complementarity during the early stage of therapy; a significantly lower level of

complementarity for the successful group during the middle; and remained at the same level during the last stage. Moreover, during the early stage of therapy, the more disturbed clients elicited greater therapist complementarity. Dietzel and Abeles' (1975) results show that the therapeutic timing of when and when not to respond to the client in a complementary manner is important for facilitating constructive client change.

A fourth principle is that the therapist attempts to increase the client's anxiety level by making asocial responses. An asocial response refers to metacommunicative feedback which describes the client's aversive interpersonal behavior pattern and its self-defeating consequences. For instance, the therapist would inform the client with a dependent interpersonal style that their style tends to "invite" others to take care of them and to be dominant over them.

Related to the asocial response, a fifth principle is that, in later sessions, the therapist can exert the greatest pressure for changing the client's aversive interpersonal style by responding in an anticomplementary manner. A client, provided they are ready for the anxiety an anticomplementary response tends to elicit, will begin to behave in ways which are semimorphic to her or his aversive interpersonal style. As mentioned in the first principle, behaving in a semimorphic manner to their prior maladaptive interpersonal pattern will

allow the client to appropriately adjust her or his actions to different interpersonal situations.

These principles have been elaborated into treatment packages, consisting of distinct stages, some of which are tailored toward specific psychiatric disorders (Kiesler, 1986b). Among these treatment packages are interactional psychotherapy (Cashdan, 1982) and interpersonal behavior therapy (DeVoge & Beck, 1979).

Interactional psychotherapy, as developed by Cashdan (1982), uses a five stage model for performing psychotherapy. In the first stage, hooking, the therapist establishes conditions which enable her or him to be viewed by the client as a significant other. This is done by the therapist responding to the client in a complementary manner. The second stage, maladaptive strategies, takes place when the therapist attempts to elicit a clear and direct expression of the client's maladaptive interpersonal style within the therapy session. Upon assessment of the client's interpersonal style, the therapist, in the third stage, stripping, confronts and challenges the client on their maladaptive interpersonal style. Provided the client finds the confrontation non-threatening, the therapist assists her or him in selecting more adaptive interpersonal strategies by providing feedback describing the effects of their interpersonal behavior in the fourth stage, adaptive strategies. In the fifth and last stage, unhooking or

termination, the client begins to apply these adaptive strategies to relationships outside therapy while the therapist monitors their progress.

DeVoge and Beck (1979) developed a four-stage process model in which interpersonal and behavior therapy strategies are integrated. In stage one, the therapist tries to avoid any intense or rigid interpersonal actions in order to initiate a comfortable form of intimacy with the client. Once a comfortable relationship is established, the therapist then "invites" the client directly into a conversation about the "here and now" relationship in order to bring the client's maladaptive interpersonal style out in the open. Following from this stage, the therapist refuses to engage in any behavior which is complementary, instead, she or he provides the client with metacommunicative feedback about her interpersonal style. Finally, in stage four, various behavioral techniques such as social skills and assertiveness training are instituted.

Chapter 3: Method

Subjects

Clinical Sample

The subjects in the clinical sample were inpatients of a short-term psychiatric ward at an urban Western Canadian hospital. Sampling was limited to those inpatients with a diagnosed DSM-III Axis II personality disorder and who did not meet the DSM-III criteria for schizophrenia, major affective disorder, or chronic organic mental disorder in order to maximize the sampling of inpatients for whom a personality disorder was the principal issue in treatment. Furthermore, consenting inpatients meeting these diagnostic requirements had to satisfy additional requirements (on the MCMI) to be included in the research: 1) have a valid MCMI profile (a weight factor score not exceeding ± 12 or a validity index score not exceeding 0), 2) at least one MCMI personality disorder scale exceeding a base rate score of 75, and 3) MCMI base rate scores not exceeding 85 on the hypomanic, psychotic thinking, psychotic depression, or psychotic delusion scales. In total, 102 inpatients were approached, and 90 inpatients met all the requirements. An additional five inpatients were used in a pilot study.

The mean (\pm SD) age of the sample was 34.2 ± 9.8 years; 66% were female; and 95% were white. Thirty-two percent were unemployed, an additional 20% were unemployed by choice (e.g., housewife, student), and 12% did clerical work; 63% were secondary school graduates. Thirty-seven percent were single, 30% were married, and 17% were divorced. In view of these socio-demographic characteristics most individuals in this sample appear to come from a middle social class background.

Regarding the major reasons for hospitalization identified by the unit psychiatrists, 46% were suicidal, 83% had an anxiety state and/or dysthymia, and 16% had a substance abuse disorder. Seventy-eight percent were prescribed medication. Fifty-two percent had at least one prior admission to a psychiatric unit. The average length of stay was 15.3 days, the range being from 4 to 56 days.

The prevalence rate of each DSM-III personality disorder, as calculated by using the highest BR score among the MCMI personality scales, was as follows: 6% schizoid, 22% avoidant, 20% dependent, 2% histrionic, 2% narcissistic, 1% antisocial, 3% compulsive, 23% passive-aggressive, 20% borderline, 1% paranoid, 0% schizotypal. This rate is similar to the prevalence rate reported in research by Pfohl, Coryell, Zimmerman, and Stangl (1986) who collected their data from a sample of 131 psychiatric inpatients. More subjects were diagnosed with schizotypal personality disorder (9%) in Pfohl

et al.'s (1986) study than in the present study (0%).

Non-clinical Sample

The subjects in the non-clinical sample were university students at an urban Western Canadian university. The criteria for membership in this sample was: 1) consent to participate in the research, and 2) to not be undergoing psychotherapy or counseling. In addition, subjects were excluded if they considered themselves to not have an adequate opportunity to observe a fellow group member. Or they could be disqualified if they interacted with a fellow group member(s) on a social basis outside classroom time. In total, 105 students were asked to volunteer for the research, and 97 met these requirements.

The mean (\pm SD) age of the sample was 26.4 ± 5.2 years; 61% were female; and 90% were white. Seventy-seven percent were undergraduate students with the remaining 23% being graduate students. Fifty-nine percent were single. Most individuals in this sample appear to come from an upper middle social class background.

Psychological Instruments

Two instruments were used in this study: the Interpersonal Check List (ICL) and the Millon Clinical Multiaxial Inventory (MCMI). A brief description of each instrument along with its psychometric properties is presented below.

The ICL is made up of 134 items presented in a true-false form. Since the items are trait attributive in nature, the ICL

can be used to provide a self-rating of interpersonal behavior and a rating of others as well. The subject is asked to go through the list and check the items which describe their own (or the other person's) interpersonal behavior and leave blank the items which do not. Approximately 5-10 minutes are required to complete the instrument. Scores are given for the 16 interpersonal behavior categories and four summary scores of control and affiliation, average intensity (sum of intensity values checked divided by the number of items checked), and number of items checked. Results can be plotted on a circumplex chart. A published copy of the ICL can be found in LaForge (1977a, pp. 91-92).

Initial test-retest reliabilities ranged from .64 to .77 (LaForge & Suczek, 1955). Average test-retest reliabilities over a two-week period for a female obesity sample was .73 for 16 variables and .78 for octants (Leary, 1957). Test-retest reliability over a five-month period were .95 for the control axis and .62 for the affiliation axis (Lake, Miles, & Earle, 1973). The internal consistency of the ICL, for both normal and alcoholic samples, ranged from .95 to .98 (Armstrong, 1958). Inter-rater agreement, as measured by Pearson product-moment correlation coefficients of the ratings made by subjects of their fellow group members (sorority members who knew each other for approximately one year), was a median correlation coefficient of .53 (Truckenmiller & Schaie, 1979). When

sorority group members were rated by fellow sorority members, the inter-rater reliability coefficient was .74 for the control axis and .65 for the affiliation axis (Lomont, 1966).

Concurrent validity of the ICL has been approached by comparing ICL self-ratings with self-ratings of similar traits defined by other instruments. Typically, the correlations are positive, significant, and low (Gynther, Miller, & Davis, 1962; Zuckerman, Levitt, & Lubin, 1961). Therefore, while the relationship between interpersonal behavior as measured by the ICL and similar personality traits as measured by various questionnaires is statistically significant, there does not appear to be a strong relationship between behavior and psychological needs, attitudes, and traits.

Lange (1970) assessed the construct validity of the ICL by making four videotapes in which the main characters role-played interpersonal behavior indicative of one of the four poles of the two bipolar axes of the ICL. The subjects were asked to view one of these tapes and describe the main character with the ICL. Lange (1970) found that the subjects used the ICL octants to describe the interpersonal behavior of the main characters in a manner which corresponded with the behavior being exhibited in the videotape.

The ICL has also been used to verify theoretical predictions in a wide variety of studies: studying the personalities of alcoholics (Armstrong, 1958; Hurwitz & Lelos,

1968); in showing changes due to psychotherapy (Boe, Gocka, & Kogan, 1966); in evaluating therapist-client relationships (Heller, Myers, & Kline, 1963; McNair, Callahan, & Lorr, 1962); and in other area as well.

The ICL was selected for use in this study for three reasons: 1) in comparison to the other three measures of interpersonal behavior (Kiesler, 1983), information about its psychometric properties and scoring procedures was readily available, 2) it is superior to the other three at measuring interpersonal behavior intensity (Kiesler, 1983), and 3) it can be used as both a self-report and other-report instrument. In addition, the ICL is an instrument designed to assess both normal and abnormal interpersonal functioning.

The MCMI is a 175-item true-false self-report inventory designed for adults receiving psychotherapy or participating in psychological assessment. Subjects are asked to read each statement and decide whether it describes or does not describe them. If they are not sure of their choice, they are asked to mark the statement false indicating that it does not describe them. Approximately 20 minutes are required to complete the MCMI. Scores are reported for 20 scales: eight Basic Personality Scales (schizoid, avoidant, dependent, histrionic, narcissistic, antisocial, compulsive, and passive-aggressive), three Pathological Personality Scales (schizotypal, borderline, and paranoid), six Symptom Disorder Scales of moderate severity

(anxiety, somatoform, hypomanic, dysthymia, alcohol abuse, and drug abuse), three Symptom Disorder Scales of extreme severity (psychotic thinking, psychotic depression, and psychotic delusions) plus two additional correction scales to identify and adjust possible test-taking distortion.

The test-retest reliability coefficients for 5-week intervals average .82, .77, .67 for the Basic Personality Scales, Pathological Personality Scales, and Symptom Disorder Scales, respectively (Millon, 1982). In assessing the internal consistency of these scales, Kuder-Richardson 20 reliability coefficients average .83, .90, and .82 for the three sets of scales (Millon, 1982). In research assessing validity, the MCMI correlates with the Symptom Distress-90 , the Psychological Screening Inventory, and the MMPI (basic scales plus Wiggins Content Scales) "in theoretically expected and clinically meaningful patterns" (Hess, 1985).

The MCMI Basic Personality and Pathological Personality Scales are based on Millon's (1969, 1981) theory of personality which is termed biosocial learning theory. Millon (1969, 1981) proposed a schema of eight basic coping patterns. These patterns are derived from a combination of two basic variables: 1) the primary source of the person's positive and negative reinforcements (no source-detached patterns, "others" as source-dependent patterns, "self" as source-independent patterns, inconsistency or conflict with the source-ambivalent

patterns), and 2) the style of instrumental behavior used by a person to obtain these reinforcements (passive versus active).

Millon (1981) proposed that these eight basic coping patterns when exhibited maladaptively are indicative of DSM-III personality disorders. Table 4 illustrates the eight basic coping patterns, the corresponding interpersonal behavior style, and the DSM-III personality disorder equivalent. The three remaining DSM-III personality disorders are considered to be severe variants of these eight personality disorders mentioned above: the paranoid personality disorder is a more severe variant of the narcissistic and antisocial personalities, the schizotypal personality disorder is a more severe variant of the avoidant and schizoid personalities; the borderline personality disorder is a more severe variant of the passive-aggressive, compulsive, dependent, and histrionic personalities. Millon (1969, 1981) proposed that the basic personality patterns also account for the direction in which patients decompensate and the specific symptom disorders they display under stress.

A major reason for the development of the MCMI was to link Millon's personality theory with DSM-III. As Millon states:

With the advent of the DSM-III (APA, 1980), diagnostic categories and labels have been precisely specified and defined operationally. No other diagnostic instrument currently available, other than the MCMI, is fully consonant with the nosological format and conceptual terminology of

**Table 4: Millon's (1981) Basic Coping Strategies
and Their Interpersonal and Diagnostic
Equivalents**

Coping Strategy	Interpersonal Behavior Style	DSM-III
Passive-Ambivalent	Conforming	Compulsive
Passive-Independent	Narcissistic	Narcissistic
Active-Independent	Aggressive	Antisocial
Active-Detached	Avoidant	Avoidant
Passive-Detached	Asocial	Schizoid
Active-Ambivalent	Negativistic	Passive-Aggressive
Passive-Dependent	Submissive	Dependent
Active-Dependent	Gregarious	Histrionic

this official system. Since the author of the MCMI was a member of the task force that developed the DSM-III, much of what evolved in the committee's deliberations reflected the diagnostic conceptions the author employed in formulating the theory that underlies the MCMI (Millon, 1969, 1981). Hence, their obvious conceptual and diagnostic parallels.
(Millon, 1982, p. 1)

Thus, Millon proposes that the MCMI is "fully consonant" with the DSM-III system. Hence, the MCMI will be used in this thesis research because it should provide a valid, standardized assessment of all 11 DSM-III personality disorder categories.

There has been research both confirming and disconfirming this linkage between the MCMI and the DSM-III personality disorder categories. Reich (1987) reported results on the associations between computer-scored MCMI diagnoses and DSM-III diagnoses among 2,679 patients, where diagnostic assignments were derived independently by two clinical judges. Table 5 shows each MCMI category and the highest DSM-III associations in percent. Each MCMI diagnostic category recorded the highest percentage of "hits" with its DSM-III equivalent. Overall, Reich (1987, p. 226) concluded that the MCMI "is a well validated instrument with good reliability and clearly has a valid relationship to the DSM-III personality disorders. Its series of scales provide information that is of much clinical value."

Table 5: Association of MCMI and DSM-III Personality Disorder Diagnosis

MCMI	Highest DSM-III Clinical Associations
Schizoid	Schizoid 82.8, schizotypal 74.2, avoidant 69.9
Avoidant	Avoidant 87.2, schizotypal 75.2, schizoid 71.9, borderline 70.7, dependent 64.6, passive-aggressive 64.6
Dependent	Dependent 88.6, borderline 69.7, avoidant 66.9
Histrionic	Histrionic 84.6, narcissistic 76.8, antisocial 67.2
Narcissistic	Narcissistic 85.9, antisocial 72.7, paranoid 72.7, histrionic 69.6
Antisocial	Antisocial 84.4, paranoid 74.3, narcissistic 68.2
Compulsive	Compulsive 80.5
Passive-aggressive	Passive-aggressive 86.2, borderline 77.1, avoidant 73.2
Schizotypal	Schizotypal 85.2, schizoid 67.9, avoidant 73.2
Borderline	Borderline 85.2, avoidant 74.3, dependent 70.7, passive-aggressive 70.7, paranoid 65.8
Paranoid	Paranoid 76.5, antisocial 67.6

Adapted From: Reich, J.H. (1987). Instruments measuring DSM-III and DSM-III-R personality disorders. Journal of Personality Disorders, 1, p. 226.

Other studies have indicated that this linkage is not as strong as proponents have suggested. For instance, Piersma (1987) compared computer-scored MCMI diagnoses with clinician-generated DSM-III Axis II diagnoses at both admission and discharge for psychiatric inpatients. Based on the diagnoses made, only four personality disorder categories were of reasonable size to be examined. These categories were: compulsive personality, histrionic personality, dependent personality, and borderline personality. The results showed that in only 8 of 43 cases did the admission MCMI Axis II diagnosis correspond with the clinician diagnosis. For discharge MCMI diagnosis, only 9 of the 43 cases corresponded with the clinician diagnoses. In addition, clinicians diagnosed Axis II disorders much less frequently than did the MCMI. These results suggest that the MCMI, as a measure of Axis II personality disorders, is not associated to a satisfactory degree with clinician diagnosis. However, Piersma (1987) made the point that this low relationship is not much different from inter-rater agreement among experienced clinicians, as reported by Mellso, Varghese, Joshua, and Hicks (1982). In another personality disorder classification study involving the MCMI, Cantrell and Dana (1987) compared computer-scored MCMI Axis II diagnoses with clinician-generated DSM-III Axis II diagnoses using a sample of psychiatric outpatients. Similar to the findings reported by Piersma (1987), the results of Cantrell

and Dana (1987) indicated that the MCMI tended to overdiagnose when compared to the clinician-generated diagnoses. The predominant personality disorder diagnosis among clinicians in this study was mixed personality disorder. Therefore not enough subjects were eligible to warrant comment about the relationship between the two diagnostic methods.

With this research evaluating the MCMI as a measure of DSM-III personality disorders taken into consideration, there appears to be two limiting factors to this instrument which should be dealt with prior to using it in personality disorder research: 1) the tendency to overdiagnose subjects, and 2) the tendency for the scales to overlap to an excessive degree whereby the instrument's ability to accurately assign a respondent to one category is diminished. In regard to the first criticism, the patients will be diagnosed with an unspecified Axis II personality disorder by a unit psychiatrist. Hence, a prospective subject has to meet two criterion before being included in this research: 1) being diagnosed as having a DSM-III personality disorder by a unit psychiatrist, and 2) attaining a base rate score exceeding 74 on at least one MCMI personality scale which is considered to be the cutting line for determining the clinical presence of a particular personality pattern (Millon, 1982). It is proposed that this procedure will serve to lower the rate of overdiagnosis.

The major reason for not using the diagnoses of the unit psychiatrists exclusively in the research is that they did not have time to diagnose a specific personality disorder and tended to fall back on the mixed personality category.

With regard to the second criticism, viz., the excessive degree of overlap among the MCMI personality categories, instead of collapsing the results into one personality disorder category as is done in computer-generated MCMI diagnoses, the scores on all 11 personality scales will be used in the statistical analyses for this research.

Procedure

Clinical Sample

Three to five days after admission to the unit, inpatients meeting the DSM-III criteria mentioned previously were approached about volunteering for the research. Each prospective subject was given a copy of the information sheet contained in Appendix 1 explaining the aims and methods of the research and the ethical precautions which were taken. Those subjects agreeing to volunteer for the study were given a copy of the consent form contained in Appendix 2 to sign.

Prior to being given the MCMI and ICL to complete, the reading ability of the subject was checked to make certain that she or he could comprehend the test items. Subjects who were too drowsy from medication were excluded from the research. The order that the two instruments were presented to subjects was

randomly varied.

An MCMI Reusable Test Booklet (Millon, 1984a) and an MCMI Hand-Scored Answer Sheet (Millon, 1984b) were given to each subject. The subject read the instructions for completing the inventory which are contained on the first page of the test booklet. Any questions about completing the inventory were handled by the researcher. When a question was asked about the meaning of a word, the subject was shown its definition in Webster's dictionary in order to maintain standardized conditions. The subject was left alone to complete the inventory.

The ICL (See LaForge, 1977a, pp. 91-92) was given to each subject. A copy of the instructions for completing the ICL was given to each subject. The instruction sheet is contained in Appendix 3 and was adapted from the instructions contained in LaForge (1977b). Any questions about completing the ICL were dealt with by the researcher. When a question was asked about the meaning of a word, the subject was shown its definition in Webster's dictionary. The subject was left alone to complete the check list.

The interpersonal behavior of each subject was rated by her or his prime nurses for the morning (7:00-15:00 hours) and afternoon (15:00-23:00 hours) shifts. Each nurse was given the ICL to rate the interpersonal behavior of the subject. A copy of the instructions for completing the ICL was given to the

nurse. The instruction sheet is contained in Appendix 4 and was adapted from the instructions contained in LaForge (1977b). Any questions asked both before and during the completion of the check list were handled by the researcher. When a question was asked about the meaning of a word, the nurse was shown its definition in Webster's dictionary. A nurse could not serve as a rater if she or he interacted with the subject prior to the subject's admission to the unit.

In total, 24 nurses served as raters for the research. The mean (\pm SD) age of the raters was 35.2 ± 6.5 years; 89% were female; and 92% were white. The post-secondary education of the raters consisted of either a two-year diploma degree in nursing/psychiatric nursing or a four-year bachelor of nursing degree. Seventy-one percent of the nurses were married.

The time frame of three to five days was selected as the criterion time to approach the subject because, based on a pilot study conducted, it took approximately this amount of time for the raters to interact with the subject for the minimum number and duration of time required in the research (six times each for a duration of 10 minutes or more). In fact, the estimated time that the nurse spent interacting with the subject before completing the ICL rating was 2.8 hours. Also, it took approximately this amount of time for the researcher to be notified by hospital staff that an inpatient meeting the diagnostic criteria was present on the ward.

Occasionally, the prime nurses took time off prior to a subject's third day on the ward. Therefore, additional days sometimes had to be allowed before the subject participated in the study so that a newly assigned prime nurse could interact with him or her for the required number of days and duration of time.

Of the mental health professions employed at the hospital (e.g., psychology, psychiatry, nursing, social work), nurses were selected to serve as raters for two major reasons: 1) nurses, relative to the other professions, interact with inpatients both more often and for longer periods of time, and 2) nurses are relatively untrained at formulating a psychiatric diagnosis.

This relative lack of training appears to be advantageous when rating the interpersonal behavior of others. Leary (1957) observed that the judgements and perceptions of psychiatrists and psychologists tend to be "distorted" when rating the interpersonal behavior of a patient because their ratings tend to be divorced from their personal reactions. It is not appropriate for these professionals to admit that they like, fear, or look up to a patient. Based on their training, these professionals attempt to weave together data from diverse sources (verbal content, symbolic cues, interpersonal behavior, etc.) when interacting with the patient to acquire an understanding of the patient's "deeper motives" and to predict

her/his future course of behavior. In comparison, individuals who are untrained tend to rate a person in terms of their direct reaction to her or him and do not "psychologize". They tend to like, fear, and respect a person and their ratings reflect these reactions.

Fellow inpatients on the ward were not selected to serve as raters because research findings suggest that accurate judges of interpersonal behavior tend to be well-adjusted individuals (Baker & Block, 1957; Chance & Meaders, 1960; Cline, 1964; Fillenbaum, 1968; Hjelle, 1969).

A minimum time criteria of at least six interactions each lasting for 10 minutes or more was established for the interactions between raters and ratees in both the clinical and non-clinical samples. The establishment of these minimum criteria was based on research results from the person perception literature (Cline & Richards, 1960, 1961; Gage, 1953; Hjelle, 1968; Smith, 1967).

Gage (1953), after reviewing the relevant literature, concluded that the psychological processes involved in accurate interpersonal perception have a generality which extends beyond the limits of a specific social situation. Hence, Gage made the point that, with this generality, individuals are capable of perceiving the interpersonal behavior of persons who are unfamiliar about as well as persons who are familiar. Cline and Richards (1960) showed their subjects a series of 10 films each

depicting an interviewee discussing their: 1) personal values, 2) personality strengths and weaknesses, 3) reaction to the interview, 4) hobbies and activities, 5) self-concept, and 6) temper. Each film lasted for approximately 5-10 minutes. Cline and Richards (1960) found that, on a number of different methods for measuring interpersonal behavior and personality (e.g., sentence completion, opinion prediction, adjective check list), subjects were capable of predicting fairly accurately the interviewee's responses on these instruments, suggesting that they accurately perceived the interviewee's behavior and personality regardless of the method used and within the time constraints set by the researchers. Cline and Richards (1961) replicated these results on different samples, e.g., university students and T group members. Hjelle (1968) analysed the accuracy of interpersonal behavior and personality ratings in three sample groups formed on the basis of familiarity: 1) an "intimate" group composed of married couples, 2) a "casual acquaintance" group who rated the degree of familiarity with their partner as being "quite familiar" or "moderately familiar", and 3) a "non-acquaintance" group who rated the degree of familiarity with their partner as being "quite unfamiliar" or "very unfamiliar". The interpersonal behavior/personality accuracy scores (Pearson product-moment correlation coefficients) for the intimate, casual acquaintance, and non-acquaintance groups were .51, .49, .40,

respectively. Hjelle (1968) concluded from these results that increasing familiarity is positively associated with making accurate social judgements of that person's self-perceived behavior. However, the accuracy coefficient of .40 in the non-acquaintance group was statistically significant so Hjelle proposed that observable characteristics such as approximate age, race, physical characteristics, and expressed behavior of the ratee provided the rater with valid information about the ratee's interpersonal behavior and personality, even though the two had only met each other briefly for the first time.

The current research will also obtain interpersonal behavior ratings from students participating in small discussion groups. Smith (1967) found that peer ratings of interpersonal behavior and personality when provided by university students had good reliability and predictive validity. But, he also concluded that it is best to obtain these ratings before first mid-term examinations because knowledge of academic performance on these examinations could bias the ratings.

In sum, previous research suggests accurate ratings of interpersonal behavior and personality can be obtained after interacting with the ratee for a short duration of time. In addition, in studies using the peer ratings of students interacting in small groups, the literature suggests that ratings should be made before mid-term exams to avoid the

possible biasing effects of course grades. The researcher took these two factors into consideration when deriving an appropriate time frame which would insure reliable and accurate ratings. For both samples it was decided that a rater would have to spend a minimum number of times and a minimum length of time interacting with a ratee before rating their interpersonal behavior. The rater was to have at least six interactions with the ratee, each lasting at least 10 minutes.

The time duration of 10 minutes was based on the results from the interpersonal perception accuracy research mentioned above which has suggested that a duration of 10 minutes is sufficient to obtain an accurate perception of interpersonal behavior. The frequency of interactions was set at six based on the suggestion that university students should provide their ratings before mid-term examinations. The students met once per week and mid-term exams were tentatively scheduled for the seventh week of classes. Hence, there is the possibility for six interactions; thus, the number of interactions was set at six. This criteria was also established for the clinical sample in order to make the two samples equivalent in this respect.

A major question which this research is attempting to address is, "How well does the interpersonal circumplex correspond with psychiatric diagnoses?" Typically, upon initial contact with the mental health system, the patient is diagnosed by the mental health professional and then treatment, on the

basis of the diagnosis, is planned. Usually, the amount of time spent by the diagnostician interacting with the patient before making the diagnosis is relatively short. Therefore, in addition to the reasons already given, a relatively short duration of time was selected in order to make it congruent with the practices of psychiatric diagnosis.

Non-clinical Sample

Members of discussion groups in university courses in psychology were approached about volunteering for the study by the researcher. In total members of 23 discussion groups, 5 groups with 5 members in each and 18 groups with 4 members in each, participated in the study. Discussion group members were selected because they interacted in a reasonably controlled setting where the minimum time requirements for interaction were met. Moreover, inter-rater reliability could be assessed as more than one person was able to observe each subject's behavior at the same point in time. Each student was given a copy of the Information Sheet contained in Appendix 5 explaining the aims and methods of the research and the ethical precautions which were taken. Those subjects agreeing to participate in the research were given a copy of the consent form contained in Appendix 6 to sign.

In each discussion group, each subject was given enough copies of the ICL to rate both their own interpersonal behavior and the behavior of each other group member. The order that the

subjects rated their own behavior and the behavior of the other group members was randomly varied.

When providing a self-rating of interpersonal behavior, a copy of the instructions for completing the ICL contained in Appendix 3 was given to each subject. These self-rating instructions were identical to those for the clinical sample.

The subject rated the interpersonal behavior of each member in their group. A copy of the instructions for completing the ICL on each group member was given to the subject. The instruction sheet is contained in Appendix 7 and was adapted from the instructions provided by LaForge (1977b).

All subjects were approached in week seven of the semester which was the week before mid-term exams for the undergraduate students. Each week, the undergraduate students met in their small groups to discuss questions and issues pertaining to their course work for approximately 20 minutes making the total amount of time spent interacting in the small group two hours. The graduate students, on the other hand, spent more time in their small groups when discussing questions and issues related to course work. An estimate by graduate students of time spent together in small groups was six hours. For both student groups there was little or no direct supervision, except that the discussion topics were imposed.

Subjects were excluded from the study if they socialized with a group member outside classroom time. Subjects were also excluded from the study if they considered themselves to have an inadequate opportunity to observe a fellow group member.

Hypotheses

As mentioned in chapter one of this thesis, the purpose of this research is to test empirically some theoretical propositions made about the relationship between interpersonal behavior and personality disorders. These propositions were formulated into hypotheses in order to test them. One hypothesis is that individuals with diagnosed DSM-III personality disorders have more intense interpersonal behavior than individuals from a non-clinical sample.

Another hypothesis to be tested is that individuals with diagnosed DSM-III personality disorders have a more rigid interpersonal behavior pattern than individuals from a non-clinical sample.

A third hypothesis to be tested is that individuals with diagnosed DSM-III personality disorders have more discrepant ratings of their interpersonal behavior between their self-ratings and other-ratings compared to individuals from a non-clinical sample.

In addition to these hypotheses, theoretical propositions have been made about the relationship between specific interpersonal circumplex octants and specific DSM-III

personality disorders. Following Morey (1985), the relationship between the interpersonal behavior categories and the DSM-III personality disorder categories will be plotted on the interpersonal circumplex by using the correlation coefficients between the 11 MCMI personality scales and the ICL control and affiliation axes. Personality scales correlating positively with the control axis will be located on the dominant side of this axis, whereas scales correlating negatively will be located on the submission side. For the affiliation axis, personality scales correlating positively will be located on the love side of the axis, whereas scales correlating negatively will be located on the hostility side of the axis. The correlations of the control and affiliation axes with another MCMI scale, the hypomanic scale, will be plotted on the interpersonal circumplex. As mentioned in chapter 2 of this thesis, Wiggins (1982) proposed that the hypomanic disorder fits the interpersonal description for octant NO of the circumplex; however, no Axis II categories seem to correspond.

Statistical Analyses

The results, for the most part, will be analysed by statistics which are commonly used in social science research. To measure the degree of agreement among raters in this study, the Cronbach alpha reliability coefficient will be used. To test for equality between group means, the t-test will be used. The degree of association between variables will be measured by

the Pearson product-moment correlation coefficient. The "goodness of fit" between observed and expected frequencies will be measured by chi-square analysis.

The results will also be analysed by a statistic which is used to measure for significant differences between proportions (Hinkle, Wiersma, & Jurs, 1979). In this statistical method, the proportions of a specified characteristic observed in two independent samples are subtracted from one another and divided by the standard error of the difference between independent proportions. This statistical method provides a z score which can be used to determine whether or not a significant difference between proportions exists.

Another statistical method to be used in this research is multidimensional scaling (MDS). This method is used on a relatively infrequent basis in social sciences research. Therefore, a more indepth discussion of this method will be presented in order to familiarize readers with the procedures of this statistical method.

MDS is considered to be an non-parametric analogue to factor analysis (Dillon & Goldstein, 1984; Dunn-Rankin, 1983). Correlation matrices tend to be more parsimoniously represented by MDS than by factor analysis, i.e., MDS provides fewer dimensions (Davison, 1985; Shepard, 1972).

The procedure for conducting MDS consists of the following steps. First, for every pair of variables to be scaled, a measure of proximity is obtained. This research used correlation coefficients. Second, a number of dimensions are selected which may fit the data. Third, in a series of steps or iterations, the variables are plotted in the selected dimensions so that the physical distances between them are related to their degree of proximity (e.g., the degree of correlation). Fourth, for each iteration, the distance between two variables in the n dimensional space is calculated and compared to the original proximity values. A measure of how well the new proximity values fit the original is the Kruskal Stress value. A small Kruskal Stress value indicates that there is little error between the new and original proximity values. The analysis is finished when an improvement in fit between the new and original proximity values cannot be made.

Chapter 4: Results

The means and standard deviations of the number of items checked and of the control and affiliation axes for both the self- and other-ratings of the clinical and non-clinical samples are presented in Table 6. The mean number of items checked for the clinical sample self-ratings were somewhat higher than the mean for the non-clinical sample self-ratings. The mean number of items checked for the other-ratings of clinical and non-clinical samples were just about equivalent. The number of items checked for the self-ratings were higher than the other-ratings. The mean clinical sample self-rating scores for control and affiliation axes fell in the submissive-affiliative quadrant of the circumplex, whereas the mean other-rating scores for this sample fell in the submissive-hostile quadrant. The mean non-clinical sample self-rating scores fell in the dominant-affiliative quadrant of the circumplex, whereas the mean other-rating scores for this sample fell in the dominant-hostile quadrant. The clinical sample self- and other-rating scores were slightly more dispersed than the non-clinical sample scores.

Regarding the reliability of the other-ratings, the Cronbach alpha reliability coefficient for clinical sample raters was $\alpha = 0.81$ for the control axis and $\alpha = 0.87$ for the

Table 6: Number of Items Checked and Control and Affiliation Axes Scores for Clinical and Non-clinical Samples

Number of Items Checked

Clinical Sample

	N	Mean	SD
Self-rating	90	53.53	16.59
Other-rating	90	28.21	8.05

Non-clinical Sample

	N	Mean	SD
Self-rating	97	41.65	11.85
Other-rating	97	25.01	8.01

Control and Affiliation Axes Scores

Clinical Sample

		<u>Control</u>		<u>Affiliation</u>	
	N	Mean	SD	Mean	SD
Self-rating	90	-5.2	7.83	+1.2	9.15
Other-rating	90	-7.5	5.80	-4.1	8.13

Non-clinical Sample

		<u>Control</u>		<u>Affiliation</u>	
	N	Mean	SD	Mean	SD
Self-rating	97	+1.7	4.58	+4.0	4.32
Other-rating	97	+2.2	3.84	-1.4	3.88

affiliation axis. For non-clinical sample raters, based on the 23 discussion groups which participated in the research, the mean alpha coefficient for the control axis was $\alpha = 0.63$ with a median alpha coefficient of $\alpha = 0.85$ and a range from 0.97 to 0.05. The mean alpha coefficient for the affiliation axis was $\alpha = 0.64$ with a median alpha coefficient of $\alpha = 0.77$ and a range from 0.95 to 0.01. Hence, the reliability coefficients for the clinical sample raters were slightly higher than the reliability coefficients for the non-clinical sample.

The intercorrelation matrices for the ICL octants of both the self- and other-ratings in the clinical and non-clinical samples are presented in Table 7. When compared to the idealized circumplex matrix presented in Figure 2, all of these matrices appear to exhibit some degree of circumplex ordering as the correlations tend to decline from the principal diagonal to a minimum value and then increase again to the same levels as the corners are approached. An exception though is the clinical sample other-rating measure where the correlation between octant HI (Self-effacing-Masochistic) and octant FG (Rebellious-Distrustful) was negative. Each matrix was subsequently analysed by the multidimensional scaling procedure. Figures 7 to 10 contain graphic representations of the matrices for the clinical sample self-ratings, clinical sample other-ratings, non-clinical sample self-ratings, non-clinical sample other-ratings, respectively. Each

Table 7: Intercorrelation Matrices for ICL Octants***Clinical: Self-rating**

	AP	BC	DE	FG	HI	JK	IM	NO
AP	<u>1.00</u>							
BC	<u>0.50</u>	<u>1.00</u>						
DE	<u>0.50</u>	<u>0.67</u>	<u>1.00</u>					
FG	<u>0.22</u>	<u>0.40</u>	<u>0.67</u>	<u>1.00</u>				
HI	-.12	-.09	-.09	<u>0.17</u>	<u>1.00</u>			
JK	<u>0.26</u>	-.05	-.08	0.05	<u>0.62</u>	<u>1.00</u>		
IM	<u>0.54</u>	0.07	-.05	-.10	<u>0.17</u>	<u>0.62</u>	<u>1.00</u>	
NO	<u>0.47</u>	<u>0.20</u>	0.11	-.03	<u>0.21</u>	<u>0.56</u>	<u>0.74</u>	<u>1.00</u>

Clinical: Other-rating

	AP	BC	DE	FG	HI	JK	IM	NO
AP	<u>1.00</u>							
BC	<u>0.64</u>	<u>1.00</u>						
DE	<u>0.59</u>	<u>0.71</u>	<u>1.00</u>					
FG	<u>0.20</u>	<u>0.30</u>	<u>0.61</u>	<u>1.00</u>				
HI	<u>-.51</u>	<u>-.53</u>	<u>-.48</u>	<u>-.26</u>	<u>1.00</u>			
JK	<u>-.45</u>	<u>-.55</u>	<u>-.57</u>	<u>-.43</u>	<u>0.71</u>	<u>1.00</u>		
IM	-.05	<u>-.35</u>	<u>-.40</u>	<u>-.44</u>	<u>0.38</u>	<u>0.64</u>	<u>1.00</u>	
NO	0.08	<u>-.22</u>	<u>-.25</u>	<u>-.35</u>	<u>0.40</u>	<u>0.33</u>	<u>0.70</u>	<u>1.00</u>

*Note: All significant correlations ($p \leq .05$) are underlined

Table 7 (Continued)*

Non-clinical: Self-rating

	AP	BC	DE	FG	HI	JK	IM	NO
AP	<u>1.00</u>							
BC	<u>0.61</u>	<u>1.00</u>						
DE	<u>0.44</u>	<u>0.60</u>	<u>1.00</u>					
FG	0.10	<u>0.21</u>	<u>0.54</u>	<u>1.00</u>				
HI	-.09	-.13	0.09	<u>0.50</u>	<u>1.00</u>			
JK	0.08	-.11	-.10	0.14	<u>0.70</u>	<u>1.00</u>		
IM	<u>0.29</u>	-.02	-.08	-.08	<u>0.33</u>	<u>0.66</u>	<u>1.00</u>	
NO	<u>0.55</u>	<u>0.20</u>	0.13	-.06	<u>0.18</u>	<u>0.44</u>	<u>0.70</u>	<u>1.00</u>

Non-clinical: Other-rating

	AP	BC	DE	FG	HI	JK	IM	NO
AP	<u>1.00</u>							
BC	<u>0.68</u>	<u>1.00</u>						
DE	<u>0.60</u>	<u>0.70</u>	<u>1.00</u>					
FG	<u>0.15</u>	<u>0.28</u>	<u>0.32</u>	<u>1.00</u>				
HI	-.10	<u>-.25</u>	-.11	<u>0.25</u>	<u>1.00</u>			
JK	0.11	<u>-.15</u>	-.13	<u>0.17</u>	<u>0.72</u>	<u>1.00</u>		
IM	<u>0.17</u>	<u>-.15</u>	-.08	0.10	<u>0.54</u>	<u>0.68</u>	<u>1.00</u>	
NO	<u>0.56</u>	<u>0.20</u>	<u>0.21</u>	<u>0.15</u>	<u>0.31</u>	<u>0.48</u>	<u>0.60</u>	<u>1.00</u>

*Note: All significant correlations ($p \leq .05$) are underlined

representation shows the location of the ICL octant categories in a two-dimensional space as derived by the terminal MDS solution. The figures tend to show that the ICL octants demonstrate some degree of circumplical ordering for the self- and other-ratings of both samples. In Figure 7 (clinical sample self-rating), however, a gap appears between octants FG and HI. A gap was also observed between octants AP and NO in Figure 8 (clinical sample other-rating). A gap was observed between octant FG and its adjacent octants in Figure 10 (non-clinical sample other-rating) as well. Overall, it appears that the non-clinical sample self- and other-ratings tend to demonstrate better circumplical ordering than the clinical sample ratings.

The number of iterations taken to arrive at the terminal MDS solutions were 5, 3, 2, and 3 for the clinical self-rating, clinical other-rating, non-clinical self-rating, and non-clinical other-rating, respectively. The Kruskal Stress values at the terminal MDS solution were .05, .11, .03, and .04 for the clinical self-rating, clinical other-rating, non-clinical self-rating, and non-clinical other-rating, respectively. Thus, all of these Stress values fell within the range reported by Kruskal and Wish (1978) to be acceptable, which, in turn, suggests a "good fit" exists between the data from these four sources and the terminal MDS solution. In addition, when the intercorrelation matrices were scaled in three dimensions, Kruskal Stress values for each solution did

Figure 7: Multidimensional Scaling Results for
ICL Octants: Clinical Self-rating

Two-Dimensional Plot

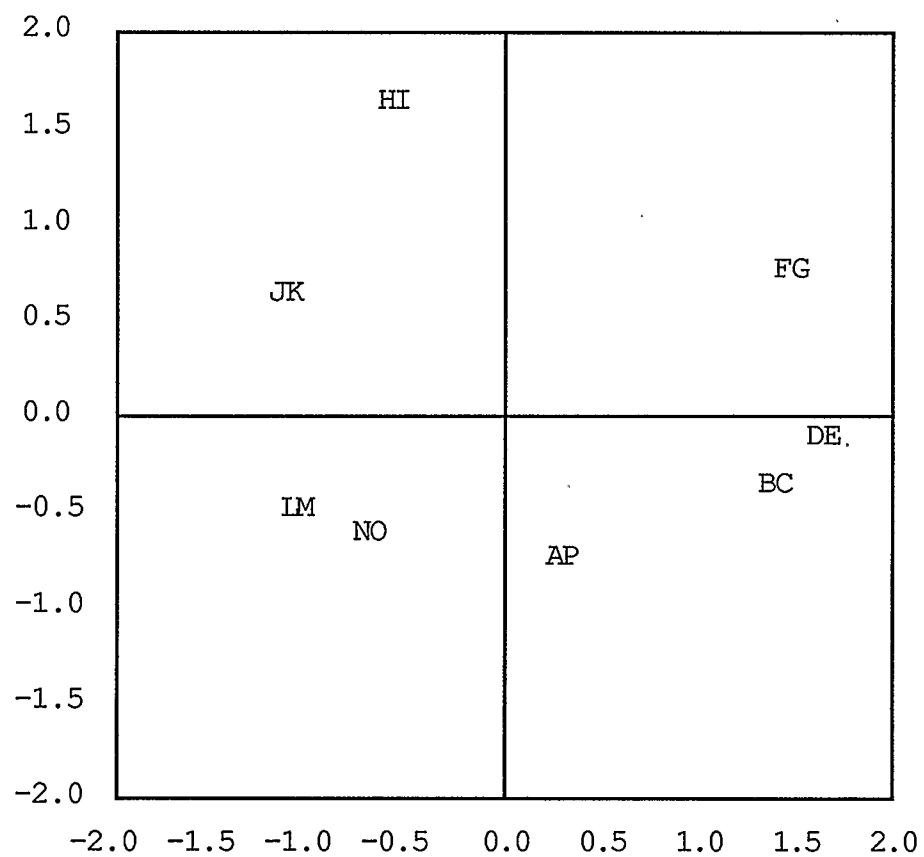
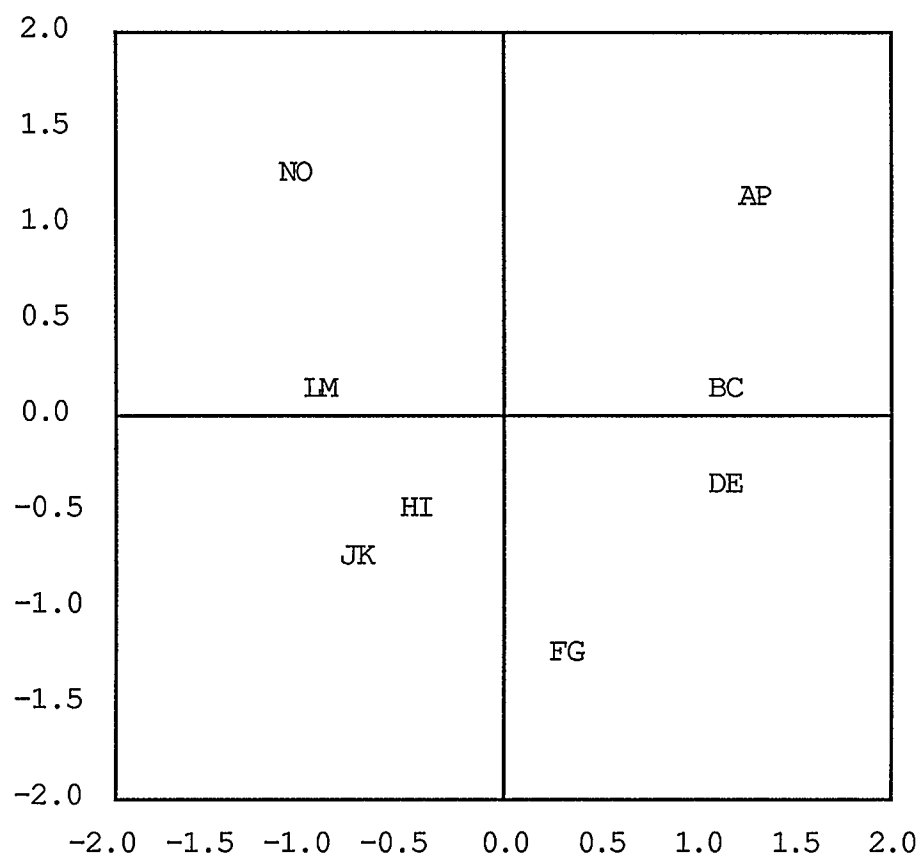


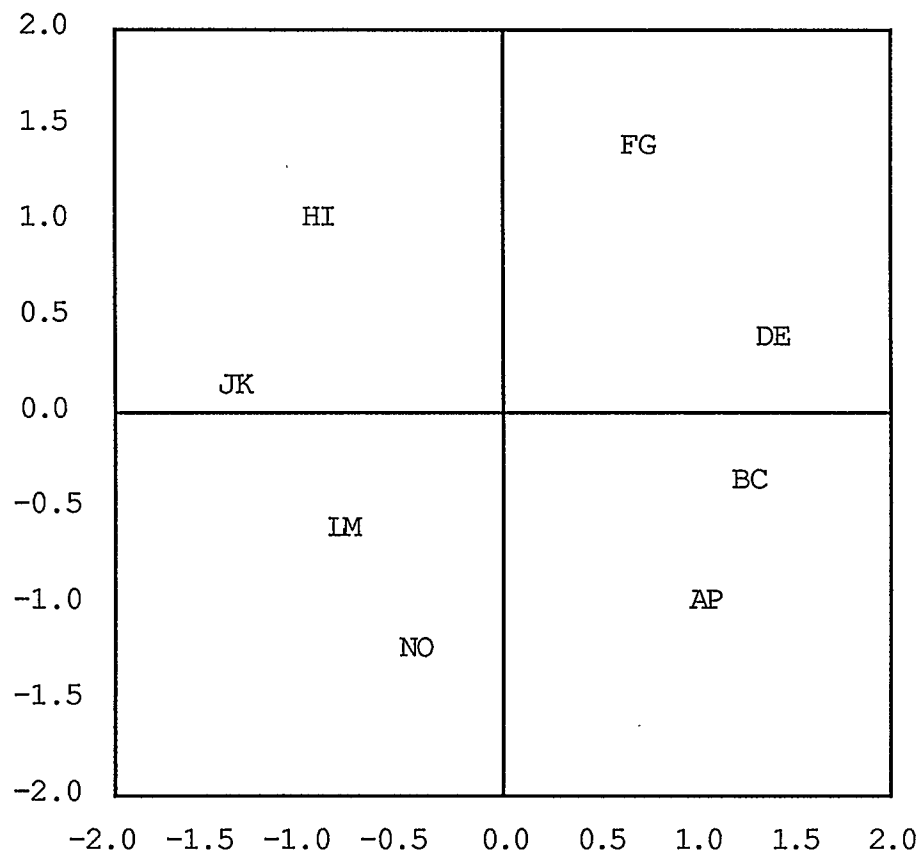
Figure 8: Multidimensional Scaling Results for
ICL Octants: Clinical Other-rating

Two-Dimensional Plot



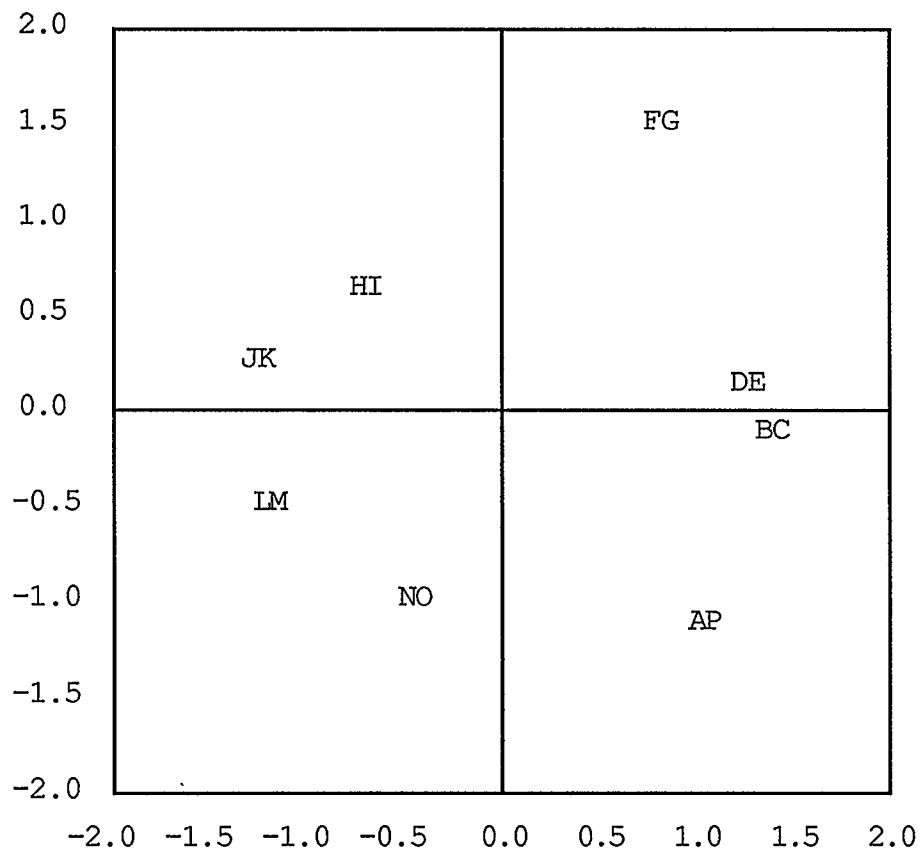
**Figure 9: Multidimensional Scaling Results for
ICL Octants: Non-clinical Self-rating**

Two-Dimensional Plot



**Figure 10: Multidimensional Scaling Results for
ICL Octants: Non-clinical Other-rating**

Two-Dimensional Plot



not differ appreciably from the values for the two dimensional solutions. This result suggests that two dimensions can spatially represent the interrelationships among the interpersonal octants about as well as three dimensions. Thus, the two-dimensional solutions were selected to spatially represent these interrelationships because they are more parsimonious than the three-dimensional solutions.

For the hypothesis that individuals with a diagnosed DSM-III personality disorder have more intense interpersonal behavior than individuals from a non-clinical sample, data testing this hypothesis was statistically analysed in four ways: 1) the group means of the ICL average intensity scores for the clinical and non-clinical sample self-ratings were statistically analysed by a t-test to determine if a significant difference exists. The ICL average intensity score is calculated by summing the intensity values of items checked in the ICL and dividing the sum by the total number of items checked, 2) the group means of the average intensity scores for the clinical and non-clinical sample other-ratings were analysed by a t-test to determine if a significant difference exists, 3) the proportion of ICL summary scores for the clinical and non-clinical sample self-ratings which deviate from the origin of the circumplex by more than 2 standard deviation units were statistically analysed by testing for significant differences between proportions (Hinkle, Wiersma, &

Jurs, 1979). In determining the origin of the circumplex and standard deviation units, the average of the two samples' control and affiliation axes means and their pooled standard deviations were used, and 4) the proportion of ICL summary scores for the clinical and non-clinical sample other-ratings which deviate from the origin of the circumplex by more than 2 standard deviation units were statistically analysed by the same procedure mentioned in the preceding analysis. As with the self-ratings, the origin and standard deviation units were determined by averaging the two samples' control and affiliation axes means and pooling their standard deviation units.

Methods 3 and 4 described in the above paragraph use a summary score to measure interpersonal behavior intensity. As mentioned in chapter 2 of this thesis, the ICL summary score serves to summarize behavior as rated on the interpersonal circumplex by taking into account the trigonometric relationships among the interpersonal behavior categories. Based on the summary score, a person's interpersonal behavior is represented by a single point on the interpersonal circumplex. The following formulas, contained in LaForge et al. (1954), were used for deriving the summary scores for the control and affiliation axes, respectively:

$$\text{Control} = AP - HI + .7 (NO + BC - FG - JK)$$

$$\text{Affiliation} = LM - DE + .7 (NO - BC - FG + JK).$$

The results from these four measures of interpersonal behavior intensity are presented in Table 8. Each of the four methods showed the clinical sample to have significantly higher intensity values than the non-clinical sample, thus, supporting the hypothesis.

For the hypothesis that individuals with a diagnosed DSM-III personality disorder have more rigid interpersonal behavior than individuals from a non-clinical sample, data testing this hypothesis was statistically analysed in the following manner: 1) chi-square values were computed for the frequencies of items checked in each quadrant of the interpersonal circumplex by the subjects in both the clinical and non-clinical samples, 2) the group means of these chi-square values for the clinical and non-clinical samples was statistically analysed by a t-test to determine if a significant difference exists. The same procedure was carried out for the other-ratings of the two samples as well. By an individual displaying interpersonal rigidity, this term means that the individual tends to rely rigidly on a narrow band of actions to the exclusion of other, possibly adaptive, modes of behavior. By displaying a narrow band of interpersonal actions, an individual will tend to have a relatively high frequency of scores falling into one quadrant of the circumplex when compared to the other quadrants resulting in high chi-square values.

Table 8: Intensity Score Results Comparing Clinical and Non-clinical Samples

- 1) Average intensity scores comparing the self-ratings of the clinical and non-clinical samples

$$H_0: \mu_C = \mu_{nc}^*$$

$$H_1: \mu_C > \mu_{nc}$$

	N	Mean	SD
Clinical	90	2.20	0.23
Non-clinical	97	1.90	0.18

$$t(185) = 9.95 \quad p < .01_{\text{one-tailed}}$$

- 2) Average intensity scores comparing the other-ratings of the clinical and non-clinical samples

$$H_0: \mu_C = \mu_{nc}$$

$$H_1: \mu_C > \mu_{nc}$$

	N	Mean	SD
Clinical	90	2.22	0.02
Non-clinical	97	1.86	0.02

$$t(185) = 13.06 \quad p < .01_{\text{one-tailed}}$$

- 3) Proportion of self-ratings for both the clinical and non-clinical samples deviating from the pooled standard deviations by ± 2

$$H_0: P_C = P_{nc}^{**}$$

$$H_1: P_C > P_{nc}$$

$$P_C - P_{nc} = 0.26 \quad z = 4.48 \quad p < .01_{\text{one-tailed}}$$

Table 8 (Continued)

- 4) Proportion of other-ratings for both the clinical and non-clinical samples deviating from the pooled standard deviations by ± 2

$$H_0: P_C = P_{nc}$$

$$H_1: P_C > P_{nc}$$

$$P_C - P_{nc} = 0.19 \quad z = 3.17 \quad p < .01_{\text{one-tailed}}$$

* μ_C denotes clinical population mean
 μ_{nc} denotes non-clinical population mean

** P_C denotes proportion for the clinical population
 P_{nc} denotes proportion for the non-clinical population

The results are presented in Table 9. Both methods showed the clinical sample to have significantly higher rigidity scores than the non-clinical sample, thus, supporting the hypothesis.

For the hypothesis that individuals with a diagnosed DSM-III personality disorder have more discrepant ratings of their interpersonal behavior than individuals from a non-clinical sample, data testing this hypothesis was statistically analysed in the following way: 1) the summary scores for both the self-rating and the other-rating were plotted on the circumplex grid, 2) the difference between these two summary scores was given a discrepancy value from the Discrepancy Value Table contained in Table 10 which was adapted from Leary (1957, p. 260), 3) the group means of these discrepancy values for the clinical and non-clinical samples were statistically analysed by a t-test to determine if a significant difference exists.

In the Discrepancy Value Table, a brief description of the extent of discrepancy between two scores when plotted on the circumplex grid is presented along with the discrepancy value. The discrepancy value is based on the idea that discrepancy can take two forms: 1) between intensity levels, and 2) between octants on the interpersonal circumplex (Leary, 1957). These values were computed by the Euclidean distance formula which is the square root of the squares of horizontal and vertical

Table 9: Rigidity Score Results Comparing Clinical and Non-clinical Samples

- 1) Rigidity scores comparing self-ratings of the clinical and non-clinical samples

$$H_0: \mu_c = \mu_{nc}^*$$

$$H_1: \mu_c > \mu_{nc}$$

	N	Mean	SD
Clinical	90	7.22	5.85
Non-clinical	97	4.06	3.01

$$t(185) = 4.70 \quad p < .01_{\text{one-tailed}}$$

- 2) Rigidity scores comparing other-ratings of the clinical and non-clinical samples

$$H_0: \mu_c = \mu_{nc}$$

$$H_1: \mu_c > \mu_{nc}$$

	N	Mean	SD**
Clinical	90	22.27	14.76
Non-clinical	97	10.59	7.01

$$t(125.12) = 6.83 \quad p < .01_{\text{one-tailed}}$$

* μ_c denotes clinical population mean

μ_{nc} denotes non-clinical population mean

** Separate variance estimate used

Table 10: Discrepancy Value Table

Same octant, same intensity	0
Same octant, different intensity	23
Adjacent octant, both moderate intensity	26
Adjacent octant, different intensity	41
Adjacent octant, both extreme intensity	44
Second adjacent octant, both moderate intensity	48
Third adjacent octant, both moderate intensity	62
Second adjacent octant, different intensity	66
Opposite octant, both moderate intensity	68
Second adjacent octant, both extreme intensity	81
Third adjacent octant, different intensity	84
Opposite octant, different intensity	91
Third adjacent octant, both extreme intensity	105
Opposite octant, both extreme intensity	114

Adapted From: Leary, T.F. (1957). Interpersonal Diagnosis of Personality (p. 260). New York: Ronald.

distances between the two points. For instance, two summary scores which fall within the same octant and same intensity level receive a discrepancy score of 0 because there is no distance separating the scores. Whereas, two summary scores which fall in the opposite octants and are both at extreme intensity levels receive the highest discrepancy score of 114 because these scores are furthest apart when plotted on the circumplex chart. A subject's summary scores will be considered extreme if the score deviates from the origin of the circumplex by more than 2 standard deviation units. The origin and standard deviation units will be computed by taking the average of the two samples' control and affiliation axes scores and the pooled standard deviations for each axis.

The results presented in Table 11 indicate that the discrepancy scores for the clinical sample were significantly higher than the scores for the non-clinical sample, thereby supporting the hypothesis.

The two samples were similar in social class background as both the clinical sample and the non-clinical sample appeared to be composed of middle class individuals. A t-test on the ages of the two samples showed clinical sample members were older to a statistically significant degree than non-clinical sample members, $t(185) = 5.78$ $p < .01$ two-tailed. There were no significant differences observed between males and females in

**Table 11: Discrepancy Score Results Comparing the
Clinical and Non-clinical Samples**

$$H_0: \mu_c = \mu_{nc}^*$$

$$H_1: \mu_c > \mu_{nc}$$

	N	Mean	SD
Clinical	90	50.21	31.48
Non-clinical	97	29.83	25.01

$$t(185) = 4.92 \quad p < .01_{\text{one-tailed}}$$

* μ_c denotes clinical population mean

μ_{nc} denotes non-clinical population mean

both the clinical and non-clinical samples on any of the measures testing these three hypotheses. However, there was a significant difference between undergraduate and graduate students on the other-rating average intensity measure $t(95)=17.06$ $p < .01$ two-tailed. Independent t-tests comparing the group mean of the other-rating average intensity scores for each of these subgroups with the group mean of the clinical sample showed that the clinical sample still had significantly higher scores ($p < .01$) on this measure of interpersonal behavior intensity than both of these non-clinical subgroups. The assumption of homogeneity of variance was violated when the rigidity scores of the clinical and non-clinical samples (other-ratings) were compared. A t-test which used a separate variance estimate when comparing the means of these two samples still showed a significant difference to exist.

Pearson product-moment correlation coefficients between the MCMI personality scales plus hypomanic scale and the ICL control and affiliation axes scores were calculated for the clinical sample self- and other-ratings. The correlation coefficients between the MCMI scales and the self- and other-rating scores for the ICL control and affiliation axes are presented in Table 12. For an MCMI scale to be included in Table 12, its correlation coefficient was statistically significant ($p \leq .05$) for either the control axis or affiliation axis or both. The correlations which met this criterion were

used as coordinates to plot the association between the MCMI and the ICL. The plot for the correlations between the ICL self-ratings and the MCMI is presented in Figure 11 where the vertical axis represents the correlation between the MCMI and the ICL control axis and the horizontal axis represents the correlation between the MCMI and the ICL affiliation axis. This figure shows the narcissistic, paranoid, and antisocial scales fall in the dominant-hostile quadrant of the circumplex; the passive-aggressive, schizoid, and avoidant scales fall in the submissive-hostile quadrant; the borderline, dependent, and schizotypal scales fall in the submissive-affiliative quadrant; and the hypomanic, histrionic, and compulsive scales fall in the dominant-affiliative quadrant. The plot of the correlations between the MCMI and the ICL other-ratings is presented in Figure 12. This figure shows the narcissistic, antisocial, and paranoid scales fall in the dominant-hostile quadrant of the circumplex; and the schizotypal and dependent scales fall in the submissive-affiliative quadrant.

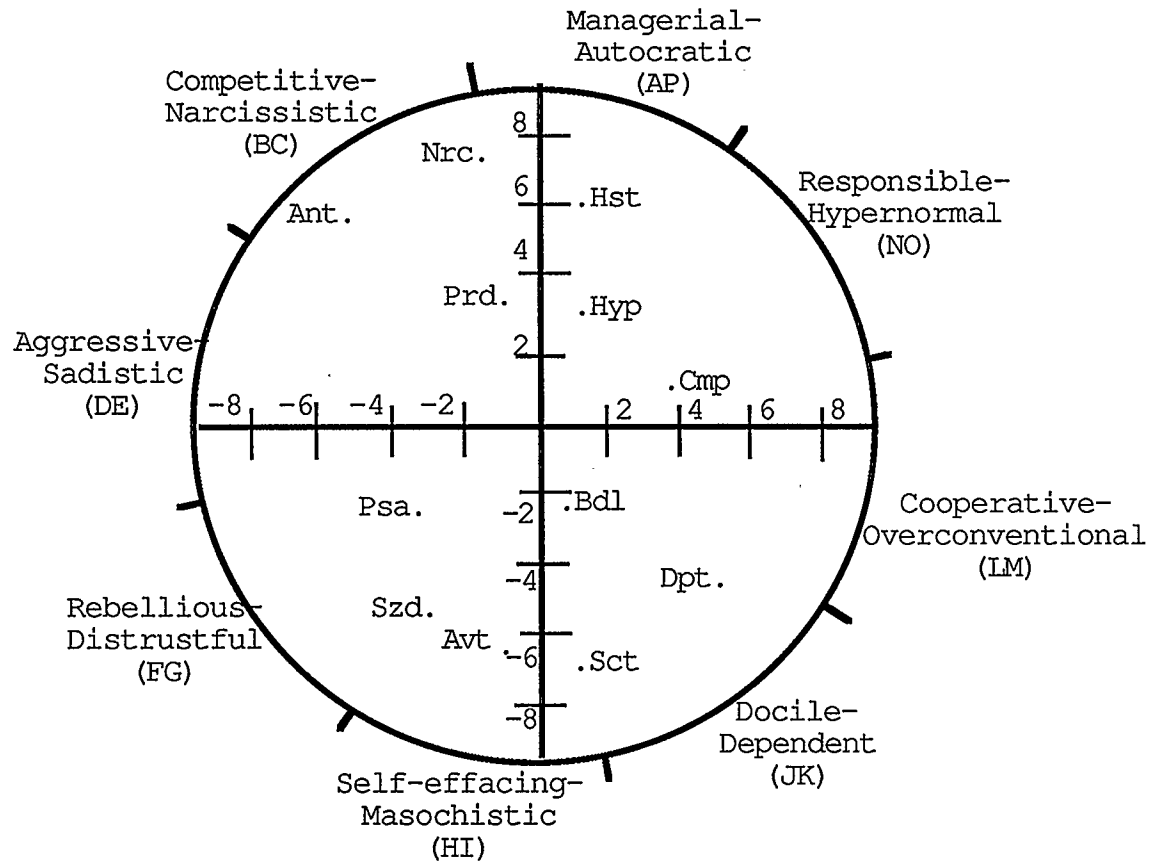
The correlations between the MCMI and the ICL may have been influenced by test-taking distortion on the part of the subject. Therefore, the correlation coefficients between the ICL self- and other-ratings and the MCMI scales were calculated only for subjects with an MCMI weight score between +3 and -2. Millon (1982) suggests that weight scores falling in this range tend to indicate little test-taking distortion has occurred.

Table 12: Correlations Between MCMI and ICL Control and Affiliation Axes*

MCMI	Self-rating		Other-rating	
	Control	Affiliation	Control	Affiliation
Schizoid	-.57	-.26		
Avoidant	-.62	-.10		
Dependent	-.44	.56	-.22	.31
Histrionic	.60	.07		
Narcissistic	.72	-.12	.32	-.17
Antisocial	.57	-.50	.41	-.26
Compulsive	.09	.38		
Passive-aggressive	-.22	-.35		
Schizotypal	-.66	.11	-.21	.08
Borderline	-.21	.02		
Paranoid	.34	-.07	.27	-.10
Hypomanic	.32	.07		

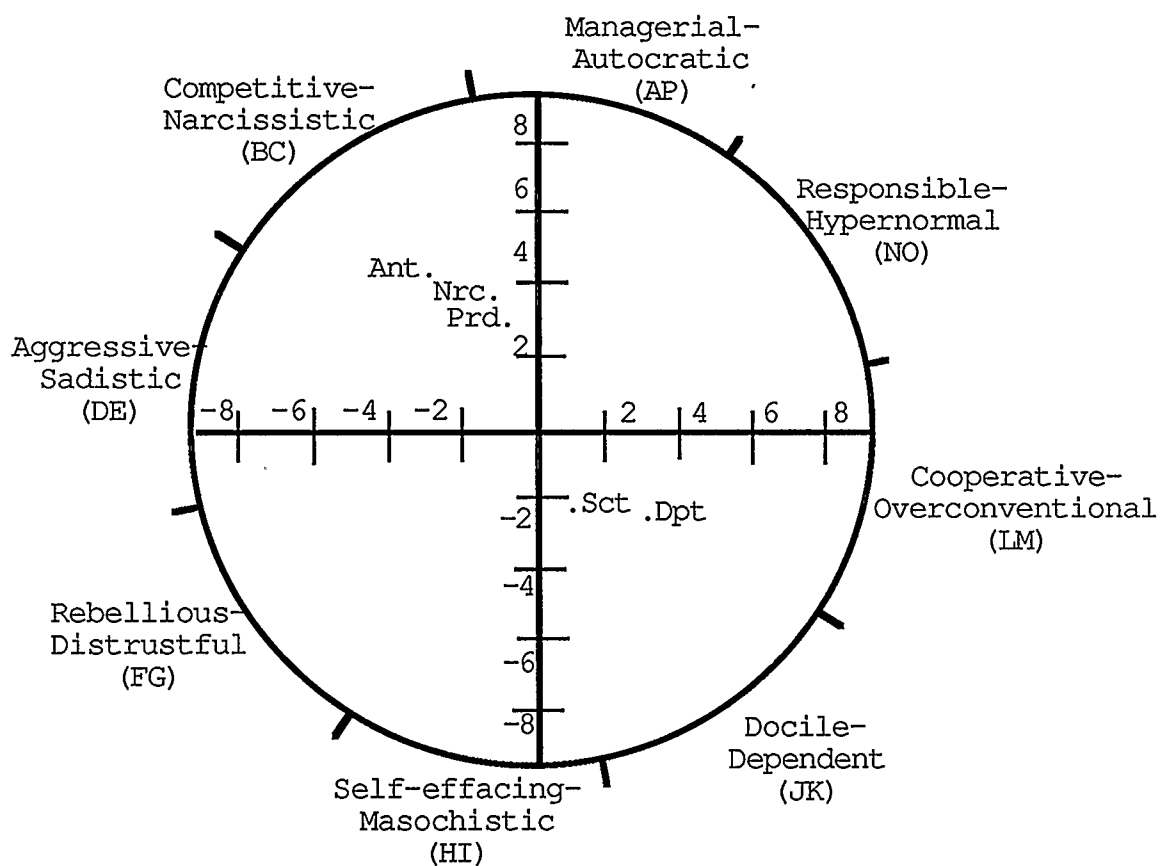
* All pairs of control and affiliation correlation coefficients presented have at least one coefficient which was statistically significant ($p \leq .05$)

**Figure 11: Positioning of MCMI Personality Scales
on the Interpersonal Circumplex
(Self-rating/N=90)**



Abbreviations: Szd = Schizoid; Avt = Avoidant; Dpt = Dependent;
Hst = Histrionic; Nrc = Narcissistic;
Ant = Antisocial; Cmp = Compulsive;
Psa = Passive-aggressive; Sct = Schizotypal;
Bdl = Borderline; Prd = Paranoid; Hyp = Hypomanic

**Figure 12: Positioning of MCMI Personality Scales
on the Interpersonal Circumplex
(Other-rating/N=90)**



Abbreviations: Szd = Schizoid; Avt = Avoidant; Dpt = Dependent;
Hst = Histrionic; Nrc = Narcissistic;
Ant = Antisocial; Cmp = Compulsive;
Psa = Passive-aggressive; Sct = Schizotypal;
Bdl = Borderline; Prd = Paranoid; Hyp = Hypomanic

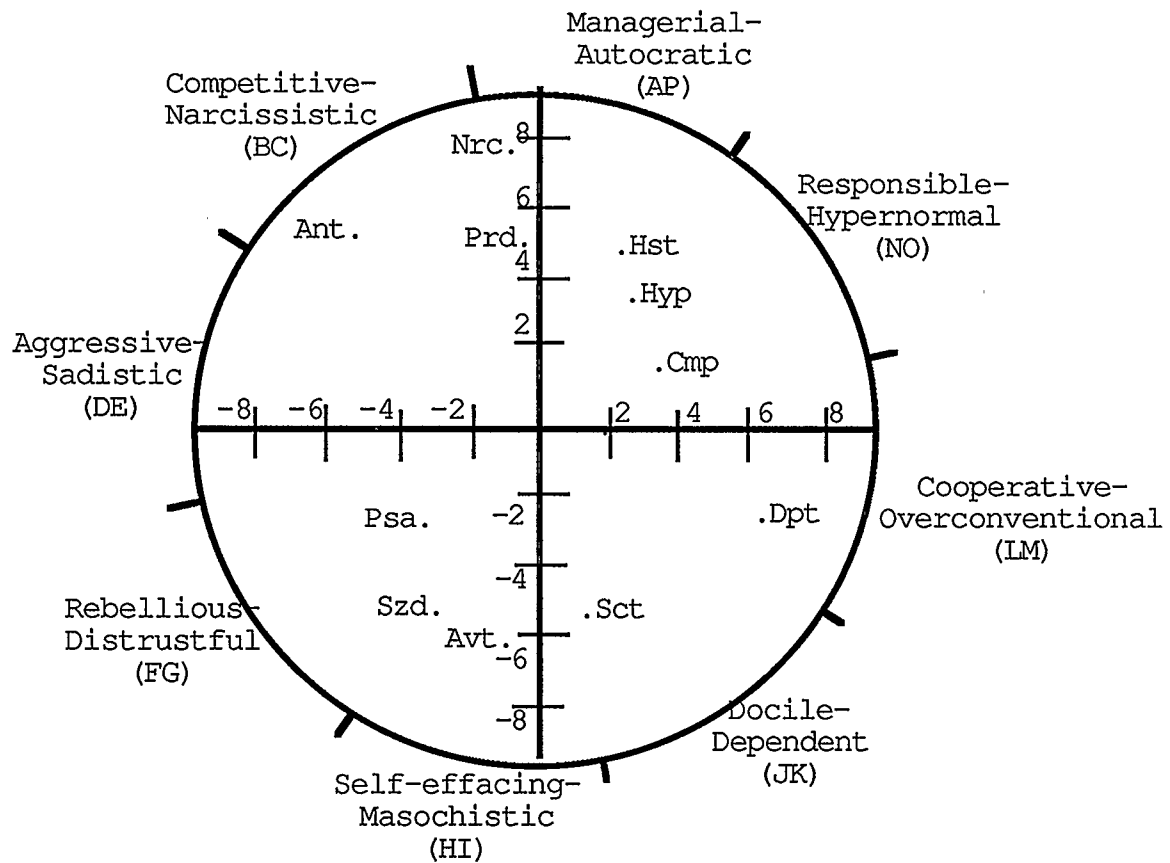
The correlations between the MCMI scales (weight score between +3 and -2) and the ICL self- and other-rating scores for the control and affiliation axes are presented in Table 13. As in Table 12, for an MCMI scale to be included in Table 13 and plotted on the circumplex grid, its correlation coefficient was statistically significant ($p \leq .05$) for either the control axis or affiliation axis or both. The correlations which met this criterion were used as coordinates to plot the association between the MCMI and the ICL. The plot for the correlations between the ICL self-ratings and the MCMI is presented in Figure 13. This figure shows the narcissistic, paranoid, and antisocial scales fall in the dominant-hostile quadrant of the circumplex; the passive-aggressive, schizoid, and avoidant scales fall in the submissive-hostile quadrant; the dependent and schizotypal scales fall in the submissive-affiliative quadrant; and the hypomanic, histrionic, and compulsive scales fall in the dominant-affiliative quadrant. The plot for the correlations between the ICL other-ratings and the MCMI is presented in Figure 14. This figure shows the antisocial, paranoid, and narcissistic scales fall into the dominant-hostile quadrant of the circumplex; the compulsive and schizotypal scales fall in the submissive-hostile quadrant; and the histrionic and dependent scales fall in the submissive-affiliative quadrant.

**Table 13: Correlations Between MCMI and
ICL Control and Affiliation Axes
(N= 54/ Weight Score Between +3 to -2)***

MCMI	Self-rating		Other-rating	
	Control	Affiliation	Control	Affiliation
Schizoid	-.56	-.27		
Avoidant	-.63	-.07		
Dependent	-.26	.61	-.12	.28
Histrionic	.52	.21	-.03	.22
Narcissistic	.76	-.02	.28	-.05
Antisocial	.56	-.49	.36	-.15
Compulsive	.14	.34	-.01	-.21
Passive-aggressive	-.25	-.34		
Schizotypal	-.56	.11	-.19	-.01
Borderline				
Paranoid	.45	-.01	.30	-.15
Hypomanic	.34	.22		

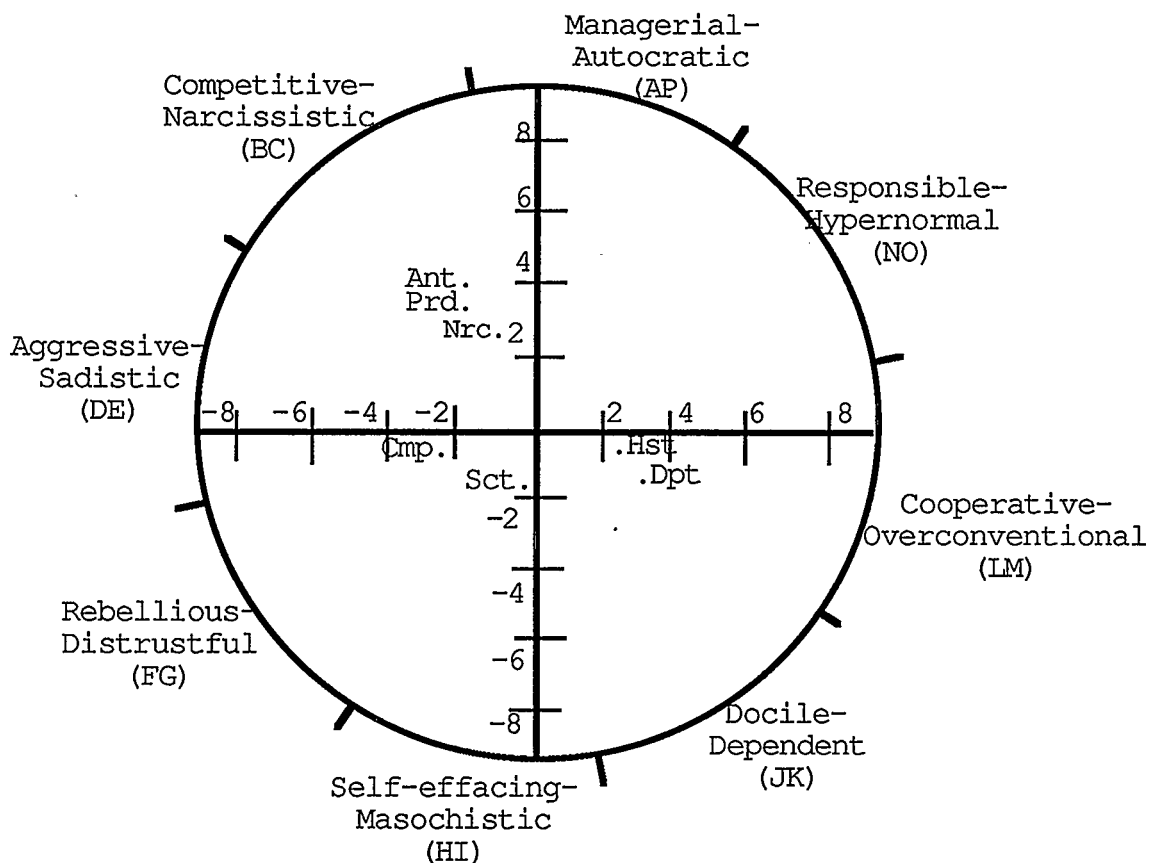
* All pairs of control and affiliation correlation coefficients presented have at least one coefficient which was statistically significant ($p \leq .05$)

**Figure 13: Positioning of MCMI Personality Scales
on the Interpersonal Circumplex
(Self-rating/N=54/Weight Score
Between +3 to -2)**



Abbreviations: Szd = Schizoid; Avt = Avoidant;
Dpt = Dependent; Hst = Histrionic;
Nrc = Narcissistic; Ant = Antisocial;
Cmp = Compulsive; Psa = Passive-aggressive;
Sct = Schizotypal; Bdl = Borderline;
Prd = Paranoid; Hyp = Hypomanic

Figure 14: Positioning of MCMI Personality Scales on the Interpersonal Circumplex (Other-rating/N=54/Weight Score Between +3 to -2)



Abbreviations: Szd = Schizoid; Avt = Avoidant;
 Dpt = Dependent; Hst = Histrionic;
 Nrc = Narcissistic; Ant = Antisocial;
 Cmp = Compulsive; Psa = Passive-aggressive;
 Sct = Schizotypal; Bdl = Borderline;
 Prd = Paranoid; Hyp = Hypomanic

Chapter 5: Discussion

Multidimensional Scaling

The multidimensional scaling results showed that the ratings (Figures 7-10), in terms of where the interpersonal octants were situated in a two-dimensional space, appeared to represent the underlying dimensions of interpersonal behavior, namely, control and affiliation, for both the self-ratings and other-ratings of the clinical and non-clinical samples. Therefore, the ratings from this study appeared to have similar underlying structures regardless of the type of sample (clinical or non-clinical) and the rating source (self- or other-rating). However, The non-clinical self- and other-ratings appeared to demonstrate better circumplex ordering than the clinical sample ratings. The dimensions observed in this study correspond with the dimensions found in previous research, as reported in literature reviews involving the interpersonal circumplex (Carson, 1969; Kiesler, 1983; Wiggins, 1982) and research which did not use the interpersonal circumplex to study interpersonal behavior (Borgatta, 1960, 1964; Borgatta et al., 1958).

For the clinical sample ratings, the self-ratings (Figure 7) appear to have a gap between octants FG (Rebellious-Distrustful) and HI (Self-effacing-Masochistic) and

the other-ratings (Figure 8) appear to have a gap between octant NO (Responsible-Hypernormal) and its adjacent octants. For the non-clinical sample ratings, the other-ratings (Figure 10) appear to have a gap between octant FG (Rebellious-Distrustful) and its adjacent octants. Researchers have noted that the ICL contains measurement gaps in the upper-right and lower-left quadrants. For instance, Paddock and Nowicki (1986), in their research using a principal components analysis of ICL ratings, observed gaps between categories FG and its adjacent octants and between octants NO and AP. Lorr and McNair (1965) also noted these gaps and constructed their IBI Detachment, Deference, Affiliation, Sociability, and Exhibition scales to remedy the situation. Similarly, Wiggins (1979) developed his IAS F: Aloof, G: Introverted, O: Extraverted, and N: Gregarious segments to avoid these gaps. It is proposed that these gaps may be explained by taking into consideration the areas of the circumplex which are indicative of adjusted and maladjusted interpersonal behavior.

Leary (1957) proposed that adaptive interpersonal behavior for octant NO (Responsible-Hypernormal) of the circumplex is indicative of people who are attempting to present themselves as "normal". Baumrind (1960) proposed that adjustment was indicated by interpersonal behaviors in the upper right quadrant (dominant-affiliative) of the circumplex whereas behavior patterns falling into other quadrants were indicative

of maladjustment. Both Lorr and McNair (1965) and Kiesler (1979) proposed that behaviors in the left half of the interpersonal circumplex were indicative of maladjustment and behaviors in the right half were indicative of adjustment. Therefore, these theorists have proposed that interpersonal behavior represented by the right half of the circumplex, especially the upper right half (dominant-affiliative), appears to be indicative of adaptive interpersonal behavior. Indeed, the stereotype for normal, acceptable behavior in North American culture appears to be dominant-affiliative interpersonal behavior (Leary, 1957). The friendly, outgoing person is responded to favorably in North American society. Opposite to the upper right quadrant of the circumplex is the lower left quadrant, where octant FG (Rebellious-Distrustful) is situated. It is proposed, therefore, that items in this quadrant are to be considered the opposite of normal interpersonal behavior.

For the clinical self-ratings (Figure 7), octant FG (Rebellious-Distrustful) seems to be related to the other octants considered by these theorists to be indicative of maladjustment octants BC (Competitive-Narcissistic) and DE (Aggressive-Sadistic), whereas, octant HI (Self-effacing-Masochistic) seems to be related with interpersonal behaviors situated in the right half of the circumplex which these theorists propose are indicative of

adjustment. For the clinical other-ratings (Figure 8), the gap between octants NO (Responsible-Hypernormal) and its adjacent octants appears to be due to asking the nurses to rate maladjusted individuals with terms considered in North American culture to be indicators of adjusted interpersonal behavior. Octant NO (Responsible-Hypernormal) which is proposed to be representative of "normal" behavior in North American culture appears to be independent of the other circumplex octants in this rating. For the non-clinical other-ratings (Figure 10), the gap between octant FG (Rebellious-Distrustful) and its adjacent octants appears to be due to asking the raters to rate an adjusted individual (fellow student) with terms considered to be the semantic opposite of a "normal" person. Therefore, these terms seem to be independent of the other octants.

Hence, as mentioned in chapter 2 of this thesis, there are two approaches for distinguishing between adjusted and maladjusted behavior with the interpersonal circumplex. One approach is the "deviation" method proposed by Leary (1957) and used in this research; where maladjustment is indicated by an exaggeration of normal interpersonal behaviors irrespective of its location on the circumplex. The other approach is the "location" method proposed by Baumrind (1960), Kiesler (1979), and Lorr and McNair (1965); where adjustment and maladjustment are distinguished by the location of interpersonal behavior on the circumplex irrespective of interpersonal behavior

intensity. Therefore, it appears that these two approaches to conceptualizing interpersonal adjustment/maladjustment are both involved when rating interpersonal behavior with the ICL. The results from this study have shown that the terms used to describe subjects in the clinical sample are more intense than the terms used for the subjects in the non-clinical sample regardless of the rating source. However, whether a person is adjusted or maladjusted appears to have some effect on the frequency with which items in the various locations of the circumplex are checked.

Interpersonal Behavior Intensity, Rigidity, and Discrepancy

The four measures of interpersonal behavior intensity reported in the results section (Table 8) showed that the clinical sample had significantly higher scores (group means/proportions) on each of these measures than the non-clinical sample. Thus, the null hypothesis of no difference between the clinical and non-clinical populations on each of these four interpersonal measures was rejected; and the alternate hypothesis of individuals with diagnosed personality disorders having more intense interpersonal behavior than individuals from a non-clinical population was empirically supported. By using two different methods and two different rating sources to measure interpersonal behavior intensity this finding has convergent validity.

The finding that the summary scores of the clinical sample deviated from the origin of the circumplex to a greater degree than the summary scores for the non-clinical sample on both self- and other-ratings appears to correspond with the findings reported by Wiggins et al. (1989). In their study, Wiggins et al. (1989) used a non-clinical sample (university students) to assess the relationship between the deviation from the origin of the circumplex (vector length) and psychopathology as measured by the Psychological Screening Inventory (PSI) and interpersonal problems as measured by the Inventory of Interpersonal Problems. Their findings showed that vector length was related to both psychopathology and interpersonal problems within certain interpersonal categories. For example, the vector length of summary scores which fell into the arrogant-calculating (BC) octant of the interpersonal circumplex produced correlation coefficients of .41 and .57 (significant at $p < .05$) with the PSI social nonconformity and expression scales, respectively. Unlike the research conducted by Wiggins et al. (1989), however, the current research only attempted to determine if the clinical sample had more extreme summary scores than the non-clinical sample.

The two measures of interpersonal behavior rigidity presented in the results section (Table 9) showed that the clinical sample had significantly higher group means than the non-clinical sample. Thus, the null hypothesis of no difference

between the clinical and non-clinical populations on both measures of interpersonal rigidity was rejected; and the alternate hypothesis of individuals with diagnosed personality disorders having more rigid interpersonal behavior than individuals from a non-clinical population is empirically supported. Like the intensity measures mentioned above, with two different measures for interpersonal rigidity supporting the hypothesis, these results have convergent validity as well. The raters for the two samples observed the subjects in one setting (psychiatric unit for clinical sample raters and discussion group for non-clinical sample raters) and for approximately the same number of times and duration of time. Therefore, with this degree of equivalency established, the other-rating measure of interpersonal rigidity is considered to be an adequate one.

Although clinical sample members were older to a statistically significant degree than non-clinical sample members, age difference is not considered to be a major determinant in the rigidity score results below the age of 50 (Vaillant and Perry, 1985). The clinical sample with a mean (\pm SD) age of 34.2 ± 9.8 was below this age at which there is stabilization in behavior.

The measure of interpersonal behavior discrepancy presented in the results section (Table 11) showed that the clinical sample had a significantly higher group mean than the non-clinical sample. Therefore, the null hypothesis of no difference between the clinical and non-clinical populations on this measure of interpersonal discrepancy is rejected; and the alternate hypothesis of individuals with diagnosed personality disorders having more discrepant ratings of their interpersonal behavior than individuals from a non-clinical population is empirically supported.

The results support the notion that personality disorders are an exaggeration of normal personality traits which is reflected in the intense and rigid interpersonal behavior of the personality disordered individual. Other psychopathology research tends to support this position. Foulds (1964) proposed a continuum of increasing failure to maintain or establish mutual personal relationships which proceeds from normality through psychopathy, neurosis, integrated psychosis, to non-integrated psychosis. Tyrer and Alexander (1979) recorded the personality traits of 65 subjects whose primary diagnosis was personality disorder and another 65 subjects with other diagnoses. The results were factor analysed and showed a similar structure of personality variables in both groups of patients. Yet the personality disordered subjects differed only in degree from the personalities of the other psychiatric

patients and fell "... at the extreme of a multidimensional continuum" (Tryer & Alexander, 1979, p. 166).

Inter-rater Agreement

The reliability coefficients recorded from the samples suggest that there was in general fair to good agreement among raters. The proportion of observed variance which was true variance for the clinical sample ratings was 80% for the control axis and 86% for the affiliation axis. In comparison, the proportion for the non-clinical sample ratings was 63% for the control axis and 64% for the affiliation axis. With these reliability coefficients along with the test-retest reliability coefficients of the ICL reported in the method section of this thesis taken into consideration, it is suggested that, for the purposes of clinical assessment, ICL results for a single subject should be reported with confidence boundaries.

Furthermore, even though the non-clinical sample had more raters per subject than the clinical sample which should have resulted in higher reliability coefficients, the results show the non-clinical sample to have lower reliability coefficients. This finding tends to be consistent with propositions made about personality disorders (Kiesler, 1986a; Millon, 1981). With subjects in the clinical sample having more intense and rigid types of interpersonal behavior than the non-clinical sample, their behavior is more salient than the behavior of the non-clinical subjects because it persists inflexibly and

inappropriately across situations. It is proposed that this saliency makes it easier for raters to agree on the behavior being observed.

Three of the discussion groups in the non-clinical sample had low reliability coefficients either for the control or affiliation axis scores. A decision was made to use the scores from these groups in the analyses because their reliability coefficients for one of the two axes were fairly high. For example, one discussion group recorded a reliability coefficient of .05 for the control axis scores; however, this group's reliability coefficient for the affiliation axis was .78.

The Relationship Between Interpersonal Circumplex Octants and DSM-III Personality Disorders

The correlations between the ICL control and affiliation axes scores and the MCMI personality scales appear to give some empirical support to theoretical propositions (Widiger & Kelso, 1983; Wiggins, 1982) made about the relationship between DSM-III personality disorder categories and the interpersonal circumplex. A representation of these relationships as proposed by Wiggins (1982) and Widiger and Kelso (1983) is presented in Table 1. In terms of the octants of the interpersonal circumplex which the correlations fell within, it appears that Wiggins' (1982) proposed relationships between the interpersonal circumplex and dependent personality disorder is

empirically supported by both self- and other-ratings (Figures 11 and 12); the narcissistic personality disorder is supported by the self-ratings only (Figure 11); the hypomanic disorder is supported by the self-ratings (weight score between +3 to -2) only (Figure 13); and the histrionic personality disorder is supported by the other-ratings (weight score between +3 to -2) only (Figure 14).

Other personality disorder categories were close in supporting Wiggins' (1982) proposed relationships. Of the personality disorders not mentioned above, the paranoid, passive-aggressive, schizoid, and compulsive personality disorders all fell within the quadrant (Figure 11) which contained the octant that Wiggins (1982) proposed was related to them.

Widiger and Kelso's (1983) proposed relationships between the interpersonal circumplex and the dependent and paranoid personality disorders are empirically supported by both self- and other-ratings (Figures 11 and 12); the compulsive, and borderline personality disorders are empirically supported by the self-ratings only (Figure 11); the narcissistic personality disorder is empirically supported by the other-ratings only (Figure 12); the histrionic personality disorder is empirically supported by the other-ratings (weight score between +3 to -2) only (Figure 14).

Like Wiggins' (1982) theoretical propositions, some of the personality disorder categories not mentioned above were close in supporting Widiger and Kelso's (1983) proposed relationships. The antisocial, passive-aggressive, schizoid, and avoidant personality disorders all fell within the circumplex quadrant (Figure 11) which contained the octant that Widiger and Kelso (1983) proposed was related to them.

The self-ratings (Figures 11 and 13) showed a greater degree of dispersion on the affiliation axis than Morey (1985) observed in a study which compared ICL self-ratings and MCMI personality scale scores. In Morey's (1985) study, 18% had a major affective disorder and 31% were diagnosed with schizophrenia. In this research, however, subjects falling into these diagnostic categories, along with organic brain syndrome, were excluded. Therefore, this difference in the dispersion on the affiliation axis between Morey's (1985) study and the current one may be due to the different diagnostic categories which were used in these two studies.

The results on the relationship between the interpersonal circumplex and DSM-III personality disorders provide support for both Wiggins' (1982) and Widiger and Kelso's (1983) theoretical propositions when self-ratings were used and a lesser degree of support when other-ratings were used. Although empirical evidence has shown that the major factors which psychiatric staff use to rate patients are similar to the

control (need for staff control) and affiliation (likability) axes of the interpersonal circumplex (Elstein & Van Pelt, 1968), it may be that the raters tended to think in a categorical mode when rating the subjects as opposed to a dimensional mode which is used with the MCMI results in this study. Kendall (1979) has observed that clinicians tend to think in terms of categories when classifying people. This observation may be applicable to psychiatric staff as well.

Upon inspection of the correlations between the psychiatric staff ICL ratings and the MCMI personality scales when plotted on the circumplex (Figure 12), there appears to be a "corridor" or narrow band which the correlations tended to remain within. Like Morey's (1985) results using ICL self-ratings, these correlations show a lack of dispersion on the affiliation axis. The ends of the corridor extend from the dominant-hostile quadrant to the submissive-affiliative quadrant. The paranoid, narcissistic, and antisocial personality disorders are situated at one end and the dependent and schizotypal personality disorders are situated at the other end. The scales at both ends of the corridor tend to provide empirical support for the theoretical propositions of Wiggins (1982) and Widiger and Kelso (1983), whereas the remainder of the scales, situated in the middle of the corridor, tend not to support these theoretical propositions. Therefore, with the arrangement and location of this "corridor" taken into consideration, it may be

that the raters tended to base their ratings around the idea of whether the subject was exhibiting independent or dependent interpersonal behavior.

Interpersonal rigidity could also contribute to the differences in the degree to which ICL self- and other-ratings correspond with the DSM-III personality disorder categories. The mean rigidity score for the self-ratings was 7.22, whereas the mean for the other-ratings was 22.27. Therefore, the subjects appeared to use a relatively wider range of the circumplex when rating their own interpersonal behavior than the raters used. By using a wider range of the circumplex, this type of response is more congruent with the dimensional approach used for the MCMI results. The other-ratings, by comparison, tend to be congruent with a categorical approach to classification.

The MCMI weight scores, when taken into consideration, had little effect on the degree of correlation between the ICL self-ratings and the MCMI personality scales. The weight scores had more of an effect, however, on the degree of correlation between the ICL other-ratings and the MCMI personality scales. Most notably, the compulsive and schizotypal personality scale correlations, when plotted on the circumplex, shifted from the submissive-affiliative quadrant using the total sample to the submissive-hostile quadrant when the results subjects with weight scores falling between +3 to -2 were used exclusively.

Moreover, the histrionic personality scale correlation shifted from the dominant-affiliative quadrant to the submissive-affiliative quadrant when weight score was taken into consideration. This lack of change in the positioning of the personality disorder categories on the circumplex grid for self-ratings suggests that the results from the whole sample have about the same validity as the results from just those subjects who showed little test-taking distortion. Both ICL self-rating scores and MCMI scores came from the same source, therefore, scores on these two instruments appeared to covary even when test-taking distortion was evident. On the other hand, the covariation between ICL other-rating scores and MCMI scores appeared to change when test-taking distortion was taken into consideration. The MCMI scores from the subjects who displayed little test-taking distortion appeared to have more validity than the scores from the whole sample as the positioning of personality disorder categories on the circumplex appeared to conform better with Wiggins' (1982) and Widiger and Kelso's (1983) theoretical propositions.

The hypomanic scale of the MCMI was included in the analyses on the relationship between the ICL octants and the MCMI personality scales because Wiggins (1982) proposed that this DSM-III Axis I category appeared to fit octant NO (Responsible-Hypernormal) the best, whereas none of the Axis II personality disorder categories appeared to fit. Furthermore,

Romney and Bynner (in press) in their research on the circumplexity of DSM-III personality disorders observed a gap in this octant of the circumplex model which appears to fit the description of hypomanic disorder. They proposed that the inclusion of an Axis II category for hypomanic personality disorder may be warranted in the upcoming DSM-IV. The correlation between the MCMI hypomanic scale and the interpersonal circumplex self-ratings (weight score between +3 and -2) (Figure 13) did indeed fall into octant NO when plotted on the ICL circumplex grid which supports both Wiggins' (1982) and Romney and Bynner's (in press) positions. In addition, the correlation between the hypomanic scale and the interpersonal circumplex self-ratings (Figure 11) fell into the dominant-affiliative quadrant of the circumplex which contains octant NO. Thus, these results support the proposition that a hypomanic personality disorder category is warranted in the upcoming DSM-IV Axis II classification system.

Implications for Classification

The results from this research support the hypotheses that individuals with diagnosed personality disorders have more intense, rigid, and discrepant ratings of their interpersonal behavior than individuals from a non-clinical population. With this taken into consideration, what are the implications of these findings for personality disorder classification? As mentioned in chapter 1 of this thesis, Axis II classification

system of the DSM-III is considered to be problematic when compared to Axis I because a greater degree of inference is required on the part of the clinician when making an Axis II diagnosis (Livesley, 1985; Widiger & Frances, 1985).

These results suggest three major ways in which the degree of inference in personality disorder classification could be lowered. Firstly, the results suggest that the DSM-III criteria identifying personality disorders could be further objectified by using descriptors which reflect the intense and rigid nature of the interpersonal behavior exhibited in these disorders. Authors of the Axis II section of the DSM-III formed the 11 personality disorder categories by using the behaviors and symptoms which frequently tended to cluster together as category markers. Relatively little consideration has been given to the intensity and rigidity of these behaviors and how they differ from normal behaviors and personality traits. For example, a diagnostic criterion for dependent personality disorder is "passively allows others to assume responsibility for major areas of life because of an inability to function adequately" (APA, 1980, p. 326). ICL terms describing this type of intense interpersonal behavior are "Lets others make decisions" and "Likes to be taken care of". If these descriptive terms were contrasted with their less intense ICL counterparts "Appreciative" and "Cooperative", it is proposed that the diagnostician would have some context to place a

client's interpersonal behavior within when deciding whether or not her or his behavior meets this particular criterion for dependent personality disorder.

Secondly, this research has shown evidence to support the notion that there is a correspondence between certain personality disorder categories and certain interpersonal circumplex octants. For a personality disorder category in which this correspondence is evident, it is proposed that the interpersonal terms and descriptions be included in the description and diagnostic criteria for that particular personality disorder category. In the example given above, the terms "Lets others make decisions", "Likes to be taken care of", "Appreciative", and "Cooperative" all come from octant JK of the ICL. The results from this thesis research has shown that the dependent personality disorder tends to correspond with octant JK for both self- and other-ratings. Terms from this octant could be used to describe this personality disorder.

Thirdly, it is proposed that the circumplex model can not only assist in describing more accurately the interpersonal behavior of personality disordered individuals, it can also assist in describing more accurately the interpersonal behavior of those who interact with the personality disordered individual. Interpersonal behaviors when exhibited tend to "pull" certain interpersonal behaviors or complementary

responses from others (Carson, 1969; Kiesler, 1983; Leary, 1957). For instance, the diagnostic criterion for dependent personality disorder mentioned beforehand "passively allows others to assume responsibility for major areas of life because of an inability to function adequately" (APA, 1980, p. 326) describes an interpersonal maneuver whereby; the individual with a dependent personality disorder tends to train others to respond with interpersonal behaviors from the dominant-affiliative quadrant of the interpersonal circumplex (Carson, 1969; Kiesler, 1983; Leary, 1957). Terms from the dominant-affiliative quadrant of the ICL such as, "Kind and reassuring" and "Enjoys taking care of others" could be used to describe the types of complementary behaviors which the individual with a dependent personality disorder tends to evoke from others.

Interpersonal behavior is considered to be such an important component in psychiatric classification systems that both Adams (1964) and McLemore and Benjamin (1979) have proposed that the interpersonal system could replace traditional psychiatric classification systems in diagnosing mental disorders with a functional cause. However, studies have shown that dimensions besides control and affiliation underly personality disorders (Hyler & Lyons, 1988; Kass et al., 1985; Widiger et al., 1987). Therefore, it is unlikely that the interpersonal circumplex could adequately describe the nuances

of all 11 DSM-III personality disorders. Widiger and Frances (1985) have also proposed that the interpersonal system is important in the classification and treatment of personality disorders. Yet, they also recognize that the replacement of Axis II with the interpersonal system would not be feasible as it fails to represent personality disorders which are not interpersonal and would not be accepted readily by clinicians who were unfamiliar with the system. They propose, nevertheless, that the interpersonal system could be included in the DSM-IV as an appendix or as an optional axis.

Eysenck (1987) has made an interesting proposal for conceptualizing personality disorders which appears to have implications for the interpersonal circumplex. He proposes that DSM-III personality disorders can be conceptualized as combinations of three dimensions of personality: psychoticism (emotional independence), neuroticism (emotional instability) and extraversion. The differences in behavior for each DSM-III personality disorder, according to Eysenck (1987), can be found in the degree of prominence of one or the other of these three factors. The DSM-III (APA, 1980) has grouped the personality disorders into three clusters. Moreover, Kass et al. (1985) and Hyler and Lyons (1988) also found that these personality disorders tended to cluster in a manner similar to the DSM-III. Eysenck (1987) proposed that, in one cluster which includes paranoid, schizoid, and schizotypal personality disorders;

individuals with these disorders appear odd or eccentric which tends to be related to the psychoticism dimension. A second cluster includes histrionic, narcissistic, antisocial, and borderline personality disorders; individuals with these disorders often appear dramatic, emotional, or erratic which tends to be related to the extraversion dimension. A third cluster includes avoidant, dependent, compulsive, and passive-aggressive personality disorders; individuals with these disorders tend to be described as anxious or fearful which is related to the neuroticism dimension.

To extend Eysenck's proposition a bit further, it appears that the personality dimensions which contribute to DSM-III personality disorders are a combination of the three major classes of mental processes identified by German philosopher, Immanuel Kant (1781/1896): cognition (psychoticism), affect (neuroticism), and conation/behavior (extraversion). Therefore, the groups of DSM-III personality disorders reflect differences in the degree of prominence of a particular class of mental process.

It is proposed that the interpersonal circumplex could be used to classify and conceptualize personality disorders in the following manner: personality disorders which have conation and behavior as the most prominent personality dimension (i.e., histrionic, narcissistic, antisocial, and borderline personality disorders); the interpersonal circumplex could be

the model of choice for conceptualizing these disorders. In personality disorders which have either affect or cognition as the most prominent personality dimension; the interpersonal circumplex would be given a lesser degree of emphasis by researchers and clinicians in conceptualizing these disorders.

Implications for Treatment

The results from this research also have implications for the treatment of personality disorders. First of all, maladaptive individuals by displaying intense and rigid behavior patterns attempt to "structure" their interactions with others (Kiesler, 1983, 1986b; Leary, 1957). If the therapist interacting with a personality disordered client is not cognizant of this process, the result could be that she or he is reinforcing the client's maladaptive interpersonal behavior pattern instead of remediating it because interpersonal actions at a particular intensity level tend to evoke from interactants complementary responses at an equivalent level of intensity (Kiesler, 1983). Thus, in psychotherapeutic situations, the intense interpersonal behaviors of the personality disordered client may tend to pull intense reactions from the therapist. Related to this idea, the more extreme and rigid the interpersonal style of an individual, the less likely she or he will exhibit the predicted complementary response when interacting with others (Kiesler, 1983). Therefore, interactions with the personality

disordered client may not be rewarding for the therapist as the client, with an extreme and rigid behavior pattern, will tend not to respond in a complementary manner.

Personality theorists have proposed that personality disorders are an exaggeration of normal personality traits and are characterized by intense and rigid interpersonal behavior (Kiesler, 1986a; Millon, 1981; Widiger & Frances, 1985). With results from this research supporting this proposition, it is further proposed that the goal of therapy for personality disorders should be centered on getting the client to behave in a manner appropriate to the interpersonal situation rather than attempting to totally eradicate their (maladaptive) behavior pattern. Hefferline (1955a; 1955b) wrote on this issue and proposed that punishing a behavior or proclaiming it "bad" does not eliminate the behavior from an individual's repertoire of behavior patterns. Instead, the individual, to avoid further punishment, redirects some of his or her behavior (behavior which otherwise would have been available for coping with the external environment) to a new task of holding back these behaviors which would, if manifested, incur punishment or derogation from others. Hefferline (1955b) proposes that the individual should be taught how to express the maladaptive behavior in a way which is appropriate to the social situation, and psychotherapy could assist in achieving this result. This approach to the remediation of maladaptive interpersonal

behavior has also been discussed by interpersonal theorists. Kiesler (1986b) discussed the end result of psychotherapy as being one in which the client begins to behave more flexibly by exhibiting interpersonal behaviors which are appropriate to the situation.

By personality disorders being considered an exaggeration of normal personality traits as characterized by intense and rigid interpersonal behaviors, this concept implies that a relationship exists between interpersonal and intrapersonal processes. Lorr, Bishop, and McNair (1965) proposed that an intense and rigid interpersonal behavior pattern influences and, in turn, is influenced by preferred defense mechanisms for resolving inner conflict. For instance, they proposed that the submissive-abusive-inhibited type tends to use the defense mechanism "turning against the self".

The Gestalt school of psychology has a concept, isomorphism (Kohler, 1938), to describe the relationship between interpersonal and intrapersonal processes which may be useful for further explaining the implications of extreme and rigid interpersonal behavior in personality disorders. Gestalt psychologists hold that there is a relationship among behavior, experience, and neural activity, so that a particular pattern of neural activity gives rise to a particular pattern of experience and a particular pattern of behavior. For example, intense and rigid neural activity gives rise to experiences

which are intense and rigid and, in turn, behavior which is intense and rigid. Different sequences among behavior, neural activity, and experience can occur as well. For instance, by observing the behavior of another individual as intense and rigid, this will tend to give rise to neural activity which is intense and rigid and, in turn, experiences which are intense and rigid. Therefore, as Kiesler (1983) proposed, in an interpersonal situation where an individual is maladaptively emitting behaviors which are intense and rigid, the interactant in response to this behavior pattern will tend to have neural activity and experiences which are intense and rigid.

Limitations of the Present Study

If this research were to be conducted again it is suggested that two methodological changes be made in order to improve it. One change would be to have larger rating groups for the non-clinical sample. Some of the non-clinical groups in the present study had reliability coefficients for either control axis or affiliation axis which were near zero, indicating that more of the observed score variance was error score variance. By increasing the size of these groups and, hence, the number of raters for each group member, it would be more likely that the random error for each individual's score would be cancelled out within the group of ratings. Thus, increasing the number of raters should increase reliability of measurement.

A second methodological change which could be made concerns the response format for the ICL interpersonal ratings. Instead of a "true-false" format, using a Likert scale format may prove to be superior. J.S. Wiggins (personal communication, February 1989) indicated that the Likert scale is superior to the "true-false" format because it delineates more clearly the underlying continuum of the trait or traits being measured. As discussed previously, some measurement gaps were observed involving octants FG (Rebellious-Distrustful) and NO (Responsible-Hypernormal). By using a Likert scale for the ratings, these gaps should be minimized.

Implications for Future Research

The implications that the results have for future research will be discussed. First of all, this study showed that the interpersonal behavior of individuals with diagnosed personality disorders is more intense and rigid and their ratings more discrepant than individuals from a non-clinical sample. A question which follows from this finding is whether or not these characteristics are a sign of general maladjustment or specific to personality disorders. Future research should be conducted to test whether individuals with DSM-III Axis I disorders but no Axis II disorders have higher scores on the measures of these interpersonal characteristics than individuals from a non-clinical sample and individuals with diagnosed DSM-III personality disorders. Tyrer and

Alexander (1979) found that patients whose primary diagnosis was personality disorder and patients whose diagnoses was otherwise had a similar personality structure. Yet the individuals with a personality disorder differed in degree from the personalities of the other psychiatric patients and fell "... at the extreme of a multidimensional continuum" (Tyrer & Alexander, 1979, p. 166). Hence, with Tyrer and Alexander's (1979) research taken into consideration, it would be expected that individuals with diagnosed personality disorders would have higher scores on the measures of these interpersonal characteristics than individuals with a diagnosed DSM-III Axis I disorder but no Axis II disorder.

A second major area to be addressed in future research is, how do significant others view the interpersonal behavior of an individual with a personality disorder. The current research used raters for both samples who knew the subjects for a limited period of time. By using significant others as raters, they may have a different perspective on the interpersonal behavior of a subject. However, some methodological difficulties would have to be dealt with before this type of research could be conducted, such as the problem of significant others knowing a subject for varying lengths of time. For example, can the results of ratings made by the bosses of two subjects be compared; one boss who has known and worked with one of the subjects for five years and another boss

who has known the other subject for six months? Or is it allowable for the results from two raters, one a spouse who has known the subject for 10 years, and another rater, a boss who has known the subject for 5 years, to be compared? Perhaps using length of acquaintanceship as a covariate may be one way of circumventing this type of methodological problem.

The results from this research showed that the personality disorder categories lacked dispersion on the affiliation dimension of the interpersonal circumplex when ICL other-ratings were correlated with MCMI personality scales. An area for future research is: Can the degree of correspondence between DSM-III personality disorder categories and ICL other-ratings be improved by comparing the other-ratings with clinician-generated DSM-III Axis II diagnoses? In this study, the correlation between MCMI scores and ICL other-ratings compared data from two different rating sources (the subject and the rater). By comparing ICL ratings provided by the clinician with clinician-generated Axis II diagnoses, the degree of correspondence between the two should increase as both are derived from the same rating source- the clinician.

With this research providing support to the notion that the interpersonal behavior of individuals with diagnosed personality disorders is more intense and rigid than individuals from a non-clinical sample, a further research question which should be addressed is whether some personality

disorders are more extreme variants of other personality disorders. Millon (1981), with his syndromal continuity hypothesis, has proposed that the paranoid, schizotypal, and borderline personality disorders are more extreme variants of the other eight personality disorders listed in the DSM-III. It is proposed that this extremeness would be reflected by more intense interpersonal behavior being exhibited. For instance, patients with a paranoid personality disorder would exhibit more intense interpersonal behavior than patients with a narcissistic or antisocial personality disorder. For Millon's (1981) theory to be supported empirically, it is proposed that the interpersonal behavior intensity scores of individuals diagnosed with one of the extreme personality disorders should be higher than the scores of individuals diagnosed with one of the mild personality disorders which correspond with this extreme personality disorder. When the highest MCMI personality scale scores were used to categorize the subjects in the clinical sample, of the personality disorder categories which Millon (1981) considered to be extreme, only the borderline personality disorder category had sufficient number of subjects to warrant comparison with its milder counterparts. Comparison of the average intensity scores (self- and other-ratings) for borderline personality with its less severe counterparts showed no significant differences among the groups which does not support Millon's (1981) theory.

Another research question involving the intensity and rigidity of interpersonal behavior which should be addressed is whether the reactions to the individual with a personality disorder tend to be more intense and rigid. Kiesler (1983) has proposed that intense and rigid interpersonal behaviors tend to elicit intense and rigid reactions in others. The Gestalt school of psychology with its concept of isomorphism (Kohler, 1938) has proposed that observing the behavior of an individual as intense and rigid gives rise to neural activity, experiences, and behavior which are intense and rigid. Research on the reactions to intense and rigid interpersonal behavior would have important implications for the treatment of personality disorders. For instance, if research showed that personality disordered clients tended to evoke more intense and rigid reactions in others; the therapist working with a personality disordered client would be better prepared to disengage herself or himself to analyse the therapeutic process without disrupting the therapeutic alliance.

This research has shown that a relationship exists between some of the personality disorder categories as measured by the MCMI personality scales and certain interpersonal circumplex octants. An area for future research could address the question: Do therapeutic interventions based on the concepts of complementary, anticomplementary, and acomplementary interpersonal relations (Kiesler, 1983) serve to alter the

personality disordered individual's maladaptive interpersonal behavior pattern? For instance, empirical support has been found for the relationship between the dependent personality disorder and submissive-affiliative interpersonal behavior. By responding in an anticomplementary manner (submissive-hostile) to an individual with a dependent personality disorder, does this response reduce the client's maladaptive interpersonal behavior pattern as Kiesler (1982, 1986b) has proposed?

Summary

In the recent personality disorder literature there has been a substantial amount of discussion about the importance that interpersonal behavior, in particular the interpersonal circumplex, has in conceptualizing these disorders (Frances, 1982; Kiesler, 1986a; Millon, 1981; Widiger & Frances, 1985; Wiggins, 1982). Personality theorists have proposed that personality disorders are an exaggeration of normal personality traits and are characterized by intense and rigid interpersonal behavior (Kiesler, 1986a; Millon, 1981; Widiger & Frances, 1985). Some proponents of the interpersonal circumplex (Kiesler, 1983; Leary, 1957) have suggested that interpersonal behavior and mental disorders are related in three ways: 1) using a type of interpersonal behavior to an extreme degree, 2) adhering rigidly to one or a few types of interpersonal behavior, and 3) having discrepant ratings of an individual's interpersonal functioning between the individual (self-report) and others (other-report). Prior to this study, no empirical studies had verified these hypothesized relationships. Therefore, the purpose of this study was to test these theoretical propositions empirically so that further questions concerning the interpersonal circumplex and personality disorder classification and treatment could be addressed.

A clinical sample composed of 90 inpatients diagnosed with a personality disorder at a short-term psychiatric unit at an urban Western Canadian hospital were given the Millon Clinical Multiaxial Inventory (MCMI) and the Interpersonal Check List (ICL) to complete. A non-clinical sample composed of 97 university students at an urban Western Canadian university were given the ICL to complete. In addition the subjects in both samples were rated by individuals who interacted with them for a relatively brief duration of time (minimum time requirement 6 times for a duration of 10 minutes or more). The clinical sample subjects were rated by their prime nurses and the non-clinical subjects were rated by their fellow discussion group members.

Statistical analyses of these ratings showed that on four separate measures of interpersonal intensity, the clinical sample scores were significantly higher ($p < .01$) than the non-clinical sample scores. On two separate measures of interpersonal behavior rigidity, the clinical sample scores were significantly higher ($p < .01$) than the non-clinical sample scores. On the measure of interpersonal discrepancy, the clinical sample scores were significantly higher ($p < .01$) than the non-clinical sample scores. Thus, these results empirically support the theoretical propositions made by interpersonal theorists when applied to personality disorders, namely, that individuals with diagnosed personality disorders exhibit more

intense and rigid types of interpersonal behavior and have more discrepant ratings of their interpersonal behavior than individuals from a non-clinical sample.

Personality theorists have also proposed that there is a relationship between certain personality disorder categories and the interpersonal circumplex (Widiger & Kelso, 1983; Wiggins, 1982). The results from the correlations between ICL control and affiliation axes scores and the MCMI personality scales provided some degree of empirical support for these theoretical propositions. The ICL self-ratings appeared to provide a greater degree of support than the ICL other-ratings.

The results were discussed with reference to previous research on personality disorders and the interpersonal circumplex. The implications of the findings for personality disorder classification and treatment was also discussed. Suggestions were made regarding future research involving the interpersonal circumplex and personality disorders.

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Appendix 1: Information Sheet for Subjects in the Clinical Sample

I am investigating the kinds of adjectives individuals use to describe their own interpersonal behavior and the kinds of adjectives individuals use to describe other people's interpersonal behavior. Your participation in my study will involve completing the Millon Clinical Multiaxial Inventory a questionnaire designed to help you in describing your feelings and attitudes and, the Interpersonal Check List which contains descriptive terms of various types of interpersonal behavior. In addition, two of your prime nurses will use the Interpersonal Check List to describe your behavior. The total time for completion the questionnaire and the check list is approximately 25-40 minutes.

All of your responses and those made about you will be held in strict confidence and shall remain completely anonymous. The data you supply will be number coded with your name removed and stored on the computer and destroyed after the research has been completed. Your doctor will also be supplied with your results from the questionnaire and the check list in order to assist him in formulating a treatment plan to help you. Your participation in the study is voluntary and you may withdraw from the study at any time without affecting your access to treatment. I will also be pleased to supply you with a summary of the results of the study. If you have any questions, you can contact me, Jordan Sim, or my academic advisor, Dr. David Romney, our names, addresses, and telephone numbers are listed below.

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Appendix 2: Consent Form for Subjects in the Clinical Sample

I, _____, consent to participate in this study concerning the kinds of adjectives individuals use to describe their own interpersonal behavior and the kinds of adjectives individuals use to describe other people's interpersonal behavior. I understand that I will be asked to complete a check list and a questionnaire. Approximately 25-40 minutes of my time will be required in total.

I understand that:

- all of my responses and those made about me will be held in strict confidence and all the information I provide shall remain completely anonymous. The data will be coded with my name removed and stored on computer and destroyed after the research has been published;
- the results from the check list and the questionnaire will be made available to my doctor should he so wish and placed in my medical record;
- there is no physical or psychological risk involved in the study;
- I have the right to a summary of the results of the study;
- I am free to withdraw from the study at any time.

Name of Patient

Signature of Patient

Name of Witness

Signature of Witness

Date

*I would like a copy of the results of the study (write your name, address, and phone number at the bottom of the page).

**Appendix 3: Interpersonal Check List Instructions for
Subjects in Clinical and Non-clinical
Samples**

Here is a list of words and phrases which describe ways people may behave in relation to one another. First, go through the list; when an item describes you make a check mark beside its corresponding number. If an item does not describe you, do not make any mark. For example, the first phrase is, Able to give orders, number one on the list of items. If you believe you are able to give orders, make a check mark beside this item. If you believe you are not able to give orders, leave the space blank. Then do the same for item number two and so forth. Your first impression is best; so go through the list as quickly as you can, making a mark when the word or phrase describes you, leaving it blank when it does not. Filling out the check list should take approximately 5-10 minutes to complete.

Appendix 4: Interpersonal Check List Instructions for Raters of Clinical Subjects

Here is a list of words and phrases which describe ways people may behave in relation to one another. First, go through the list; when an item describes the patient make a check mark beside its corresponding number. If an item does not describe the patient, do not make any mark. For example, the first phrase is, Able to give orders, number one on the list of items. If you believe the patient is able to give orders, make a check mark beside this item. If you believe the patient is not able to give orders, leave the space blank. Then do the same for item number two and so forth. Your first impression is best; so go through the list as quickly as you can, making a mark when the word or phrase describes the patient, leaving it blank when it does not. Filling out the check list should take approximately 5-10 minutes to complete.

Appendix 5: Information Sheet for Subjects in the Non-clinical Sample

I am investigating the kinds of adjectives individuals use to describe their own interpersonal behavior and the kinds of adjectives individuals use to describe other people's interpersonal behavior. Your participation in the study will involve completing copies of the Interpersonal Check List, which contains descriptive terms of various types of interpersonal behavior, one being a self description and the others being descriptions of the other members of your group. The description that you provide on the other group members will be based on their behavior in the group. In addition, the other members of this group will use the Interpersonal Check List to describe your behavior. Approximately 5-10 minutes of your time will be required to complete each check list.

All data obtained will be used for the immediate purposes of the research project. All of your responses and those made about you will be held in strict confidence and shall remain completely anonymous. The data will be number coded with your name removed and stored on the computer and destroyed after the research has been published. Your participation in the study is voluntary and you may withdraw from the study at any time. Your participation/non-participation will in no way affect your course grade. If you wish to have a summary of the results of the study, you can make arrangements on the consent form. If you have any questions, you can contact me, Jordan Sim, or my academic advisor, Dr. David Romney, our names, addresses, and telephone numbers are listed below.

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**Appendix 6: Consent Form for Subjects in the
Non-clinical Sample**

I, _____, consent to participate in this study concerning the kinds of adjectives individuals use to describe their own interpersonal behavior and the kinds of adjectives individuals use to describe other people's interpersonal behavior. I understand that I will be asked to describe my own behavior by completing a check list and will describe the behavior of my fellow group members using the same check list. Approximately 5-10 minutes of my time will be required to complete each check list.

I understand that:

- all of my responses and those made about me will be held in strict confidence and all the information I provide shall remain completely anonymous. The data will be number coded with my name removed and stored on computer and destroyed after the research has been published.
- there is no physical or psychological risk involved in the study;
- I have the right to a summary of the results of the study;
- I am free to withdraw from the study at any time.

Name of Subject

Signature of Subject

Name of Witness

Signature of Witness

Date

*I would like a copy of the results of the study (Write your name, address, and phone number at the bottom of the page).

**Appendix 7: Interpersonal Check List Instructions for
Raters of Non-clinical Subjects**

Here is a list of words and phrases which describe ways people may behave in relation to one another. First, go through the list; when an item describes the group member you are rating make a check mark beside its corresponding number. If an item does not describe the group member, do not make any mark. For example, the first phrase is, Able to give orders, number one on the list of items. If you believe the group member is able to give orders, make a check mark beside this item. If you believe the group member is not able to give orders, leave the space blank. Then do the same for item number two and so forth. Your first impression is best; so go through the list as quickly as you can, making a mark when the word or phrase describes the group member, leaving it blank when it does not. Filling out the check list should take approximately 5-10 minutes to complete.