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Factor Analysis of a Self-Report Problem Inventory for Use in Clinical Settings

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FACTOR ANALYSIS OF A SELF-REPORT PROBLEM INVENTORY FOR USE IN CLINICAL SETTINGS

by

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ABSTRACT

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A factor analysis was performed using 609 subjects, each of whom completed the 265 item self-report problem inventory. Factor analysis was used in this context as the logical first step in the development of the problem inventory. For the purpose of analysis, 240 of the items were used. Results suggest that there may be utility in further research involving the problem inventory. A literature review of current diagnostic issues, self-report inventory issues, diagnostic interviewing issues, and finally, self-report inventory development is included.

(79 pages)

INTRODUCTION

Self-report inventories have long been used as an aid in diagnosing psychological problems. The vast popularity of the Minnesota Multiphasic Personality Inventory attests to the fact that a self-report inventory which is reliable and valid has a place in psychodiagnosis. More recently, however some attention has been given to diagnostic inventories which relate to Diagnostic and Statistical Manual (DSM) categories of pathology. Presently, there is no well researched and validated self-report inventory which is sensitive to DSM categories, and yet does not require a trained interviewer or inordinate amounts of time for interpretation. Such an instrument would be an aid both to diagnosis and to psychotherapy outcome research by providing easily administered pre and post testing to identify the presence of psychopathology and measure its increse or decrease during psychotherapy.

Statement of the Problem

For many years, clinicians and researchers have been very concerned about making accurate diagnosis of medical and emotional problems in order to facilitate treatment. In recent years both clinicians and researchers have increasingly stressed the importance of standardized diagnosis to facilitate a common basis of understanding among all concerned in order that they may "effectively comunicate about the disorders for which they have professional responsibility" (APA, 1980b, p1). The most widely accepted and comprehensive diagnostic reference tool to date is the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM III). Despite criticism of the DSM III (McLemore & Benjamin, 1979; Benjamin, 1981), it remains the guidepost of clinical diagnosis. Professionals have attempted to increase the validity and reliability of their diagnoses, a variety of approaches have been tried. In recent years, behaviorism has become a dominant influence in psychology, and its principles have influenced diagnostic models. Clinicians have recently attempted to operationalize their definitions of diagnostic syndromes by specifying in greater detail

the behaviors which these syndromes involve. Thus diagnosis is becoming increasingly based on the presence and severity of specific behavioral symptoms (APA, 1980b). The DSM III in fact catalogues specific behaviors for the clinician to note in formulating a diagnosis. This approach to diagnosis was chosen because it appears to make possible much more accurate categorization. Given the increased concern with specific symptoms, and the widespread use of the DSM III, it seems most appropriate to use the concept of noting the presence or absence of specific behaviors, in addition to thoughts and feelings, in further attempts to refine diagnostic procedures. A multidimensional approach, such as the use of a combination of behavioral, cognitive and emotive measures, is suggested in order to adequately assess changes due to the therapeutic process.

Although diagnosis has been refined and improved a great deal it is still an imprecise affair. Field trials performed during the development of the DSM III show that even experienced clinicians often do not agree on diagnosis (APA, 1980a), and there is some concern about the correct use of diagnostic instruments and procedures (e.g., Wiens & Matarazzo,

1983). There is, therefore, a need for continued refinement of diagnostic procedures. This need is perhaps more important with inexperienced clinicians and with paraprofessionals whose lack of experience and training make accurate diagnosis and understanding of diagnosis a greater problem. Although the DSM III has improved diagnosis immensely, there is still frequent confusion and disagreement among experienced clinicians in its use. One rather obvious possibility would be to capitalize on the strengths of the widely used DSM III by refining, clarifying, and providing more understanding of the diagnostic categories that it defines, and developing an instrument which would use similar priciples and diagnostic categories, but with greater objectivity and reliability.

Purpose of the Study

The present study attempted to take a first step toward develping an instrument which would be a useful tool in diagnosing emotional problems. This author acknowledges the need to develop multiple measures for diagnosis, but concentrates on the development of a single

instrument for use in conjunction with other measures. The instrument is constructed to assess behavior, cognition and feelings.

The proposed inventory is a structured, self-report instrument which asks subjects to rate behaviors, cognitions, and affect. In the continuum from non-structured psychiatric interviews to highly structured instruments such as the MMPI, the proposed inventory is closest to the more highly structured instruments. In terms of reliability, self-report instruments are generally acknowledged as being superior to interviews, due to the fact that the same questions are asked in the same order for each subject (Anastasi, 1968). Highly structured self-report instruments are also considered to be more valid than an interview. The reason is that with an interview much of the validity as well as the reliability, comes from the interviewer's skill.

An interview, even one based conceptually on the DSM III, may lead to incorrect decisions because important data were not elicited or because given data were inadaquately or incorrectly interpreted. On the other hand, while it is more reliable, an inventory may not be valid since one cannot guarantee accurate perception, on the subject's part, of the

intention of the item, and also since the restrictions due to answering the same questions in the same order for each subject may lower diagnostic validity because of the restrictive nature of the instrument (i.e more types of information may be gleened from an interview which employs less structure) (Anastasi, 1968). As a rule, however, current research indicates that more highly structured instruments are likely to be more valid than those with less structure. Whether a statistically validated test is as accurate as a clinical interview depends on the situation and the skill of the interviewer (Anastasi, 1968, p. 152). Anastasi suggests that when tests with known high validity can be obtained they should be used.

The thrust of this study, therefore, was to develop an instrument which would more accurately measure client variables, and which would be sensitive to DSM III categories of diagnosis. It was believed that an inventory of the type used here has a good probability of demonstrating some type of test reliability. Because it is based on behaviors listed in DSM III, and thus has face validity, it also has a good possibility of being shown to have other types of validity.

Given the current need for therapists to document the effectiveness of their work, and given also the increased inclination of both therapists and researchers to use instruments which use indications of the presence or absence of particular behaviors, thoughts and feelings in both diagnosis and in measuring outcome it seemed worthwhile to attempt to develop such an instrument. Given the widespread use of the DSM III for diagnosis it seemed worthwhile to begin by working to make a related instrument which would be easier to use and more reliable.

The present research used a highly structured self report instrument which should have the potential to provide greater reliability than a psychiatric interview. In addition, this inventory is possibly sensitive to categories of DSM III diagnosis, and may (after considerable research) prove to be useful for diagnostic purposes, if acceptable levels of diagnostic validity can be reached.

The inventory is, in fact, quite similar to the Millon Clinical Multiaxial Inventory (MCMI) (Millon, 1985) in structure and in types of questions asked, the major difference being that the inventory attempts

to cover more diagnostic categories than the MCMI. Furthermore, the inventory is thought to be significantly different than instruments such as the Diagnostic Interview Schedule (DIS) (Robins, 1985), the Psychiatric Diagnostic Interview (PDI), and the Structured Clinical Interview for DSM-III (SCID), all of which require an interviewer rather than simply self-administration.

Again, although such instruments are of immense value in diagnosis, the superior reliability, and possible greater validity of a self-report structured instrument may make it more valuable both for clinical diagnosis and for research purposes (Anastasi, 1968). Ultimately, of course, until much more definitive research is completed, a variety of instruments (including structured interviews) should be utilized and researched in order to capitalize on the various types of reliability and validity found in each, and to fully define which are most effective.

In order to develop this self-report problem inventory , the logical first step, after assembling a suitable pool of items, is the factor analysis of items currently found in the inventory so as to determine

which items represent factors that are aligned along the same dimensions as DSM III diagnostic categories. A factor analytic procedure, in facilitating the clustering of items, also provides a logical basis for further studies involving the reliability and validity of the instrument.

Therefore, this study was designed to perform an exploratory factor analysis on a self-report problem inventory for the purpose of determining whether or not certain groups of items on the inventory have some resemblance to diagnostic categories found in the DSM-III. These are considered to be the first steps in developing the problem inventory as a possible measure to be used along with other types of techniques for diagnosis of psychological problems. In the longer range, the development of such an instrument might serve an even more important purpose, that of providing a more accurate basis for assessing efficacy to treatment.

Hypothesis

The factor structure found within the self-report problem

inventory will reveal groups of questions which conceptually relate to diagnostic categories found in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition.

REVIEW OF THE LITERATURE

The Development of the DSM III

The beginning of development for the DSM III came about in the early 1970's as a response to the World Health Organization's increased interest in "multiaxial" systems of diagnosis (Rutter, Shaffer, & Shepard, 1973). The major difference between the DSM II and DSM III is the inclusion in the DSM III of a multiaxial system of diagnosis. Multiaxial, in this sense, refers to the division of major categories of diagnosis into (in this case) five sections, all of which contribute to an overall diagnostic picture of the patient's pathology and current functioning. Since the present paper concentrates on an assessment instrument which only concerns itself with axes I and II, further discussion of the total multiaxial aspect of the DSM III will be curtailed.

In terms of reliability, the DSM III field trials (Spitzer, Forman, & Nee, 1979; APA, 1980a) show relatively good reliability coefficients for axes I and II (.70 and .60, respectively). This suggests fairly good

interrater reliability in terms of diagnostic agreement between clinicians. Although the DSM III has not been without controversy, especially in it's development (Bayer & Spitzer, 1985), it seems relatively safe at this point to assert that the DSM III is in the forefront of psychiatric and psychological diagnosis. Therefore, the impetus for the present study rests on the assumption that the DSM III is an accurate tool for assessing psychopathology.

Self-report Inventories

Self-report inventories such as the Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1940) have long been used as aids in determining diagnoses of psychological problems. Recently, the validity of the MMPI has been questioned as to its continued applicability in psychodiagnosis due to the use of outdated norms. Even one of the MMPI's developers, Hathaway, (1972) in the MMPI Handbook, suggests that the time has come for either a better instrument, or improved and updated procedures for the MMPI. In spite of these apparent shortcomings, some researchers (e.g., Osborne, 1985)

have suggested that the MMPI is still useful for identifying patient's pathologies, and for studying therapeutic outcome, if used as a hypothesis generating tool to be verified by other methods. The author believes that Osborne recognizes the obvious utility of a self-report diagnostic inventory for certain applications.

The Millon Clinical Multiaxial Inventory (MCMI) (Millon, 1982) was developed with the purpose of bridging the gap between self-report inventories and the type of diagnostic categories found in the DSM III.

Factor-analytic studies using subscale scores on the MCMI have identified three primary factors which were named: 1) Maladjustment, 2) Psychoticism, and 3) Extraverted acting-out (Choca, Peterson, & Shanley, 1986). These factors seem to be related to previous factors obtained from the MMPI (Eichman, 1961; Kassebaum, Couch & Slater, 1959), which were named: 1) maladjustment and 2) introversion-extroversion. These so-named factors also seem to coincide with Eysenck's (1976) triad of Neuroticism, Extraversion, and Psychoticism.

Although Millon has worked extensively with his instrument, it has

recently come under attack for it's incongruence with the taxonomy of the DSM III in terms of content validity (Widiger, Williams, Spitzer & Frances, 1985). Widiger, et al claim that Millon used his own taxonomy rather than that of the DSM III in constructing the MCDI. Although Millon (1985) asserts that this problem has been rectified by further refinements of the MCDI (namely the creation of the MCDI-II), it remains a question as to whether or not Millon's instrument truly represents DSM III categorization to a full extent.

Diagnostic Interviewing

As mentioned above, the ability of clinicians to make diagnoses which agree with those of other clinicians is perhaps somewhat less than ideal. Since diagnostic interviews are still the standard procedure, several attempts have been made in the past to try to somehow aleviate this reliability problem situation by the use of more structured interviewing techniques for the purpose of making a diagnosis.

Spitzer, Endicott & Robins (1975) identified five sources of unreliability in making a clinical diagnosis: 1) "Subject variance,"

which pertains to patients who have different conditions at different times, 2) "occasion variance," which refers to different stages of a condition at different times, 3) "information variance," which is present when clinicians have different information about their patients, 4) "observation variance," which occurs when clinicians observe different things in the presence of the same patient generated stimulus, and finally, 5) "criterion variance," which occurs when clinicians use different diagnostic criteria.

Spitzer et al. (1975) suggested that the largest source of variance in making a diagnosis is criterion variance. This may have been their rationale for being involved in the development of the DSM III. The second largest source of variance, according to Spitzer, et al. (1975) is information variance. The Research Diagnostic Criteria (RDC) (Spitzer, Endicott, & Robins, 1978) was developed with the purpose of more rigidly structuring the diagnostic interview in order to help reduce this source of unreliability. One problem with the RDC, as pointed out by Meier (1979), is that the instrument has only been normed for an inpatient population. This would make inferences using the RDC

questionable if the subject population was anything but an inpatient population.

Another diagnostic interview schedule, the Schedule for Affective Disorders and Schizophrenia (SADS) was developed by Endicott and Spitzer (1978), also for the purpose of decreasing information variance in a diagnostic interview. The SADS is intended to be used as a aid in data collection for evaluation, diagnosis, prognosis, and also as an measure of patient change. Both the RDC and SADS were developed with DSM III criteria as a background, in an attempt to facilitate the reduction of criterion variance.

Although diagnostic interview schedules certainly have their place in clinical practice, there are some problems associated with the use of such instruments. Rappaport, Gill, and Schafer (1968) pointed out that the clinical interview is highly susceptible to both subjective and objective variables. More recently, Bromet, Dunn, Connell, Dew, and Schulberg (1986), in using the Schedule for Affective Disorders and Schizophrenia, Lifetime version (SADS-L) found that the agreement for diagnoses was rather poor across time (temporal stability). One reason

for this, they pointed out, was that the interviewers were perhaps not well enough trained in interviewing to use the schedule. Indeed, Matarazzo (1983) suggests that the user of any diagnostic interview schedule should be familiar with diagnosis in general if satisfactory results are to be obtained.

Thus far, however, there is no assurance that even more highly trained interviewers would make highly reliable diagnoses based on the SADS-L study. Given Anastasi's (1968) belief in the relative superiority of highly structured instruments, the development of a structured self-report problem inventory seems like a productive possibility. Therefore, following Spitzer and Williams (1984) tact of developing a structured interview based soley on the DSM III (The Structured Clinical Interview), but using a self-report inventory instead, would possibly improve the accuracy of diagnoses by providing a more formal method of following DSM III criteria for diagnoses.

Development of a Self-report Problem Inventory

The most widely used and the best current diagnostic tool appears to be a structured diagnostic interview schedule, which not only requires the interveiwer to be adept at diagnosis, but also leaves much to be desired in terms of proven reliability, even among experienced clinicians. For this reason, the present study focused on developing a self-report diagnostic inventory which can be administered without the presence of a qualified clinician. Using an instrument which has already shown reliability (the Behavior Checklist) (Elliott, 1975), the present study proceded by adding items derived from the DSM III, which possibly tap behavioral, cognitive and affective indices of psychopathology. It is believed that such an instrument as the proposed problem inventory would be useful in aiding diagnosis, while at the same time be easily administered, scored, and interpreted.

In his dissertation, Elliott (1975), who was mainly concerned with developing a therapy outcome measure, followed Paul's (1967) suggestion to reduce client variables to self reported behavioral indices in order to assess therapeutic outcome. To accomplish this, Elliott used

what he called low inference items (which reflected various distressing behaviors) arranged on a likert-type scale (from 0= never to 5= always) which clients could complete prior to and following a given number of therapy sessions. The resulting instrument was then tested for internal and overall reliability using a college student population. The issue of using a college population to determine reliability on a therapeutic assessment instrument was addressed by Kubat (1977) who, in her thesis, used Elliott's Behavioral Checklist to test for reliability with a clinical population. She confirmed Elliot's findings of the reliability of the instrument and also improved the format of the items. The result yielded a revised inventory which has high reliability for assessing therapeutic outcome in terms of the distressing behaviors which bring clients to therapy.

The present study proposed to capitalize on the results of research obtained from Elliott's and Kubat's studies by generating an instrument which utilizes similar items and others which describe infrequent but important behaviors. Moreover, the present study related the resulting inventory to DSM III diagnostic categories by use of a factor analysis. It

is possible that this approach will lay the foundation for further studies involving reliability, diagnostic validity and perhaps the use of the inventory as a psychotherapy outcome measure.

METHOD

Sample

The subject population for this study consists of 615 undergraduate students enrolled in: 1) four general psychology classes, 2) two sections of developmental psychology, and 3) two sections of career development. Subjects were 44% male and 56% female, with a mean age of 20.8 years (standard deviation = 3.71), and a range in age from 17 to 46 years. Racial and demographic variables were not collected, but the vast majority of subjects were caucasion (based on observation by the experimentor and a knowledge of the general demographics at Utah State University).

Subject identities were limited to age, sex, class attending and date of administration. No identifying variables in terms of name, etc. were retained in the raw data. This population is hypothesized to include persons who are suffering from a variety of psychological problems, encompassing a large number of diagnostic categories found in the DSM III, with the exception of some of the extremely rare

conditions such as multiple personality, transsexualism, etc. Although there are no statistics available as to the frequency of various emotional disorders in this particular population, casual observation of the range of problems presented at the Utah State University Psychology Department Community Clinic suggested to the author that a wide range of disorders is probably to be found in this population. University students are, of course, above average in intellectual ability, but so far as is known, this systematic bias does not correlate with or suggest the likelihood of a preponderance of any particular kind of emotional disorder. The Task Panel Reports Submitted to the President's Commission on Mental Health (1978) estimated in 1975 that between 0.5 and 3% of the population suffer from schizophrenia, 0.3% of the population suffers from "manic-depressive" disorders, 8 to 13% of the population suffers from "neuroses", and 7% of the population has a personality disorder. More generally, the Task Panel estimated that 15% of the overall population suffers in some way from a mental disorder (Task Panel Reports, 1978). It seemed reasonable to assume that the population for this study would contain similar proportions of people

with emotional problems.

The probable absence of subjects representing rare categories of DSM III diagnoses is not considered to be a threat to the validity of the present experiment, since the prevalence of such disorders is so low anywhere in the United States as to make standardized diagnosis of such disorders a difficult (if not impossible) enterprise under normal clinical diagnostic circumstances.

Since the scope of the present study entailed simply determining factors in which items clustered for the proposed inventory, this type of problem would be addressed at a later date, if research into the diagnostic predictive validity of the proposed inventory were ever to be undertaken. This issue points toward one of many problems in generalizing research findings of the proposed study to populations outside the state of Utah, which may naturally differ in diagnoses, etc. Again, such questions are beyond the scope of the present study, and should properly be addressed in further resesarch.

Measure

The measure used for this study was developed by Elwin Nielsen and the author, Department of Psychology, Utah State University. Kubat's (1977) revised behavioral checklist consists of 149 items that are completed by the therapy client using a six-point, Likert-type scale (0= never to 5= always). In the development phase of the self-report problem inventory, Nielsen included all of the items found on Kubat's revision of the checklist and then expanded it to include important but infrequent behaviors by generating questions that were applicable to various DSM III diagnostic categories. This was accomplished by taking each DSM III category definition, comparing the criteria used for diagnosis with items found on the Kubat instrument, and either restructuring or reformulating questions based on the criterion. In the process, a number of the original items found on the instrument were eliminated, the wording of a number of items was changed, and a number of items not found on the original instrument were added.

The author followed a similar procedure, making a careful inspection of the Elliot-Kubat instrument and Nielsen's additional

items, and double-checking for indicators listed in the DSM III which had been overlooked but which are potentially important to a clinical population, and which needed to be addressed by specific items. Such items were then constructed and added to the inventory by using the DSM III criteria as guidelines. In this way all of the diagnostic categories for DSM III were covered by items in the inventory, except as noted below. Items added by Nielsen and Corey were primarily items describing behaviors, cognitions and feelings which are not often displayed, but which are considered by mental health professionals to be extremely important when they are observed, and which would round out the instrument to fit with the DSM III.

With the additional items, the self-report problem inventory has a total of 265 items and covers every major diagnostic category found in the DSM III whose criteria are not more readily definable with special measures, such as mental retardation (see appendix A). The immediate advantage of referring to DSM III is that that document provides a ready stimulus for generating items for the wide range of behaviors that might be of concern in a clinical situation. Since the items on the

proposed inventory are of the same nature as the original checklist in terms of using specific questions about various behaviors, cognitions, and feelings of the client, it is postulated that items are relatively low inference, that is, the items are "easy" to answer in that subjects do not have to make an inferential judgement to determine if a given item applies to them (e.g. questions either apply or they don't). In developing the instrument and thinking about its possible application, it seemed worthwhile to consider the possible effect that responding to inventory items would have upon therapeutic outcome. Burton and Nichols (1978), in using the Behavioral Target Complaint Form (which asks clients to list behavioral complaints that they would like to have changed in therapy), empirically established that such a procedure does not, in itself, affect the outcome of therapy. In comparison, the present inventory would likely be no more reactive and would possibly be even less reactive than the Behavioral Target Complaint Form, simply because it merely asks for a rating on various behaviors, rather than having the client generate a list of (and therefore contemplate rather deeply) behaviors which are distressing to him/her. The author's logic

is that when an individual goes to the effort of thinking or reminding oneself of a problem, and then writing it down, that person is more likely to react to the instrument than if less effort were required.

At this point it may be useful to clarify definitions. Elliot, and following him, Kubat, referred to their instrument as a checklist. Strictly speaking, it did not ask the subject to "check" items, but rather to rate them. The presently proposed instrument might most properly be called an inventory, since it asks people to rate themselves on a large number of likert-type items. The logic of the present author is that on a checklist the respondent simply checks items on an inclusion-exclusion basis. A questionaire is usually open-ended, and on a rating scale, the respondent makes ratings on a few dimensions. The present instrument requires ratings on a very large, inclusive number of items. The term inventory seems appropriate, and will be used here after to describe the present instrument.

Procedures

735 problem inventories were administered to subjects over a

2-month period beginning in March, 1986 and ending in May, 1986. Of these, 615 were returned (subjects were allowed to take the inventories home overnight). An informal survey by the author revealed that completion of the inventory took an average of 45 minutes, with some subjects claiming as much as 90 minutes and some claiming as little as 30 minutes. Of the 615, 6 inventories were discarded due to incompleteness, leaving a total of 609 inventories for analysis. Furthermore, the items which requested female responses only (items 115 through 121) were excluded from analysis, as were the last 18 items (items 248 through 265) since these were simply repetitions of earlier items (repetitious items were added at the erroneous advice of a statistician, who later agreed that there had been a misunderstanding concerning the use of SPSSX for factor analysis) This left a total of 240 items for analysis.

Following data collection, the inventory "scores" were subjected to several types of factor analysis. The final analysis consisted of a principle axis solution, using an oblique rotation. In the words of Kleinbaum and Kupper, (1978, p. 376)

> Factor analysis is a multivariable method that has as its aim the explanation of relationships among several difficult-to-interpret, correlated variables in terms of a few conceptually meaningful, relatively independent factors.

In addition, factor analysis may be used to group test or inventory items into "relatively homogenous and independent clusters" (Anastasi, 1968). It is for these reasons that factor analysis has become increasingly popular for the purpose of identifying which variables relate to various factors proposed as the measures of numerous inventories, checklists and other types of instruments (e.g., Achenbach & Edelbrock, 1978). The use of factor analysis in the present study was justified as a means of determining whether the individual items could be grouped together to form clusters representative of the diagnostic categories found in DSM III.

RESULTS

An exploratory principle axis extraction with an oblique rotation yielded 54 rotated factors (three factors were discarded because their items loaded well on other, "earlier" factors) using an eigen value of 1.0 for the factoring cutoff level. The cumulative percentage of variance explained by all 54 factors was 69.8%, with only 18.5% of the variance explained by the first factor. Appendix B provides a summary of the factors with the problem inventory items they include, along with individual eigen values, percentages and cumulative percentages of the variance explained by each factor, and finally, factor loadings obtained from the factor pattern matrix (since the rotation was oblique) for each item. In addition, an arbitrary label has been assigned to each of the factors.

The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) (Kaiser, 1974) equalled .91096, an idex which Kaiser would characterize as "marvelous". The MSA increases as the number of variables increases, the number of common factors decreases, the number of

cases increases, and the average magnitude of correlations increases (Kaiser, 1970). The high MSA value suggests that the data involved (individual item "scores" on the problem inventory) may appropriately be analyzed through the use of factor analysis.

Using a strict interpretation of the scree test for determining the number of factors (Cattell, 1966) (separating substantive from error factors) leaves only 6 factors, accounting for a mere 33% of the total variance, and encompassing only 67 of the 240 items on the problem inventory. A more loosely defined scree test suggests the inclusion of 23 factors, accounting for 50.9% of the total variance, and encompassing 145 of the items.

DISCUSSION

Although there appears to be a glowing problem with this study in terms of how many factors to use in interpretation, the matter is simplified by the fact that the 54 factors identified by use of the Kaiser-Guttman rule (extraction of factors with eigen values greater than or equal to one) encompass all of the items on the inventory. The fact that there are so many factors is likely due in part to the large number of items on the inventory, and the fact that so many differnet types of behaviors are described by the items. The inventory was, after all, intended to assess forty four different diagnostic categories found in the DSM III. If these are fairly discrete diagnostic categories, as some clinicians think, then it is perhaps not unexpected to find a large number of factors. Furthermore, "relaxing" the more or less arbitrary rule(s) for factoring may be an important part of an exploratory factor analysis, since a very stringent determination of residual error factors could possibly eliminate "good" explanatory factors in the process (Cattell, 1978, p.61).

For the present, then, the author has chosen to report all the factors which have eigen values greater than or equal to one. At this stage in the exploration of the instrument there may be additional justification for retaining items with low factor matrix values since many of the diagnoses in DSM III are made on the basis of a single behavior and therefore the inventory has only one item for that diagnosis. Other diagnostic categories include many different behaviors. This difference in numbers of behaviors between diagnostic categories may be adding some numerical confusion to the results.

As can be seen in appendix B, with few exceptions items within factors generally group together in "intuitively obvious" categories which have subsequentely been labelled by an experienced clinician not otherwise involved in the study. In addition, the author has noted that the factors seem to follow a more general pattern which resembles Eysenck's (1976) triad of Neuroticism, Extraversion, and Psychoticism. The present author has used these same terms along with the factor labels for factors which intuitively fit within one of the triad categories in appendix B.

This "triad" also appeared in a factor analysis of subscale scores (not individual items) of the Millon Clinical Multiaxial Inventory (Choca et al., 1986), and earlier in a factor analysis of the MMPI (Eichman, 1961; Kassebaum, et al., 1959).

As is to be expected, the factor groupings did not neatly coincide with DSM III diagnostic categories as specified in the hypothesis. However, many of the factors may be interpreted as being indicative of various types of psychopathology, as labelled in appendix B. An interesting finding of this study is that the familiar triad of Neuroticism, Psychoticism, and Extraversion (Eysenck, 1976) continued to appear throughout the problem inventory, across numerous factors.

Appendix C shows the proposed relationship of problem inventory items to DSM III diagnostic categories. The only truly homogenous DSM III diagnostic category which remained intact in the factor analysis is that of Post Traumatic Stress Disorder (factor 7, and the one item factor 34). Nevertheless, many of the other proposed item groupings have remained at least partially intact, at least up to factor 23 (the most "liberal" scree test cutoff point for factoring).

It seems reasonable that the nonconcurrence of factors to DSM III categories is because the behaviors, cognitions, and emotions assessed on the problem inventory, when grouped together, may not be singularly indicative of a given DSM III diagnostic category. In other words, some of the items may be indicative of more than one diagnostic category, rather than being unique to a given diagnosis (e.g., the item "I have trouble sleeping" is found in factor 7-Post traumatic stress disorder, whereas a similar item; "restlessness" is found in factor 14).

There appear to be several type of factors which have emerged from the analysis. The first is that which mimics or duplicates a given DSM III diagnostic category, such as post traumatic stress disorder (factor 7). In the post traumatic stress disorder factor the inventory items which were written to define the diagnosis fall neatly into the factor and circumscribe it rather precisely. Several other factors do not mimic DSM III diagnostic categories quite so completely, but nevertheless, do have rather strong similarities to a DSM III category.

The second type of factor is that which defines one primary characteristic of a diagnostic category, such as depression (factor 6).

The depression factor (factor 6) appears to define the experience of depression which cuts across several diagnostic categories, most strongly, the two categories of major depression and cyclothymic disorder. Additionally, there are other diagnostic categories where depression is characteristic, albeit relatively less important. As they are defined by DSM III these two categories have depression as primary characteristics, along with other features such as, in the case of major depression, appetite disturbance, sleep disturbance and tension. In other words there are several diagnostic categories in which depression is a characteristic. The diagnosis that is made depends on a combination of characteristics.

On the other hand, perhaps there are simply two or three different shades of a particular symptomatic characteristic, such as depression anxiety. When defined adequately each of these may be shown to contribute to the diagnosis of certain problems, but not to others. It appears then, that many of the factors are primary characteristics of one or (usually) more diagnostic categories. This being the case, it eventually may be possible to make rather good patient diagnoses from

the inventory by observing the way the factors fall together in the a particular patient's inventory score profile.

In other words, it is possible that a combination of factors could be used to explain a single diagnostic category. For example, the diagnostic category of depression has many different implications in terms of semantic differences. A depressed patient may be experiencing a number of different sensations, cognitions, and feelings, all of which contribute to the patient's report of a subjective state called "depression". A number of different factors in the problem inventory contain items which would access a patient's subjective reporting of the state of depression, but which currently are spread out among different factors. For example, the items "The things I do aren't as worthwhile anymore" and "I don't do as many fun things anymore" are contained on two different factors. Although both of these items might be said to describe a self-report of the condition of depression, they have been separated by the process of factor analysis, and it may be that each of these defines a depressive characteristic which is different in different diagnoses, and that either of them will define the

formal diagnostic category of depression.

Thus, from a diagnostic point of view, the above inconsistency may be due to slightly different aspects of the same disorder. Certainly different types of depression may be present in a given population of patients, such as "neurotic depresson", "psychotic depression", "melencholia", etc. If there are actually different subtypes of one diagnostic category, then perhaps a re-examination of the problem inventory is in order, and it may turn out that the problem inventory can refine and clarify traditional diagnosis.

As mentioned previously, there are some diagnostic categories in which a single item is diagnostic. These diagnoses are usually very rare in the population, and so did not factor out well. An obvious example is item number 128: "I can become more sexually aroused with animals". This item would, by itself, be diagnostic, but in the factor analysis it was combined with a number of similarly diagnostic items relating to sexual problems.

Additionally, there are some of the "later" factors which appear very similar to "earlier" (in order of statistical significance) factors.

For example factor 54 (3 items) and factor 55 (1 item) both contain items (3 altogether) that were designed to be diagnostic of panic disorder. However, factor 9 contains 9 items that were created to assess panic disorder and one item that was designed to assess generalized anxiety, which is very closely related to panic disorder. It may be that these later, less statistically significant items are not incorporated into the earlier related factors because the behaviors, cognitions or feelings which those items define occur much less frequently in this population, or it may be that they are probing a slightly different facet of the given diagnosis (e.g., panic disorder).

Moreover, there are some of the later factors that have a variety of items which appear to cut across several different diagnostic categories in ways that are not immediately sensible. These factors may be combining together low frequency items that, for this population, are not particulaly diagnostic of any of the regular categories, or there exists the possibility that items in these later categories were not as well represented in this population due to higher reactivity of the items, greater reluctance on the part of subjects to

respond "truthfully" to the items, or a combination thereof.

Thus, although a total of 57 factors was extracted in the rotational solution, it may be that many of the factors (e.g factors 24 through 57) could be combined and/or grouped with other earlier factors due the fact that many of these factors are "cooperative" (Cattell, 1952). Cooperative factors are those factors which contain variables that load relatively well on more than one factor. With the present sample, the problem inventory test items may not be well enough refined to discriminate between maladies which, though conceptualized in DSM III as distinctive, have features that are common to a number of different diagnostic categories. For this reason the cooperativeness of factors may be taken into account in order to explain the presence of what appear to be similar factors. Such a possibility might be explored by conducting a factor analysis of the inventory taken on a much larger population which included patients from a mental health clinic as well as subjects from the general population, such as those in the present study.

Finally, with more research the problem inventory may prove to

be useful in categorizing general psychopathology as it relates to the dimensions of neuroticism (or maladjustment), psychoticism, and extraverted acting-out, in addition to the already established diagnostic category of post traumatic stress disorder. Thus, the problem inventory may be useful for the purpose of aiding a clinician in making a DSM III type diagnosis by virtue of the numerous behaviors, cognitions, and emotions which are assessed, and by the degree to which the inventory can discriminate between "psychoticism", "neuroticism", and "acting-out".

The fact that basic diagnostic categories emerge in the factor analysis may be a sort of statistical validiation of these components as contributing entities in clinical diagnosis, and thus support the value of diagnostic systems such as DSM III. That same fact also reflects the complexity of human behavior, where many characteristics may blend in different ways. Once again, consideration of these two notions suggests that further systematic statistical analysis of basic diagnosis, which is made possible by such approaches as the present one, may help to refine and clarify our diagnoses.

This study does appear to have moved closer to the goal of developing a diagnostic instrument which will be sensitive and intricate enough that it can be a good outcome measure. The factors that emerged appear to define characteristics of many of the commonly used diagnostic categories. Thus, there is considerable face validity to the 23 factors that a loosely defined scree test would include. The items that comprise these factors would very likely make a sensitive indication of psychotherapeutic effectiveness. That assertion will, of course, need to be tested in a carefully controlled experiment using a clinical population and appropriate controls.

Limitations

One limitation of this study was the use of a singular subject population (students enrolled in psychology classes at Utah State University). Although factor-analytic studies used to explore the structure of a test often employ such limited subject populations (Cattell, 1978), it is believed that results may have been altered by the use of a more heterogenous population (in terms of racial, age, and

social demographics).

Another limitation of the study involves the nature of the inventory itself, that is, the large number of items contained on the inventory. This problem was partially addressed by the use of a large subject population (close to three times the number of items), however, the high number of factors could have been due, in part, to the large number of variables in the analysis.

In fact, it has been suggested to the author that the SPSSX statistical package used to factor analyze the data may have been "overworked" by the large number of variables. Overworked in this sense means that the amount of contiguous memory available on the Digital Equipment VAX system for the author's individual account may have, at times, been insufficient to process the various types of correlational matrices necessary to perform factor analysis.

Recommendations

An immediate and productive next step would appear to be a study similar to the present one, but with the inclusion of a popluation of

patients whose problems have become severe enough to lead them to admission to a mental health facility. Even though this study assumed that there is a wide range of emotional problems to be found in this general college population, one would not expect that this brief sampling would uncover the broad range of problems that the DSM III defines. The present findings seem sufficiently positive to justify the greater logistical effort of expanding the subject population.

If a factor analysis of the problem inventory on a broader population sample provided results similar to those of the present study, then it would seem worthwhile to attempt to begin to validate and refine the instument by combining "conceptually similar" factors among the first 23 factors, and adding similar items to these factors from among the last 31 factors. A confirmatory factor analysis using subscale scores (as opposed to ratings on each item) would then determine if any simple structure containing general diagnostic categories among subscale scores exists. Furthermore, it may be helpful to determine if combinations of factors (e.g., factors 1, 2, and 4) are similar enough to warrant investigation into the possibility that the

combination is actually part of one larger diagnostic factor. On the same note, it may be helpful to determine whether or not a number of diagnostic categories are represented by a single factor. Both of these questions could be addressed by use of factor and cluster analytic techniques.

The above mentioned problem of "cooperative factors" also needs to be addressed in the context of limiting factor extraction in further studies. Presumably, an oblique rotation of a principle axis solution using subscale scores could ultimately determine if the large number of factors yielded in the present study are warranted, or if some items need to be eliminated or revised in order to ensure greater discrimination between diagnostic categories, especially in light of the possibility of differential categories of a single diagnosis as mentioned above.

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APPENDIXES

Appendix A: Self-report Problem Inventory

Sex: M_____ F_____
Age: _____
Date: _____
Class: _____

These questions cover many problems which may or may not be representative of you. Please answer by degree from never to always (circle 0 to 5), the degree to which that behavior describes you or has been a problem for you.

	Never	Seldom				Always
1. Lately, I've been very restless	0	1	2	3	4	5
2. Lately, I have accomplished a great deal	0	1	2	3	4	5
3. I am more talkative than usual	0	1	2	3	4	5
4. I have a lot of ideas that seem to race through my head	0	1	2	3	4	5
5. I've come to realize that I'm a very special person	0	1	2	3	4	5
6. I am either too busy or restless to take time for sleep	0	1	2	3	4	5
7. I can't keep my mind focused on one thing at a time	0	1	2	3	4	5
8. My life has been so good lately that nothing goes wrong	0	1	2	3	4	5
9. I don't eat as much as I used to	0	1	2	3	4	5
10. I have a very good appetite	0	1	2	3	4	5
11. I've gained a lot of weight lately	0	1	2	3	4	5
12. I've lost weight lately even though I am not dieting	0	1	2	3	4	5
13. I'm having troulbe sleeping	0	1	2	3	4	5
14. I am tense much of the time	0	1	2	3	4	5
15. I have a hard time doing things that used to be easy	0	1	2	3	4	5
16. Things that I used to enjoy don't seem as pleasurable now	0	1	2	3	4	5
17. I have less interest in sex than I used to	0	1	2	3	4	5
18. I don't have as much energy as I used to	0	1	2	3	4	5
19. I don't do things that are worthwhile anymore	0	1	2	3	4	5
20. I think that I'm to blame for many things	0	1	2	3	4	5
21. I can't make decisions as easily as I used to	0	1	2	3	4	5
22. I sometimes think that I would like to die	0	1	2	3	4	5
23. I experience quite a bit of insomnia	0	1	2	3	4	5
24. I sleep or want to sleep a lot more than I used to	0	1	2	3	4	5
25. I'm tired all the time	0	1	2	3	4	5
26. The things I do aren't as worthwhile anymore	0	1	2	3	4	5
27. I don't produce as much I used to	0	1	2	3	4	5
28. I'm not around people as much these days	0	1	2	3	4	5
29. Lately I have less interested in sex	0	1	2	3	4	5

	Never	Seldom				Always
30. I don't do as many fun things as I used to.	0	1	2	3	4	5
31. I often experience guilt about things that I've done.	0	1	2	3	4	5
32. I do things more slowly than I used to.	0	1	2	3	4	5
33. I am less talkative than I used to be.	0	1	2	3	4	5
34. I am pessimistic about the future.	0	1	2	3	4	5
35. I spend a lot of time thinking about past events.	0	1	2	3	4	5
36. I cry, or am tearful a lot of the time.	0	1	2	3	4	5
37. I am either too busy or restless to take time for sleep	0	1	2	3	4	5
38. I can do just about anything I want.	0	1	2	3	4	5
39. I work long hours at night, even when it isn't necessary	0	1	2	3	4	5
40. I always have unusually creative ideas.	0	1	2	3	4	5
41. I enjoy being surrounded by people most of the time.	0	1	2	3	4	5
42. I just can't get enough sex.	0	1	2	3	4	5
43. I enjoy and get away with things that many people couldn't, like making daring business investments or driving at high speeds.	0	1	2	3	4	5
44. I have so much energy, I just can't sit still.	0	1	2	3	4	5
45. There's no doubt in my mind that I have done, and will continue to do great things.	0	1	2	3	4	5
46. I like to laugh and joke and have a good time more than most other people around me	0	1	2	3	4	5
47. I don't like being in places like tunnels or buses where I might not be able to get out if I need to.	0	1	2	3	4	5
48. I hate to have other people look at me.	0	1	2	3	4	5
49. I worry about doing something to embarrass myself.	0	1	2	3	4	5
50. I think some of my fears are unreasonable.	0	1	2	3	4	5
51. I have one or more fears that cause me to avoid places or objects even though I know there is no real danger	0	1	2	3	4	5

For the next 12 items, simply rate the degree to which you are bothered by such problems:

52. Heart pounding in my chest.	0	1	2	3	4	5
53. Chest pain or discomfort.	0	1	2	3	4	5
54. Choking or smothering sensations.	0	1	2	3	4	5
55. Dizziness or unsteady feeling.	0	1	2	3	4	5
56. Feeling as though things are not real.	0	1	2	3	4	5
57. Tingling in my hands or feet.	0	1	2	3	4	5
58. Hot or cold flashes.	0	1	2	3	4	5
59. Excessive sweating.	0	1	2	3	4	5
60. Feelings of faintness	0	1	2	3	4	5
61. Fear of dying.	0	1	2	3	4	5
62. Fear of going crazy.	0	1	2	3	4	5

Rate the degree to which you have lately experienced tension in your body in the form of one or more of the following:

	Never	Seldom				Always
63. Shakiness	0	1	2	3	4	5
64. Jitteriness	0	1	2	3	4	5
65. Jumpiness	0	1	2	3	4	5
66. Trembling	0	1	2	3	4	5
67. Muscle tension	0	1	2	3	4	5
68. Muscle aches	0	1	2	3	4	5
69. Can't relax	0	1	2	3	4	5
70. Eyelid twitching	0	1	2	3	4	5
71. Figgiting	0	1	2	3	4	5
72. Restlessness	0	1	2	3	4	5
73. Easily startled	0	1	2	3	4	5

Rate the degree to which you have unusual feelings in your body such as:

74. Heart pounding or racing	0	1	2	3	4	5
75. Coldness	0	1	2	3	4	5
76. Clammy hands	0	1	2	3	4	5
77. Lightheadedness	0	1	2	3	4	5
78. Upset stomach	0	1	2	3	4	5
79. Hot or cold spells	0	1	2	3	4	5
80. Discomfort in the pit of the stomach	0	1	2	3	4	5
81. Lump in the throat	0	1	2	3	4	5
82. Flushed face	0	1	2	3	4	5
83. Having too much energy	0	1	2	3	4	5

Answer by indicating the degree to which the following apply to you:

84. Lately, I have a great deal to say to people	0	1	2	3	4	5
85. I really worry a lot about things that might happen	0	1	2	3	4	5
86. I often have thoughts that I don't like, or that don't make sense	0	1	2	3	4	5
87. There are one or more behaviors which I feel I have to do, but which give me no pleasure and don't make sense	0	1	2	3	4	5
88. I have to do things just right	0	1	2	3	4	5
89. I often redo things many times or have a hard time doing things because I want to get them as perfect as possible	0	1	2	3	4	5

I had a horrible experience which I cannot forget and which continues to bother me in one or more of the following ways:

90. I repeatedly remember the things about the event	0	1	2	3	4	5
91. I repeatedly dream about the event	0	1	2	3	4	5
92. Sometimes I have the strange feeling that the event is happening all over again	0	1	2	3	4	5

I had a terrible experience in my life which is still bothering me. Some time after it happened, I began to:

	Never	Seldom				Always
93. Lose interest in one or more activities that I used to enjoy	0	1	2	3	4	5
94. Become separated or detatched from other people	0	1	2	3	4	5
95. Experience my feelings less than I did before	0	1	2	3	4	5

Previously in my life I had a very horrible experience that still bothers me in that since it occurred I experience one or more of the following:

96. I am nervous or easily startled	0	1	2	3	4	5
97. I have trouble sleeping	0	1	2	3	4	5
98. I have trouble with the fact that I'm alive and comfortable, while others are not	0	1	2	3	4	5
99. I have trouble with my memory or my concentration	0	1	2	3	4	5
100. I find it easier to avoid activities that arouse memories of that horrible event	0	1	2	3	4	5
101. There are certain things that happen to me now which make me more aware of that horrible event	0	1	2	3	4	5

Rate the degree to which the following apply to you:

102. I have been sickly for a good part of my life	0	1	2	3	4	5
103. Difficulty swallowing	0	1	2	3	4	5
104. Loss of voice	0	1	2	3	4	5
105. Double vision	0	1	2	3	4	5
106. Blurred vision	0	1	2	3	4	5
107. Loss of memory	0	1	2	3	4	5
108. Trouble walking	0	1	2	3	4	5
109. Seizures	0	1	2	3	4	5
110. Abdominal pains	0	1	2	3	4	5
111. Nausea	0	1	2	3	4	5
112. Vomiting spells	0	1	2	3	4	5
113. Bloating	0	1	2	3	4	5
114. Diarrhea	0	1	2	3	4	5

(Women only) I have had more trouble than most women I know with:

115. Painful menstruation	0	1	2	3	4	5
116. Irregular menstruation	0	1	2	3	4	5
117. Excessive bleeding	0	1	2	3	4	5
118. Severe vomiting through pregnancy	0	1	2	3	4	5
119. Since I became available for sexual activity I have found intercourse painful or not very pleasant	0	1	2	3	4	5
120. I have experienced a lot of pain in my back, joints, and extremities	0	1	2	3	4	5
121. I have suffered from cardio-pulminary symptoms such as shortness of breath, dizziness, heart-throbbing, chest pains,						

Never Seldom Always

etc. for which physicians could find no
physical reason. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5

Respond to the following by indicating the degree to which the following apply to you:

122. I have a physical dysfunction which handicaps me,
and which doctors cannot explain. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
123. Although doctors can't explain what's wrong with me,
I have a serious disease. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
124. I've forgotten some important personal things about
myself that I should be able to remember. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
125. I very often think I would be much more comfortable
and happy if I belonged to the other sex. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
126. I become sexually aroused with a certain article,
such as a piece of clothing. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
127. I frequently dress up in opposite sex's clothing,
and become sexually aroused. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
128. I can become more sexually aroused with animals. . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
129. I often fantasize about sexual activity with a child
or a much younger person. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
130. I like to expose myself to strangers. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
131. I get excited at watching people
who don't know I'm there. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
132. I have been sexually excited while I was
bound or being made to suffer in some way. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
133. I have been sexually excited while humiliating
or hurting someone. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
134. Since becoming available for sexual activity, I have
experienced considerable difficulty in being able
to enjoy sexual intercourse. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
135. On more than one occasion I have had problems that
resulted from my gambling, such as not being able to
pay my bills, problems with my spouse, etc. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
136. I have frequently had the impulse to steal something,
even though I didn't really need to. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
137. I have intentionally set destructive fires. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
138. I lose my temper. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
139. Occasionally my temper gets completely out of hand,
and I break things or hurt someone. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
140. There is a situation in my life that is so stressful that
I can't function as well as I should. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
141. I am suspicious or afraid that someone might have it in for me,
or might want to do me harm. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
142. I need to guard myself against being blamed, or in some
way suffering from the disloyalty of my friends. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5
143. I'm very jealous lately. . . . . 0 . . . . . 1 . . . . . 2 . . 3 . . 4 5

	Never	Seldom				Always
144. Other people think that I am too quick to take offense, or that I am too sensitive	0	1	2	3	4	5
145. I think it's important to be rational and objective	0	1	2	3	4	5
146. People often don't know that I have tender feelings deep inside	0	1	2	3	4	5
147. I tend to remain aloof from most people	0	1	2	3	4	5
148. I tend to be indifferent to the praise or criticism of others	0	1	2	3	4	5
149. I am not really close to more than one or two people	0	1	2	3	4	5
150. I have some rather remarkable abilities such as clairvoyance, the ability to send my thoughts without speaking, keen awareness of things that are about to pass, etc	0	1	2	3	4	5
151. For a long time I have avoided getting close to other people and have sensed that people do such things as talking behind my back even though they don't say so	0	1	2	3	4	5
152. I have been able to sense the presence of a force or person who was not actually present with me in the room	0	1	2	3	4	5
153. I have felt that I could fade into nothingness, or lose my identity as a person	0	1	2	3	4	5
154. People seem to have difficulty understanding me	0	1	2	3	4	5
155. I tend to have very strong feelings	0	1	2	3	4	5
156. I feel the need to have people notice me and pay attention to me, and I try to get them to do so	0	1	2	3	4	5
157. I have a strong craving for activity and excitement	0	1	2	3	4	5
158. I tend to have strong reactions to events that other people sometimes consider minor	0	1	2	3	4	5
159. Sometimes I become excessively angry or have temper tantrums when I probably shouldn't	0	1	2	3	4	5
160. Some people perceive me as shallow or lacking in genuiness, although I try to be warm and charming	0	1	2	3	4	5
161. I tend to be concerned about myself and sometimes self-indulgent and inconsiderate of others	0	1	2	3	4	5
162. Some people think that I tend to be vain and demanding	0	1	2	3	4	5
163. I tend to feel helpless, and constantly need reassurance	0	1	2	3	4	5
164. I have made a number of suicidal threats or gestures in my life	0	1	2	3	4	5
165. I consider myself to be a unique and special person, with unusual achievements or talents	0	1	2	3	4	5
166. I believe that great things are in store for me, either in terms of unlimited success, achievement of great power, or an ideal love	0	1	2	3	4	5
167. I like and deserve to have people						

	Never	Seldom				Always
notice and admire me.	0	1	2	3	4	5
168. I cannot stand criticism from others and tend to become angry or ashamed when I get it.	0	1	2	3	4	5
169. I believe I am entitled to get things that please me and to have people work to meet my needs. In order to do this, I may do some things such as take advantage of others, put my rights above theirs, or not worry about how other people feel, as long as I achieve my objectives	0	1	2	3	4	5
170. I am angry.	0	1	2	3	4	5
171. Before the age of 15, I had been in trouble for such things as truancy, delinquency, lying, drunkedness, vandalism, stealing, etc.	0	1	2	3	4	5
172. Since the age of 18, I have had trouble keeping a job, or have changed jobs frequently, or have left jobs because I wasn't being treated right.	0	1	2	3	4	5
173. I have been accused of not taking adequate care of my child (or children), and not providing such things as adequate nutrition, hygiene or medical care.	0	1	2	3	4	5
174. On most occasions I arrange for neighbors or friends to take care of of my child (or children), and when that's not possible, I think it's alright to leave them on their own for awhile	0	1	2	3	4	5
175. Since the age of 18 I have engaged in thefts on repeated occasions, have been arrested several times, and have engaged in illegal occupations.	0	1	2	3	4	5
176. I have been divorced at least once, or have deserted my family	0	1	2	3	4	5
177. I have had ten or more sexual partners in one year. . .	0	1	2	3	4	5
178. On more than 3 occasions since my 18th birthday, I have had serious physical fights with others, including my spouse	0	1	2	3	4	5
179. I have been accused of defaulting on debts or failing to provide support for my child(ren) or other dependents.	0	1	2	3	4	5
180. I tend to act somewhat impulsively, and tend not to plan ahead.	0	1	2	3	4	5
181. I make promises I can't keep.	0	1	2	3	4	5
182. I think it's OK for me to lie or con others, if it will get me something I really want.	0	1	2	3	4	5
183. I tend to be kind of reckless doing such things as driving while intoxicated, or speeding alot.	0	1	2	3	4	5
184. I tend to do impulsive things such as overspending, shoplifting, overeating, substance abuse, etc., that cause me difficulties.	0	1	2	3	4	5

	Never	Seldom				Always
185. I have had a number of intense relationships that have not worked out.	0	1	2	3	4	5
186. I tend to have a strong temper and get extremely angry or lose control, sometimes more than I should.	0	1	2	3	4	5
187. I have difficulty maintaining long term friendships.	0	1	2	3	4	5
188. I tend to have rather strong swings in my mood that last a short time; for example, from depression to anxiety.	0	1	2	3	4	5
189. I get frantic when I'm alone.	0	1	2	3	4	5
190. I frequently make suicidal gestures, or try to hurt myself, or get in fights.	0	1	2	3	4	5
191. I very often bored.	0	1	2	3	4	5
192. I tend to be very sensitive to possible rejection, ridicule, or other putdowns from other people.	0	1	2	3	4	5
193. I have been hurt enough so that I am unwilling to enter into a close relationship unless I know the other person is really going to care about me.	0	1	2	3	4	5
194. I tend to avoid close personal attatchments, and would rather keep my social contacts cool, and concentrate on my job or other activity.	0	1	2	3	4	5
195. I have a strong desire for affection and acceptance.	0	1	2	3	4	5
196. I suffer from low self-esteem and tend to put myself down alot	0	1	2	3	4	5
197. I tend to let others make decisions for me or assume responsibility for things I do.	0	1	2	3	4	5
198. I tend to put other people's needs ahead of my own rather than have a fuss or take a chance on being rejected.	0	1	2	3	4	5
199. I lack self-confidence and tend to see myself as stupid, helpless, inadequate, etc.	0	1	2	3	4	5
200. I would describe myself as a conventional, serious, and somewhat formal person.	0	1	2	3	4	5
201. I believe it is very important to take care of the details and follow the rules and do things the way they are supposed to be done.	0	1	2	3	4	5
202. I tend to demand that things be done my way, and that my family meet my expectations.	0	1	2	3	4	5
203. My primary interest is in my work and my productivity.	0	1	2	3	4	5
204. I try too hard to be perfect.	0	1	2	3	4	5
205. I have a difficult time making decisions or getting things done on time because I'm not sure about which things are most important.	0	1	2	3	4	5
206. I gossip quite often.	0	1	2	3	4	5
207. Sometimes I find myself procrastinating, being stubborn or forgetful.	0	1	2	3	4	5
208. I resent living up to other people's expectations.	0	1	2	3	4	5

	Never	Seldom				Always
209. I have been accused of being inefficient, and have not moved ahead as well as I would have liked.	0	1	2	3	4	5
210. I have had one or more seizures or blackouts	0	1	2	3	4	5
211. I have had a rather abrupt change in my thinking or in my mood	0	1	2	3	4	5
212. I have recently begun to have headaches, trouble with my vision, or numbness or other strange feeling in some part of my body	0	1	2	3	4	5
213. It seems as though my mind becomes clouded over and I have trouble focusing my attention	0	1	2	3	4	5
214. I have lately tended to misinterpret things or see things that are not there	0	1	2	3	4	5
215. Sometimes I can't talk clearly	0	1	2	3	4	5
216. Lately I have had either insomnia or daytime drowsiness.	0	1	2	3	4	5
217. Lately I just don't seem to want to do much.	0	1	2	3	4	5
218. Lately I have just had to keep moving.	0	1	2	3	4	5
219. Lately I have had periods when I wasn't sure where I was, or when I had difficulty remembering.	0	1	2	3	4	5
220. Recently I've had so much trouble thinking that it has caused me difficulty with my job or with other people.	0	1	2	3	4	5
221. I seem to be losing my memory.	0	1	2	3	4	5
222. I am having trouble lately with such things as thinking clearly, impared judgement, difficulty making my muscles work, and other things that I used to do easily.	0	1	2	3	4	5
223. Lately it seems that my personality is changing.	0	1	2	3	4	5
224. My thinking is very clear.	0	1	2	3	4	5
225. Lately it seems like I just can't remember things.	0	1	2	3	4	5
226. I have, on more than one occasion, had problems or difficulties during the time when I had been using alcohol or drugs.	0	1	2	3	4	5
227. I have, on more than one occasion, had difficulties or physical symptoms when I stopped taking alcohol or drugs.	0	1	2	3	4	5
228. On more than one occasion, I have used alcohol or drugs to excess.	0	1	2	3	4	5
229. I drink or use drugs when I am alone.	0	1	2	3	4	5
230. I'm sure that someone is out to get me, or is trying to hurt me.	0	1	2	3	4	5
231. When I drink or use drugs too much I tend to hear things that are not there.	0	1	2	3	4	5
232. When I have been drinking or using drugs I am sometimes able to see or hear things that other people do not.	0	1	2	3	4	5
233. I have felt certain that someone else is controlling my thoughts, putting thoughts into my head, or taking thoughts out of my head.	0	1	2	3	4	5

	Never	Seldom				Always
234. I am certain that someone is trying to hurt me	0	1	2	3	4	5
235. I hear voices when there is no one there.	0	1	2	3	4	5
236. I hear voices in my head.	0	1	2	3	4	5
237. I am not thinking nearly as clearly, doing as good a job, or taking care of my family as well as I used to.	0	1	2	3	4	5
238. I am convinced that some other person or force is controlling me.	0	1	2	3	4	5
239. Sometimes I am sure that unpleasant thoughts or ideas are being inserted into my head.	0	1	2	3	4	5
240. Sometimes I believe that other people can hear what I am thinking.	0	1	2	3	4	5
241. God has sent special, personal communications to me.	0	1	2	3	4	5
242. A part of my body is rotting or being eaten away by a horrible disease.	0	1	2	3	4	5
243. The time must soon come when the world will recognize what a remarkable, special being I am.	0	1	2	3	4	5
244. I am certain that some other being or force is interfering with my life and causing me difficulty.	0	1	2	3	4	5
245. I have frequently been aware of people talking about me.	0	1	2	3	4	5
246. I often hear voices that other people don't hear.	0	1	2	3	4	5
247. I often see things that other people don't see.	0	1	2	3	4	5
248. I don't like being in places like tunnels or buses where I might not be able to get out if I need to.	0	1	2	3	4	5
249. I have a physical dysfunction which handicaps me, and which doctors cannot explain.	0	1	2	3	4	5
250. Although doctors can't explain what's wrong with me, I have a serious disease.	0	1	2	3	4	5
251. I've forgotten some important personal things about myself that I should be able to remember.	0	1	2	3	4	5
252. I very often think I would be much more comfortable and happy if I belonged to the other sex.	0	1	2	3	4	5
253. I become sexually aroused with a certain article, such as a piece of clothing.	0	1	2	3	4	5
254. I frequently dress up in opposite sex's clothing, and become sexually aroused.	0	1	2	3	4	5
255. I can become more sexually aroused with animals.	0	1	2	3	4	5
256. I often fantasize about sexual activity with a child or a much younger person.	0	1	2	3	4	5
257. I like to expose myself to strangers.	0	1	2	3	4	5
258. I get excited at watching people who don't know I'm there.	0	1	2	3	4	5
259. I have been sexually excited while I was bound or being made to suffer in some way.	0	1	2	3	4	5
260. I have been sexually excited while humiliating or hurting someone.	0	1	2	3	4	5

	Never	Seldom				Always
261. Since becoming available for sexual activity, I have experienced considerable difficulty in being able to enjoy sexual intercourse.	0	1	2	3	4	5
262. On more than one occasion I have had problems that resulted from my gambling, such as not being able to pay my bills, problems with my spouse, etc.	0	1	2	3	4	5
263. I have frequently had the impulse to steal something, even though I didn't really need to.	0	1	2	3	4	5
264. I have intentionally set destructive fires.	0	1	2	3	4	5
265. There is a situation in my life that is so stressful that I can't function as well as I should.	0	1	2	3	4	5

Appendix B: Results of the Factor Analysis

Factor numbers followed by label (in parentheses), position on Eysenck's (1976) triad (in italics-where applicable), eigen value, percentage and cumulative percentage of variance explained, and individual items followed by respective pattern matrix factor loadings.

	Eigen value	% of var	Cum% of var
Factor 1 (Confusion) *Psychoticism*	44.46	18.5	18.5

213. It seems as though my mind becomes clouded over and I have trouble focusing my attention ..... .43
214. I have lately tended to misinterpret things or see things that are not there ..... .40
215. Sometimes I can't talk clearly ..... .32
220. Recently I've had so much trouble thinking that it has caused me difficulty with my job or with other people. ..... .31
222. I am having trouble lately with such things as thinking clearly, impared judgement, difficulty making my muscles work, and other things that I used to do easily. ..... .29
223. Lately it seems that my personality is changing. ..... .26
211. I have had a rather abrupt change in my thinking or in my mood ..... .26
221. I seem to be losing my memory. ..... .26
216. Lately I have had either insomnia or daytime drowsiness. ..... .26
99. I have trouble with my memory or my concentration. ..... .25
212. I have recently begun to have headaches, trouble with my vision, or numbness or other strange feeling in some part of my body ..... .23
197. I tend to let others make decisions for me or assume responsibility for things I do. ..... .22
225. Lately it seems like I just can't remember things. ..... .21
237. I am not thinking nearly as clearly, doing as good a job, or taking care of my family as well as I used to. ..... .21
199. I lack self-confidence and tend to see myself as stupid, helpless, inadequate, etc. ..... .21
153. I have felt that I could fade into nothingness, or lose my identity as a person. ..... .18

	Eigen value	% of var	Cum% of var
Factor 2 (Paraphilia) *Extraversion*	11.21	4.7	23.2

127. I frequently dress up in opposite sex's clothing,

and become sexually aroused. 70
128. I can become more sexually aroused with animals. 68
132. I have been sexually excited while I was bound or being made to suffer in some way. 66
133. I have been sexually excited while humiliating or hurting someone. 56
130. I like to expose myself to strangers. 53
129. I often fantasize about sexual activity with a child or a much younger person. 50
131. I get excited at watching people who don't know I'm there. 41
125. I often think I would be much more comfortable and happy if I belonged to the other sex. 30
173. I have been accused of not taking adequate care of my child (or children), and not providing such things as adequate nutrition, hygiene or medical care. 26
126. I become sexually aroused with a certain article, such as a piece of clothing. 24

	Eigen value	% of var	Cum% of var
Factor 3 (Dependency) *Neuroticism*	7.68	3.2	26.4

195. I have a strong desire for affection and acceptance. 52
156. I need to have people notice me and pay attention to me, and I try to get them to do so. 50
167. I like and deserve to have people notice and admire me. 48
155. I tend to have very strong feelings. 37
192. I tend to be very sensitive to possible rejection, ridicule, or other putdowns from people 35
157. I have a strong craving for activity and excitement. 35
158. I tend to have strong reactions to events that other people sometimes consider minor. 35
163. I tend to feel helpless, and constantly need reassurance. 25
180. I tend to act somewhat impulsively, and tend not to plan ahead. 24
168. I cannot stand criticism from others and tend to become angry or ashamed when I get it. 21

	Eigen value	% of var	Cum% of var
Factor 4 (Manic-Grandiocity) *Psychoticism*	6.43	2.7	29.1

165. I consider myself to be a unique and special person, with unusual achievements or talents. 74
166. I believe that great things are in store for me, either in terms of unlimited success, achievement of great power, or an ideal love. 72
45. There's no doubt in my mind that I have done, and will continue to do great things. 64
5. I've come to realize that I'm a very special person 61

243. The time must soon come when the world will recognize what a remarkable, special being I am. 27
38. I can do just about anything I want. 26
224. My thinking is very clear. 21

	Eigen value	% of var	Cum% of var
Factor 5 (Substance abuse) *Extraversion*	4.83	2.0	31.1

226. I have, on more than one occasion, had problems or difficulties during the time when I had been using alcohol or drugs. 84
228. On more than one occasion, I have used alcohol or drugs to excess. 80
227. I have, on more than one occasion, had difficulties or physical symptoms when I stopped taking alcohol or drugs. 58
231. When I drink or use drugs too much I tend to hear things that are not there. 57
229. I drink or use drugs when I am alone. 56
232. When I have been drinking or using drugs I am sometimes able to see or hear things that other people do not. 53
171. Before the age of 15, I had been in trouble for such things as truancy, delinquency, lying, drunkedness, vandalism, stealing, etc. 30
183. I tend to be kind of reckless doing such things as driving while intoxicated, or speeding alot. 30
184. I tend to do impulsive things such as overspending, shoplifting, overeating, substance abuse, etc., that cause me difficulties. 22

	Eigen value	% of var	Cum% of var
Factor 6 (Depression) *Neuroticism*	4.56	1.9	33.0

26. The things I do aren't as worthwhile anymore. 61
19. I don't do things that are worthwhile anymore. 57
27. I don't produce as much as I used to. 48
20. I think that I'm to blame for many things 31
2. Lately, I have accomplished a great deal. 30
15. I have a hard time doing things that used to be easy. 25
32. I do things more slowly now than I used to. 25
16. Things that I used to enjoy aren't as pleasurable now. 25
18. I don't have as much energy as I used to. 22
217. Lately I just don't seem to want to do much. 19
35. I spend a lot of time thinking about past events. 17
34. I am pessimistic about the future. 16

	Eigen value	% of var	Cum% of var
Factor7 (Post Traumatic Stress Disorder)	3.69	1.5	34.5

93. Lose interest in one or more activities that

I used to enjoy ..... .85
94. Become separated or detatched from other people ..... .82
95. Experience my feelings less than I did before ..... .74
100. I find it easier to avoid activities that arouse memories of that horrible event ..... .59
101. There are certain things that happen to me now which make me more aware of that horrible event ..... .56
90. I repeatedly remember the things about the event ..... .39
96. I am nervous or easily startled ..... .39
92. Sometimes I have the strange feeling that the event is happening all over again ..... .35
97. I have trouble sleeping ..... .32
98. I have trouble with the fact that I'm alive and comfortable, while others are not ..... .22

	Eigen value	% of var	Cum% of var
Factor 8 (Paranoid Schizophrenia) *Psychoticism*	3.56	1.5	36.0

239. Sometimes I am sure that unpleasant thoughts or ideas are being inserted into my head ..... .38
240. Sometimes I believe that other people can hear what I am thinking ..... .30
139. Occasionally my temper gets completely out of hand, and I break things or hurt someone ..... .28
170. I am angry ..... .27
233. I have felt certain that someone else is controlling my thoughts, putting thoughts into my head, or taking thoughts out of my head ..... .27

	Eigen value	% of var	Cum% of var
Factor 9 (Anxiety, Hysteria) *Neuroticism*	3.42	1.4	37.4

61. Fear of dying ..... .59
54. Choking or smothering sensations ..... .53
56. Feeling as though things are not real ..... .43
62. Fear of going crazy ..... .42
55. Dizziness or unsteady feeling ..... .38
60. Feelings of faintness ..... .38
53. Chest pain or discomfort ..... .33
85. I really worry a lot about things that might happen ..... .27

	Eigen value	% of var	Cum% of var
Factor 10 (Paranoid, Manic) *Psychoticism*	3.17	1.3	38.8

230. I'm sure that someone is out to get me, or is trying to hurt me ..... .48
234. I am certain that someone is trying to hurt me ..... .41

6. I am either too busy or restless to take time for sleep ..... .32
37. I am either too busy or restless to take time for sleep ..... .27
238. I am convinced that some other person or force is controlling me ..... .24
189. I get frantic when I'm alone ..... .23

	Eigen value	% of var	Cum% of var
Factor 11 (Avoidence) *Neuroticism*	2.90	1.2	40.0

194. I tend to avoid close personal attatchments, and would rather keep my social contacts cool, and concentrate on my job or other activity ..... .54
193. I have been hurt enough so that I am unwilling to enter into a close relationship unless I know the other person is really going to care about me ..... .45
196. I suffer from low self-esteem and tend to put myself down alot ..... .24
198. I tend to put other people's needs ahead of my own rather than have a fuss or take a chance on being rejected ..... .23

	Eigen value	% of var	Cum% of var
Factor 12 (Anti-social personality) *Extraversion*	2.70	1.1	42.2

179. I have been accused of defaulting on debts or failing to provide support for my child(ren) or other dependents ..... .68
176. I have been divorced at least once, or have deserted my family ..... .66
178. On more than 3 occasions since my 18th birthday, I have had serious physical fights with others, including my spouse ..... .47
177. I have had ten or more sexual partners in one year ..... .34
175. Since the age of 18 I have engaged in thefts on repeated occasions, have been arrested several times, and have engaged in illegal occupations ..... .24

	Eigen value	% of var	Cum% of var
Factor 13 (Hallucinations, Manic) *Psychoticism*	2.56	1.1	42.2

246. I often hear voices that other people don't hear ..... .35
24. I sleep or want to sleep a lot more than I used to ..... .34
235. I hear voices when there is no one there ..... .33
247. I often see things that other people don't see ..... .31
236. I hear voices in my head ..... .30
44. I have so much energy, I just can't sit still ..... .26
241. God has sent special, personal communications to me ..... .26

	Eigen value	% of var	Cum% of var
Factor 14 (Anger, Axiety) *Extraversion*	2.52	1.0	43.2

186. I tend to have a strong temper and get extremely angry or lose control, sometimes more than I should. 41
138. I lose my temper quite often. 38
159. Sometimes I become excessively angry or have temper tantrums when I probably shouldn't. 28
72. Restlessness. 27
71. Figgiting. 27
69. Can't relax 26
107. Loss of memory. 19

Factor 15 (Anxiety, Impulsivety)	Eigen value	% of var	Cum% of var
Extraversion	2.30	1.0	44.2

65. Jumpiness. 29
202. I tend to demand that things be done my way, and that my family meet my expectations. 28
64. Jitteriness. 24
43. I enjoy and get away with things that many people couldn't, like making daring business investments or driving at high speeds. 20

Factor 16 (Compulsive) *Neuroticism*	Eigen value	% of var	Cum% of var
	2.21	0.9	45.1

89. I often redo things many times or have a hard time doing things because I want to get them as perfect as possible. 86
88. I have to do things just right. 84
204. I try too hard to be perfect. 72
203. My primary interest is in my work and my productivity. 27
201. I believe it is very important to take care of the details and follow the rules and do things the way they are supposed to be done. 27
39. I work long hours at night, even when it isn't necessary. 19

Factor 17 (Eating Disorder) *Extraversion*	Eigen value	% of var	Cum% of var
	2.17	0.9	46.0

9. I don't eat as much as I used to. 65
12. I've lost weight lately even though I am not dieting. 64
10. I have a very good appetite 58
11. I've gained a lot of weight lately 40

Factor18 (Sexual appetite) *Neuorticism*	Eigen value	% of var	Cum% of var
	2.13	0.9	46.9

17. I have less interest in sex than I used to. 88
29. Lately I have less interest in sex. 83
134. Since becoming available for sexual activity, I have experienced considerable difficulty in being able

to enjoy sexual intercourse. 33
42. I just can't get enough sex. 30

	Eigen value	% of var	Cum% of var
Factor 19 (Intellectualization) *Neuroticism*	2.04	0.8	48.6

145. I think it's important to be rational and objective 26

	Eigen value	% of var	Cum% of var
Factor 20 (Somatic concerns)	1.98	0.8	48.6

80. Discomfort in the pit of the stomach. 20

	Eigen value	% of var	Cum% of var
Factor 21 (Borderline personality disorder)	1.93	0.8	49.4

190. I frequently make suicidal gestures,
or try to hurt myself, or get in fights. 31
164. I have made a number of suicidal threats or
gestures in my life. 46
210. I have had one or more seizures or blackouts 29
219. Lately I have had periods when I wasn't sure where I was,
or when I had difficulty remembering. 25
185. I have had a number of intense relationships
that have not worked out. 24
208. I resent living up to other people's expectations. 24

	Eigen value	% of var	Cum% of var
Factor 22 (Somatiform disorder) *Neuroticism*	1.87	0.8	50.1

122. I have a physical dysfunction which handicaps me,
and which doctors cannot explain. 84
123. Although doctors can't explain what's wrong with me,
I have a serious disease. 81
102. I have been sickly for a good part of my life. 28

	Eigen value	% of var	Cum% of var
Factor 23 (Phobic, Anxiety) *Neuroticism*	1.86	0.8	50.9

49. I worry about doing something to embarrass myself. 36
51. I have one or more fears that cause me to avoid places
or objects even though I know there is no real danger. 35
50. I think some of my fears are unreasonable. 34

	Eigen value	% of var	Cum% of var
Factor 24 (Indecision, Paranoia) *Psychoticism*	1.77	0.7	51.7

48. I hate to have other people look at me. 27
205. I have a difficult time making decisions or getting things
done on time because I'm not sure about which

things are most important. 23
150. I have some rather remarkable abilities such as clairvoyance, the ability to send my thoughts without speaking, keen awareness of things that are about to pass, etc. 20

	Eigen value	% of var	Cum% of var
Factor 25 (Narcissism) *Extraversion* 1.72	0.7	52.4	

162. Some people think that I tend to be vain and demanding. 28
169. I believe I am entitled to get things that please me and to have people work to meet my needs. In order to do this, I may do some things such as take advantage of others, put my rights above theirs, or not worry about how other people feel, as long as I achieve my objectives 28
160. Some people perceive me as shallow or lacking in genuiness, although I try to be warm and charming. 21
25. I'm tired all the time. 21

	Eigen value	% of var	Cum% of var
Factor 26 (Somatization) *Psychoticism*	1.69	0.7	53.1

105. Double vision. 39
7. I can't keep my mind focused on one thing at a time 23

	Eigen value	% of var	Cum% of var
Factor 27 (Paranoia) *Psychoticism* 1.65	0.7	53.8	

244. I am certain that some other being or force is interfering with my life and causing me difficulty. 26
83. Having too much energy. 22
152. I have been able to sense the presence of a force or person who was not actually present with me in the room. 22
242. A part of my body is rotting or being eaten away by a horrible disease. 21
140. There is a situation in my life that is so stressful that I can't function as well as I should. 21

	Eigen value	% of var	Cum% of var
Factor 29 (Tension)	1.60	0.7	55.1

148. I am indifferent to the praise or criticism of others. 27
67. Muscle tension. 26
79. Hot or cold spells. 24
68. Muscle aches 24

	Eigen value	% of var	Cum% of var
Factor 30 (Acting out, Sleep disorder) *Extraversion*	1.57	0.7	55.8

136. I have frequently had the impulse to steal something,

even though I didn't really need to. 40
23. I experience quite a bit of insomnia. 37
13. I'm having troulbe sleeping. 34

	Eigen value	% of var	Cum% of var
Factor 31 (Depression) *Neuroticism*	1.53	0.6	56.4

30. I don't do as many fun things as I used to. 45
28. I'm not around people as much these days. 40
33. I am less talkative than I used to be. 25

	Eigen value	% of var	Cum% of var
Factor 32 (Anxiety, Phobia) *Neuroticism*	1.48	0.6	57.0

40. I always have unusually creative ideas 29
77. Lightheadedness. 24
78. Upset stomach. 22
47. I don't like being in places like tunnels or buses
where I might not be able to get out if I need to. 22
245. I have frequently been aware of people talking about me. 21
172. Since the age of 18, I have had trouble keeping a job,
or have changed jobs frequently, or have left jobs
because I wasn't being treated right. 20

	Eigen value	% of var	Cum% of var
Factor 33 (Passivity) *Neuroticism*	1.47	0.6	57.6

63. Shakiness. 38
161. I tend to be concerned about myself and sometimes
self-indulgent and inconsiderate of others. 36
209. I have been accused of being inefficient, and have not
moved ahead as well as I would have liked. 28
66. Trembling. 27
207. Sometimes I find myself procrastinating,
being stubborn or forgetful. 21

	Eigen value	% of var	Cum% of var
Factor 34 (Post Traumatic Stress Disorder)	1.44	0.6	58.2

91. I repeatedly dream about the event. 40

	Eigen value	% of var	Cum% of var
Factor 35 (Hysteria) *Neuroticism*	1.42	0.6	58.8

103. Difficulty swallowing. 27
8. My life has been so good lately that nothing goes wrong. 20

	Eigen value	% of var	Cum% of var
Factor 36 (Hysteria) *Neuroticism*	1.39	0.6	59.4

106. Blurred vision. 35
70. Eyelid twitching. 23
41. I enjoy being surrounded by people most of the time. 21

	Eigen value	% of var	Cum% of var
Factor 37 (Ideas of reference) *Psychoticism*	1.36	0.6	60.0

151. For a long time I have avoided getting close to other people and have sensed that people do such things as talking behind my back even though they don't say so. 22
191. I am very often bored 18

	Eigen value	% of var	Cum% of var
Factor 38 (Mania) *Psychoticism*	1.35	0.6	60.5

46. I like to laugh and joke and have a good time more than most other people around me 24

	Eigen value	% of var	Cum% of var
Factor 39 (Depression) *Neuroticism*	1.34	0.6	61.1

146. People often don't know that I have tender feelings deep inside. 27
21. I can't make decisions as easily as I'd like to. 25
22. I sometimes think that I would like to die. 17

	Eigen value	% of var	Cum% of var
Factor 40 (Bipolar) *Psychoticism*	1.32	0.5	61.6

188. I tend to have rather strong swings in my mood that last a short time; for example, from depression to anxiety. 30
84. Lately, I have a great deal to say to people. 29
36. I cry, or I am tearful a lot of the time. 28
206. I gossip quite often 26
143. I'm very jealous lately 25
187. I have difficulty maintaining long term friendships. 24
31. I often experience guilt about things that I've done. 15

	Eigen value	% of var	Cum% of var
Factor 41(Irrationality) *Neuroticism*	1.30	0.5	62.2

86. I often have thoughts that I don't like, or that don't make sense. 27
124. I've forgotten some important personal things about myself that I should be able to remember. 26
87. There are one or more behaviors which I have to do, but which give me no pleasure and don't make sense. 24

	Eigen value	% of var	Cum% of var
Factor 42 (Anxiety) *Neuroticism*	1.27	0.5	62.7
1. Lately, I've been very restless			.23
14. I am tense much of the time			.22

	Eigen value	% of var	Cum% of var
Factor 43 (Suspicion)	1.25	0.5	63.2
141. I am suspicious or afraid that someone has it in for me, or might want to do me harm			.19

	Eigen value	% of var	Cum% of var
Factor 44 (Somatization) *Neuroticism*	1.24	0.5	63.7
111. Nausea			.34
114. Diarrhea			.28
82. Flushed face			.28
112. Vomiting spells			.27
110. Abdominal pains			.25
113. Bloating			.18

	Eigen value	% of var	Cum% of var
Factor 45 (Unnamed)	1.22	0.5	64.2
73. Easily startled			.21

	Eigen value	% of var	Cum% of var
Factor 46 (Panic) *Neuroticism*	1.20	0.5	64.7
52. Heart pounding in my chest			.37
74. Heart pounding or racing			.36
4. I have a lot of ideas that race through my head			.18

	Eigen value	% of var	Cum% of var
Factor 47 (Avoidance) *Neuroticism*	1.18	0.5	65.2
149. I am not really close to more than one or two peolpe			.46
147. I tend to remain aloof from most people			.35
154. People seem to have difficulty understanding me			.20

	Eigen value	% of var	Cum% of var
Factor 48 (Seizures)	1.59	0.5	65.7
109. Seizures			.27

	Eigen value	% of var	Cum% of var
Factor 49 (Impulse Disorder) *Extraversion*	1.15	0.5	66.2
135. On more than one occasion I have had problems that resulted from my gambling, such as not being able to pay my bills, problems with my spouse, etc.			.20

Factor 50 (Anti-social personality) *Extraversion*	Eigen value	% of var	Cum% of var
	1.14	0.5	66.7

182. I think it's OK for me to lie or con others, if it will get me something I really want. 23
142. I need to guard myself from being blamed, or in some way suffering from the disloyalty of my friends. 22
137. I have intentionally set destructive fires. 19
144. Other people think that I am too quick to take offense, or that I am too sensitive 16

Factor 52 (Hypomanic)	Eigen value	% of var	Cum% of var
	1.10	0.5	67.6

3. I am more talkative than usual. 30
174. On most occasions I arrange for neighbors or friends to take care of of my child (or children), and when that's not possible, I think it's alright to leave them on their own for awhile 20

Factor 54 (Insecurity) *Neuroticism*	Eigen value	% of var	Cum% of var
	1.06	0.4	68.5

59. Excessive sweating. 32
58. Hot or cold flashes. 30
200. I would describe myself as a conventional, serious, and somewhat formal person. 27

Factor 55 (Somatization) *Neuroticism*	Eigen value	% of var	Cum% of var
	1.05	0.4	68.9

57. Tingling in my hands or feet. 27

Factor 56 (Restless) *Neuroticism*	Eigen value	% of var	Cum% of var
	1.04	0.4	69.4

218. Lately I have just had to keep moving. 24
108. Trouble walking. 23

Factor 57 (Somatization) *Neuroticism*	Eigen value	% of var	Cum% of var
	1.01	0.4	69.8

76. Clammy hands. 30
104. Loss of voice. 29
75. Coldness. 24
181. I make promises I can't keep. 22
81. Lump in the throat. 21

Appendix C: Proposed Relationship of Items to DSM III Diagnostic Categories.

Item number(s)	DSM III diagnosis	DSM III code
1-8	Manic	296.4 X
9-22	Depressed	296.2 X
23-46	Cyclothymic	301.13
47	Agoraphobia	300.22
48-51	Social Phobia	300.23
52-62	Panic Disorder	300.01
63-85	Generalized Anxiety	300.02
86-89	Obsessive/Compulsive	300.03
90-101	Post Traumatic Stress	308.
102-121	Somatization Disorder	300.81
122	Conversion Disorder	300.11
123	Hypocondriasis	300.70
124	Psychogenic Amnesia	300.12
125	Transsexualism	302.5 X, 302.60
126	Fetishism	302.81
127	Transvestism	302.30
128	Zoophelia	302.10

Item number(s)	DSM III diagnosis	DSM III code
129	Pedophelia	302.20
130	Exhibitionism	302.40
131	Voyeurism	302.82
132	Sexual Masochism	302.83
133	Sexual Sadism	302.84
134	Sexual Dysfunction	302.7 X
135	Pathological Gambling	312.31
136	Kleptomania	312.32
137	Pyromania	312.33
138-139	Intermittent Explosive Disorder	312.34
140	Adjustment Disorder	309. XX
141-146	Paranoid Personality	301.00
147-149	Schizoid	301.20
150-154	Schizotypal	301.22
155-164	Histrionic	301.50
165-169	Narcissistic	301.81
170-183	Antisocial	301.70
184-191	Borderline	301.83
192-196	Avoident	301.82
197-199	Dependent	301.60
200-205	Compulsive	301.40
206-212	Passive-Aggressive	301.84

Item number(s)	DSM III diagnosis	DSM III code
213-219	Dementia-Delerium	290.3
220-224	Pre-senile Dementia	290.1
225-229	Substance-induced Amnestic Disorder	292.83
230-232	Organic Delusions/Hallucinations	293.81, 293.82
233-247	Schizophrenic Disorders	295.