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A COMPARISON OF MULTIVARIATE PROCEDURES
FOR GROUPING MMPI PROFILE DATA

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy
in the Graduate School of
The Ohio State University

By

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* * * * *

The Ohio State University
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CHAPTER I

INTRODUCTION

Psychologists, both in research and practice, are often concerned with comparing persons on the basis of multivariate information considered simultaneously in order to identify a reduced number of "types" of persons designated by similar configurations of the multivariate data. Just as the task of interpreting a person's test behavior is made easier by condensing an array of item scores into a manageable number of dimensions or scale scores, the task is further simplified by grouping profiles with similar scores into discriminable subsets or classes in order to generalize about a greater number of persons as a single type.

In terms of the dimensions or variables measured, and relative to all other persons upon whose profiles paired comparisons are made, persons classified within a subset on the basis of profile similarity form a type and are treated as having in common the characteristics which define the type. Although persons within a type share a collection of common characteristics, types are

neither entirely homogeneous nor an entity.

Dahlstrom (1968) has noted that just as within biological classification systems not every specimen will show all of the features ascribed to the species, the same is likely to be the case in any personological classification system that can be devised. He adds that variations about some specified set of defining properties will be large and important, but that this does not necessarily vitiate either the theoretical or practical value of a classification scheme. Dahlstrom cites Kaplan (1964) who notes:

No state in history has been wholly, fully, a democracy, just as no male has exhibited all the traits of masculinity in superlative degree...but we can conceptualize perfect specimens of any species.

The most important function of an ideal type, however, is as a theoretical term. Weber makes the mistake, I believe, of concluding that, because an ideal type refers to an individual, albeit a fictitious one, it serves only in the study of individuals rather than of the generic kinds with which theory is concerned.

It is the inherent imprecision in the definitional features of a class, Dahlstrom points out, that has lead Polanyi (1968) to advance a radical revision in the logic of scientific explanation, positing a tacit integration process in the scientist himself which

enables him to work within such indeterminacies. Polanyi suggests that only by such an abstraction process can the similarities be discerned in comparing individuals, each of whom differs from every other in some respect.

As noted by Kaplan above, but in distinction from Polanyi's further contentions, Dahlstrom emphasizes that the configurations identified as types and used as explanatory structures are clearly scientific inventions:

Both biological species concepts as well as psychological types are in constant danger of being reified and treated as entities. Existential issues have particularly plagued these notions throughout the history of our science. One statement of this recurring issue appeared in Allport's last volume on personality: "Traits reside in the person; types in some outside point of view." (Allport, 1963, p. 349). Traits (dimensions) are just as much abstractions from the observational givens as are the patterns designated by types. A trait may be seen as a property of some individual, but membership in some class is just as much a property of that person. There should be no ambiguity in the locus of the abstraction or the role of the scientist who carries out the abstracting process (cf. Bieri, et al., 1966).

The Classification Problem

Similarity is a construct which is basic to the measurement of individual differences and to methods of personality assessment based on comparative norms. The process of discovering psychological similarity among persons as personality types exists in noting common characteristics at a level sufficiently abstract to permit generalization beyond a myriad of non-typal diversities. Once a type has been identified, its usefulness in approaching practical problems depends upon the usefulness of the attributes which determine the type. The construct validity of a type, as abstracted from test profiles, is determined by the empirical and/or logical relationship between the attributes reflected in scale scores, and the extent to which persons with geometrically similar profiles manifest greater behavioral similarity on measures independent of the test when compared with each other than when compared with persons with geometrically dissimilar profiles assigned to other classes.

McQuitty (1959) proposed as a basic definition of a binary type a pair of persons chosen where each member of the pair is more like the other member than he is like any other person. This represents the

lowest order of abstraction in developing objective numerical procedures for the isolation of types. By analogy with the Linnean botanical classification system, types of this kind may be seen as species. Similarly, a genus may be defined as a pair of species so chosen that each member of the pair is more like the other member than it is like any other species. In an analogous fashion, higher-order types, as families, orders, classes, etc., may be defined. A type, as defined by McQuitty, is a category of people of such a nature that everyone in a category is more like what is common to the members of his category than he is like what is common to the members of any other category of the same size. He recommends a successive agreement analysis by which an individual is first classified with the one person with whom he has most in common, then with the two persons with whom he has most in common, then with the three persons he has most in common, etc..

In an applied setting, the psychologist may be faced with the practical problem of assigning an individual on the basis of his multivariate test scores, perhaps with additional information, to a diagnostic category or group. He is also faced with the technical problem of choosing a discrimination technique from several potentially useful methods.

The situation is one which clearly illustrates the operationist idea that what is measured is determined by how it is measured. This doctrine and its place in the philosophy of science have been explained by Kaplan (1964).

There exists a large number of possible methods for quantifying similarity among persons on the basis of test scores for the purpose of identifying a limited number of types. Gleser (1965) has noted that each measure defines similarity somewhat differently and hence leads to the identification of different configurations of scores as maximally similar.

The present study is designed to compare the efficiency of several multivariate classification methods commonly used to assign persons to one of a number of subgroups on the basis of their test profiles. The purpose is to examine the efficiency or adequacy of each method in identifying discriminable subgroups of Minnesota Multiphasic Personality Inventory (MMPI) profiles gathered from a sample of emotionally disturbed adolescent girls. The efficiency of each procedure is then measured by the similarity of subjects (Ss) within and dissimilarity of Ss between subgroups as determined by an external criterion developed independent of the MMPI.

Multivariate Approaches
To The Classification Problem

A considerable body of psychological literature (e.g., Gough, 1962; Marks and Seeman, 1963; Meehl, 1954; Sawyer, 1966) attests to the comparative supremacy of actuarial over clinical methods of classification and prediction; as for example in assigning an individual upon whom a profile has been obtained, to his population of origin, such as a diagnostic group. It is theoretically possible, with a very large sample of MMPI profiles and a method of analyzing the profiles, to numerically derive new typologies. With the use of electronic data processing and multivariate statistical techniques, complex patterns may be derived which are beyond the intuitive pattern recognition capacity of an individual.

When similarity indices are written as computer programs, a number of decisions are quite arbitrarily made regarding, for example, the minimum number of persons required to form a subgroup or how much variability will be permitted within a subgroup. In discussing this problem, Meehl (1963) states:

At present there is no rigorous,
straight-forward actuarial "searching"

technique available for grouping similar but non-identical MMPI profiles into coarser classes or "types" so as to combine the desiderata of stable sample size, high psychological homogeneity, easy identifiability for routine clinical entrance, and quasi-complete coverage of the range of patterns empirically found (p. viii).

Goldstein and Linden (1967, 1969) have reviewed the literature on objections and shortcomings of commonly used multivariate grouping procedures. They noted that the choice of one multivariate technique as opposed to another generally leads to differing results. Gleser (1965) has emphasized that when one is dealing with a complex description such as is embodied in a profile or set of scores, it is important to define what is meant by similarity and to specify whether similarity is determined, for example, by counting the differences between persons along each dimension of the profile or by the patterning of profile elements. Each definition leads to different groupings of persons. This situation leads to the question: What is the optimal procedure for taxonomic classification of individual personality test profiles? Winter (1969) pointed out that under most circumstances the discrimination problem does not have a solution, i.e., no method is likely to enable one to assign an individual

to a type classification without any chance of error.

Many theories of abnormal personality accept the concept of syndromes of symptoms. In developing an analogy of psychological types to medical syndromes, McQuitty (1959) stated that a given trait or behavior sometimes indicates membership in one personality type or classification and sometimes in another, just as a given medical symptom means one disease and at other times a quite different disease.

A person, for example, seen as a hysterical personality may endorse a test item which indicates repression of sexual feelings. Similarly, a person seen as an obsessive-compulsive personality may endorse the same item. Consequently, it would seem important to know the pattern in which this single dependent variable appears. If the endorsed item appears in a pattern of items indicating over-intellectualization of emotional experience, it is usually hypothesized that endorsement indicates an obsessive-compulsive rather than hysterical type. Single test items, such as those which make up the MMPI need not all have what McQuitty calls "invariant validity", that is a one-to-one correspondence between the item and the type it identifies. Items, however, are presumed to have

"differential validity"; meaning that responses to these items manifest types but they manifest different types in different people. It is required that the pattern of responses to these items has high invariant validity, i.e., each pattern is unique to one and only one personality type, thus manifesting a one-to-one relationship between types and patterns.

According to Cattell (1959) the primary advantage of multivariate techniques of personality research over univariate strategies is that the multivariate method can deal with patterns and wholistic concepts. The univariate method, borrowed from classical physics, investigates a single variable with all others held constant. The multivariate method, on the other hand, investigates a great many variables, usually not artificially controlled, but allowed to vary as they vary in nature. Relationships are then found by employing factor analysis, the multiple discriminant function, distance measures, canonical correlations, and other such methods which have been developed principally in the behavioral sciences.

Two further advantages of multivariate methods have been described by Cattell (1959). First is the sheer efficiency of measuring several variables with

a single sample over that of measuring a single variable with several samples. Secondly, multivariate approaches permit investigation into naturally functioning wholes and later attempts at understanding are made by extracting the causal connections by superior statistical analytical procedures. Controlled manipulative experiments on behavior related to matters of vital emotional importance are unethical. If attempted, however, the artificiality of the experiment may create responses different from the naturally occurring ones.

The present study investigates the efficiency of several commonly used multivariate methods by comparing the adequacy of each method with every other technique in order to determine which may be the optimal method of assessing similarity. The five methods compared in the present study and described in detail in the following section are (1) a distance measure (D^2) followed by a prototype search and clustering routine based on the mean profile of the prototype, (2) a distance measure (D^2) followed by a hierarchical grouping procedure, (3) a correlational cluster technique, (4) the Taxonome program using a distance function as well as the correlation coefficient r_p , and (5) an inspectional clustering

method based on clinical experience and judgment of an expert reader of MMPI profiles.

The "optimal" method's adequacy or efficiency is examined relative to coverage (i.e., the number of profiles from among a fixed sample that are classified) and by the degree to which individuals assigned to subtypes are similar (and dissimilar from persons in other subtypes) when compared on the basis of other personality data compiled independent of the MMPI by a person knowing the S well; namely, the S's psychotherapist. The generalized null hypothesis states that there is no difference between methods in terms of their adequacy or efficiency.

CHAPTER II

METHOD

The data upon which the multivariate classification methods under investigation were compared were those collected and reported by Marks (1967) as part of The Adolescent personality Description Project (APDP) which was organized in 1963 and funded by the National Institute of Mental Health. The ultimate purpose of this project "is to provide an extensive library of personality descriptions of emotionally disturbed adolescents for whom the descriptions have been actuarially derived" (Marks, 1967).

As part of the original study, Marks assembled a nationally representative sample of MMPI profiles and a wide grange of non-test data on over 2,000 emotionally disturbed youth. The population consisted of Caucasian boys and girls, ages 12 through 18 years who were not mentally deficient or retarded, but who had some adjustment problem and were either seeking professional help or had been referred for it by others.

The settings from which the Ss came were both medical and non-medical, inpatient and out-patient, public and private; with child guidance clinics, adolescent clinics, medical centers, county guidance centers, psychiatric hospital, mental health centers, private offices, and state hospitals all represented.

All Ss were tested during routine pretreatment evaluations and various forms of the MMPI were used. The "cannot say" alternative was eliminated from the instructions and Ss were encouraged to answer every question. Ss who left 50 or more questions unanswered were either retested or eliminated from the project. Only poor vision, clear lack of cooperation, or gross confusion were considered significant in affecting valid test results. Ss were either retested or excluded if in the judgment of the examiners any one of these applied.

Subjects

The sampling population for the present study was limited to 325 girls who had obtained MMPI T-scores of 70 or above on two or more of the clinical scales; who had completed a Personal Data Schedule (a self-administered objective questionnaire of 72 items

covering attitudes and feelings toward self, others, home, school, work, health, religion, dating, sex, and leisure time, plus 300 self-descriptive adjectives); who had remained in psychotherapy for a minimum of ten hours; and whose therapist had completed a set of ratings as described below. From this population, approximately one-half ($N=150$) of the Ss were selected; with the size determined by the core storage availability of the computer used. Demographic cards for the 325 girls were sorted into groups by age with identifying data appearing in numerical order within groups. Every other case was then selected from within each age group except for the last 25 Ss in the three age groups with the largest N which were eliminated from the study. This procedure (see Table 1) yielded the required N of 150 cases.

TABLE 1
SELECTING THE STUDY SAMPLE FROM
THE ORIGINAL FEMALE CASES

Age	Original <u>N</u>	Minus 25 <u>Ss</u>	Corrected <u>N</u>	Sample <u>N</u>
12	6	0	6	3
13	26	0	26	13
14	37	0	37	18
15	76	9	67	34
16	77	9	68	34
17	66	7	59	30
18	37	0	37	18

Criterion Judges

Marks (1967) described the persons from whom the criterion information was gathered as follows:

Our research collaborators number 74 and our psychotherapist raters 172. One-hundred and sixteen of our therapists are either Board-certified psychiatrists, Ph.D. clinical psychologists, or Masters of Social Work with two additional years of therapy experience. They have provided the ratings on 746 cases, or on 90% of our patients. Twenty-four of our therapists are either third or fourth-year psychiatry residents, or recent MSW graduates. They have in turn provided ratings on 83 patients, or on 10% of our cases....An impressive finding is that 78% of our therapists spend 11 or more hours per week actually engaged in psychotherapy.

Non-Test Criterion Information

The rating materials which were included in the present study consisted of a Q-sort and an adjective check list which were completed by the Ss' psychotherapists after a minimum of 10 hours interview contact. Marks (1967) described these instruments as follows:

The Q-sort item pool (Appendix A) consisted of 108 phenotypic and genotypic statements about personality structure and function. The statements were originally selected

from over 2,000 for their representative coverage of the personality domain; and empirically screened for age and sex non-specificity, for clinical pertinence, ratatability, inter-patient variability, and other variables, as reported in a number of studies (Marks 1959, 1961; Marks and Seeman 1962a, 1962b, 1962c, 1962d, 1963)....The content of the pool covers attitudes towards self, attitudes towards others, motivational needs, areas of conflict, mechanisms of defense, types of control, character traits, ego strengths, ego weaknesses, and accessibility to personality change....

The Adjective Check List (Appendix B) contains 300 items that were developed and reported by Gough (1960).

The present study included as criterion information the adjective check list completed by Ss describing themselves and the adjective check list on Ss completed by their psychotherapists.

Adolescent Normative Data

In addition to computing T-scores based on the standard adult male and female normative groups, T-scores were also computed from special adolescent norms which were developed by Marks (1967). Marks compiled MMPI normative data for both boys and girls for four age groups. These four groups and the size of

each of the normative subsamples of girls were: Age 13-6/14-5 ($N=280$); age 14-6/15-5 ($N=277$); age 15-6/16-5 ($N=158$); and age 16-6/17-5 ($N=139$). The non-K-corrected MMPI mean raw scores and standard deviations on the 13 basic scales which were compiled by Marks on a non-patient sample of adolescent girls appear in Appendix C. All of the 854 girls in the normative sample were Caucasian high-school pupils who had not been in psychiatric treatment. The normative sample MMPI data were profiles, gathered on both rural and urban youth from the states of Kansas, Missouri, Ohio, North Carolina, and Minnesota.

Four Scoring Procedures

Used On Each Ss MMPI

For each of the 150 Ss included in the present study, eight tabulating cards were encoded with the S's identifying number, age, and scores on the three validity scales and ten clinical scales of the MMPI. On each of the eight cards was encoded either a set of T-scores or raw scores which had been derived from one of two sets of norms and one of two different procedures of converting MMPI raw scores into T-scores. These procedures involved converting K-corrected and

non-K-corrected raw scores into T-scores based on adult norms (Hathaway and McKinley, 1951; Dalstrom and Walsh, 1960), and converting K-corrected and non-K-corrected raw scores into T-scores based on adolescent norms developed by Marks (1967).

TABLE 2
FOUR PROCEDURES BY WHICH S's MMPI
RAW SCORES WERE CONVERTED
INTO T-SCORES

	K	NORMATIVE SAMPLE
1	K-corrected	Adult Norms
2	Non-K-corrected	Adult Norms
3	K-corrected	Adolescent Norms
4	Non-K-corrected	Adolescent Norms

Multivariate Classification

Procedures

Five procedures which have been used with psychological test data for the purpose of developing taxonomic groups on the basis of profile similarity were compared. Two general rules for all procedures were that a subgroup had to include at least three profiles and that subgroups not overlap, that is that a profile was not to be assigned to more than one subgroup.

The five multivariate classification procedures compared were:

1. Distance measure followed by a prototype construction procedure. The generalized (n-dimensional) distance function:

$$d = \sqrt{(a_1 - a_2)^2 + (b_1 - b_2)^2 + \dots + (n_1 - n_2)^2}$$

commonly called Mahalanobis' D (1936) was reasoned by Cattell (1949) to be unsuitable in its crude form because its magnitude gives--as a result of different scale metrics for different coordinates--no immediately meaningful value. The distance measure suggested by Cronbach and Gleser (1953) and independently by Osgood and Suci (1952) defines dissimilarity between two profiles as the Euclidean distance between the two points representing these profiles in k-dimensional space. Two profiles are considered identical if and only if the points are coincident, that is, if the two profiles are geometrically identical. The greater the distance between two points the more dissimilar are the two profiles. Sines (1966) used D^2 to identify classes of MMPI profiles ($D^2 = \sum d^2$), where d = the difference in T-score points between corresponding scales on the MMPI. Sines stated that there were many similarities between the program he devised to group MMPI profiles

and the method proposed by Sawrey et al. (1960).

In the present study, this program was written according to Sines' (1966) description, employing the parameters used by him. The program compared each MMPI profile to every other profile and computed the D^2 value which was the sum of the squared differences in T-score points between the 13 corresponding scales. The program made paired comparisons of profiles and noted any pair for which the D^2 value was equal to or less than 625. The largest set of profiles that compared to some particular "target" profile, each with a D^2 of 625 or less, was then located. All profiles that compared to the target profile with a D^2 of 625 or less were identified. Next, a matrix was formed to the D^2 values resulting from the comparison of each of the profiles with each other. This matrix was successively reduced by eliminating profiles until only those profiles remained that related to at least 60% of the other profiles in the group with a D^2 of 625 or less with no more than 10 T-score points difference on any single scale.

The profiles in this final group were then averaged and the resulting mean profile was set as "Prototype No. 1." Then every profile was compared

to this mean profile and if the relation was 484 or less, the profiles constructed the first cluster and were removed from the sample before recycling. Sines (1966), pointed out that 625 was set as the critical value for the first D^2 after a sample of 350 MMPI profiles had been run through the program several times using other cut-off values.

In the present study, profiles which made up the prototype, rather than the ensuing cluster, were measured for homogeneity and compared with the subsets generated by the other procedures. This was done because the prototype groups were usually larger, never smaller, than the clusters developed from them, giving a more reliable estimate. It is likely, according to Sines, that with a very large sample of profiles, the number of profiles which are clustered through comparison with the mean prototype profile is larger than the group which makes up the prototype.

2. Distance measure followed by hierarchical grouping. Either Overall's D^2 statistic (1964) or the d^2 statistic proposed by Cronbach and Gleser (1953) may be used to provide the data required for the hierarchical grouping procedure in the modified form proposed by Ward and Hook (1963). The former is

chosen in cases where the solution is oblique, and the latter where the solution is orthogonal. In discussing factor analytic approaches to the MMPI, Shure and Rogers (1965) pointed out that because of the item overlap inherent in the makeup of the scales, the solution to the distance problem is actually oblique.

Following the procedure described by Goldstein and Linden (1969), the distance measure, D^2 (Overall, 1964), was utilized as input for the iterative procedure for hierarchical grouping proposed by Ward (1963). In this program, first one group of two subjects and $N-2$ groups of one subject is determined. The grouping process is continued until all subjects are included in one group. In the present study, the grouping procedure was stopped when none of the groups were smaller than $N=3$. At that stage in the grouping process, all of the profiles except either one or two were assigned to a group comprised of at least three profiles.

3. Correlational cluster procedure. This routine as it was used in the present study is a modification of that originally proposed by Lorr, Bishop, and McNair (1965). This procedure was described by Goldstein and Linden (1969) and used by them to classify

alcoholics by means of the MMPI.

The operational correlational cluster routine begins with the construction of a variance-covariance matrix yielding an indication of elevation and using MMPI raw scores as input. From this matrix clusters of Ss are selected whose profile elevation and shape are similar. The first cluster in this procedure is built around a pivot profile that has the highest average correlation with all cluster profiles above a lower cutting point that was defined as the .05 level of significance for the Pearson r ($\approx .553$ for 13 variables) less one-half of the associated standard error for that statistic. Retained in this cluster were all profiles that correlated above the lower cutting point with the pivot profile and all members initially assigned to the cluster.

An upper cutting point was determined as the .05 level of significance for the Pearson r plus one-half of the standard error of that statistic. All profiles with an average r greater than the upper cutting point were removed to prevent clusters from overlapping. This limit also serves to eliminate profiles that are common to more than one cluster. Using the residual N a second cluster was identified following the same

procedures as described for the first cluster. Again, all profiles whose average $\bar{r}$ was above the upper cutting point with the second cluster were removed and further clustering procedures initiated for the residual N .

4. The profile similarity coefficient r_p and the Taxonome program. This measure is described in detail by Cattell (1949) who proposed the index r_p to take into account profile shape as well as elevation. The Taxonome program has been refined by Cattell, Coulter, and Tzujoka (1966) and defined by them as:

The central profile tendency found in a defined subgroup of a population, which is measurable on certain dimensions. The subgroup is not arbitrarily defined but recognized by its constituting an unusual modal frequency of occurrence and segregation in the general population on a dimension or combination of dimensions.

This procedure substitutes the profile similarity coefficient r_p for the simple d function. In the present study, the cut-off point in the program's search for groups was set at the .05 level of significance for the r_p ($>.354$ for 13 variables). The r_p formula (for continuous variables, in the orthogonal

case) may be written:

$$\bar{r}_{p(1y)} = \frac{E_k - \sum_j^k d^2(1y)}{E_k + \sum_j^k d^2(1y)}$$

where k is the number of dimensions involved in the comparison, d is the difference, in standard score units, between the individuals i and y on each of the successive 13 dimensions, and E_k is twice the median chi-square value for k degrees of freedom, i.e., $E_k = 2k$, where k is the median chi-square.

Based on profile resemblance, the Taxonome program constructs a matrix with S_s in rows and clusters in columns. Clusters identified by this procedure are not disjoint; therefore, S_s assigned to more than one cluster were removed from further attention in the present study.

5. Groupings made on the basis of clinical judgment. An expert in the use and interpretation of the MMPI was presented with the same basic problem of dividing N S_s into k subgroups. However to eliminate the effort and time consuming task of making four sorts of the profiles as the computer did, he was asked

to make one sort of the profiles using those based on the adult norms without the K correction which provided the greatest coverage of Ss for the mathematical grouping procedures.

Procedure

The project was designed to compare differences in efficiency between five methods of sorting N individuals into k subsets by assessing profile similarity. The effectiveness of each method was measured by the degree of similarity within subsets and dissimilarity between subsets on the basis of criterion information gathered upon each individual independently of the test.

In order to compare the efficiency of the five methods to group MMPI profiles collected from 150 emotionally disturbed adolescent girls into subgroups or subtypes, computer programs were written for the four procedures which mathematically define similarity. Using a source deck of the Taxonome program obtained from the Institute for Personality and Ability Testing, this program was run on an IBM 360/70 OS computer. The other three programs were run on an IBM 360/50 DOS computer.

The four sets of MMPI scores were then separately processed by each system, each time using the same parameters. This yielded 16 sets of k subgroups of N individuals based on profile similarity, plus 16 residual pools of Ss who did not meet the constraints for membership within a subgroup for each of the four methods operating upon each of the four sets of MMPI scores. Residual profiles were not given further attention in the present study. The clinician grouped profiles which had been drawn on the regular MMPI psychograph. A sixth grouping procedure was to randomly assign profiles to subgroups. The number of subgroups for the random grouping was the median number of subgroups generated by the other five procedures, and the minimum number of Ss required to form a subgroup (N=3) were assigned to each. For purpose of the present study profiles had been assigned identifying numbers from 1 through 150 in order by age group beginning with the youngest group. For random grouping of the profiles every 25th profile was pulled beginning with No. 25 until 14 subgroups of three profiles were formed. Thus, subgroup No. 1 was comprised of profiles 25, 50, and 150; subgroup No. 2 of profiles 24, 49, and 149, etc..

Following the identification of the subsets generated by each procedure on the basis of MMPI profile similarity, the Q-sorts which had been done for each individual by his psychotherapist were correlated within each subgroup and between the subgroups the procedure identified. The 108 Q-sort items had been sorted by the therapists into a nine category, rectangular, forced distribution with 12 statements in each category. Therapists had been instructed to place in category 1 the 12 statements "least descriptive" of the patient, and in category 9 the 12 statements "most descriptive" of the patient. The remaining statements were distributed among categories between these two extremes, corresponding to the degree of judged "descriptiveness". The Q-sort done for each girl was encoded into two tabulating cards. Pearson product moment correlation coefficients were computed by making pairwise correlations within each subgroup and between each subgroup identified by each system, yielding matrices of averaged within and averaged between subgroup correlations.

Similarly the adjective check lists which had been completed for each individual by his psychotherapist were correlated within each subgroup and

between the subgroups generated by each system. This procedure was repeated employing the adjective check lists completed by each patient describing herself. The adjective check list was included in the present study with the Q-sort in order to have multiple criteria and to include an instrument which did not force the distribution of items. From 300 adjectives, raters were asked to check only those which were most descriptive. Therapist raters were instructed not to describe some diagnostic stereotype, and patients were instructed to describe themselves as they are and not as they wished they were or wished other would see them.

The raw data was encoded into three tabulating cards. As was done with the Q-sort, Pearson product moment correlation coefficients were computed by making pairwise correlations within each subgroup and between each subgroup which emerged from each system.

In order to systematically examine the multivariate procedures in terms of the constructs (types) they identified, a modification of the correlation matrix proposed by Campbell and Fiske (1956) was employed. These authors have proposed a procedure for establishing convergent and discriminant validation by the multi-

trait-multimethod matrix. By generating such a matrix as Campbell and Fiske described, one can obtain the correlations between a number, y , methods of measuring some number, x , of traits, computed over all subjects. The modifications used in the present study were to define "method" as a procedure for identifying similarity, and to substitute types resulting from the grouping procedures for "traits". To fill in the matrix completely would mean correlating the measures on all individuals within each subgroup generated by every system with individuals in every other subgroup generated by every other procedure. For purposes of the present study, correlations were made only between individuals within each subset and individuals within all other subsets generated by a single system. This was to provide a measure of the within subset homogeneity and between subset differences. To extend these comparisons across all procedures would indicate, for example, whether subset m of procedure A is similar or dissimilar to subset n of procedure B. However, this additional information was not viewed as relevant to the present question.

A modified correlational matrix originally proposed by Campbell and Fiske was developed on a

logical rather than quantitative basis. However, the model provides a summarization of the data and simplifies the interpretation of the observations. From such a correlational matrix in the present study, one deduced the extent to which persons within a type, who are alleged to be similar, are similar on the basis of the criterion information. Conversely, types alleged to be different, ought to have low correlations when between-type correlations are performed. From such a succinct condensation of the data, one can easily observe the relative accuracy of each of the procedures for quantifying similarity.

CHAPTER III

RESULTS

The distance measure followed by the prototype construction technique grouped the smallest number of subjects. The average number of Ss assigned to a subtype was three.

TABLE 3

AVERAGE WITHIN AND BETWEEN SUBTYPE r's ON THREE
CRITERION MEASURES FOR SUBTYPES IDENTIFIED
BY D2 FOLLOWED BY PROTOTYPE CONSTRUCTION
UPON FOUR DIFFERENTLY DERIVED SETS
OF MMPI SCORES FOR 150 Ss .

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF <u>Ss</u>	OVERALL AVG. WITHIN TYPE <u>r</u>			OVERALL AVG. BETWEEN TYPE <u>r</u>		
			Q	TACL	PACL*	Q	TACL	PACL
Adult +K	9	28	.20	.19	.12	.21	.17	.10
Adult -K	14	44	.24	.21	.14	.13	.14	.12
Adoles. +K	6	18	.30	.22	.14	.27	.21	.12
Adoles. -K	7	21	.27	.22	.15	.24	.21	.14

*On all tables, Q=Q-sort; TACL=therapists' Adjective Checklist; and PACL=patients' Adjective Checklist.

The subgroups which emerged had relatively high within-subtype correlations, but the between-subtype correlations were also relatively high. Table 3 sum-

marizes the results of S assignment into subgroups utilizing this method. The correlation matrices from which all of the results reported in this chapter were summarized appear in Appendices D through O.

The distance measure followed by Ward's (1963) hierarchical grouping procedure grouped the largest number of Ss into the greatest number of subtypes at the point that it had been decided to stop the grouping process. Table 4 summarizes these results.

TABLE 4

AVERAGE WITHIN AND BETWEEN SUBTYPE r's ON THREE
CRITERION MEASURES FOR SUBTYPES IDENTIFIED
BY D² FOLLOWED BY HIERARCHICAL GROUPING
UPON FOUR DIFFERENTLY DERIVED SETS
OF MMPI SCORES FOR 150 Ss

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF <u>Ss</u>	OVERALL AVG. WITHIN TYPE <u>r</u>			OVERALL AVG. BETWEEN TYPE <u>r</u>		
			Q	TACL	PACL	Q	TACL	PACL
Adult +K	31	148	.20	.17	.14	.15	.14	.12
Adult -K	20	149	.20	.18	.14	.15	.14	.12
Adoles. +K	14	149	.19	.16	.14	.15	.14	.12
Adoles. -K	17	148	.18	.17	.14	.15	.14	.12

The correlational cluster procedure placed the greatest number of individuals into the fewest groups. The individual members of each group had positive

average correlations which were significant at or above the .05 level of significance with other members assigned to that group on the basis of profile similarity. Table 5 summarizes the results of the subgrouping by this method.

TABLE 5

AVERAGE WITHIN AND BETWEEN SUBTYPE $\bar{r}$'s ON THREE
CRITERION MEASURES FOR SUBTYPES IDENTIFIED
BY THE CORRELATIONAL CLUSTER ROUTINE
UPON FOUR DIFFERENTLY DERIVED SETS
OF MMPI SCORES FOR 150 $\bar{S}$ s

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF $\bar{S}$ s	OVERALL AVG. WITHIN TYPE $\bar{r}$			OVERALL AVG. BETWEEN TYPE $\bar{r}$		
			Q	TACL	PACL	Q	TACL	PACL
Adult +K	5	58	.20	.17	.12	.15	.14	.10
Adult -K	6	71	.19	.16	.12	.15	.13	.10
Adoles. +K	5	59	.19	.18	.12	.13	.13	.09
Adoles. -K	4	60	.20	.16	.12	.16	.15	.10

With each of the four sets of data, the Taxonome program identified one very large group, and then a number of very small groups. When $\bar{S}$ s assigned to more than one subtype were removed a number of the smaller subgroups were consequently eliminated. This left always one very large subgroup and two or four very small subgroups. The individual members of each

subtype had positive r_p 's which were significant at or beyond the .05 level. Table 6 summarizes $\bar{S}$ placement into subgroups utilizing Taxonome and the index of profile similarity r_p .

TABLE 6

AVERAGE WITHIN AND BETWEEN SUBTYPE r 's ON THREE
CRITERION MEASURES FOR SUBTYPES IDENTIFIED
BY THE TAXONOME PROCEDURE UPON FOUR
SETS OF MMPI SCORES FOR 150 $\bar{S}$ s

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF $\bar{S}$ s	OVERALL AVG. WITHIN TYPE r			OVERALL AVG. BETWEEN TYPE r		
			Q	TACL	PACL	Q	TACL	PACL
Adult +K	5	40	.17	.16	.13	.16	.15	.13
Adult -K	3	94	.16	.15	.13	.17	.15	.11
Adoles. +K	3	86	.16	.14	.12	.17	.15	.13
Adoles. -K	3	93	.16	.14	.12	.18	.16	.12

Table 7 summarizes the correlations on criterion information for subtypes identified by the clinician.

TABLE 7

AVERAGE WITHIN AND BETWEEN SUBTYPE r 's ON THREE
CRITERION MEASURES FOR SUBTYPES IDENTIFIED
BY THE CLINICIAN FOR 150 MMPI PROFILES

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF $\bar{S}$ s	OVERALL AVG. WITHIN TYPE r			OVERALL AVG. BETWEEN TYPE r		
			Q	TACL	PACL	Q	TACL	PACL
Adult -K	17	87	.23	.18	.14	.16	.14	.12

Table 8 summarizes the correlations on criterion information for subtypes randomly identified.

TABLE 8

AVERAGE WITHIN AND BETWEEN SUBTYPE $\bar{r}$'s ON THREE
CRITERION MEASURES FOR SUBGROUPS SELECTED
RANDOMLY FROM 150 MMPI PROFILES

NORM GROUP	NO. OF SUBTYPES	TOTAL NO. OF Ss	OVERALL AVG. WITHIN TYPE $\bar{r}$			OVERALL AVG. BETWEEN TYPE $\bar{r}$		
			Q	TACL	PACL	Q	TACL	PACL
Adult -K	14	42	.17	.15	.07	.18	.16	.10

Overall average within and between subtype correlations for each of the four mathematical multivariate procedures accross all four sets of differently derived MMPI scores on the three criterion measures showed higher within subtype correlations than between subtype correlations except in the case of Taxonome. Overall average within subtype correlations on the three criterion measures are higher for subtypes identified by the clinician than the overall average between subtype correlations on the criterion measures (Table 7). Overall average within subtype correlations on the three criterion measures are lower for subgroups randomly selected than the overall average between subtype correlations

on the criterion measures (Table 8). Combined comparisons of the mathematical procedures accross all four MMPI profile scoring procedures appear in Table 9.

TABLE 9

OVERALL AVERAGE WITHIN AND BETWEEN SUBGROUP
CORRELATIONS FOR FOUR MULTIVARIATE PRO-
CEDURES ON THREE CRITERION MEASURES

PROCEDURES	OVERALL AVG. WITHIN TYPE $\bar{r}$			OVERALL AVG. BETWEEN TYPE $\bar{r}$		
	Q	TACL	PACL	Q	TACL	PACL
Prototype Construction	.25	.20	.14	.19	.17	.12
Hierarchical Grouping	.19	.17	.14	.15	.14	.12
Correlational Cluster	.19	.17	.12	.15	.14	.10
Taxonome	.16	.15	.12	.17	.15	.12

TABLE 10

OVERALL AVERAGE WITHIN AND BETWEEN SUBGROUP
CORRELATIONS FOR EACH OF THE FOUR SETS
OF MMPI T-SCORES ACCROSS FOUR MULTI-
VARIATE PROCEDURES

NORMS	OVERALL AVG. WITHIN TYPE $\bar{r}$			OVERALL AVG. BETWEEN TYPE $\bar{r}$		
	Q	TACL	PACL	Q	TACL	PACL
Adult Norms +K	.20	.17	.13	.16	.15	.12
Adult Norms -K	.19	.17	.13	.15	.14	.11
Adolescent Norms +K	.19	.16	.13	.16	.15	.12
Adolescent Norms -K	.18	.16	.13	.17	.15	.12

Slightly greater overall average within subgroup correlations, and lower between subgroup $\bar{r}$'s were

derived from those MMPI profiles scored with adult norms without K-correction.

Three comparisons of within type homogeneity and between type heterogeneity were made for all five multivariate procedures plus the random grouping of adult norm non-K-corrected MMPI profiles. Table 11 shows comparisons on matched t-tests.

TABLE 11

MATCHED t-TESTS COMPARING WITHIN SUBTYPE $\bar{r}$ 'S
WITH AVERAGE BETWEEN SUBTYPE $\bar{r}$ 'S FOR EACH
MULTIVARIATE PROCEDURE USING ADULT
NORM NON-K-CORRECTED PROFILES

PROCEDURE	CRITERION	df	t	p
D ² PROTOTYPE	Q-SORT	13	2.59	.05
	TH'S ACL	13	2.38	.05
	PT'S ACL	13	1.95	NS
D ² HIERARCHICAL GROUPING	Q-SORT	19	2.97	.01
	TH'S ACL	19	3.09	.01
	PT'S ACL	19	2.29	.05
CORRELATIONAL CLUSTER	Q-SORT	5	1.29	NS
	TH'S ACL	5	1.80	NS
	PT'S ACL	5	2.79	.05
TAXONOME	Q-SORT	2	-0.30	NS
	TH'S ACL	2	0.59	NS
	PT'S ACL	2	1.00	NS
CLINICIAN	Q-SORT	16	2.42	.05
	TH'S ACL	16	1.91	NS
	PT'S ACL	16	2.46	.05
RANDOM	Q-SORT	13	-0.27	NS
	TH'S ACL	13	-0.60	NS
	PT'S ACL	13	-1.35	NS

The pairs of scores compared in Table 11 were (1) the within type correlation on the diagonal of the subtype correlation matrix, and (2) the average of the between subtype correlations in its row and column.

TABLE 12

MEDIAN TEST OF CHI SQUARE COMPARING FREQUENCY OF THE WITHIN SUBTYPE $\bar{r}$ AS GREATER THAN THE AVERAGED BETWEEN SUBTYPE $\bar{r}$ WHEN RANK ORDERED AND SPLIT AT THE MEDIAN

PROCEDURE	CRITERION	df	χ^2	p
D ² PROTOTYPE	Q-SORT	1	14.00	.001
	TH'S ACL	1	20.40	.001
	PT'S ACL	1	2.28	NS
D ² HIERARCHICAL GROUPING	Q-SORT	1	1.60	NS
	TH'S ACL	1	3.60	NS
	PT'S ACL	1	0.40	NS
CORRELATIONAL CLUSTER	Q-SORT	1	0.00	NS
	TH'S ACL	1	1.32	NS
	PT'S ACL	1	1.32	NS
TAXONOME	Q-SORT	1	3.38	NS
	TH'S ACL	1	3.38	NS
	PT'S ACL	1	6.00	.02
CLINICIAN	Q-SORT	1	2.96	NS
	TH'S ACL	1	5.76	.05
	PT'S ACL	1	5.76	.05
RANDOM	Q-SORT	1	0.00	NS
	TH'S ACL	1	0.56	NS
	PT'S ACL	1	2.28	NS

The same pairs of scores used to make the t-tests reported in Table 11 were ranked in order and a median

test (Siegel, 1956) and Chi square was done to note how often for each matrix of subtype correlations the within subtype correlation on the diagonal was greater than the between average subtype correlations in the rows and columns. This statistic was used to observe the frequency with which the within subtype $\bar{r}$ was greater than the averaged between subtype $\bar{r}$'s. The magnitude of these differences was considered by the matched t-tests (Table 11). However, since both of these statistics necessitated averaging the between-subtype $\bar{r}$'s, one further analysis was done using the sign test (Siegel, 1956). Using this technique, one counts the number of times that the between-subtype $\bar{r}$'s in each correlation matrix are smaller than the within-subtype $\bar{r}$ on the diagonal, and also the number of times that the between-subtype $\bar{r}$'s in the row and column are greater than the within-subtype $\bar{r}$. Where the number of between subtype correlations greater than the within-subtype $\bar{r}$ is the same as those less than the within-subtype $\bar{r}$, there is a tie. In Table 13 which shows the results of the sign test, N =the number of subtypes generated by the procedure minus ties, and the probability of the ratio occurring by chance alone for N subgroups is reported.

TABLE 13

SIGN TEST OF THE FREQUENCY WITH WHICH THE BETWEEN
SUBTYPE r 's IN THE ROWS AND COLUMNS OF EACH
MATRIX WERE LESS THAN OR GREATER THAN
THE WITHIN r 's ON THE DIAGONAL

PROCEDURE	CRITERION	B<W	B>W	<u>N</u>	p
D ² PROTOTYPE	Q-SORT	11	2	13	.011
	TH'S ACL	9	5	14	.212
	PT'S ACL	9	5	14	.212
D ² HIERARCHICAL GROUPING	Q-SORT	14	6	20	.058
	TH'S ACL	15	5	20	.021
	PT'S ACL	13	7	20	.132
CORRELATIONAL CLUSTER	Q-SORT	3	3	6	.656
	TH'S ACL	4	2	6	.344
	PT'S ACL	4	1	5	.188
TAXONOME	Q-SORT	3*	3	6	.656
	TH'S ACL	3	3	6	.656
	PT'S ACL	5	0	5	.031
CLINICIAN	Q-SORT	10	6	16	.227
	TH'S ACL	11	4	15	.059
	PT'S ACL	11	5	16	.105
RANDOM	Q-SORT	6	8	14	.395
	TH'S ACL	6	8	14	.395
	PT'S ACL	4	11	15	.059

*Because Taxonome generated so few subgroups,
plus or minus signs were assigned to each
entry in its matrix rather to each row.

CHAPTER IV

DISCUSSION

Unlike many correlation studies where a set of test data is compared with a set of non-test criterion data, the present study was primarily interested in the procedures for grouping test profiles in terms of similarity. Intercorrelations of the non-test data were made upon persons with similar profiles as indices of the similarity or as a measure of how well the grouping procedure was working. The correlation coefficients reported in this study represent measures of the efficiency of the multivariate procedures and the four MMPI scoring procedures to group like MMPI profiles into discriminable subgroups. Another indication of considerable importance of the efficiency of these procedures was coverage, i.e., the percentage of profiles that was assigned to subgroups.

The MMPI scoring procedure which generated the greatest within-subtype homogeneity and between-subtype heterogeneity as well as the greatest coverage of the profiles was that utilizing adult norms without K-correction.

It should be pointed out that almost all of the correlation coefficients reported in Tables 3 through 10 reach significance due to the great number of variables that were correlated (Q-sort=108 variables, the Adjective Check List=300 variables) and averaged. Consequently the testing of differences for the within and between subtype $\bar{r}$'s reported in Tables 11 through 13 provide more information about the effectiveness of each technique than the straight correlation coefficients on criterion information among the subtypes they generated.

The distance measure followed by the prototype construction procedure developed by Sines (1966), and the groupings made by the clinician generated subtypes in which persons within each subtype were most often more similar to each other than to others when between subtype comparisons were made. However, the prototype procedure grouped the smallest number of profiles, only 29 percent, and most of the subgroups were made up of only three individuals. The clinician, on the other hand, grouped 58 percent of the profiles and the average size of subgroups was five.

Overall, the most efficient procedure appeared to be the distance measure followed by Ward's (1963)

hierarchical grouping procedure. This classification method classified 99 percent of the profiles at the point that the grouping procedure was stopped (when no groups were made up of less than three members). On all three criterion measures on which matched t-tests were done comparing the magnitude of the within-subtype $\bar{r}$ on the diagonal with the average between-subtype $\bar{r}$ in its row and column for the entire matrix, the difference was always greater than what would be expected by chance alone.

The correlational cluster procedure grouped the largest number of people into a small number of large groups, however, the significance of the within-subtype $\bar{r}$ as greater than the between-subtype $\bar{r}$'s was minimal both in terms of magnitude and frequency of occurrence. The Taxonome procedure did the least efficient job of grouping profiles. It produced one large group and two small groups for which differences between the within-subtype $\bar{r}$ and between-subtype $\bar{r}$ were not significant.

All five multivariate classification procedures did a considerably more efficient job of grouping profiles than was done by the random grouping as determined by the matched t-tests and the sign test.

As was mentioned in the Method section, there are a number of difficulties inherent in studies of this kind which effect the results and in some ways render them artificial. First of all, the decision that the minimum subgroups size be three was an arbitrary decision. Cut-off points for the four procedures which mathematically define similarity were made arbitrarily.

The present study completely ignored the residual profiles which were left unclassified by each system. Further analysis of these groups would seem useful. Are the residual pools made up of "unique" individuals, or is the difficulty in classifying these people a function of the parameters of the classification technique?

It is likely that an even more accurate estimate of the efficiency of these procedures would be obtained by using a larger number of MMPI profiles in the original grouping procedure and a smaller number of criterion variables on which to intercorrelate persons assigned to a subtype.

APPENDIX A
LIST OF Q ITEMS

1. Is vulnerable to real or fancied threat; generally fearful, is a worrier.
2. Demands sympathy from others.
3. Values wealth or material possessions and judges others in terms of them.
4. Has a need to think of self as an unusually self-sufficient person.
5. Possesses a basic insecurity and need for attention.
6. Places value on intellectual and cognitive activities, skills and attitudes.
7. Psychic conflicts are represented in somatic symptoms.
8. Overacts to danger or makes emergency responses in the absence of danger.
9. Presents self as being physically, organically sick.
10. Fears or phobias present.
11. Is cheerful.
12. Tends not to become involved in things; is passively resistant.
13. Is easy to talk to and get along with in this kind of relationship.
14. Utilizes acting-out as a defense mechanism.
15. Tends to arouse liking and acceptance in people.

16. Is overanxious about minor matters and reacts to them as if they were emergencies.
17. Utilizes projection as a defense mechanism.
18. Is consciously guilt-ridden, self-condemning, self-accusatory.
19. Is unpredictable and changeable in behavior and attitudes.
20. Complains of difficulty in going to sleep.
21. Has multiple neurotic manifestations.
22. Resents authority figures and typically has impulses to resist or derogate them.
23. Judges self and others in conventional terms like "popularity", "social pressures"; etc.
24. Spends a good deal of time in personal fantasy and daydreams.
25. Presents a favorable prognosis.
26. Reacts to frustration intropunitively (i.e., punishes self).
27. Has shown ability to talk about conflicts in most areas.
28. Is evasive.
29. Tends to avoid or delay action; fears committing self to any definite course.
30. Has "diagnostic" insight; awareness of the descriptive features of own behavior.
31. Has a high aspiration level for self; is ambitious; wants to get ahead.
32. Is tense, high-strung and jumpy.
33. Is a reliable informant.

34. Undercontrols own impulses; acts with insufficient thinking and deliberation.
35. Has a need to achieve; to strive to do something as well as possible.
36. Has a rapid personal tempo; thinks, talks, moves at a fast rate.
37. Defenses are fairly adequate in relieving psychological distress.
38. Is suggestable; overly responsive to other people's evaluations rather than own.
39. Genotype has psychopathic features.
40. Genotype has schizoid features.
41. Has good verbal-cognitive insight into own personality structure and dynamics.
42. Is "normal", healthy, symptom free.
43. Undervalues and consistently derogates the opposite sex.
44. Is distrustful of people in general; questions their motivations.
45. Thinks and associates in unusual ways; has unconventional thought processes.
46. Is nervous, tense in manner, trembles, sweats, or shows other signs of anxiety.
47. Handles anxieties and conflicts by refusing to recognize their presence.
48. Fears loss of control; cannot "let go" even when appropriate.
49. Appears to be poised, self-assured, socially at ease.
50. Has a need to affiliate with others.
51. Exhibits good heterosexual adjustment.

52. Is self-dramatizing; histrionic.
53. Is open and frank in discussing problems.
54. Is defensive about admitting psychological conflicts.
55. Has feelings of hopelessness.
56. Complains of weakness or easy fatiguability.
57. Seems unable to express own emotions in any modulated adaptive way.
58. Tends to be ruminative and over-ideational.
59. Is socially extraverted (outgoing).
60. Has inner conflicts about self-assertion.
61. Tends to be flippant both in word and gesture.
62. Exhibits evidence of narcissism (latent or manifest).
63. Has a resilient ego-defense system; has a safe margin of integration.
64. Expresses impulses by verbal acting-out.
65. Has an exaggerated need for affection.
66. Is a serious person who tends to anticipate problems and difficulties.
67. Is able to sense other person's feelings; is an intuitive empathic person.
68. Keeps people at a distance; avoids close interpersonal relationships.
69. Gets along well in the world as it is; is socially appropriate in own behavior.
70. Utilizes rationalization as a defense mechanism.
71. Genotype has obsessive-compulsive features.

- 72. Is demanding; tends to take the attitude "the world owes me a living".
- 73. Is excitable.
- 74. Utilizes regression as a defense mechanism.
- 75. Has inner conflict about emotional dependency.
- 76. Avoids situations where own performance will be inferior to that of others.
- 77. Is tearful and/or cries openly.
- 78. Is irritable.
- 79. Is resentful.
- 80. Emphasizes oral pleasures; is self-indulgent.
- 81. Is perfectionistic; is compulsively meticulous.
- 82. Gets appreciable "secondary gain" from symptoms.
- 83. Is argumentative.
- 84. Is critical; not easily impressed; skeptical.
- 85. Has inner conflicts about sexuality.
- 86. Is shy, anxious and inhibited.
- 87. Is afraid of emotional involvement with others.
- 88. Is readily dominated by others; is submissive.
- 89. Is provocative.
- 90. Is apathetic.
- 91. Tends toward over-control of needs and impulses.
- 92. Is self-defeating; places self in an obviously bad light.
- 93. Exhibits depression (manifest sad mood).

94. Exhibits manneristic behavior.
95. Accepts others as they are; is not judgmental.
96. Genotype has paranoid features.
97. Is sensitive to anything that can be construed as a demand.
98. Is egocentric; self-centered; selfish.
99. Is stereotyped and unoriginal in approach to problems.
100. Obsessive thinking is present.
101. Utilizes intellectualization as a defense mechanism.
102. Genotype has hysteriod features.
103. Reports difficulty in thinking; can't concentrate.
104. Delusional thinking is present.
105. Manifests hypochondriacal tendencies.
106. Has grandiose ideas (extreme is delusions of grandeur).
107. Would be organized and adaptive when under stress or trauma.
108. Has the capacity for forming close inter-personal relationships.

APPENDIX B

ADJECTIVE CHECK LIST

Patient's name _____
(or case code) _____ Age _____ Sex _____ Date _____

DIRECTIONS: Consider each adjective to describe a relatively stable personality trait or disposition. Check those adjectives which are descriptive (or mostly descriptive) of the patient or client, and not of a diagnostic stereotype.

() absent-minded	() charming
() active	() cheerful
() adaptable	() civilized
() adventurous	() clear-thinking
() affected	() clever
() affectionate	() coarse
() aggressive	() cold
() alert	() commonplace
() aloof	() complaining
() ambitious	() complicated
() anxious	() conceited
() apathetic	() confident
() appreciative	() confused
() argumentative	() conscientious
() arrogant	() conservative
() artistic	() considerate
() assertive	() contented
() attractive	() conventional
() autocratic	() cool
() awkward	() cooperative
() bitter	() courageous
() blustery	() cowardly
() boastful	() cruel
() bossy	() curious
() calm	() cynical
() capable	() daring
() careless	() deceitful
() cautious	() defensive
() changeable	() deliberate

()	demanding	()	hard-hearted
()	dependable	()	hasty
()	dependent	()	headstrong
()	despondent	()	healthy
()	determined	()	helpful
()	dignified	()	high-strung
()	discreet	()	honest
()	disorderly	()	hostile
()	dissatisfied	()	humorous
()	distractible	()	hurried
()	distrustful	()	idealistic
()	dominant	()	imaginative
()	dreamy	()	immature
()	dull	()	impatient
()	easy going	()	impulsive
()	effeminate	()	independent
()	efficient	()	indifferent
()	egotistical	()	individualistic
()	emotional	()	industrious
()	energetic	()	infantile
()	enterprising	()	informal
()	enthusiastic	()	ingenious
()	evasive	()	inhibited
()	excitable	()	initiative
()	fair-minded	()	insightful
()	fault-finding	()	intelligent
()	fearful	()	interests narrow
()	feminine	()	interests wide
()	fickle	()	intolerant
()	flirtatious	()	inventive
()	foolish	()	irresponsible
()	forceful	()	irritable
()	foresighted	()	jolly
()	forgetful	()	kind
()	forgiving	()	lazy
()	formal	()	leisurely
()	frank	()	logical
()	friendly	()	loud
()	frivolous	()	loyal
()	fussy	()	mannerly
()	generous	()	masculine
()	gentle	()	mature
()	gloomy	()	meek
()	good-looking	()	methodical
()	good-natured	()	mild
()	greedy	()	mischievous
()	handsome	()	moderate
()	hard-headed		

()	modest	()	reliable
()	moody	()	resentful
()	nagging	()	reserved
()	natural	()	resourceful
()	nervous	()	responsible
()	noisy	()	restless
()	obliging	()	retiring
()	obnoxious	()	rigid
()	opinionated	()	robust
()	opportunistic	()	rude
()	optimistic	()	sarcastic
()	organized	()	self-centered
()	original	()	self-confident
()	outgoing	()	self-controlled
()	outspoken	()	self-denying
()	painstaking	()	self-pitying
()	patient	()	self-punishing
()	peaceable	()	self-seeking
()	peculiar	()	selfish
()	persevering	()	sensitive
()	persistent	()	sentimental
()	pessimistic	()	serious
()	planful	()	severe
()	pleasant	()	sexy
()	pleasure-seeking	()	shallow
()	poised	()	sharp-witted
()	polished	()	shiftless
()	practical	()	show-off
()	praising	()	shrewd
()	precise	()	shy
()	prejudiced	()	silent
()	preoccupied	()	simple
()	progressive	()	sincere
()	prudish	()	slipshod
()	quarrelsome	()	slow
()	queer	()	sly
()	quick	()	smug
()	quiet	()	snobbish
()	quitting	()	sociable
()	rational	()	soft-hearted
()	rattlebrained	()	sophisticated
()	realistic	()	spendthrift
()	reasonable	()	spineless
()	rebellious	()	spontaneous
()	reckless	()	spunky
()	reflective	()	stable
()	relaxed	()	steady

() stern	() unassuming
() stingy	() unconventional
() stolid	() undependable
() strong	() understanding
() stubborn	() unemotional
() submissive	() unexcitable
() suggestible	() unfriendly
() sulky	() uninhibited
() superstitious	() unintelligent
() suspicious	() unkind
() sympathetic	() unrealistic
() tactful	() unscrupulous
() tactless	() unselfish
() talkative	() unstable
() temperamental	() vindictive
() tense	() versatile
() thankless	() warm
() thorough	() wary
() thoughtful	() weak
() thrifty	() whiny
() timid	() wholesome
() tolerant	() wise
() touchy	() withdrawn
() tough	() witty
() trusting	() worrying
() unaffected	() zany
() unambitious	

APPENDIX C

Raw Score Means and Standard Deviations on Each MMPI Scale (-K)
for the Adolescent Female Normals (Marks, 1967)

Age 13-6 / 14-5 (14) N-280*

	L	F	K	1	2	3	4	5	6	7	8	9	0
Mean	3.96	5.52	13.51	5.52	18.50	19.53	16.65	35.24	10.36	14.94	14.49	16.32	28.60
SD	2.15	3.99	4.48	4.01	4.75	4.50	4.66	4.55	4.58	7.00	8.18	4.74	7.90

Age 14-6 / 15-5 (15) N-277

Mean	4.25	6.15	13.43	5.93	19.25	20.11	17.74	34.35	10.55	15.73	15.65	17.04	28.82
SD	2.32	4.38	4.57	4.47	4.63	4.87	4.77	4.86	4.57	7.40	9.31	5.37	7.75

Age 15-6 / 16-5 (16) N-158

Mean	4.73	6.82	12.90	6.48	20.66	20.20	17.57	33.86	10.92	16.79	16.85	16.86	31.58
SD	2.27	4.44	4.56	4.30	4.89	5.07	4.58	4.33	3.86	7.56	9.49	4.45	8.07

Age 16-6 / 17-5 (17) N-139**

Mean	5.13	7.23	12.59	8.03	21.18	21.41	18.43	33.54	10.05	16.82	17.56	16.18	32.02
SD	2.41	4.06	3.98	4.37	4.66	5.02	4.33	4.46	3.46	6.86	8.77	4.63	7.49

*Includes a few Ss younger than 13-6.

**Includes a few 18-year old Ss.

APPENDIX D

Q-SORT CORRELATIONS WITHIN AND BETWEEN SUBGROUPS
GENERATED BY FOUR MULTIVARIATE PROCEDURES
ON THE BASIS OF MMPI PROFILES USING
ADULT NORMS WITH K CORRECTION

D² Prototype (9 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07	08	09
4 01	.29								
3 02	.20	.00							
3 03	.09	.21	.11						
3 04	.15	.16	.15	-.04					
3 05	.31	.24	.15	.14	.32				
3 06	.31	.25	.17	.15	.26	.28			
3 07	.28	.25	.14	.10	.31	.37	.29		
3 08	.24	.21	.13	.07	.30	.24	.32	.23	
3 09	.20	.24	.18	.13	.27	.28	.22	.20	.19

D² Hierarchical Grouping (31 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
3	01	20															
6	02	18	10														
6	03	03	07	09													
5	04	09	12	04	21												
7	05	23	14	08	05	15											
6	06	12	15	15	20	11	22										
4	07	20	19	12	13	18	20	19									
4	08	08	09	08	07	05	09	08	-01								
8	09	22	19	07	27	17	22	21	11	28							
3	10	33	23	13	20	25	24	30	15	32	44						
5	11	21	14	10	18	16	19	15	03	25	26	17					
3	12	18	14	-03	12	12	08	13	13	19	24	11	11				
9	13	28	17	05	20	21	14	21	12	29	34	23	23	31			
4	14	07	11	10	23	06	24	17	03	23	15	18	02	11	22		
4	15	15	15	18	11	19	22	18	12	21	33	17	12	19	12	21	
3	16	11	11	09	14	11	19	19	02	16	18	13	06	09	20	10	05
4	17	14	16	09	27	12	24	25	12	28	24	20	19	24	23	17	16
4	18	12	15	06	23	13	17	22	09	23	22	15	15	21	18	14	15
8	19	21	20	10	26	16	26	24	10	30	30	25	17	26	22	20	17
7	20	22	13	06	16	14	14	16	05	21	22	18	11	21	14	11	13
3	21	22	11	10	07	21	10	14	09	16	25	14	09	19	06	17	14
6	22	10	13	11	11	12	19	18	01	13	14	10	01	06	18	15	18
5	23	15	17	16	12	13	22	17	01	16	16	18	01	09	19	13	16
3	24	07	06	15	-07	11	13	09	-05	00	08	09	-07	-04	09	13	12
5	25	03	07	07	19	02	19	14	-02	14	07	13	-01	05	21	01	16
5	26	14	06	07	-01	14	07	12	-02	04	13	10	00	07	04	07	11
5	27	23	16	01	18	20	08	16	12	24	29	19	24	34	04	17	04
3	28	-00	05	22	02	07	21	11	04	05	14	10	-08	-03	16	22	16
4	29	27	21	-02	26	18	17	22	13	33	33	25	28	36	16	12	12
3	30	04	10	02	23	-01	16	16	03	17	17	15	07	09	25	01	18
3	31	19	17	00	21	13	13	18	18	26	28	18	30	32	09	11	07

To save space, decimal points are omitted in the r's.

D² Hierarchical Grouping (31 subgroups)
(continued)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
01															
02															
03															
04															
05															
06															
07															
08															
09															
10															
11															
12															
13															
14															
15															
16															
17	26														
18	26	10													
19	27	22	25												
20	15	14	21	11											
21	12	08	15	16	04										
22	15	12	16	11	09	16									
23	12	13	20	14	09	18	19								
24	-01	-01	03	05	11	19	20	18							
25	18	11	18	10	-02	16	16	06	19						
26	01	06	05	07	13	09	11	16	04	02					
27	21	18	22	16	19	01	05	-09	01	04	25				
28	08	03	10	03	07	19	16	26	12	08	-06	18			
29	33	26	29	21	14	04	09	-12	12	03	34	-10	38		
30	23	18	21	11	01	10	11	-02	23	01	09	06	19	19	
31	29	18	25	14	14	00	03	-15	07	-00	30	-07	39	14	29

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
15	01	.12				
12	02	.14	.32			
18	03	.17	.22	.22		
7	04	.12	.04	.09	.16	
6	05	.10	.17	.17	.05	.07

Taxonome (5 subgroups)

<u>Ss</u>		01	02	03	04	05
13	01	.13				
12	02	.15	.14			
9	03	.14	.17	.21		
10	04	.12	.15	.23	.17	
5	05	.13	.13	.25	.23	.34

APPENDIX E

THERAPISTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED
BY FOUR MULTIVARIATE PROCEDURES
ON THE BASIS OF MMPI PROFILES
USING ADULT NORMS WITH
K CORRECTION

D² Prototype (9 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09
4	01	.13								
3	02	.15	.08							
3	03	.15	.12	.28						
3	04	.12	.06	.20	.02					
3	05	.19	.18	.18	.10	.30				
3	06	.23	.23	.22	.12	.29	.36			
3	07	.14	.17	.17	.08	.22	.20	.11		
3	08	.16	.15	.15	.08	.19	.22	.16	.12	
3	09	.17	.17	.30	.16	.21	.27	.17	.14	.36

D² Hierarchical Grouping (31 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
3	01	21															
6	02	18	13														
6	03	04	08	08													
5	04	15	13	05	18												
7	05	22	18	09	13	21											
6	06	13	13	10	14	15	16										
4	07	23	20	07	14	20	17	25									
4	08	07	10	08	13	09	12	13	02								
8	09	19	16	07	19	17	16	22	14	20							
3	10	30	21	09	15	28	19	35	09	21	38						
5	11	18	13	04	16	14	15	17	09	18	20	15					
3	12	12	11	07	14	10	09	13	10	15	15	12	05				
9	13	23	16	04	15	20	10	21	09	19	26	16	15	20			
4	14	14	13	10	20	14	19	13	10	19	16	18	12	12	18		
4	15	12	11	14	02	14	09	16	06	09	23	04	06	09	03	15	
3	16	18	18	10	20	17	23	25	13	22	26	17	16	16	26	07	26
4	17	22	16	05	21	19	21	23	13	23	23	19	13	18	23	06	26
4	18	11	14	04	17	12	10	15	13	18	16	14	16	13	15	02	17
8	19	20	15	04	19	17	15	19	11	20	21	19	13	18	18	05	20
7	20	20	16	11	15	20	15	19	10	17	26	13	10	17	15	14	21
3	21	19	15	04	15	19	14	19	10	17	21	15	10	16	15	09	20
6	22	14	14	11	14	15	17	19	11	17	22	13	11	12	18	12	23
5	23	17	15	11	18	19	21	19	13	16	22	15	12	13	20	11	26
3	24	05	07	15	05	09	15	09	08	09	12	10	06	01	17	10	20
5	25	15	15	10	16	15	21	23	12	19	22	18	14	13	21	08	26
5	26	17	14	09	05	16	11	14	05	11	20	11	06	12	08	13	13
5	27	23	15	04	15	19	13	25	10	19	29	16	16	22	11	11	18
3	28	05	11	15	06	13	13	14	09	09	15	06	06	04	13	12	18
4	29	18	12	-02	17	14	09	18	10	18	18	14	13	22	10	02	15
3	30	16	13	02	22	09	20	15	14	21	14	25	12	13	27	-06	23
3	31	15	11	-02	18	10	04	18	08	18	16	15	16	17	09	-01	14

To save space, decimal points are omitted in the r's.

D^2 Hierarchical Grouping (31 subgroups)
(continued)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
01															
02															
03															
04															
05															
06															
07															
08															
09															
10															
11															
12															
13															
14															
15															
16															
17	30														
18	21	13													
19	22	16	15												
20	18	12	15	17											
21	23	13	16	15	09										
22	18	13	14	16	13	12									
23	20	14	16	18	17	22	22								
24	12	04	07	09	10	17	18	25							
25	21	15	18	16	14	22	23	17	22						
26	10	06	10	14	10	12	15	10	12	05					
27	18	12	18	19	17	14	14	-00	16	13	21				
28	11	09	06	10	11	16	16	22	18	08	03	13			
29	23	16	20	14	14	07	07	-07	08	06	22	-03	23		
30	31	19	24	13	17	15	19	11	24	06	14	06	18	30	
31	19	18	17	09	09	05	07	-04	13	02	14	-02	22	17	26

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
15	01	.12				
12	02	.12	.20			
18	03	.16	.18	.21		
7	04	.13	.10	.15	.14	
6	05	.12	.10	.14	.10	.10

Taxonome (5 subgroups)

<u>Ss</u>		01	02	03	04	05
13	01	.08				
12	02	.13	.15			
9	03	.12	.16	.25		
10	04	.12	.15	.22	.19	
5	05	.10	.13	.22	.20	.23

APPENDIX F

PATIENTS' ADJECTIVE CHECK LIST CORRELATIONS WITHIN
AND BETWEEN SUBGROUPS GENERATED BY FOUR
MULTIVARIATE PROCEDURES ON THE BASIS
OF MMPI PROFILES USING ADULT
NORMS WITH K CORRECTION

D² Prototype (9 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09
4	01	.09								
3	02	.14	.16							
3	03	.12	.14	.24						
3	04	.10	.15	.09	.09					
3	05	.09	.11	.07	.06	.09				
3	06	.10	.14	.16	.06	.10	.10			
3	07	.15	.12	.09	.15	.08	.08	.04		
3	08	.09	.13	.09	.13	.12	.11	.09	.11	
3	09	.05	.07	.05	.15	.02	.05	.10	.06	.15

D² Hierarchical Grouping (31 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
3	01	13														
6	02	17	19													
6	03	10	14	16												
5	04	08	12	15	11											
7	05	13	15	12	11	13										
6	06	12	13	09	09	12	12									
4	07	06	12	13	10	11	10	12								
4	08	13	16	14	12	13	09	10	11							
8	09	10	11	11	10	11	13	08	10	09						
3	10	10	14	12	09	09	11	11	11	10	05					
5	11	07	06	09	08	05	08	12	07	08	09	14				
3	12	07	09	13	11	09	09	06	11	07	04	08	02			
9	13	15	16	13	12	13	12	09	15	11	09	09	09	18		
4	14	12	17	18	15	13	12	13	18	12	14	11	14	16	17	
4	15	10	15	17	12	10	07	14	21	09	13	11	14	12	20	11
3	16	19	20	19	17	19	17	13	19	15	15	08	13	16	21	17
4	17	15	18	13	13	16	11	07	16	11	08	02	11	15	17	13
4	18	12	17	15	11	11	08	10	19	09	09	08	11	14	18	16
8	19	10	13	11	09	10	11	08	11	09	09	09	09	14	13	11
7	20	15	16	11	10	13	12	08	10	11	10	08	06	14	14	10
3	21	16	20	17	16	18	16	11	20	15	15	09	14	17	20	18
6	22	13	13	11	14	16	16	13	09	13	12	10	10	11	15	11
5	23	14	16	13	16	17	19	14	10	15	12	12	09	13	14	09
3	24	13	14	16	17	13	15	14	15	13	12	08	10	07	16	16
5	25	11	11	12	09	09	07	10	15	06	06	06	11	10	14	16
5	26	18	18	15	13	16	15	12	15	14	13	09	12	14	18	16
5	27	09	17	15	10	10	09	10	19	06	09	06	12	14	18	18
3	28	04	04	06	10	05	12	10	03	10	09	10	06	07	07	06
4	29	12	14	11	08	12	11	06	12	08	08	08	11	15	14	09
3	30	05	08	07	04	05	07	08	04	06	06	10	05	05	08	06
3	31	05	07	09	04	06	-01	02	15	-00	00	-01	13	10	10	13

To save space, decimal points are omitted from the r's.

D^2 Hierarchical Grouping (31 subgroups)
(continued)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
01																
02																
03																
04																
05																
06																
07																
08																
09																
10																
11																
12																
13																
14																
15																
16	20															
17	19	15														
18	17	16	15													
19	15	12	10	08												
20	18	14	11	12	12											
21	27	20	18	14	14	24										
22	22	13	10	13	14	16	16									
23	23	15	08	11	14	18	20	21								
24	25	13	10	09	14	19	19	21	18							
25	14	10	11	08	07	15	10	10	12	09						
26	24	17	15	12	14	20	19	20	19	13	25					
27	15	15	18	11	11	15	06	09	10	11	14	15				
28	11	05	04	05	06	10	12	14	10	06	09	03	06			
29	14	12	12	13	12	13	12	11	05	08	12	13	05	09		
30	08	07	04	06	06	06	09	12	08	04	09	04	07	06	-02	
31	07	08	13	04	04	09	-00	-03	01	14	05	15	-03	05	-03	25

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
15	01	.15				
12	02	.15	.16			
18	03	.10	.09	.09		
7	04	.12	.09	.14	.20	
6	05	.09	.09	.04	.02	.08

Taxonome (5 subgroups)

<u>Ss</u>		01	02	03	04	05
13	01	.12				
12	02	.12	.17			
9	03	.11	.15	.12		
10	04	.12	.14	.11	.10	
5	05	.14	.14	.15	.11	.20

APPENDIX G

Q-SORT CORRELATIONS WITHIN AND BETWEEN SUBGROUPS
GENERATED BY FIVE MULTIVARIATE PROCEDURES
PLUS ONE RANDOM GROUPING ON THE BASIS
OF MMPI PROFILES USING ADULT NORMS
WITHOUT K CORRECTION

D^2 Prototype (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
5	01	.31													
3	02	.18	.32												
3	03	-.05	.17	.16											
3	04	.20	.27	.07	.17										
3	05	.12	.35	.23	.20	.27									
3	06	.11	.17	.10	.13	.17	-.04								
3	07	.18	.20	.18	.13	.18	.20	.03							
3	08	.34	.27	-.04	.18	.16	.10	.13	.29						
3	09	.23	.32	.03	.24	.26	.13	.14	.31	.23					
3	10	.14	.09	.06	.07	.09	.13	.13	.13	.11	.27				
3	11	.19	.28	.15	.19	.26	.13	.17	.22	.28	.18	.19			
3	12	.01	.11	.26	.03	.16	.08	.10	-.06	.00	.10	.12	.35		
3	13	.20	-.09	-.11	.02	-.19	.01	.04	.12	.01	.13	.05	-.04	.41	
3	14	.16	.03	.09	.17	-.01	.11	.16	.06	.06	.17	.12	.05	.24	.18

D^2 Hierarchical Grouping (20 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
14	01	24																			
11	02	11	09																		
4	03	26	10	26																	
11	04	17	11	16	14																
14	05	10	14	04	11	24															
7	06	17	11	15	14	14	17														
8	07	16	09	19	10	07	13	09													
3	08	32	16	31	21	11	24	20	44												
11	09	23	12	22	14	14	18	11	23	25											
4	10	12	05	10	09	03	09	12	18	03	04										
8	11	27	09	31	17	03	16	17	33	21	12	30									
6	12	18	08	18	11	12	18	12	20	21	05	18	16								
4	13	18	17	21	16	12	11	13	33	14	10	18	08	21							
7	14	12	07	07	13	06	09	04	18	07	09	12	04	09	08						
7	15	24	10	27	15	08	18	16	28	21	10	25	15	18	10	18					
7	16	22	14	25	15	20	22	18	24	26	08	20	22	18	05	24	27				
5	17	11	12	05	13	19	13	07	13	10	08	06	09	16	08	11	18	13			
5	18	25	07	28	17	01	15	19	31	19	13	32	17	16	11	23	17	02	24		
7	19	26	08	33	17	00	16	19	33	20	11	35	16	19	10	25	18	03	34	32	
6	20	14	11	15	09	10	13	13	21	13	06	15	14	17	05	14	17	09	14	14	05

To save space, decimal points are omitted in the r's.

Correlational Cluster (6 subgroups)

<u>Ss</u>		01	02	03	04	05	06
18	01	.13					
22	02	.17	.21				
10	03	.15	.22	.30			
9	04	.12	.10	.02	.19		
5	05	.13	.19	.23	.06	.12	
7	06	.14	.16	.12	.16	.11	.11

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.16		
15	02	.18	.20	
5	03	.14	.15	.08

Clinician's Groupings (17 subgroups)

Ss		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
3	01	.14																
4	02	.25	.21															
4	03	.10	.08	.26														
5	04	.08	.08	.24	.08													
8	05	.24	.23	.28	.15	.43												
7	06	.14	.12	.27	.21	.24	.28											
5	07	.18	.23	.09	.06	.19	.09	.16										
6	08	.15	.18	-.01	.08	-.02	.03	.13	.21									
3	09	.17	.18	.05	.10	.07	.08	.14	.23	.12								
5	10	.18	.25	.07	.03	.26	.10	.19	.06	.08	.26							
3	11	.14	.17	.04	.10	.04	.08	.12	.18	.17	.04	.00						
7	12	.18	.19	.23	.17	.32	.23	.18	.06	.11	.19	.08	.20					
7	13	.21	.29	.09	.05	.19	.09	.27	.15	.17	.23	.13	.17	.23				
6	14	.17	.23	.14	.11	.26	.15	.18	.11	.14	.21	.10	.21	.20	.12			
4	15	.08	.03	.21	.19	.18	.26	.06	.03	.09	.02	.02	.20	.02	.10	.23		
5	16	.15	.18	.25	.20	.25	.28	.14	.08	.13	.11	.12	.24	.15	.18	.21	.17	
5	17	.17	.25	.11	.10	.21	.11	.17	.12	.18	.17	.18	.20	.20	.17	.08	.18	.19

Random Groupings (14 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07	08	09	10	11	12	13	14
3 01	.02													
3 02	.12	.11												
3 03	.18	.16	.13											
3 04	.19	.11	.16	.02										
3 05	.17	.08	.15	.20	.02									
3 06	.24	.15	.21	.24	.15	.26								
3 07	.19	.09	.20	.23	.15	.35	.33							
3 08	.20	.03	.19	.21	.18	.24	.33	.31						
3 09	.09	.18	.02	.10	.11	.11	.03	.09	.28					
3 10	.26	.13	.18	.27	.18	.33	.34	.32	.15	.34				
3 11	.07	.03	.11	.10	.09	.11	.13	.13	.09	.11	-.02			
3 12	.20	.11	.17	.16	.17	.24	.26	.26	.13	.29	.15	.17		
3 13	.25	.16	.17	.29	.17	.35	.34	.34	.17	.42	.07	.29	.37	
3 14	.15	.20	.14	.16	.15	.20	.18	.23	.25	.26	.14	.24	.23	.09

APPENDIX H

THERAPISTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED BY
FIVE MULTIVARIATE PROCEDURES PLUS ONE
RANDOM GROUPING ON THE BASIS OF MMPI
PROFILES USING ADULT NORMS WITHOUT
K CORRECTION

D^2 Prototype (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
5	01	.16													
3	02	.15	.30												
3	03	.05	.26	.22											
3	04	.15	.27	.16	.14										
3	05	.11	.27	.16	.16	.16									
3	06	.07	.16	.14	.12	.08	.02								
3	07	.05	.12	.15	.10	.10	.18	.07							
3	08	.15	.18	.08	.16	.10	.08	.09	.11						
3	09	.18	.26	.16	.20	.17	.13	.11	.19	.16					
3	10	.14	.16	.12	.17	.05	.11	.04	.12	.17	.20				
3	11	.13	.33	.24	.24	.23	.16	.13	.17	.29	.18	.36			
3	12	-.02	.21	.34	.15	.16	.21	.21	.07	.12	.08	.22	.47		
3	13	.19	.09	.04	.07	-.04	.13	.08	.15	.14	.16	.06	-.01	.33	
3	14	.09	.06	.09	.04	-.00	.21	.19	.08	.12	.13	.09	.19	.25	.36

D^2 Hierarchical Grouping (20 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
14	01	20																			
11	02	10	10																		
4	03	21	07	22																	
11	04	20	11	18	19																
14	05	13	13	10	15	23															
7	06	21	09	18	18	18	20														
8	07	17	09	18	16	14	18	11													
3	08	25	14	21	25	17	26	16	38												
11	09	18	08	19	17	16	20	15	19	19											
4	10	12	12	09	11	17	13	12	15	10	08										
8	11	20	07	20	18	08	17	14	25	14	08	19									
6	12	19	09	21	17	15	20	16	22	18	11	17	19								
4	13	10	15	02	11	09	07	06	23	03	10	10	07	15							
7	14	17	12	11	17	13	14	12	28	11	11	17	14	16	16						
7	15	19	09	20	19	15	20	16	22	18	12	16	18	07	13	17					
7	16	17	08	17	15	15	20	15	16	17	11	13	17	04	10	17	12				
5	17	14	14	09	14	19	16	13	22	12	15	12	16	15	16	14	13	10			
5	18	16	04	19	15	03	15	13	17	12	02	19	14	05	11	13	12	06	16		
7	19	23	06	23	19	10	22	15	28	18	10	23	19	09	18	18	15	11	21	23	
6	20	12	08	13	12	11	14	12	16	10	10	10	14	06	08	13	12	10	08	09	07

To save space, decimal points are omitted in the $\bar{x}$'s.

Correlational Cluster (6 subgroups)

<u>Ss</u>		01	02	03	04	05	06
18	01	.12					
22	02	.15	.18				
10	03	.13	.17	.18			
9	04	.14	.14	.09	.17		
5	05	.13	.16	.13	.10	.17	
7	06	.09	.10	.08	.10	.06	.06

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.15		
15	02	.16	.19	
5	03	.12	.14	.11

Clinician's Groupings (17 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
3	01	.15																
4	02	.11	.15															
4	03	.14	.10	.18														
5	04	.18	.16	.20	.19													
8	05	.19	.09	.17	.11	.19												
7	06	.22	.14	.25	.26	.16	.30											
5	07	.08	.13	.07	.07	.09	.06	.09										
6	08	.12	.17	.07	.15	.05	.13	.12	.18									
3	09	.13	.19	.04	.14	.05	.13	.11	.25	.19								
5	10	.20	.19	.16	.13	.21	.15	.14	.14	.15	.22							
3	11	.14	.13	.13	.15	.08	.19	.11	.18	.19	.10	.02						
7	12	.20	.16	.19	.18	.19	.23	.11	.12	.12	.21	.16	.19					
7	13	.13	.17	.10	.13	.10	.11	.12	.16	.16	.19	.10	.15	.14				
6	14	.14	.14	.10	.10	.11	.12	.11	.15	.15	.19	.13	.13	.15	.10			
4	15	.14	.10	.18	.18	.10	.25	.07	.09	.07	.09	.14	.15	.09	.09	.19		
5	16	.15	.18	.17	.20	.15	.20	.10	.13	.14	.21	.12	.19	.17	.13	.14	.14	
5	17	.14	.20	.08	.15	.16	.13	.12	.18	.16	.23	.13	.19	.17	.14	.08	.20	.27

Random Groupings (14 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07	08	09	10	11	12	13	14
3 01	.06													
3 02	.13	.12												
3 03	.17	.13	.17											
3 04	.15	.10	.15	.14										
3 05	.17	.11	.16	.14	.07									
3 06	.24	.12	.17	.17	.19	.30								
3 07	.20	.11	.19	.19	.16	.26	.22							
3 08	.21	.09	.23	.16	.18	.18	.20	.15						
3 09	.12	.12	.04	.11	.09	.14	.12	.13	.22					
3 10	.17	.06	.12	.18	.15	.21	.23	.19	.06	.16				
3 11	.13	.12	.15	.13	.13	.13	.15	.21	.14	.12	.06			
3 12	.16	.14	.14	.13	.12	.18	.17	.17	.15	.17	.14	.11		
3 13	.18	.07	.10	.19	.13	.22	.19	.16	.13	.21	.10	.14	.07	
3 14	.19	.20	.17	.15	.14	.19	.24	.19	.18	.14	.15	.22	.15	.19

APPENDIX I

PATIENTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED
BY FIVE MULTIVARIATE PROCEDURES PLUS
ONE RANDOM GROUPING ON THE BASIS
OF MMPI PROFILES USING ADULT
NORMS WITHOUT K CORRECTION

D^2 Prototype (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
5	01	.08													
3	02	.11	.22												
3	03	.11	.10	.12											
3	04	.13	.11	.16	.22										
3	05	.14	.21	.15	.22	.25									
3	06	.11	.11	.09	.08	.12	.09								
3	07	.08	.12	.10	.14	.14	.17	.13							
3	08	.13	.12	.10	.09	.08	.15	.08	.04						
3	09	.08	.14	.09	.13	.20	.12	.14	.03	.10					
3	10	.16	.09	.16	.18	.16	.17	.15	.16	.13	.20				
3	11	.05	.06	.11	.06	.07	.15	.15	.10	.07	.07	.15			
3	12	.13	.12	.16	.17	.20	.08	.12	.07	.15	.19	.08	.14		
3	13	.12	.09	.15	.13	.15	.18	.18	.15	.08	.17	.15	.09	.22	
3	14	.12	.09	.10	.08	.13	.11	.03	.15	.08	.18	.08	.13	.16	.14

D² Hierarchical Grouping (20 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
14	01	12																			
11	02	12	13																		
4	03	13	14	13																	
11	04	13	11	11	13																
14	05	13	13	17	12	18															
7	06	07	09	09	07	11	07														
8	07	14	14	15	16	14	08	17													
3	08	10	11	11	09	11	09	12	05												
11	09	11	11	14	09	14	10	12	11	11											
4	10	10	13	16	10	14	08	15	07	11	15										
8	11	13	12	11	14	10	07	16	08	10	08	18									
6	12	07	08	06	09	05	05	12	04	05	09	12	11								
4	13	11	15	12	11	11	11	18	13	13	18	12	13	11							
7	14	16	14	16	15	16	09	18	14	13	12	15	10	14	19						
7	15	15	15	16	15	15	10	18	12	14	14	16	11	17	16	17					
7	16	09	10	12	09	11	07	11	09	10	10	10	06	10	13	12	08				
5	17	13	12	18	11	19	12	11	13	15	12	08	03	09	16	15	13	19			
5	18	13	11	13	13	11	06	16	09	11	11	16	10	10	17	15	11	12	12		
7	19	12	13	12	13	10	08	18	10	11	13	16	11	16	15	16	10	06	17	15	
6	20	06	07	07	06	07	05	08	05	05	08	09	10	09	07	08	03	05	06	08	04

To save space, decimal points are omitted in the r's.

Correlational Cluster (6 subgroups)

<u>Ss</u>		01	02	03	04	05	06
18	01	.15					
22	02	.09	.09				
10	03	.14	.09	.14			
9	04	.11	.12	.09	.18		
5	05	.09	.03	.09	.01	.13	
7	06	.12	.09	.11	.11	.08	.10

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.13		
15	02	.13	.14	
5	03	.07	.09	.12

Clinician's Groupings (17 subgroups)

Ss		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
3	01	.04																
4	02	.10	.17															
4	03	.08	.09	.24														
5	04	.07	.12	.10	.10													
8	05	.08	.10	.16	.10	.15												
7	06	.10	.09	.16	.10	.14	.14											
5	07	.08	.09	.14	.05	.10	.08	.16										
6	08	.11	.21	.10	.15	.11	.09	.10	.22									
3	09	.10	.14	.10	.09	.10	.05	.18	.10									
5	10	.09	.07	.10	.08	.08	.07	.09	.11	.08	.04							
3	11	.10	.16	.04	.13	.06	.11	.09	.18	.16	.09	.15						
7	12	.08	.13	.12	.12	.08	.09	.14	.16	.09	.09	.14	.10					
7	13	.10	.17	.09	.11	.08	.10	.07	.19	.17	.09	.18	.12	.14				
6	14	.07	.13	.19	.10	.11	.10	.13	.13	.13	.10	.14	.12	.14	.17			
4	15	.10	.16	.16	.16	.16	.16	.10	.18	.12	.09	.15	.13	.14	.14	.20		
5	16	.07	.15	.14	.12	.11	.13	.09	.13	.09	.06	.12	.11	.12	.12	.14	.13	
5	17	.09	.15	.14	.13	.14	.13	.11	.16	.11	.10	.14	.13	.12	.12	.17	.13	.15

Random Groupings (14 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07	08	09	10	11	12	13	14
3 01	.07													
3 02	.09	.13												
3 03	.13	.09	.07											
3 04	.11	.13	.13	.14										
3 05	.07	.06	.06	.09	-.09									
3 06	.10	.15	.13	.13	.08	.11								
3 07	.04	.05	.03	.05	.02	.07	-.05							
3 08	.10	.16	.12	.15	.03	.14	.07	.04						
3 09	.09	.16	.10	.11	.05	.10	.04	.13	.04					
3 10	.10	.09	.00	.07	.05	.14	.06	.09	.07	.10				
3 11	.09	.09	.14	.12	.06	.09	.07	.08	.06	.04	.02			
3 12	.08	.15	.15	.14	.10	.14	.05	.15	.11	.04	.14	.11		
3 13	.12	.15	.11	.13	.08	.16	.07	.15	.10	.15	.10	.13	.17	
3 14	.11	.12	.16	.13	.04	.12	.08	.15	.08	.08	.09	.16	.16	.08

APPENDIX J

Q-SORT CORRELATIONS WITHIN AND BETWEEN SUBGROUPS
GENERATED BY FOUR MULTIVARIATE PROCEDURES
ON THE BASIS OF MMPI PROFILES USING
ADOLESCENT NORMS WITH K CORRECTION

D^2 Prototype (6 subgroups)

<u>Ss</u>		01	02	03	04	05	06
3	01	.37					
3	02	.24	.32				
3	03	.35	.18	.53			
3	04	.35	.22	.23	.28		
3	05	.39	.30	.29	.38	.33	
3	06	.25	.12	.21	.18	.24	.15

D^2 Hierarchical Grouping (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
6	01	.07													
9	02	.12	.11												
10	03	.05	.07	.20											
13	04	.10	.08	.12	.09										
17	05	.10	.16	.15	.12	.22									
8	06	.08	.06	.18	.12	.15	.15								
14	07	.10	.08	.24	.15	.16	.20	.26							
12	08	.05	.06	.17	.12	.15	.14	.19	.12						
8	09	.10	.02	.25	.16	.09	.19	.30	.20	.38					
18	10	.06	.06	.17	.10	.13	.15	.18	.14	.17	.12				
21	11	.08	.05	.22	.15	.13	.17	.25	.19	.32	.15	.24			
3	12	.09	.08	.22	.16	.20	.25	.27	.19	.23	.21	.21	.25		
6	13	.05	.09	.14	.10	.13	.12	.15	.13	.15	.10	.16	.14	.05	
4	14	.06	.09	.13	.07	.13	.13	.13	.10	.09	.12	.08	.17	.10	.07

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
17	01	.23				
12	02	.22	.29			
13	03	.11	.10	.08		
10	04	.18	.13	.06	.11	
7	05	.11	.05	.14	.08	.19

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
75	01	.16		
8	02	.18	.32	
3	03	.13	.35	.23

APPENDIX K

**THERAPISTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED BY
FOUR MULTIVARIATE PROCEDURES ON THE
BASIS OF MMPI PROFILES USING
ADOLESCENT NORMS WITH K
CORRECTION**

D^2 Prototype (6 subgroups)

<u>Ss</u>		01	02	03	04	05	06
3	01	.14					
3	02	.07	.16				
3	03	.21	.11	.30			
3	04	.22	.15	.32	.36		
3	05	.26	.11	.28	.35	.27	
3	06	.21	.14	.25	.29	.26	.15

D^2 Hierarchical Grouping (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
6	01	.09													
9	02	.10	.11												
10	03	.06	.07	.14											
13	04	.10	.08	.13	.13										
17	05	.13	.13	.12	.15	.19									
8	06	.10	.07	.18	.17	.17	.22								
14	07	.13	.09	.16	.18	.16	.23	.22							
12	08	.11	.11	.14	.15	.16	.18	.18	.15						
8	09	.10	.04	.15	.16	.11	.21	.23	.15	.24					
18	10	.12	.12	.14	.15	.17	.18	.18	.16	.16	.16				
21	11	.10	.04	.13	.13	.11	.18	.18	.13	.20	.13	.15			
3	12	.08	.09	.19	.18	.19	.23	.25	.21	.23	.20	.18	.21		
6	13	.05	.08	.10	.11	.10	.13	.13	.13	.10	.12	.09	.16	.07	
4	14	.14	.12	.16	.17	.23	.25	.23	.20	.20	.21	.17	.24	.17	.29

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
17	01	.21				
12	02	.17	.17			
13	03	.15	.12	.13		
10	04	.16	.10	.11	.15	
7	05	.13	.07	.13	.13	.18

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
75	01	.14		
8	02	.14	.22	
3	03	.14	.23	.25

APPENDIX L

PATIENTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED
BY FOUR MULTIVARIATE PROCEDURES ON
THE BASIS OF MMPI PROFILES USING
ADOLESCENT NORMS WITH K
CORRECTION

D^2 Prototype (6 subgroups)

<u>Ss</u>	01	02	03	04	05	06
3 01	.14					
3 02	.12	.13				
3 03	.02	.11	.24			
3 04	.06	.14	.16	.10		
3 05	.17	.13	.12	.12	.11	
3 06	.05	.16	.18	.15	.14	.17

D^2 Hierarchical Grouping (14 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14
6	01	.21													
9	02	.16	.16												
10	03	.09	.10	.10											
13	04	.13	.12	.06	.13										
17	05	.16	.12	.11	.10	.19									
8	06	.11	.11	.09	.08	.11	.08								
14	07	.13	.12	.08	.10	.12	.09	.09							
12	08	.14	.14	.09	.13	.12	.09	.11	.12						
8	09	.13	.11	.11	.12	.11	.09	.11	.13	.19					
18	10	.16	.16	.10	.15	.13	.11	.13	.15	.14	.16				
21	11	.14	.13	.09	.13	.10	.09	.10	.14	.15	.15	.14			
3	12	.22	.19	.12	.17	.18	.12	.15	.17	.16	.18	.17	.15		
6	13	.06	.07	.05	.07	.05	.05	.05	.06	.08	.08	.07	.09	.04	
4	14	.13	.12	.04	.13	.06	.08	.09	.12	.13	.14	.13	.13	.11	.16

Correlational Cluster (5 subgroups)

<u>Ss</u>		01	02	03	04	05
17	01	.09				
12	02	.07	.15			
13	03	.08	.13	.15		
10	04	.05	.11	.09	.11	
7	05	.12	.07	.12	.05	.17

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
75	01	.11		
8	02	.13	.19	
3	03	.13	.17	.24

APPENDIX M

Q-SORT CORRELATIONS WITHIN AND BETWEEN SUBGROUPS
GENERATED BY FOUR MULTIVARIATE PROCEDURES
ON THE BASIS OF MMPI PROFILES USING
ADOLESCENT NORMS WITHOUT K
CORRECTION

D^2 Prototype (7 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07
3 01	.38						
3 02	.17	.17					
3 03	.34	.20	.23				
3 04	.36	.13	.34	.28			
3 05	.36	.15	.33	.30	.24		
3 06	.14	.27	.25	.27	.19	.32	
3 07	.11	.20	.15	.22	.12	.35	.27

D^2 Hierarchical Grouping (17 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
7	01	.07																
11	02	.09	.08															
12	03	.11	.09	.14														
14	04	.14	.12	.16	.19													
7	05	.09	.08	.13	.16	.17												
3	06	.02	.06	.01	.03	.03	-.03											
15	07	.09	.10	.16	.18	.17	.02	.21										
4	08	.08	.11	.19	.17	.23	.08	.26	.33									
13	09	.09	.11	.15	.16	.16	-.02	.22	.22	.21								
10	10	.07	.08	.12	.17	.19	.04	.21	.20	.17	.18							
10	11	.07	.07	.18	.14	.14	.03	.21	.31	.19	.14	.27						
5	12	.07	.08	.10	.16	.23	-.00	.20	.15	.21	.21	.10	.26					
8	13	.08	.09	.19	.16	.15	.06	.21	.29	.18	.16	.25	.11	.18				
9	14	.05	.08	.09	.13	.18	.01	.16	.16	.15	.18	.11	.19	.12	.12			
4	15	.09	.10	.15	.18	.16	.01	.18	.15	.15	.19	.13	.19	.14	.16	.04		
10	16	.05	.07	.19	.13	.16	.06	.21	.32	.19	.17	.31	.10	.27	.11	.12	.29	
6	17	.07	.10	.11	.13	.13	.10	.14	.19	.13	.14	.13	.13	.15	.12	.12	.14	.05

Correlational Cluster (4 subgroups)

<u>Ss</u>		01	02	03	04
18	01	.14			
24	02	.17	.22		
10	03	.17	.23	.27	
8	04	.12	.10	.04	.20

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.16		
16	02	.18	.20	
3	03	.14	.19	.08

APPENDIX N

THERAPISTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED BY
FOUR MULTIVARIATE PROCEDURES ON THE
BASIS OF MMPI PROFILES USING
ADOLESCENT NORMS WITHOUT K
CORRECTION

D² Prototype (7 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07
3 01	.23						
3 02	.18	.14					
3 03	.21	.17	.13				
3 04	.28	.25	.26	.36			
3 05	.19	.21	.25	.29	.18		
3 06	.15	.27	.19	.27	.29	.30	
3 07	.14	.16	.10	.22	.13	.27	.16

D² Hierarchical Grouping (17 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
7	01	.09																
11	02	.10	.09															
12	03	.15	.10	.20														
14	04	.16	.12	.18	.18													
7	05	.13	.09	.18	.18	.20												
3	06	.04	.09	.04	.08	.07	.01											
15	07	.12	.10	.19	.17	.21	.07	.18										
4	08	.16	.10	.25	.19	.25	.04	.21	.32									
13	09	.11	.10	.17	.15	.19	.03	.17	.18	.18								
10	10	.12	.10	.16	.16	.20	.06	.18	.17	.17	.16							
10	11	.11	.08	.20	.13	.17	.04	.18	.26	.15	.13	.21						
5	12	.11	.12	.18	.18	.21	.06	.21	.17	.20	.20	.14	.25					
8	13	.08	.07	.14	.10	.13	.04	.12	.19	.09	.09	.16	.08	.10				
9	14	.13	.10	.14	.18	.20	.07	.17	.19	.15	.18	.13	.20	.09	.18			
4	15	.14	.12	.17	.18	.20	.07	.18	.20	.15	.16	.15	.19	.12	.18	.05		
10	16	.10	.07	.19	.13	.19	.04	.18	.25	.16	.14	.21	.15	.15	.14	.15	.18	
6	17	.07	.08	.11	.11	.14	.06	.12	.15	.10	.13	.10	.13	.08	.15	.12	.09	.07

Correlational Cluster (4 subgroups)

<u>Ss</u>		01	02	03	04
18	01	.14			
24	02	.16	.18		
10	03	.13	.16	.14	
8	04	.14	.14	.10	.18

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.14		
16	02	.17	.22	
3	03	.14	.16	.10

APPENDIX O

PATIENTS' ADJECTIVE CHECK LIST CORRELATIONS
WITHIN AND BETWEEN SUBGROUPS GENERATED
BY FOUR MULTIVARIATE PROCEDURES ON
THE BASIS OF MMPI PROFILES US-
ING ADOLESCENT NORMS WITHOUT
K CORRECTION

D^2 Prototype (7 subgroups)

<u>Ss</u>	01	02	03	04	05	06	07
3 01	.06						
3 02	.09	.22					
3 03	.17	.09	.07				
3 04	.08	.16	.09	.10			
3 05	.18	.18	.15	.14	.06		
3 06	.11	.11	.10	.15	.14	.22	
3 07	.13	.22	.08	.18	.17	.21	.25

D^2 Hierarchical Grouping (17 subgroups)

<u>Ss</u>		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
7	01	.19																
11	02	.10	.16															
12	03	.12	.10	.13														
14	04	.15	.12	.12	.14													
7	05	.10	.09	.08	.10	.07												
3	06	.10	.14	.12	.08	.07	.11											
15	07	.15	.12	.13	.14	.09	.10	.13										
4	08	.11	.13	.10	.10	.08	.12	.11	.07									
13	09	.14	.13	.11	.13	.10	.13	.13	.12	.13								
10	10	.13	.12	.12	.13	.07	.13	.13	.11	.13	.13							
10	11	.12	.12	.14	.12	.07	.14	.13	.10	.13	.13	.18						
5	12	.16	.16	.13	.16	.10	.13	.16	.14	.16	.16	.14	.14					
8	13	.13	.13	.12	.11	.08	.16	.12	.12	.13	.14	.14	.16	.11				
9	14	.10	.13	.11	.09	.08	.16	.10	.10	.11	.11	.12	.14	.13	.12			
4	15	.15	.09	.10	.14	.09	.04	.13	.10	.13	.12	.10	.14	.12	.08	.12		
10	16	.11	.12	.12	.09	.07	.17	.10	.11	.12	.13	.15	.14	.15	.13	.05	.15	
6	17	.05	.08	.05	.06	.05	.08	.06	.06	.06	.04	.09	.08	.07	.10	.05	.08	.04

Correlational Cluster (4 subgroups)

<u>Ss</u>		01	02	03	04
18	01	.14			
24	02	.09	.09		
10	03	.15	.09	.16	
8	04	.11	.13	.09	.20

Taxonome (3 subgroups)

<u>Ss</u>		01	02	03
74	01	.12		
16	02	.12	.14	
3	03	.10	.11	-.01

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