

A PATTERN ANALYTIC APPROACH TO THE  
MEASURE OF MODES OF EXPRESSION OF  
PSYCHOLOGICAL DIFFERENTIATION

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## ABSTRACT

### A PATTERN ANALYTIC APPROACH TO THE MEASURE OF MODES OF EXPRESSION OF PSYCHOLOGICAL DIFFERENTIATION

by Clyde Allan Crego, Jr.

This study represents an attempt to describe persons with respect to their unique modes of expression of psychological differentiation. A measurement model was conceived on the basis of a configural statistical procedure, assumptions concerning differential validity of configural scoring of item responses, and internal consistency within levels of dimensions expressive of level of differentiation.

The model is presented so as to provide a basis for identification of modes of expression of differentiation across broad ranges of personality dimensions and persons. Validation of the model is represented by acceptance of propositions concerning basic variables reflective of expression of differentiation.

The concept of integration is employed in the model with respect to measures of defense mode and expectancy for internal versus external control of reinforcement and the configural relationship of the dimensions to level of psychological differentiation. Level of differentiation is said to be independent of integration; integration (or lack of it) can occur at all levels of differentiation. Form

of integrative behaviors is said to be indicative of expression of differentiation in maladaptive terms. Variables expressive of lack of integration, at the specified level of differentiation aid in the description of the consequent expression of maladaptive functioning.

Propositions proposed were: (1) Integration will occur at all levels of differentiation. (2) Pathological forms of expression of high and low levels of differentiation would be reflected by lack of integration expressed by inconsistency between level of differentiation and internalization-externalization.

Ninety-nine undergraduate female subjects were administered the revised Repression-Sensitization Scale, as a measure of defense mode, the Internalization-Externalization Scale, as a measure of expectancy regarding locus of reinforcement, and the Hidden-Figures Test, a measure of field dependence-independence indicative of level of differentiation. Individual, pooled responses were converted to agreement scores and then pattern analyzed by the method, Hierarchical Classification by Reciprocal Pairs. Ninety-four clusters were yielded. Definition of clusters as types occurred on the basis of application of a measure of internal consistency within levels of dimensions employed. Seven theoretically significant types emerged from a possible twenty-seven. Levels of association representing each type were high. Propositions were supported by the emergence of the particular types.

All types were consistent with the expectation that the integrative hypothesis would reflect form of expression of internalization and defense mode as a function of level of differentiation; concurrently, integration was found to occur at all levels of differentiation.

Lack of integration was expressed by the defense modes expected to relate to the particular form of lack of integration and level of differentiation at which it occurred.

The facility of the measurement model to yield theoretically consistent and unusually definitive representations of communality and uniqueness in individual differences among persons, based on a pattern search for varied modes of expression of differentiation, was shown to have wide-spread implications for further research. Implications were cited with respect to the dimensions currently studied, the concept of integration in a configural model, and with regard to general measurement problems in the area of personality study.

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By

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To Carol  
for giving and waiting



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## INTRODUCTION

### Psychological Differentiation: The Problem

Psychological differentiation theory as proposed by Witkin (1954, 1962, 1965) has produced a model for research which has led to significant and meaningful findings in the area of personality study.

Differentiation is seen to, in part, represent a maturational process toward greater analysis, articulation, and structuring of experience. Maturation proceeds from a relatively unstructured state, wherein the self is undifferentiated from the field, toward increasing differentiation and consequent integration across psychological areas. The unstructured, undifferentiated state reflects the organism's global, unarticulated response to stimuli; increasing structuring of experience represents development of increased articulation in response to features of the environment, greater specificity of response in terms of more differentiated modes of responding, and, concurrently, increased differentiation of the self from the field (Witkin, et al., 1954, 1962).

Witkin's primary indicator of degree of psychological differentiation within persons has been the variable of field dependence-independence. Persons having low levels of differentiation are found to be field-dependent, while

high levels of differentiation are related to field-independence. Other dimensions of personality are needed, however, in order to understand mode or kind of differentiation as well as degree or amount. Witkin and others (1962) have utilized other measures of personality, such as nature of defenses, in an effort to understand modes of differentiation as well as degree of differentiation as measured by field dependence-independence.

The research generated by Witkin and others (1962) has typically proceeded by utilizing measures of single personality variables and finding the degree of association between each variable and field dependence-independence or level of differentiation. The problem with the two-variable-at-a-time research model is that it does not apply to or describe people as they actually are very well. For example, the model, variables, and research methods typically used have not taken into account such problems as curvilinearity of functions measured and that relationships investigated have typically not been rectilinear although they have been treated as such.

The present research is an effort to correct the above methodological deficiencies. It is also an effort to demonstrate that a model can be developed to study differentiation which can utilize a theoretically infinite number of variables instead of the two-by-two approach heretofore typically followed.

The approach of the present research is configural or pattern analytic. Such methods have much promise for helping us to describe and understand people as they may actually be since infinite numbers of variables can be used. Also assumptions about data, as though the data are rectilinear when in fact they are not, can be avoided. Configural methods are more compatible with data of any shape--curvilinear, rectilinear, or whatever.

### Psychological Differentiation and Integration

Theoretical clarity would be achieved if personality variables related to differentiation were seen as indices of mode of expression of psychological differentiation as it occurs in different ways in different persons. In that the measure of level of psychological differentiation is based on differences in perceptual style, field dependence-independence then reflects these basic differences while measures of persons along other related personality dimensions are seen to reflect the manner in which differentiation is expressed. These dimensions represent patterns or modes of expression of differentiation.

Modes of expression of differentiation reflect varying degrees of personality integration. Particular combinations of characteristics determine whether integration has occurred or not. While integration can occur at all levels of differentiation, modes which reflect presence of integration include different combinations of characteristics as a function of the different levels.



Integration may be said to occur when there is consistency between key, process variables, which are related to the development of differentiation and level of differentiation. Combinations of modes of expression of differentiation expressed as patterns should include such variables. Consistency between variables related to the developmental aspects of differentiation and level would reflect modes of expression the nature of which are functions of level of differentiation. Since integration has been defined as consistency between a core, developmental variable and level of differentiation, level of differentiation is expressed by personality characteristics that occur in relation to such consistency. These secondary characteristics do not necessarily reflect primary developmental aspects of differentiation, but are central as they define the specific patterns (unique modes of expression of differentiation).

If integration is present, then, these secondary characteristics may be thought of as representing what is more typically defined, in clinical terminology, as "integrated behaviors." This seems to represent adaptive functioning as it occurs at different levels of differentiation. Clinically less well integrated behaviors, in this model would be seen to represent modes of expression of differentiation in persons whose level of differentiation is inconsistent with their functioning in an area representative of developmental aspects of differentiation.

Studies have shown that high or low degree of differentiation relates differentially to form of expression of pathology, (Witkin, 1965). In that high or low degree of differentiation relates to forms of expression of non-pathological behavior as well, the most basic configural relationship between level of differentiation and its form of expression may have its locus in the dimension reflecting integration or lack of it. Lack of integration at a certain level of differentiation would result in the expression of pathological behavior expressive of that level of differentiation. Integration of behavior at any level of differentiation would result in the expression of adaptive behavior which is both expressive of the level and defined by the secondary characteristics. Thus, integration is not a function of level of differentiation, although form of expression of integrated behaviors, and visa versa.

Defense mode is highly related to level of differentiation. This dimension reflects presence or absence of pathology and indicates form of expression of pathology.

Level of defense, measured on a continuum such as repression-sensitization, would be seen in the present model to interact with all levels of differentiation, however. Persons who do not excessively over-utilize extremes in defense mode may vary quite widely as to the level of differentiation as measured by field dependence-independence measures. Pathological expression of low or

high levels of differentiation would be exemplified by pathological over-utilization of certain modes of defense.

In order to characterize pathological versus non-pathological expression of differentiation (as expressed by extremes in defense mode), as a function of integration among characteristics, consideration of a dimension reflecting integration (or lack of it) would be meaningful at this point.

Differentiation is assumed to represent increasing growth toward reliance on internal frames of reference as opposed to external (Witkin, 1964). Children with contrasting modes of field approach differ significantly along a dimension of extent of reliance on one's own standards or on those of the experimenter, and in their accompanying feelings toward the task (Witkin, 1964). Other studies have shown that relatively undifferentiated persons are more likely to use external sources for self-definition (Rudin and Stagner, 1958; Linton, 1955; Bell, 1955; Sangiuliano, 1951).

It is the view of the present author that development of perception regarding the causal relationship between a person's own behavior and reinforcement for such behavior residing in internal as opposed to external control factors is itself seen to be a function of the extent to which the parental model has succeeded in aiding the child to internalize and develop ways of attending to the consequent internal cues which can serve to guide behavior.

This aspect of learning, as it relates to perception, no doubt occurs in relation to highly differentiated behavior, on the part of the parent, in order to relate learning based originally on external cues to the child's growing capacity to utilize internal cues as guides for behavior.

Implicit in this paradigm of behavior, based on belief regarding locus of control of reinforcement, is the interaction hypothesis which states that pathological manifestations of differentiation are no doubt reflective of clinically less well integrated modes of expression, level of differentiation, and degree of internalization. Lack of integration at a high level of differentiation, for instance, would manifest itself through inappropriate dependence on external cues in conjunction with inability to attend to highly developed internal cues.

Such behavior is highly characteristic of persons described as being sensitizers (Byrne, 1963). That is, persons who score at the sensitizing end of the repression-sensitization dimension are described as being overly concerned with external controls; their behavior is characterized by overt attempts to control external sources of threat through approach to the stimuli; persons with such defense modes are shown to be most characterized by a high level of differentiation (Witkin, 1965). Thus, highly differentiated persons whose defense mode is considered to be at a pathological extreme are more than likely employing sensitizing defenses which result in or are reflective of



lack of integration as expressed through inability to attend to highly developed internal cues.

The basic thesis is as follows: Patterns of personality characteristics exist which are indicative of presence or lack of integration as expressed by consistency or inconsistency between internalization-externalization and level of differentiation. The consequent defining modes express the pathological, non-integrative functioning through extreme defense mode. Integrative functioning is expressive of moderate defensiveness and specific defining characteristics which describe individual differences in expression of differentiation.

That is to say, pathological forms of expression of high and low levels of differentiation would be reflected by inconsistency between level of differentiation and externalization-internalization; lack of integration would be characterized by mode of defense as it is related to both level of differentiation and the altered expectancy regarding locus of reinforcement.

Thus, in addition to the degree to which configural relationships between modes of expression and level of differentiation are indicative of individual differences in personality functioning, patterns of modes of expression of differentiation are expressive of the relationship between integration and defining modes which reflect adaptive or maladaptive functioning.

In that integration is thought to occur at all levels of differentiation, moderate internalization in conjunction with moderate degree of defensiveness would serve as an index of the extent to which integrative behaviors interact with all levels of differentiation. The optimal degree of integration which would occur at a high level of differentiation would be reflected by highly internalized standards and consequent integrative behaviors as expressive by lack of extreme defensiveness.

#### Differentiation: The Measurement Problem

In order to describe the complex set of inter-relationships between level of differentiation and major personality dimensions, research has proceeded most characteristically using a measurement model which assumes the existence of rectilinear relationships between the variables employed. Further, the multitude of findings expressed in the form of coefficients of correlation imposes a measurement model on the theory which accounts for the relationships two variables at a time. In that modes of expression of differentiation involve complex patterns of interacting variables in relation to level of differentiation, and since it is assumed that these covary in unique ways across people, it is felt that a configural (pattern) model would be more definitive of the general aim of describing the way

in which differentiation occurs within people. From this point of view, it is clear that exploratory study is needed to determine whether modes of expression of differentiation can be meaningfully described in terms of a configural model.

Previous conclusions drawn from studies in which rectilinear assumptions are made, have tended to exclude consideration of the meaning of relationships between moderate ranges of variables studied. Although correlational techniques often describe deviancy in measurement based on less complex, high order relationships at the extremes on measures of pairs of variables, relationship between measures of variables within their moderate ranges are often most complex, representative of curvilinearity, and especially configural in the sense that persons scoring at the moderate range of one variable may vary to a high degree with regard to their scores on other variables; relationships especially characterized by extreme levels of variables and computation of significant, moderate coefficients of correlation between them has led Witkin to seriously overlook complex but meaningful sets of configural interrelationships among variables at moderate levels of measurement. The extent to which Witkin writes about extreme forms of behavioral or other representations of personality correlates of differentiation supports the contention that a model is needed which searches for modes of expression at



all levels of interaction between differentiation and areas in which mode of expression occurs.

Another measurement difficulty has arisen with the use of total scores in the measurement of personality correlates to psychological differentiation. Many of the personality scales used are well constructed and have derived distributions of scores which are reflective of the dimensions being measured. Many of these scales were derived on the basis of careful item selection and validation procedure. However, when used within a framework in which configural relationships between variables are most meaningful, the assumption that total scores of comparable range have the same meaning is suspect if one considers that the following two assumptions are true in measurement: (1) response to different sets of items can yield identical total scores; (2) configural scoring of responses leads to greater prediction than does linear scoring (Meehl, 1950). Subjugation of total scores to analysis by correlational procedure does not account for this differential validity within dimensions; and, as stated, the model is a simple one if only pairs of variables are considered at a time. Invariant validity is often well expressed by the relationships between variables considered at their extremes. Individuals who score at extreme levels of dimensionality are representative of only certain types of persons. It is here suggested that configural relationships among variables are represented most

validly by consideration of the degree to which moderate range measurements covary with other variables in highly unique, configural fashion. This interaction between levels of variables takes into account the differential meaning of responses and scores when a configural analysis is employed in the determination of modes of expression of differentiation.

In that combinations of modes of expression of differentiation are seen to vary across different types of people, and since such configural differences among people are difficult to express in terms of relationships between variables, it was felt that analysis would best proceed if configurations of modes of expression of differentiation could be described in terms of persons who utilize each unique mode pattern. Persons would be described then, in terms of their characteristic responses within each pattern of expression. Such an approach, if careful selection of variables occurs at each level of analysis would be consistent with Loevinger's statement that science best proceeds by ". . . the identification of persons as a form of pattern recognition and the identification of randomness as absence of pattern. . . ." (Loevinger, 1965).

#### The Measurement Model

The above discussion of the theoretical expectancy concerning individual modes of expression of differentiation in the context of the configural relationships between levels of



three basic dimensions yielded the three following propositions: (1) In an exploratory study psychological integration will occur at all levels of differentiation. In the present exploratory study integration is best reflected by defining consistency between level of differentiation and internalization-externalization in terms of the moderate range of the latter dimension. Consequent integrative behavior is expressed by moderate defensiveness. (2) Pathological forms of expression of high and low levels of differentiation would be reflected by lack of integration expressed by inconsistency between level of differentiation and internalization-externalization. Mode of expression would be defined by the specific defense modes related to this lack of integration. (3) Optimal degree of integration at a high level of differentiation would be expressed by internalization and moderate defensiveness.

Thus, integration is a general concept reflecting varying degrees of consistency among major dimensions underlying differentiation. Varying degree of integration is described by the particular patterns of characteristics which are expressive of the level of differentiation for any such given degree of integration.

These propositions assume configural measures between all levels of the variables used to describe patterns of modes of expression of differentiation. Interaction of responses, it is assumed, would yield the major configurations if they in fact exist in any sample of



persons selected. Configurations of interacting responses across all three variables should be indicative of the fact that different clusters of items from a common item pool among variables would differentially define unique modes of expression of differentiation: Patterns defined by clusters of items based on interaction of responses assumes that differential determinants of response yield configurations defined only by such unique patterns and that these patterns have the greatest predictive validity. These configurations, based on varying sub-sets of items (and responses to them) among variables, are related to previously established total scores (derived by linear measurement of all responses) insofar as the relationship between the total scores is defined by the configuration of persons who consistently agree on a sub-set of items. Thus, two similar or equal total scores are said to be related in a meaningful way if the scores are derived from identical responses given to the same items. Identical scores based on different responses to different items are not assumed to reflect the same meaning at the most basic levels of the dimension employed. This assumes high interaction variance among responses between the measures. Thus, the configural relationship between field dependence-independence, mode of defense, and internalization-externalization varies according to the unique interaction variance between pooled responses among major types of persons whose modes of expression of level of differentiation interact

in unique, theoretically consistent ways and are expressed as patterns. These patterns reflect varying modes of expression of different levels of differentiation and varying degrees of integration among modes at different levels.

Exploration of the basic propositions with regard to a measurement model which makes the above assumptions would serve as a test of the utility in searching for modes of expression of differentiation by means of classifying people into types as defined by the configural relationships among measures employed.

In that configuration of types of persons varies as a function of differentially defined sub-sets of items, the size of clusters of defining items varies from type to type. In the same fashion, the number of persons represented in any configuration of persons who are characterized by patterns of modes of expression of differentiation varies as a direct function of the actual number of persons in a given sample who can be rigidly defined as being more like everyone else in that type than they are like anyone outside the type. Variance in size of item clusters defining types of persons and variance in numbers of persons defining types requires a classification procedure which permits flexibility in those parameters. A hierarchical pattern analytic structure would be expected to be most sensitive to such variation in classification parameters as well as sensitive to the above measurement assumptions.





Pattern analysis, as conceived by McQuitty (1957) is especially sensitive to configural relationships among variables and can classify people (as well as variables, items, responses, tests) in terms of the interaction variance between responses that determines the configural relationships. Hierarchical classification by Reciprocal Pairs (McQuitty, 1966) is a procedure recently developed which also takes into account greater needed flexibility in classification as a function of degree of association among members of a type. That is, search for types can be made at all levels of configural association among responses and people. It also re-utilizes actual responses on all levels of re-classification. This is seen to be highly desirable in terms of assumptions which do not have to be made as analysis proceeds via primary classification.

Although all persons are eventually classified at some level of analysis in a hierarchical pattern analysis, the difficulty with the method is that all configurations of persons yielded probably do not have theoretical significance. In that there is no internal (within pattern analysis) procedure for establishing significance of a given type from among the many yielded in a hierarchical analysis, typal status is best defined by a criterion of theoretical significance. Empirical determination of a theoretically significant criterion can, in fact, be most meaningful in the mutual development of theory and



measurement. The present author is in full agreement with McQuitty (1965) who states:

A theory concerning the nature of individual differences in personality structure is stated in terms of its assumptions. The assumptions are used to generate statistical definitions of individual differences, and the definitions are in turn used to generate statistical methods for isolating and describing individual differences. The statistical methods are applied to the data. The findings either substantiate or fail to substantiate the definitions of individual differences and therefore, similarly, the assumptions.

Thus, the present measurement model makes the statistical assumption that theoretical significance of a pattern, based on configurations yielded by pattern analysis, is best measured by internal consistency within levels of defining dimensions representing patterns. Levels within dimensions may be defined as high, low, and moderate based on the sample distribution of total scale measures. Analysis which yields patterns whose total scores represent internal consistency within dimensions for each person in the pattern is defined as a Type. Whether such types are in fact meaningful in terms of theoretical expectations would remain an empirical question. Types are said to be theoretically significant only insofar as internal consistency reflects measurement based on measures of theoretically related dimensions.

The pattern analytic search for modes of expression of differentiation is exploratory in that the model must be tested in terms of its ability to reflect basic



propositions regarding the theoretical concepts involved. Secondly, it is suggested that exploration of modes of expression of differentiation through a pattern searching procedure is the optimal way to bring into focus the relevant variables involved in the differential expression of modes based on unique individual differences. After determining the utility of the model and confirming the basic propositions among basic variables involved in this study, meaningful results would imply that search for modes of expression could best occur through use of this model in the delineation of further expressions of individual differences as reflected by patterns of modes of expression of psychological differentiation. This model assumes that meaningful relationships among personality characteristics exist with regard to normal population. The present model reflects differences in areas of personal functioning within a framework not restricted to measures of deviancy.

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## METHOD

### Subjects

Significant sex differences have been found to exist in the measurement of field dependence-independence (Witkin, et al., 1962). Therefore, subjects were all female undergraduate students taking introductory psychology and education courses at Michigan State University. Selection of females as opposed to males occurred on the basis of greater availability from subject pools. Age is a relatively homogeneous factor due to the selection procedure (Range: 17-23 years old plus three subjects whose ages were: 29, 32, and 33). One hundred subjects were solicited on a volunteer basis. The final sample consisted of 99 subjects due to the exclusion of one foreign student from the sample.

### Instruments

Level of psychological differentiation was measured by scores on the field dependence-independence dimension. These scores were obtained through the administration of the Hidden Figures Test, an embedded-figures instrument. The Hidden Figures Test, Test cf-1 from the Educational Testing Service Battery, represents a measure of flexibility of closure as originally constructed. This is an adaptation of Thurstone's Gottschaldt Figures Test (Thurstone, 1944). In relating this measure to the analytical field approach, several studies have indicated that such a





measure reliably measures field dependence-independence, and that flexibility of closure and field dependence-independence dimensions are the same (Gardner, Jackson, and Messick, 1960; Jackson, Messick, and Meyers, 1964; Witkin, et al., 1962).

The test is comprised of thirty-two patterns containing an embedded figure which the subject is to locate. All patterns are achromatic; the use of memory is required at only a minimal level. Total number of identified embedded figures represents the score on the field dependence-independence dimension.

The test was divided into two sections; each part has a ten minute time limit.

Defense mode was measured by scores on the dimension of repression-sensitization as developed by Byrne (1963). The characteristic modes of defense on this dimension range from attempts to avoid anxiety-arousing stimuli (repressing) to attempts to reduce anxiety by approaching or controlling external stimuli and their consequents. Although there seems to be little question that the sensitizing end of the dimension reflects maladjustment of a certain type, considerable confusion exists on the basis of research findings regarding the relationship of the repressing end of the dimension to maladjustment. It appears that both linear and curvilinear relationships exist depending on the population sampled (Byrne, Golightly, and Sheffield, 1965).



The R-S scale has been found to have high internal-consistency as well as high test-retest reliability (Byrne, Barry, and Nelson, 1963). The scale is comprised of 127 items plus filler items and is administered as the "Health and Opinion Inventory." Answers to the MMPI derived scale are true-false and are not subject to a time limit. High scores on the scale represent the sensitizing end of the dimension while low scores classify subjects as repressors.

Belief regarding locus of control of reinforcement in an external as opposed to internal site has been found to be reliably measured with the I-E scale developed by Rotter (1966). These generalized expectancies for internal versus external control of reinforcement are predictive of many aspects of behavior. Rotter (1966) indicates that the scale measuring persons along this dimension should relate to many other measures in a curvilinear fashion.

The scale has been found to be free from response-set (Rotter, 1966). Further, it is not identical to the measure of inner versus outer-directedness or introversion. The scale was developed so as to include a minimum number of items which, at the same time, are reliable, have high discriminatory validity, and high construct validity as measured by ability to predict differences in behavior for individuals above or below the median of the scale, or from correlations with behavioral criteria (Rotter, 1966). High scores represent externalization.



Twenty-three items represent measures in this scale (plus six filler items).

### Procedure

The instruments were administered in a group to subjects who volunteered. Subjects were tested in ten group sessions during which each subject took the entire battery. The tests were administered according to the following order: (1) The I-E Scale; (2) The Hidden-Figures Test; (3) The R-S Scale. Subjects were told that their scores would be kept confidential. Subjects were tested in one classroom used for all sessions. The tests were administered by the author.

Instructions for the R-S and Hidden-Figures Tests were as printed in standard fashion on the test booklets. Subjects were given no help with regard to questions about individual items. Instructions for the I-E Scale were as follows:

You are being asked to answer questions regarding what kinds of factors influence events and people's lives. Please answer according to how you see the influence of these various factors. There are no right or wrong answers. You must make a choice between two views for each question. Please answer every question. The test is untimed, but generally your first response is the best.



## RESULTS

Responses given by the 99 female subjects on each of the three instruments represent similar distributions found with respect to similar samples of subjects. Distributions achieved are very satisfactory for the purpose of pattern analysis. Data concerning the distributions of total scores on each dimension are given in Table 1.

TABLE 1.--Range of scores, standard deviations, means, medians, and quartiles for total scores on measures of repression-sensitization, internalization-externalization, and field dependence-independence.

Test	Range	SD	Mean	Median	Lower Quartile	Upper Quartile
R-S	9-86	17.6	38.6	35.1	23.99	48.91
I-E	1-17	3.8	7.97	7.91	4.95	10.12
FD-FI	2-25	5.6	11.69	11.20	6.77	15.91

On the R-S scale, responses to each question were assigned a zero designation when answered "false," and a one designation when answered "true." The forced-choice "a" and "b" answers on the I-E scale were assigned ones and zeros in the same fashion. Because "T-F" and "a-b" responses on the R-S and I-E scales are not consistent with scale directionality, configural scoring is independent of such directional scaling; thus, agreement between items does not reflect the same direction across items. It may

be configurally meaningful for agreement to occur with regard to either direction. On the FD-FI measure, correct responses were designated by ones, while incorrect responses were assigned zeros. These dichotomous scores were pooled into a common item pool across all subjects.

Agreement scores have been found to reflect configural relationships between responses (Zubin, 1938). An agreement score would represent the degree of association between pairs of persons across items. If two persons have an agreement score of 100 out of a possible 182, it would indicate that these two people gave identical responses to 100 items from a pool of 182. Such high agreement would indicate that these two persons have something in common which can be defined by the items on which they agree. If these two persons are compared on the basis of the items on which they agree with other persons whose responses to those items reflect some basic level of agreement, then a new category of kind of person can be described by the new, shared common item pool. In other words, successive computation of agreement matrices at successive levels of approximation of optimal level of agreement between persons would yield a hierarchical structure which classifies people according to the configural relationships among responses (expressed by agreement scores).

Using the common item pool derived after the dichotomous scoring procedure, an agreement matrix was formed between all pairs of subjects with respect to their responses





on all items. This agreement matrix was then pattern analyzed (by use of the Michigan State University 3600 digital computer) utilizing the method of Hierarchical Classification by Reciprocal Pairs. This method recomputes successive agreement matrices so as to best yield a hierarchical structure representative of the varied levels of association (agreement scores) between persons. Clusters of persons were yielded which met the pattern definition at all levels of agreement: Every member of the pattern must be more like every other member than he is like any person outside the pattern. Definition of clusters was made by the identification of the items on which members of the cluster agree.

In all, 94 clusters of people emerged from the analysis. Classification occurred by combining all persons into three major clusters on the basis of common agreement on one to ten items. These clusters were representative of clusters which combine to form the successive levels of the hierarchy as a function of the configural patterning of people described at varying levels of agreement between unique combinations of items (and responses). The analysis terminated when all persons had been classified at their lowest level in the hierarchy as represented by the emergence of several clusters of pairs of persons who agree rather highly with regard to their responses to unique subsets of items.



In order to determine whether or not a cluster is theoretically significant, a method was devised to designate clusters as types depending on whether or not all the members of each cluster were internally consistent according to total scores levels; these levels were defined by using quartiles to establish the following categories within dimensions:

H = high  
       (sensitized)  
       (externalized)  
       (field-independent)

M = moderate

L = low  
       (repressed)  
       (internalized)  
       (field-dependent)

Thus, in order to define clusters as types according to the definition that each member must be like every other member in relation to level of total scores, only those clusters were accepted wherein each member scored at the same level (as defined above) in each of the three dimensions.

Implementation of this criterion to all clusters yielded a total of seven clusters which were defined as types. Table 2 indicates these seven types.

Twenty other possible combinations of levels exist but did not emerge in the pattern analysis. The emergence of seven types from a group of 94 clusters is reflective of the number of types possible at the particular levels of

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TABLE 2.--Definition of types by their total score levels as produced by pattern analysis of configural responses by Hierarchical Classification by Reciprocal Pairs.

Type	Level of Association	Number of persons Comprising Type
*HHH	77	3
LLL	142	2
MMH	127	2
MMM	134	2
MML	131	2
LMH	141	2
MLH	141	2

\*Order of designation is as follows: R-S; I-E; FD-FI.

association (72-142) and indicative of those which achieved internal consistency as defined.

Eighty-four persons were not classified into types. Many of these persons were represented by clusters at the next higher or lower level of classification and are, in many ways similar, to the persons typed.

Use of a double-classification restriction (McQuitty's pattern definition and the present typal definition) has the effect of classifying only a small segment of any given sample into types. However, this double classification restriction is imposed in the exploratory approach so as to determine definition of basic configural relationships. Success in achieving such definitions over-rides nonclassification of all subjects which could not occur meaningfully or with the same internal consistency without inclusion of additional dimensions into the model. These dimensions would be more characteristic of their particular patterns of modes of expression of differentiation.



Items which specifically define the type listed in Table 2 will be presented in Appendix A.





## DISCUSSION

Results indicates that the measurment model is able to describe expression of modes of psychological differentiation in a meaningful and yet complex fashion based on configural relationships among basic variables considered. The exploratory nature of the present study reveals both the utility of the model in describing types of persons who represent patterns of modes of expression and the basic propositions derived from previous research and/or theoretical formulations regarding the nature of the expression of differentiation as it occurs in different ways in different people.

The results are indicative of the feasibility of including a configural variable into a pattern model which serves the purpose of mediating between the general personality variable under consideration and its modes of expression. Such mediation reflects and defines consistency among related variables, as a function of critical behavioral criteria such as presence or absence of maladaptive functioning.

In the present study the variable was defined by measures of perception of internal versus external control of reinforcement which served as an index of integration among modes of expression of differentiation. The configural differences among modes, as a function of presence or



lack of integration related quite consistently to pathological versus non-pathological modes of expression of differentiation.

Lack of integration and consequent pathological mode of expression is represented by the two types, HHH and LLL. In type HHH, lack of integration with respect to differentiation is shown by the fact that a type of persons exists who maintain a belief regarding locus of reinforcement which is the polar opposite expected for highly differentiated persons. Pathological mode of expression in defense style is consistent with this lack of integration in that these persons employ sensitizing defenses. These are the kinds of defenses known to be representative of differentiated persons whose behavior is considered to be pathological. Reliance on external standards is also related to sensitization in that much sensitizing behavior is seen as an attempt to manipulate the environment rather than a reliance on internal sources of control. It is possible, in viewing this configuration, that lack of integration occurred as a result of failure to learn to attend to already developed internal cues. Speculation concerning the antecedents for development of this mode of expression of differentiation would suggest parental models who are differentiated in the field dependence-independence sense, but who also employ an undifferentiated characteristic mode of response toward the child. Modeling with a differentiated parent may be highly related to development of



differentiation in the child. However, undifferentiated, pathological responses of the parent to the behavior of the child may serve to set up conditions whereby the child is constantly focused on the inappropriate, external, punishing world. Dimensions in which such lack of differentiated responses on the parts of parents occur may be highly related to attitudes regarding expressions of dependency needs on the part of children of these differentiated parents.

Type LLL reflects lack of integration in that undifferentiated persons are not seen as being highly developed in the area of acquisition of internal frames of reference. In that optimal levels of internalization-externalization may occur at the moderate level of this dimension, internalization may here refer to extreme reliance on internal sources of coping with pathological expression of differentiation which is expressed by over-utilization of the defense mechanism of repression. Defense theory is consistent with this interpretation in that repressors are seen to be defending more against internal anxiety-arousing cues than external. Thus, an undifferentiated, global response to internal anxiety may reflect itself through use of repression as a means of coping. This may also reflect attitudes regarding belief about how one should best deal with threat as evidenced by the response of parents who are repressive and undifferentiated toward children's attempts to express feelings and attitudes.



The proposition that integrative modes of expression of differentiation can occur at all levels of differentiation is supported by the emergence of types MML, MMM, MMH, MLH. Although it can be stated that these persons' defense mode and level of internalization reflect their integrative, non-pathological modes of expression of differentiation, it is immediately obvious that more definitive expression of modes of differentiation among integrated persons would be characterized by consideration of other patterns of meaningful personality dimensions. Use of the present model would aid in the determination of dimensions in that they no doubt vary across wide groups of people.

It is with regard to these moderate levels of typing that consideration of the next important steps for research come. Determination of the variables which would serve to describe these persons into more well-defined typologies on the basis of the fewest additional dimensions should occur. The intent would be to describe more persons within any given sub-population into more types on the basis of minimal addition of variables as the method proceeds.

Although integrative functioning is well reflected by the moderate levels of defense mode and internalization which combine with low and moderate and high differentiation, type MLH is indicative of the strongest theoretical relationship said to exist among integrated, highly differentiated persons. These are persons who strongly rely on highly developed internal frames of reference; their



integration expresses itself through the utilization moderate levels of defensiveness. It is suggested that extreme internalization in this case involves a different sub-set of items which reflect this non-pathological extreme in internalization as opposed to the sub-set of items which define type LLL.

Type LMM seems to represent what can be termed the "healthy repressor." In that repression is seen to function as an adaptive defense which has a conflict-solving function, it is conceivable that persons who score at the repressing end of the R-S dimension may be utilizing their defense mode in a successful fashion. Meaning of repressive defensiveness depends on what is being repressed. Conflicts other than sexual and aggressive may be successfully resolved through the utilization of repression. This is consistent with Sappenfield's (1965) theory of the adaptive function of defense mechanisms. It is also possible that these persons are not "denying" by giving answers opposite of sensitizing, but are only being honest with regard to lack of self-awareness. This may also be considered "repressive."

#### Research Implications

Cross-validation of present findings is needed. Identification of modes of expression of differentiation in samples of male subjects, younger and older age groups, and defined sub-populations can occur in conjunction with

the inclusion of new variables which may better define differing patterns of modes of expression.

The exploratory nature of the present study has been shown to be productive in determining modes of expression of differentiation: Exploratory research also aids in the re-defining of a measurement model which proceeds along empirical lines. In that some aspects of the model are subject to change as a function of differing dimensions relevant to expression of mode among various sub-populations, a flexible model is especially sensitive to the many parameters needed in the consideration of the complex field of individual differences. The most basic research implication is that determination of modes of expression of differentiation should proceed in a systematic manner designed to utilize the flexibility in the model; this flexibility is seen to represent the proposition that individual differences are most meaningfully described in terms of communality among basic personality dimensions if unique modes of personal functioning are included as a way of describing the interaction between communality and uniqueness of human behavior. Measurement approaches which tend to emphasize only one aspect are in opposition to the configural model.

Further research would be expected to best proceed by making the same assumptions regarding additivity within personality dimensions; that is, it is assumed that well-designed measurement scales reflect general directionality



within dimensions, but that linear addition of all responses violates differential validity concepts. Use of inter-item response comparisons and the use of levels of scale scores, in combination, suggest that dimensions be sought in which individual responses and levels of dimensionality have theoretical meaning. Dimensions in which moderate levels have differential validity and configural explanatory value unique from that of extreme levels would be more compatible to the present model. A mixed-model (correlational and pattern analytic) might best, at this point, aid in the determination of such dimensions through the utilization of regression equations to determine existence of curvilinearity among measures as well as to provide an initial description of relationships among major personality dimensions. Selection of measures on this basis, to then be included in the pattern analytic model, may prove to be the most descriptive and economical. Further, dimensions which reflect presence or lack of integration of differentiation should be identified and utilized in further search for patterns of modes of expression of differentiation.

Specific implications for research utilizing the present model have special possibilities in the area of behavioral change. Psychology is at present concerned with the development and identification of critical areas for implementation of change in attitudes toward child-rearing, inter-personal relations, and with regard to



specific areas of personal functioning. A model which seeks to determine highly configural modes of expression of basic personality characteristics would seem to also be capable of yielding a method for the identification of persons who are differentially receptive to patterns of educative or treatment programs. Traditional approaches to change inducement typically impose singular techniques which may be highly irrelevant to individual differences in modes of expression of even basically similar kinds of difficulties in personal functioning. Identification of unique modes of expression of differentiation in conjunction with inducement of change approaches which are highly focused on the particular uniqueness of mode of expression will probably lead to better results. This would be validated by research on both process and outcome variables which have heretofore produced largely negative findings due to insensitivity to individual differences in treatment populations. Positive results have no doubt been masked by attempts to treat persons with invariant approaches and/or by measurement models which assume that measurement (additive) on single variables is meaningful.

For example, in psychotherapy process research, the theoretical meaning and psychometric measurement of a variable such as dependency would be expected, in the present model, to achieve greater predictive significance if it can be described in terms of its relationship to other aspects of modes of expression of differentiation for



specific persons. Measurement of approach to dependency in the psychotherapy setting would then reflect its increased, unique significance based on its configural relationship to basic modes of expression of differentiation

Along the same lines, identification of characteristics expressive of presence of lack of integrative functioning and their representation in patterns of responses of specific persons may lead to greater utility in understanding maladaptive behavior within a non-pathological model. This would be consistent with present trends to understand occurrence of maladaptive behavior in terms of specific variables and behaviors unique to the person and the situation in which he finds himself. Areas expressive of lack of integration no doubt vary widely among people: Specification of these areas may prove economical if change inducement programs can be focused on these critical areas of personal functioning. An important question arises: Would focused approach to areas identified as reflective of lack of integration in persons lead to integrative changes in these persons as expressed by greater integration across all relevant areas of personal functioning? Research based on identification of these areas and measurement of change in patterns of modes of functioning may result in greater understanding of many complex aspects of human development.





## SUMMARY

This study represents an attempt to describe persons with respect to their unique modes of expression of psychological differentiation. A measurement model was conceived on the basis of a configural statistical procedure, assumptions concerning differential validity of configural scoring of item responses, and internal consistency within levels of dimensions expressive of level of differentiation.

The model is presented so as to provide a basis for identification of modes of expression of differentiation across broad ranges of personality dimensions and persons. Validation of the model is represented by acceptance of propositions concerning basic variables reflective of expression of differentiation.

The concept of integration is employed in the model with respect to measures of defense mode and expectancy for internal versus external control of reinforcement and the configural relationship of the dimensions to level of psychological differentiation. Level of differentiation is said to be independent of integration; integration (or lack of it) can occur at all levels of differentiation. Form of integrative behaviors is said to be indicative of expression of differentiation in maladaptive terms. Variables expressive of lack of integration, at the specified level of differentiation aid in the description of the consequent expression of maladaptive functioning.



Propositions proposed were: (1) Integration will occur at all levels of differentiation. (2) Pathological forms of expression of high and low levels of differentiation would be reflected by lack of integration expressed by inconsistency between level of differentiation and internalization-externalization.

Ninety-nine undergraduate female subjects were administered the revised Repression-Sensitization Scale, as a measure of defense mode, the Internalization-Externalization Scale, as a measure of expectancy regarding locus of reinforcement, and the Hidden-Figures Test, a measure of field dependence-independence indicative of level of differentiation. Individual, pooled responses were converted to agreement scores and then pattern analyzed by the method, Hierarchical Classification by Reciprocal Pairs. Ninety-four clusters were yielded. Definition of clusters as types occurred on the basis of application of a measure of internal consistency within levels of dimensions employed. Seven theoretically significant types emerged from a possible twenty-seven. Levels of association representing each type were high. Propositions were supported by the emergence of the particular types.

All types were consistent with the expectation that the integrative hypothesis would reflect form of expression of internalization and defense mode as a function of level of differentiation; concurrently, integration was found to occur at all levels of differentiation.

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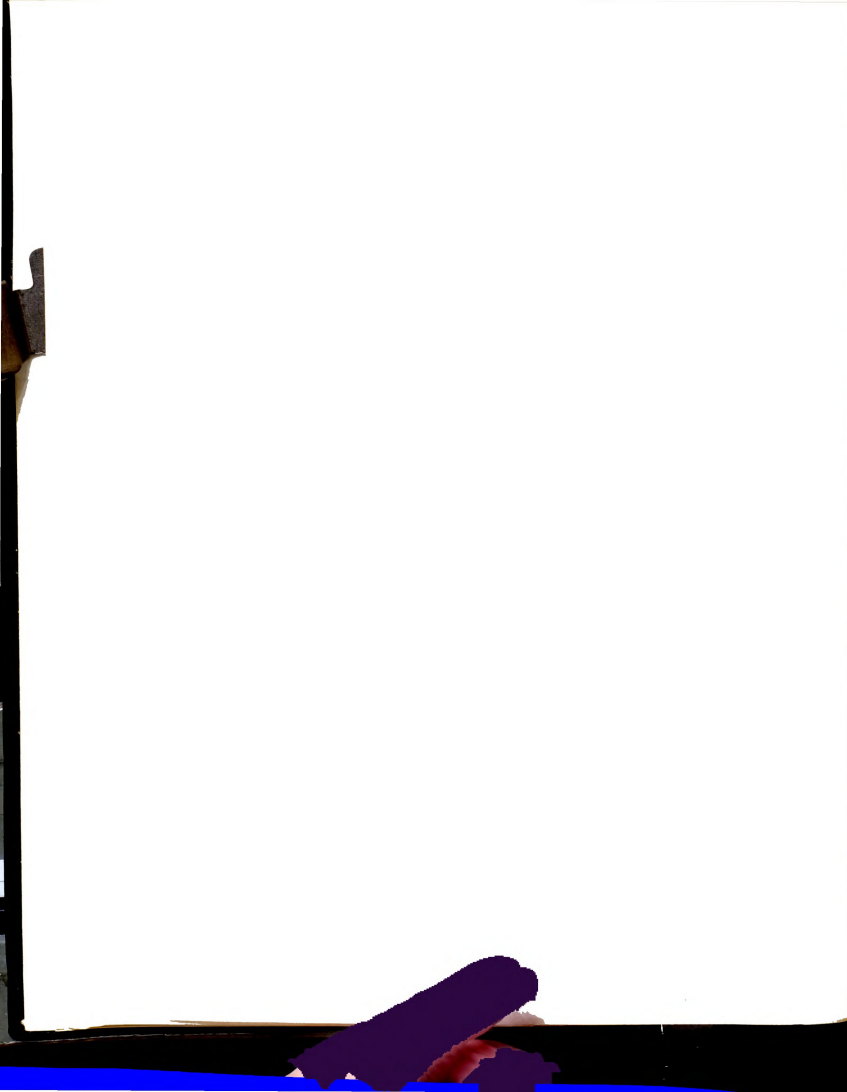
Lack of integration was expressed by the defense modes expected to relate to the particular form of lack of integration and level of differentiation at which it occurred.

The facility of the measurement model to yield theoretically consistent and unusually definitive representations of communality and uniqueness in individual differences among persons, based on a pattern search for varied modes of expression of differentiation, was shown to have wide-spread implications for further research. Implications were cited with respect to the dimensions currently studied, the concept of integration in a configural model, and with regard to general measurement problems in the area of personality study.



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APPENDIX A

ITEM DEFINITION OF TYPES



# ITEMS DEFINING TYPE MLH

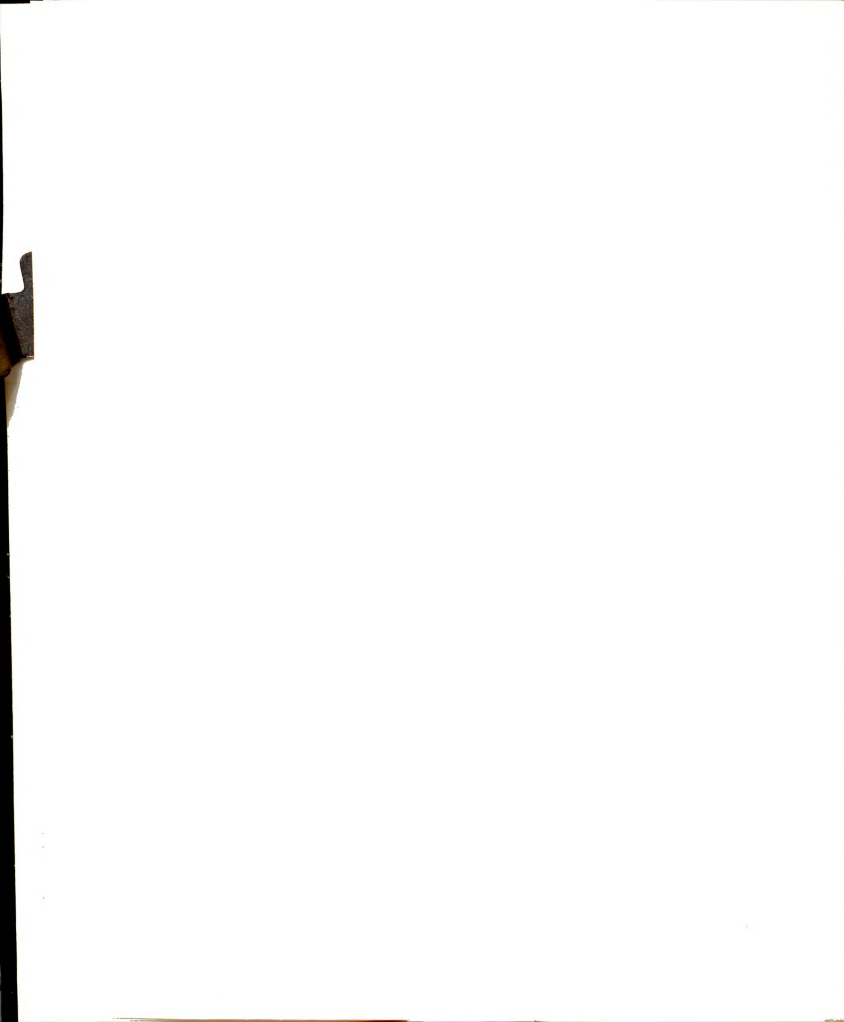
Scale	Item Numbers																							
	6	8	10	12	16	17	19	20	25	26	28	32	35	37	38	41	42	44	46	47	48	50	51	53
R-S	42	77	79	80	81	84	85	87	88	89	90	91	93	94	95	96	97	101	102	104	110	111	112	113
	98	101	102	104	110	111	112	113	118	120	122	123	127	128	130	131	132	134	135	136	138	139	141	142
	132	134	135	136	138	139	141	142	143	144	145	146	148	149	151	153	154	157	158	160	161	163	164	165
	154	157	158	160	161	163	164	165	166	168	170	171	172	173	176	179	181	182						
	181	182																						
I-E	2	3	6	7	9	10	11	12	15	16	18	20	21	22	23	25	26	28	29					
	26	28	29																					
FI-FD	1	3	4	5	6	7	8	9	11	12	13	14	16	17	18	20	21	23						
	21	23	24	25	27	28	31	32																





ITEMS DEFINING TYPE MML

Scale		Item Numbers															
R-S	2	5	8	12	14	19	21	25	26	27	28	32	35	37	38	47	48
	50	51	52	53	60	63	67	68	69	72	76	77	78	79	82	85	87
	89	90	91	93	95	96	98	101	102	104	105	107	111	112	114	118	120
	122	128	132	134	135	136	137	138	141	144	145	146	148	149	151	153	155
	156	157	158	159	160	161	162	163	164	165	166	168	170	171	172	173	174
	176	179	180														
I-E	2	4	9	10	11	13	15	16	17	18	21	22	23	25	26	29	
FI-FD	1	2	3	4	5	6	7	8	10	11	12	13	14	16	19	20	21
	23	24	25	26	27	28	29	30	31	32							



## ITEMS DEFINING TYPE MMM

Scale	Item Numbers																	
R-S	2	5	6	8	12	14	16	17	20	21	25	26	27	32	35	37	38	
	39	41	42	44	46	47	48	50	53	56	60	65	66	67	68	72	76	
	77	79	80	81	82	85	87	88	89	93	95	96	97	98	102	104	105	
	107	109	111	112	113	114	121	123	127	128	130	137	139	141	143	145	146	
	147	148	149	151	152	154	155	156	157	158	159	160	162	163	165	167	168	
	170	173	174	176	179	180	181	182										
I-E	2	3	4	5	9	10	11	13	15	16	21	23	25	26	29			
FI-FD	3	5	6	7	8	9	10	11	12	13	14	16	17	18	19	20	21	
	24	25	26	27	28	29	30	31	32									



Scale	Item Numbers																			
R-S	5	8	10	12	16	17	19	26	27	28	32	35	37	38	39	41	46	47	48	50
	55	56	60	63	65	66	67	68	70	76	77	78	80	81	85	88	89	90	91	93
	97	98	101	102	104	105	109	110	111	114	120	122	123	127	128	131	132	134	136	137
	141	142	143	144	146	147	148	149	152	153	154	155	156	157	158	159	160	163	165	166
	170	171	173	174	176	179	182													
I-E	3	4	5	6	7	9	11	12	16	18	21	22	23	25	26	29				
FI-FD	1	2	4	5	7	12	14	22	23	24	26	29	31	32						



ITEMS DEFINING TYPE HHH

Scale	Item Numbers																	
R-S	10 78 131	14 80 134	17 82 139	19 88 142	20 90 146	21 91 147	37 98 148	42 105 152	46 109 153	48 110 160	50 111 166	52 112 167	66 120 174	67 123 180	69 127	72 130		
I-E	2	5	6	9	12	18	20	21	22	23	25							
FI-FD	1 29	4 30	7 31	10 32	11	12	13	14	16	17	18	19	20	22	24	28		

Scale	Item Numbers																	
R-S	2 39 68  102 136 155 181	5 41 69  104 137 156 182	6 42 70  105 138 157	8 47 72  107 139 159	12 48 76  109 141 160	16 50 78  110 142 162	17 51 80  111 143 163	19 52 82  112 144 164	20 53 85  113 145 165	21 55 87  114 146 166	25 56 88  118 147 167	26 58 90  120 148 168	27 60 91  122 149 172	32 63 93  128 151 173	35 65 94  131 152 176	37 66 95  134 153 179	38 67 98  135 154 180	
I-E	4	5	6	10	11	12	15	16	17	18	20	22	23	26	28	29		
FI-FD	3 25	4 27	5 29	6 30	7 31	8 32	9	10	11	14	16	17	18	19	22	24		



ITEMS DEFINING TYPE LMM

Scale	Item Numbers															
R-S	2	5	6	8	12	14	17	20	25	26	27	28	35	38	39	41
	42	44	46	47	48	50	52	53	55	56	58	60	66	67	68	69
	70	72	77	78	80	81	82	84	85	87	88	89	90	91	93	95
	97	98	101	104	107	109	110	112	113	114	118	121	122	123	127	128
	130	131	132	134	135	136	137	141	142	143	144	145	146	147	148	149
	151	152	153	154	155	156	157	158	160	162	164	165	166	167	168	170
	171	172	173	174	179	180	181									
I-E	2	3	4	5	7	9	11	13	15	16	18	20	21	22	23	29
FI-FD	2	3	4	5	6	10	11	12	13	14	16	17	19	24	25	26
	27	28	29	30	31	32										



APPENDIX B

REPRESSION-SENSITIZATION SCALE



## HEALTH AND OPINION SURVEY

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

Section of  
answer sheet  
correctly  
marked.

You are to mark your answer on the answer sheet you have. Look at the example of the answer sheet shown at the right. If a statement is TRUE or MOSTLY TRUE, as applied to you, blacken between the lines in the column headed T. (See A at the right.) If a statement is FALSE or NOT USUALLY TRUE, as applied to you, blacken between the lines in the column headed F. (See B at the right.) If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

T F

A

B

Remember to give YOUR OWN opinion of yourself.  
Do not leave any blank spaces if you can avoid it.

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks on this booklet.

Remember, try to make some answer to every statement.

NOW OPEN THE BOOKLET AND GO AHEAD



1. I have a good appetite.
2. I wake up fresh and rested most mornings.
3. I am easily awakened by noise.
4. I like to read newspaper articles on crime.
5. My hands and feet are usually warm enough.
6. My daily life is full of things that keep me interested.
7. I am about as able to work as I ever was.
8. There seems to be a lump in my throat much of the time.
9. I enjoy detective or mystery stories.
10. Once in a while I think of things too bad to talk about.
11. I am very seldom troubled by constipation.
12. At times I have fits of laughing and crying that I cannot control.
13. I am troubled by attacks of nausea and vomiting.
14. I feel that it is certainly best to keep my mouth shut when I'm in trouble.
15. At times I feel like swearing.
16. I find it hard to keep my mind on a task or job.
17. I seldom worry about my health.
18. At times I feel like smashing things.
19. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
20. My sleep is fitful and disturbed.
21. Much of the time my head seems to hurt all over.
22. I do not always tell the truth.
23. My judgment is better than it ever was.
24. Once a week or oftener I feel suddenly hot all over, without apparent cause.





25. I am in just as good physical health as most of my friends.
26. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.
27. I am almost never bothered by pains over the heart or in my chest.
28. I am a good mixer.
29. Everything is turning out just like the prophets of the Bible said it would.
30. I do not read every editorial in the newspaper every day.
31. I sometimes keep on at a thing until others lose their patience with me.
32. I wish I could be as happy as others seem to be.
33. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.
34. I get angry sometimes.
35. Most of the time I feel blue.
36. I sometimes tease animals.
37. I am certainly lacking in self-confidence.
38. I usually feel that life is worthwhile.
39. It takes a loss of argument to convince most people of the truth.
40. Once in a while I put off until tomorrow what I ought to do today.
41. I think most people would lie to get ahead.
42. I do many things I regret afterwards.
43. I go to church almost every week.
44. I have very few quarrels with members of my family.
45. I believe in the second coming of Christ.



46. My hardest battles are with myself.
47. I have little or no trouble with my muscles twitching or jumping.
48. I don't seem to care what happens to me.
49. Sometimes when I am not feeling well I am cross.
50. Much of the time I feel as if I have done something wrong or evil.
51. I am happy most of the time.
52. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
53. Often I feel as if there were a tight band about my head.
54. My table manners are not quite as good at home as when I am out in company.
55. I seem to be about as capable and smart as most others around me.
56. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.
57. The sight of blood neither frightens me nor makes me sick.
58. Often I can't understand why I have been so cross and grouchy.
59. I have never vomited blood or coughed up blood.
60. I do not worry about catching diseases.
61. At times my thoughts have raced ahead faster than I could speak them.
62. If I could get into a movie without paying and be sure I was not seen I would probably do it.
63. I commonly wonder what hidden reason another person has for doing something nice for me.
64. I believe that my home life is as pleasant as that of most people I know.



65. Criticism or scolding hurts me terribly.
66. My conduct is largely controlled by the customs of those about me.
67. I certainly feel useless at times.
68. At times I feel like picking a fist fight with someone.
69. I have often lost out on things because I couldn't make up my mind soon enough.
70. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
71. I would rather win than lose in a game.
72. Most nights I go to sleep without thoughts or ideas bothering me.
73. During the past few years I have been well most of the time.
74. I have never had a fit or convulsion.
75. I am neither gaining or losing weight.
76. I cry easily.
77. I cannot understand what I read as well as I used to.
78. I have never felt better in my life than I do now.
79. I resent having anyone take me in so cleverly that I have to admit that it was one on me.
80. I do not tire quickly.
81. I like to study and read about things that I am working at.
82. I like to know some important people because it makes me feel important.
83. What others think of me does not bother me.
84. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of thing.
85. I frequently have to fight against showing that I am bashful.



86. I have never had a fainting spell.
87. I seldom or never have dizzy spells.
88. My memory seems to be all right.
89. I am worried about sex matters.
90. I find it hard to make talk when I meet new people.
91. I am afraid of losing my mind.
92. I am against giving money to beggers.
93. I frequently notice my hand shakes when I try to do something.
94. I can read a long while without tiring my eyes.
95. I feel weak all over much of the time.
96. I have very few headaches.
97. Sometimes. when embarrassed, I break out in a sweat which annoys me greatly.
98. I have had no difficulty in keeping my balance in walking.
99. I do not have spells of hay fever or asthma.
100. I do not like everyone I know.
101. I wish I were not so shy.
102. I enjoy many different kinds of play and recreation.
103. I like to flirt.
104. In walking I am very careful to step over sidewalk cracks.
105. I frequently find myself worrying about something.
106. I gossip a little at times.
107. I hardly ever notice my heart pounding and I am seldom short of breath.
108. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.





109. I get mad easily and then get over it soon.
110. I brood a great deal.
111. I have periods of such great restlessness that I can not sit long in a chair.
112. I dream frequently about things that are best kept to myself.
113. I believe I am no more nervous than most others.
114. I have few or no pains.
115. Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."
116. I can be friendly with people who do things which I consider wrong.
117. Sometimes at elections I vote for men about whom I know very little.
118. I have difficulty in starting to do things.
119. I sweat very easily even on cool days.
120. It is safer to trust nobody.
121. Once a week or oftener I become very excited.
122. When in a group of people I have trouble thinking of the right things to talk about.
123. When I leave home I do not worry about whether the door is locked and the windows closed.
124. I do not blame a person for taking advantage of someone who lays himself open to it.
125. At times I am all full of energy.
126. My eyesight is as good as it has been for years.
127. I have often felt that strangers were looking at me critically.
128. I drink an unusually large amount of water every day.
129. Once in a while I laugh at a dirty joke.

130. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
131. I work under a great deal of tension.
132. I am likely not to speak to people until they speak to me
133. I have periods in which I feel unusually cheerful without any special reason.
134. Life is a strain for me much of the time.
135. In school I found it very hard to talk before the class.
136. Even when I am with people I feel lonely much of the time.
137. I think nearly anyone would tell a lie to keep out of trouble.
138. I am easily embarrassed.
139. I worry over money and business.
140. I almost never dream.
141. I easily become impatient with people.
142. I feel anxiety about something or someone about all the time.
143. Sometimes I become so excited that I find it hard to get to sleep.
144. I forget right away what people say to me.
145. I usually have to stop and think before I act even in trifling matters.
146. Often I cross the street in order not to meet someone I see.
147. I often feel as if things were not real.
148. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
149. I have strange and peculiar thoughts.
150. I get anxious and upset when I have to make a short trip away from home.

151. I have been afraid of things or people that I knew could not hurt me.
152. I have no dread of going into a room by myself where other people have already gathered and are talking.
153. I have more trouble concentrating than others seem to have.
154. I have several times given up doing a thing because I thought too little of my ability.
155. Bad words, often terrible words, come into my mind and I cannot get rid of them.
156. Sometimes some unimportant thought will run through my mind and bother me for days.
157. Almost every day something happens to frighten me.
158. I am inclined to take things hard.
159. I am more sensitive than most other people.
160. At periods my mind seems to work more slowly than usual.
161. I very seldom have spells of the blues.
162. I wish I could get over worrying about things I have said that may have injured other people's feelings.
163. People often disappoint me.
164. I feel unable to tell anyone all about myself.
165. My plans have frequently seemed so full of difficulties that I have had to give them up.
166. Often, even though everything is going fine for me, I feel that I don't care about anything.
167. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
168. I often think, "I wish I were a child again."
169. I have often met people who were supposed to be experts who were no better than I.
170. It makes me feel like a failure when I hear of the success of someone I know well.

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171. I am apt to take disappointments so keenly that I can't put them out of my mind.
172. At times I think I am no good at all.
173. I worry quite a bit over possible misfortunes.
174. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.
175. I find it hard to set aside a task that I have undertaken, even for a short time.
176. I have several times had a change of heart about my life work.
177. I must admit that I have at times been worried beyond reason over something that really did not matter.
178. I like to let people know where I stand on things.
179. I have a daydream life about which I do not tell other people.
180. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
181. I feel tired a good deal of the time.
182. I sometimes feel that I am about to go to pieces.



APPENDIX C  
INTERNALIZATION-EXTERNALIZATION SCALE





## I-E SCALE

On answer sheet, "1" corresponds to "a." "2" corresponds to "b."

1. a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings,
6. a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.  
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.



- b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
- 10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
- 11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
b. Getting a good job depends mainly on being in the right place at the right time.
- 12. a. The average citizen can have an influence in government decisions.  
b. This world is run by the few people in power, and there is not much the little guy can do about it.
- 13. a. When I make plans, I am almost certain that I can make them work.  
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- 14. a. There are certain people who are just no good.  
b. There is some good in everybody.
- 15. a. In my case getting what I want has little or nothing to do with luck.  
b. Many times we might just as well decide what to do by flipping a coin.
- 16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
- 17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
b. By taking an active part in political and social affairs the people can control world events.
- 18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There is really no such thing as "luck."
- 19. a. One should always be willing to admit mistakes.  
b. It is usually best to cover up one's mistakes.
- 20. a. It is hard to know whether or not a person really likes you.

- b. How many friends you have depends upon how nice a person you are.
- 21. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
  - 22. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
  - 23. a. Sometimes I can't understand how teachers arrive at the grades they give.  
b. There is a direct connection between how hard I study and the grades I get.
  - 24. a. A good leader expects people to decide for themselves what they should do.  
b. A good leader makes it clear to everybody what their jobs are.
  - 25. a. Many times I feel that I have little influence over the things that happen to me.  
b. It is impossible for me to believe that chance or luck plays an important role in my life.
  - 26. a. People are lonely because they don't try to be friendly.  
b. There's not much use in trying too hard to please people, if they like you, they like you.
  - 27. a. There is too much emphasis on athletics in high school.  
b. Team sports are an excellent way to build character.
  - 28. a. What happens to me is my own doing.  
b. Sometimes I feel that I don't have enough control over the direction my life is taking.
  - 29. a. Most of the time I can't understand why politicians behave the way they do.  
b. In the long run people are responsible for bad government on a national as well as on a local level.



















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