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OF SELF STATEMENTS

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1968

DIFFERING MODES OF COGNITIVE ORGANIZATION  
OF SELF STATEMENTS

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DIFFERING MODES OF COGNITIVE ORGANIZATION  
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CHAPTER I

INTRODUCTION

Categorizing or sorting tasks which require a subject to separate a set of stimulus objects or statements into groups is an operation rooted in the earliest psychophysical experiments and in the development of scaling procedures such as the Thurstone (Thurstone & Chave, 1929) and Likert (1932) scales. Later developments in scaling procedures shifted the emphasis to performance on sorting tasks as a measure of strength of attitudes (Sherif & Hovland, 1953). Sorting tasks have also been used to discover the level of conceptual organization used by individual subjects, e.g., Goldstein & Scheerer (1941). In both of these developments the emphasis is generally on discovering the dimensions or principles of organization of experience and behavior.

Another use of categorizing tasks came from research in psychotherapy and personality. Much of the impetus for this direction came from Rogers and his associates (Rogers

& Dymond, 1954) and stressed the motivational properties deriving from discrepancies between self and ideal self. Interest in this discrepancy as a motivational construct has not been confined to the Rogers group, however, and has other theoretical roots, e.g., Angyal (1965) and Kelly (1955). Operationally, the self-ideal discrepancy has been obtained on a variety of instruments. In addition to the Q sort (Stephenson, 1953) as used by Butler and Haigh (1954) the self-ideal discrepancy has been obtained on the Interpersonal Check List (Leary, 1954) and Osgood's (Osgood, et. al., 1964) semantic differential, e.g., Moss (1953).

Along with these developments the sorting task itself underwent various modifications. For example, the Q sort and the Thurstone and Likert techniques imposed limits upon the number of categories available to a subject or judge. The own-categories technique developed by Sherif and Hovland (1953) and the Object Sorting Test of Gardner (1953) allowed the subject to determine the number of categories.

Sherif and Hovland's (1953) own-categories technique grew out of observations of judges' responses while constructing a Thurstone scale. It was discovered that judges tended to displace more neutral items away from their own position and that judges who felt most strongly about an issue neglected some of the intermediate categories. Hence, it was felt that if the judges were allowed



to determine the number of categories the number used might be useful as an index of the intensity of involvement in an issue. The results of subsequent investigations showed persons holding a strong pro-position on an issue tended to use fewer categories and to displace neutral items away from their own position (Sherif & Hovland, 1953). Further study has shown fewer categories are used not only by persons who have a strong favorable position (Reich and Sherif, 1963) but also by those strongly committed to a negative position (Vaughan, 1961).

These findings are not interpreted by the authors to mean these subjects are not capable of making finer discriminations. In the Reich and Sherif (1963) study, for example, the League of Women Voters subjects who were highly conversant with the complexities of the issue (reapportionment) used fewer categories than subjects who were much less knowledgeable about the issue. As stated elsewhere, ". . . they could have made fine discrimination on the basis of their superior information, but they did not" (Sherif, Sherif, & Nebergall, 1965, p. 124).

As a result of accumulated evidence the phenomenon of fewer categories as a function of greater involvement is now accepted. It is ". . . probably related to the assimilation-contrast effects relative to his (subject's) own stand. Logically, at least, these systematic displacements would result in a need for fewer categories" (Sherif & Sherif,

1967, p. 127). That is, the "own position" provides an anchor at one end of a polarized evaluative scale. At that end of the continuum the subject's latitude of acceptance is relatively narrow, i.e., he is more careful of accepting items into a category representing his own position and closely related assimilated positions. The displacement of items can then be seen as a function of the lowering of the level of rejection (contrast effect). This behavior seems to reflect the attitude that "those who are not for us are against us."

A cogent evaluation of own-categories particularly relevant to this study was stated by Hartley (1967, p. 94):

I like the own-categories technique for attitude study, not because it serves a better definition of attitude but because it builds toward a more adequate cognitive mapping of the individual's social field. It locates the boundaries for positive and negative valences and gives a synthesis of cognitive and conative components in a manageable manner (Hartley, 1967, p. 94).

Similarly, Bieri (1967) states, "although a start has been made to link the development of cognitive structures to attitudes, especially in relation to attitudes toward authority, this effort can only be considered to have barely begun" (Bieri, 1967, p. 181).

In recent years cognition has become a focus of one of the major orientations in the study of personality. This emphasis,

. . . shows itself in various ways, e.g., in stressing self-regulative aspects of cognitive

functioning; or in regarding conceptual structures as major motivating influences in behavior; or in viewing organismic regulation in terms of cognitive controls that are superordinate to the action of motives with the priority previously given to drive replaced by a conception of cognitive control of drive (Klein, Barr, & Wolitzky, 1967, p. 483).

The work of Witkin, Dyk, Faterson, Goodenough, and Karp (1962), and Gardener (Gardner, Holzman, Klein, Linton, & Spence, 1959; Gardner & Schoen, 1962) exemplifies the work done in the area of cognitive control. The basic premise of this work has been ". . . that the wide range of behaviors with which an individual encounters reality may be encompassed by relatively few dimensions of organization" (Gardner, et al., 1959, p. 1). Thus, cognitive control is seen as a relatively stable organizational principle having to do with ". . . the manner of coordination between a class of adaptive intentions and a class of environmental situations" (Gardner, et. al., 1959, pp. 5-6). Several different cognitive controls, coexisting but varying within the whole constellation is referred to as "cognitive style."

Part of Gardner's theoretical concern was the relationship of cognitive control to psychoanalytic theory. He sees cognitive control and Hartmann's (1939) conflict-free spheres of ego-functioning as synonymous. Hence, cognitive controls are seen as adaptive in that they: a) govern informational feedback, b) involve automatized standards of adequacy in perceptual, cognitive and motor activities, and c) in that ". . . the outcome of a cognitive control is a

pattern of attribution in which stimulus events and ideas are brought into a relation to each other as relevant and irrelevant, experienced and unexperienced, segments of a stimulus field" (Gardner, et. al., 1959, pp. 10-11).

To test the adequacy of the operations associated with the various controls Gardner, et. al. (1959) conducted a factor analytic study using measures that had been developed by the group in previous research. The controls were:

Leveling-sharpening (Holzman & Klein, 1951, 1954; Holzman, 1954; Holzman & Gardner, 1959); scanning (Schlesinger, 1954; Holzman & Klein, 1956; Gardner, 1959); constricted-flexible control (Smith & Klein, 1953); equivalence range (Gardner, 1953; Sloane, 1959); and tolerance for unrealistic experiences (Klein & Schlesinger, 1951) (Gardner, et. al., 1959, pp. 16-17).

Measures of Witkin's (1964) field dependence-independence were also included in that study.

The equivalence range control is of particular interest here in that the defining operation is a categorizing task (Object Sorting Task) requiring the subject to "put together into groups the objects which seem to you to go together" (Gardner, et. al., 1959, p. 41). The instructions were worded to encourage spontaneous categorizing behavior. There is no dimension specified as in "own categories" techniques. The obtained measure is the number of categories. Measures obtained from a perceptual judgment task did not materially add to the definition of the control. No equivalence range factor was found for men but this

measure defined one factor for women. Since equivalence range was not found in any other factor, it was suggested that the Object Sorting Task was the most direct measure of equivalence range.

Both field dependence-independence and constricted-flexible controls contributed to Factor I, the field-articulation factor. Embedded Figures and the Rod-and-Frame Test appeared to be adequate measures of the field-articulation control.

In subsequent investigations (Gardner & Schoen, 1962) equivalence range was renamed conceptual differentiation. The three studies reported in this monograph were aimed at exploring situational generality of individual consistencies in conceptual differentiation and the relationship between conceptual differentiation and level of abstraction. The investigations were also concerned with relating their findings to those reported by other investigations.

In the first study of the Gardner and Schoen monograph (1962) 16 measures were obtained. For measuring conceptual differentiation and level of abstraction the Object Sorting Test, a Behavior Sorting Task, and a Photo Sorting Task were used. On these tasks subjects were required to define their categories in order to obtain information on the level of abstraction. The scoring of number of categories was such that items put together which were not conceptualized by the subject as having a relationship other

than "things left over" were counted as separate groups (Gardner & Schoen, 1962).

Other tests were used which have been used by other investigators to define constructs which are conceptually related to conceptual differentiation: Rokeach's (1951) Narrow-Minded Test, Pettigrew's (1958) Category-Width Scale, Higgin's (1961) Social Comprehension Questionnaire, and two forms of Kelly's (1955) Role Construct Repertory Test (RCRT). Two check lists were also used: Tresselt and Mayzner's (1958) Word-Concept Check List and Gough's (1960) Adjective Check List.

Two independent groups of significant correlations were obtained: the number of categories on the three sorting tasks and the number of adjectives checked on the three versions of Gough's (1960) Adjective Check List. There was no relationship found between the two sets of measures. The number of constructs on the RCRT and the category width tests did not correlate with any of the other measures. Low negative correlations were obtained between number of categories and preferred level of abstraction. These investigators conclude differentiation and preferred level of abstraction are two distinctly different variables. The lack of relationship between RCRT and level of abstraction also leads the authors to take exception to Harvey, Hunt, and Schroeder's (1961) suggestion that number of constructs produced on RCRT reflects a general constellation of behaviors

defining abstraction.

The second of the three studies in the monograph (Gardner & Schoen, 1962) involved giving additional tests to 40 of the original sample of 70 and selecting 18 of the total measures for factor analysis. The additional tests included an Adjective Sorting Test, Fillenbaum's (1959) Self-Sorting Task, and a Self-Rating Test, a free-association test, a "distance" test using a TAT (Morgan & Murray, 1935) card, a Square and Rectangle Test, a Range Width Test, Fillenbaum's (1959) synonym test, and Frederiksen and Messick's (1959) Evaluation of Revisions Test. Four factors were extracted: I, conceptual differentiation; II, defined by loading on the adjective check lists; III, level of abstraction; and IV, an unexpected factor paradoxically loading on broad conceptual span on two tests (Range-Width Test and the free-association test), while loading on narrow conceptual span on two sorting tests and self-rating tests (Self-Sorting Task, Adjective-Sorting Task, and Self-Rating Test). This last factor is of particular interest in this study in that the mode of organization in the self domain appears to be different from the other patterns of organization. It is important to note that the instructions involved the subject self-reflexively on the self-rating tasks. That is, the subjects were asked, as on the Self-Rating Test to indicate the degree to which an adjective described him.

The third study in the group (Gardner & Schoen,

1962) showed that there was no relationship between conceptual differentiation and preferred level of abstraction.

From these studies the authors conclude preferred level of abstraction varies over time and from situation to situation. One factor suggests one form of abstraction related to verbal skills is independent of that found in the sorting tasks. Conceptual differentiation is independent of level of abstraction at which the subjects choose to function and the subjects' capacity to abstract.

Glixman (1965) used three categorizing tasks, which, from the content, were referred to as object, war, and self domains. These domains were seen as being hierarchically ordered in terms of personal significance. The object and war domains thus correspond to Gardner's object sort and the social issues which are the subject of attitudinal studies using Own Categories Procedures. The rationale for the self domain task was based on the differentiation hypothesis of Witkin, et. al., (1962). According to this hypothesis the degree of differentiation of the behavioral world is a function of the way the individual differentiates himself. Hence, this study can be seen in part as a test of the differentiation hypothesis.

From his data (included as Tables 9 and 10 in Chapter III) Glixman (1965) concludes: a) categorizing behavior is consistent across domains within individuals, and b) the largest number of categories is associated with the least



significant or ego-relevant domain (objects), and c) the most unequal distribution of items over the categories used is associated with the most significant domain (self). The overall results are seen as offering substantive support to both Gardner's and Sherif and Hovland's position in that the ". . . data presented here indicate that the individual's organization of events in a specific domain is also a function of his general mode of organizing events" (Glixman, 1965, p. 375). A secondary finding was a sex difference in degree of organization with women tending to use more categories.

In a subsequent investigation Glixman (1967) explored not only the sex difference, but examiner and examiner-sex effects upon categorizing behavior. Two domains were used in this study, objects and self. There were no subject-sex differences found as in previous research but there was an examiner-sex effect which suggests previous sex differences may have been a function of using male examiners. Examiner effects appear to be a relatively minor factor in treatment effects but complicate interpretation because of the contribution to interaction effects. The results of this study raised an even more important question: "In considering the kind of organizing process that is represented by categorizing events, one is led directly to the question of whether this process changes as a function of interactions among people" (Glixman, 1967,

p. 115). From this study it would appear that categorizing behavior represents considerably more variance than was assumed by Gardner, et. al., (1959) who saw this behavior as representing a relatively stable organizational principle.

Another closely related study conducted by Glixman and Wolfe (1967) demonstrates a convergence of categorizing behavior and semantic differential responses on the concept of cognitive structure.

From this review of categorizing tasks it may be seen that the common factor in the various theoretical uses of the technique is the assumption that categorizing behavior reflects a mode or level of organizing experience which is subject to degree of ego-relevance and interpersonal variables.

Another area of research relevant to the present study derives from the work of the Rogers group (Rogers & Dymond, 1954). It was in this group that the Butler-Haigh statements used in the present study and Glixman studies were developed. However, their original use was in obtaining measures of self and ideal self. The statements were sorted twice, once for each of the concepts, self and ideal self, according to Q sort procedures developed by Stephenson (1953). This procedure requires the S to sort the statements into 11 categories. The number of statements for each category is stipulated according to a distribution approximating the normal curve.

The basic assumption for using the self-ideal discrepancy was that it represented a motivational factor in the nature of a lack of self esteem which led to the individual seeking psychotherapy, or more generally, to a recognition of a need for change. As Butler and Haigh stated:

We hold that a discrepancy between the self-concept and the concept of the desired or valued self reflects a sense of self-dissatisfaction, which in turn generates the motivation for coming into counseling. Such a discrepancy ordinarily exists when an individual comes for help. It is our hypothesis that this self-dissatisfaction is reduced as a result of counseling (Butler & Haigh, 1954, p. 58).

There seems to be another assumption underlying this one, that is, the motivational property is a linear function of the magnitude of the self-ideal discrepancy. There has been some evidence that this variable is not a unitary dimension. For example, Guertin and Jourard's (1962) factor analysis including a self-ideal measure revealed a sex difference in terms of a social desirability factor which loaded heavily for the male subject of low self esteem.

In spite of these reservations, self-ideal discrepancy and the various measures associated with it continue to be used, as witness the current literature (e.g., Demark & Guttentag, 1967; Kaplan & Shannon, 1966).

The interest in this study is directed toward the self-ideal discrepancy as a construct rather than in the

categorizing task (Q sort) first associated with it.

This review and examination of representative studies was aimed at providing some ground for considering the relationship of ego-involvement and cognitive structuring as they converge on the operation of categorizing tasks. Further convergence seems possible with the inclusion of the self-ideal construct in that cognitive organization as motivation may be considered in relationship to cognitive organization as control.

## CHAPTER II

### PROBLEM

The purpose of this study is to explore the possibility that a differential response to categorizing tasks of two degrees of ego-involvement reflects different modes of cognitive organization. Differential response here refers to the comparative number of categories a subject uses when sorting identical sets of statements under two different instructional sets which presumably control the degree of ego-involvement. Under the condition of greater ego-involvement a subject has the option of using: a) fewer, b) more, or c) the same number of categories relative to the number used under less ego-involving instructions.

The rationale for this study arises from an interest in: a) the various ways ego-involvement has been manipulated in studying its relationship with categorizing behavior; b) the minority of subjects whose responses vary from theoretical expectation; and c) the relationship of self-ideal discrepancy, ego-involvement, and the substrate of personality referred to as conceptual differentiation.

The first concern of this study is the manipulation and control of ego-involvement. This variable has been controlled in previous studies in three ways:

a) In the Sherif and Hovland (1953) study this variable was manipulated through the choice of subjects for whom there was some a priori or independent evidence of varying degrees of involvement in a particular issue. It should be noted also that in this study the dimension (favorable-unfavorable) for the categorizing task was set by the experimenter, i.e., subjects were asked to use as many categories as necessary to delineate the stand reflected by the statements on the social position of the Negro.

b) Another procedure for controlling the degree of ego-involvement is in a priori choice of domains to be sorted. Glixman (1965) used three domains, objects, war, and self, which were presumed to represent three degrees of ego-relevance.

c) A third procedure, which in effect became the model for this aspect of the present study, is the manipulation of ego-involvement by variation of instructions, as done by Briece (1966). In this procedure two identical sets of statements were used. For the first sort the subjects were given the instructions developed by Gardner (1953). (Identical instructions were used in the Glixman study as well.) Essentially, the instructions are to "put the statements together that seem to you to go together

for some particular reason." On the other set of identical statements the subjects were instructed to sort the statements together "as they relate to you." The intent was that the instructions for the first sort would represent a condition of "non-ego-involvement" and the second one of ego-involvement. Briece apparently felt, however, that some subjects did not remain non-involved while sorting the first set. In the present study the instructions were also modified for the "non-involved" sorting task so that a non-involved set would be more clearly established.

The second concern of this study is the minority of subjects whose responses vary from expectation. Returning to the studies just discussed, the general conclusion is that "intensely involved individuals with extreme positions are more likely to adopt a constricted scale (with few categories) (Sherif & Hovland, 1953, p. 375) and, in Glixman, ". . . it has been demonstrated here that as a meaning domain increases in personal relevance within individuals, there is a decrease in number of categories used" (Glixman, 1965, p. 375).

An inspection of Sherif and Hovland's results reveals, however, that 32.9% of the Negroes who presumably had strong pro-Negro attitudes adopted extended scales (5 or more categories) rather than constricted scales (4 or fewer categories).

From the published data in the Glixman (1965) study

it can only be suspected that the use of fewer categories for the ego-relevant domain (self) was less than unanimous. In the Briece (1966) study the proportion of differential responses is much clearer. Of 40 Ss 17 used fewer categories under the condition of greater ego-involvement, 17 used the same, and 6 used more categories. Even though the ambiguous instructions for the non-involved condition probably contributed to these results, less than half of the subjects followed theoretical expectations. In plotting the number of categories against the self-ideal discrepancy there appeared to be some indication that the relationship between the two variables was different for subjects who used fewer, rather than more or the same number of categories with ego-involvement. It should be noted that this was not of concern in that study and was not explored.

The point here is not to attack the conclusions or generalizations of these studies, but rather to raise the question of whether or not subjects who do not respond according to theoretical expectations may also be responding in a consistent way of organizing behavior which is not as readily perceived as in the majority of subjects.

The third area of concern is the relationship of self-ideal discrepancy to categorizing behavior. Wolfe (1966) has recently shown that fewer categories are used as a function of stress. In view of the way self-ideal



discrepancy score is used variously to define self-comfort, self-esteem, etc., it seems reasonable to regard it as a kind of internal, characterological stress or incongruity which would be reflected in categorizing behavior.

From the point of view of Witkin, et. al., (1962) making differentiations in the world is a function of the way differentiations of self are made. It should then be of profit to investigate the relationship of self-ideal discrepancy and categorizing behavior in minimal ego-involving tasks.

Further, self-ideal measures are, by definition, obtained under a condition of ego-involvement. Since self-ideal discrepancy implies a relative evaluation of self, it would appear that exploring the possible relationship with other ego-relevant behaviors would be helpful in understanding the effects and nature of ego-involvement.

Finally, the exploration of these various relationships should possibly reveal whether or not there are patterns of response that reliably differentiate people on the basis of differential response to ego-involvement. Since sex differences have been shown in related studies this variable will be retained in the present study. In these terms this study is concerned with six possible groups as defined by differential response and sex. These groups are, then, male Ss who use: 1) fewer, 2) more, and 3) same number of categories; and female Ss who use: 4) fewer, 5) more,

and 6) same number of categories in sorting under ego-involved conditions as compared with less ego-involved conditions.

From these general concerns the following specific questions have been asked:

1. Proportion of differential responses.
  - a. What is the proportion of subjects who use:
    - a) fewer, b) more, and c) the same number of categories under the condition of greater ego-involvement when ego-involvement is manipulated by instructions and Ss are free to devise their own schema? (For convenience, differential response under the two instruction situations will be said to define a shift group.)
2. Ego-involvement and number of categories.
  - a. Is there any difference between groups in the number of categories when ego-involvement is minimal?
  - b. Is there any difference between groups in the number of categories with greater ego-involvement?
  - c. Is there a significant difference in number of categories within each group between the number of categories used under the two conditions of ego-involvement? To answer this

and the following questions, comparisons of the groups will be between shift groups within and across sex, between sex groups within and across shift, and between and within the two sorts of varying ego-involvement.

3. Self-ideal discrepancy and categorizing behavior.
  - a. When the subjects are separated according to sex and differential response (shift) to ego-involvement, are there different patterns in the relationship of self-ideal discrepancy and number of categories when ego-involvement is minimal?
  - b. When the subjects are separated according to sex and differential response to ego-involvement, are there different patterns between the groups in the relationship of self-ideal discrepancy and number of categories under the condition of greater ego-involvement?
4. Assuming that performing on the semantic differential requires certain cognitive functions appropriate to that task, it seems reasonable that a gross measure of these functions can be seen in the total of difference scores across a number of concepts and scales. It then becomes

possible to ask these additional questions:

- a. Are there different patterns between the groups in the relationship of number of categories and the sum of the difference scores on the semantic differential?
- b. Are there different patterns between the groups in the relationship of self-ideal discrepancy and the sum of a number of difference scores on the same instrument, the semantic differential?

## CHAPTER III

### METHOD

Subjects. The subjects in this study were 49 respondents out of 100 randomly selected elementary teachers in the Oklahoma City Public Schools. All male and female teachers in that system were numbered separately. A table of random numbers (Dixon & Massey, 1957, pp. 366-370) was then used to obtain a sample of 50 male and 50 female teachers. A packet containing an invitation to participate in the study, test materials, instructions, and return envelope was sent through the school mail. Of this sample, 20 males and 29 females returned completed protocols.

Instruments. This study investigated the relationship of responses to two instruments, the semantic differential (Osgood, 1957) and 50 of the Butler-Haigh (Rogers and Diamond, 1954) self statements.

The semantic differential consisted of 14 scales selected from those showing relatively high loading in the various factor analytic studies reported by Osgood (1957). Although care was taken to select items from the three factors, activity, potency, and evaluation, it was for the

purpose of tapping as broad a range of experience as possible rather than, as Osgood used them, to establish Distance scores on these dimensions. Since the interest here was in the actual number of differentiations made rather than the specific content of each differentiation, it was felt this instrument would yield maximum data within the limits of time subjects were likely to be willing to give to the tasks.

Scales were used to obtain responses to each of the concepts, My Own Self (s), My Ideal Self (i), General Consensus of Ideal Teacher ( $t_1$ ), and Own Ideal Teacher ( $t_2$ ). It was assumed the latter two concepts would be relevant to the teacher subjects and would screen the real purpose which was simply to obtain additional responses on this instrument.

Since the interest here is in the actual number of differentiations made, the following procedure was used to obtain six different scores: a) each of the seven places on each of the scales was numbered from 1 to 7, b) the absolute difference between all pairs of concepts on each scale was obtained, c) the absolute differences for each pair of concepts was summed across scales, and d) this procedure yielded the following difference scores (D):  $D_{si}$ ,  $D_{st_1}$ ,  $D_{st_2}$ ,  $D_{it_1}$ ,  $D_{it_2}$ ,  $D_{t_1t_2}$ . (D here refers to difference, not to Distance score as in Osgood, 1964.) The first of these is, of course, the self-ideal difference

score. The other D scores on the Semantic Differential were added to obtain the index of differentiation style. This score will be referred to as  $\sum ad$ . ( $\sum ad = Dst_1 + Dst_2 + Dit_1 + Dit_2 + Dt_1t_2$ .)

Categorizing tasks. Two identical sets of 50 randomly chosen Butler-Haigh (Rogers & Dymond, 1954) self statements were used for these tasks. These statements are listed in Appendix A. Two levels of ego-involvement were established by varying instructions. The instructions are based on those developed by Gardner (1953) for the Object-Sorting task used to obtain a measure of equivalence range. Essentially, they were to "put the statements together that seem to you to go together for some particular reason." The modification for the first task (Sort I) had the added stipulation to "treat the statements as statements, ignoring the fact they are first person or self-referring statements." This instruction defines the condition of less ego-involvement.

The instructions for Sort II were to "put the statements together which belong together as they apply to you." This instruction defines the condition of greater ego-involvement.

The differential response is the comparative number of categories a subject used on Sort II. For convenience, a use of fewer categories on Sort II will be referred to as a negative shift (ns), a use of more categories on Sort II

a positive shift (ps), and the same number of categories on both sorts as a zero shift (zs).

### Procedures

A booklet was constructed consisting of instructions for the semantic differential, the concepts to be rated, and instructions for the sorting tasks. The cover page was an introductory note from the experimenter which stipulated that experimental control was being sacrificed so that participation in the study could be anonymous and confidentiality thus assured. It was felt this was essential in view of the experimenter's position with the school system. It was hoped this would reduce the probable effects of source on the results. The instructions for the semantic differential are from Osgood (1957).

The instructions for the two sorting tasks were given on the last two pages of the booklet. Obviously, there was no way to control for the subject being aware of the nature of both sorting instructions before doing them. Following the instructions for Sort II there were brief instructions for returning the completed protocol in the school mail.

A third set of 50 blank IBM cards was included in the packet to be used to separate the stacks or categories.

The entire protocol was as follows:



## INTRODUCTION

You are being asked to participate in a dissertation study. This request for your participation is made in connection with my candidacy for a Ph.D. degree in clinical psychology at the University of Oklahoma. Presenting the material in this fashion, through the mail, is somewhat unusual in that there is an obvious loss of experimental control. However, there are certain advantages in that this is the only way the data can be obtained where it is manifestly clear that no names are used. Confidentiality may be thus totally assured. In other words, there is no possible way to associate this data with you. And for the purposes of this study this is absolutely necessary.

You are simply asked to participate. If you are willing to do so, turn this page and begin. However, if at any point, now or later in the test, you find, for any reason, you do not wish to continue, place all the material in the return envelope and place in the school mail.

I will schedule a time next fall to present and discuss the results of this study with you.

Break the seal and begin when you feel that you may have at least 15 to 20 minutes to finish the first part of the study.

Thank you very much for your help.

Merl Cornelius

The purpose of this portion of the study is to measure the meaning of certain concepts by having people judge them against a series of descriptive scales. In taking this test you will make some judgements as a kind of reporter of the concensus of opinions of people in the education profession. On other concepts you will be asked to make the judgements on the basis of what the concepts mean for you. Appropriate instructions will accompany each group of concepts. On the pages of this booklet you will find a concept at the top of the page and a series of scales beneath it. You are to rate the concept on each of these scales.

Here is how you are to use these scales:  
If you feel that the concept at the top of the page is very closely related to one or the other end of the scale, you should place your check-mark as follows:

fair X : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ unfair

or

fair \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : X : \_\_\_ unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong \_\_\_ : X : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ weak

or

strong \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : X : \_\_\_ weak

If the concept seems only slightly related to one side as opposed to the other side (but not really neutral), then you should check as follows:

active \_\_\_ : \_\_\_ : X : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ passive

or

active \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : X : \_\_\_ : \_\_\_ passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seems most characteristic of the concept you're judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe \_\_\_ : \_\_\_ : \_\_\_ : X : \_\_\_ : \_\_\_ : \_\_\_ dangerous

IMPORTANT: 1. Place check-mark in the middle of the spaces, not on the boundaries:

\_\_\_ : X : \_\_\_ : \_\_\_ X \_\_\_  
This Not This

2. Be sure you check every scale for every concept.

On the next two pages there are two concepts and a series of scales. The concepts are, My Actual Self and My Ideal Self. On these concepts check the scales as they apply to you.

(The scales used for each of the concepts were:

good	___:___:___:___:___:___:___	bad
unimportant	___:___:___:___:___:___:___	important
clean	___:___:___:___:___:___:___	dirty
disapproving	___:___:___:___:___:___:___	approving
harmonious	___:___:___:___:___:___:___	dissonant
active	___:___:___:___:___:___:___	passive
constrained	___:___:___:___:___:___:___	free
strong	___:___:___:___:___:___:___	weak
unsociable	___:___:___:___:___:___:___	sociable
stable	___:___:___:___:___:___:___	unstable
tired	___:___:___:___:___:___:___	refreshed
satisfied	___:___:___:___:___:___:___	unsatisfied
mild	___:___:___:___:___:___:___	intense
unpopular	___:___:___:___:___:___:___	popular
successful	___:___:___:___:___:___:___	unsuccessful

The other two concepts were introduced as follows:)

You doubtless have participated in many discussions of what an ideal teacher is like. On this page you are to check the scales in whatever way seems best to reflect the general consensus of what other people seem to feel is an ideal teacher. (This concept was: General Consensus of Ideal Teacher.)

On this page you are to check the scales in terms of your own notions about what constitutes an ideal teacher. (My Ideal Teacher.)

Since it is important to be able to take your time on the following tasks, do not continue unless you are reasonably sure you may finish it without interruption (approximately 15 to 30 minutes.)

This last task involves the three stacks of IBM cards in your packet. There are two stacks of green cards, labelled I and II, and a stack of yellow cards. Each of the green cards has a statement printed on it. The stacks are identical, but the instructions are different for the way each is to be handled. (The instructions for the second stack are on the following page and you are asked to avoid looking at them until Stack I is finished.)

Now take Stack I. The instructions are simply to put together into groups the statements which seem to belong together. Treat the statements as statements, ignoring the fact they are first person or self-referring statements. You may have as many or as few statements in a group as you like, so long as the statements in each group belong together for one particular reason. If, after you have thought about all the statements, a few do not seem to belong with any of the others, you may put these statements into groups by themselves. Please sort all the statements.

Obviously, there can be no right or wrong way to sort these statements. What is of interest is the way you sort them.

Be sure you have plenty of space. If you do not have a long counter space available, it might be helpful to place all the desks on the front row of a classroom together.

After you have sorted the statements to your satisfaction take one of the yellow cards and place it on top of each group of green cards. Then, stack the groups in whatever order seems most appropriate. Be sure to place the card marked I back on top of the stack and replace the rubber band.

Now, turn to the next page.

Now take the second stack of green cards, labelled II. The procedure is essentially the same as that for Stack I. This time, however, you are to put the statements together which belong together as they apply to you. In all other respects follow the same procedure as with Stack I.

After you have sorted the statements into groups place one of the yellow cards on top of each group of statements. Then, stack them in whatever order seems appropriate for you. Be sure to place the label card, Stack II, back on top and secure the stack with the rubber band.

Place all materials in the return envelope and place in the school mail.

Thank you very much for your help and cooperation.

## CHAPTER IV

### RESULTS

1. Proportion of differential responses. The distribution of Ss who used a) fewer, b) more, and c) the same number of categories under the condition of greater ego-involvement is shown in Table 1. The distribution by shift and sex is not significantly different from chance. Even though there are more Ss who used fewer categories under the condition of greater ego-involvement than in either of the other two groups, they constitute less than 50% of the Ss.

Table 1

Frequency of Differential Responses to Greater  
Ego-Involvement by Shift and Sex

Sex	ns	ps	zs	Total	$\chi^2$	p
Male	8	8	4	20	1.59	.50
Female	14	8	7	29	2.95	< .30
Total	22	16	11	49	3.71	< .20

2. Ego-involvement and number of categories. The answers to the questions regarding this relationship are

found in Table 2 and Table 3. Table 2 shows the mean number of categories used by Ss in each of the groups as defined by shift and sex on each of the sorts. Table 3 shows the results of t tests of comparison of these means. The probabilities are those associated with a two-tail test.

2a. As seen in Table 3 there is no significant difference between any of the groups tested in the number of categories when ego-involvement is minimal.

2b. On the other hand, under the condition of greater ego-involvement (Sort II), the comparison of the mean number of categories shows significant differences between male ns and ps Ss, female ns and ps Ss, and the total ns and ps Ss. The difference between female ps and zs Ss is not significant, but the difference between all ps and zs Ss is significant at the .05 level. The differences between female ns and zs Ss and between the total ns and zs Ss is not significant. Differences between male zs Ss and other groups were not computed because there were only four subjects in that group. There is no significant difference between the mean number of categories for male and female Ss. It would appear that group differences are cancelled when Ss are combined by sex whereas sharp differences appear when Ss are separated by shift.

2c. The t tests of the differences between the mean number of categories on Sort I and Sort II is shown in Table 4. The listed probabilities are for a one-tail

Table 2

Mean Number of Categories by Shift  
and Sex on Sort I and Sort II

Sort	Sex	ns	ps	zs	Total
I	Male	8.00	10.375	5.75	8.5
	Female	11.00	9.125	7.571	9.655
	Total	9.909	9.75	6.909	9.183
II	Male	4.00	15.125	5.75	8.8
	Female	5.5	13.625	7.571	8.241
	Total	4.954	14.375	6.909	8.469

Table 3

t Tests of Mean Number of Categories  
by Shift and Sex within Sorts

		Male		Female		Total	
		ps	zs	ps	zs	ps	zs
I	ns	1.033	--- <sup>1</sup>	.831	1.117	.086	1.416
	ps		--- <sup>1</sup>		.761		1.526
II	ns	3.734 <sup>**</sup>	--- <sup>1</sup>	3.752 <sup>*</sup>	1.088	4.904 <sup>**</sup>	1.597
	ps		--- <sup>1</sup>		2.049		3.013 <sup>*</sup>

\* Significant at .05 level, two-tail test.

\*\* Significant at .01 level, two-tail test.

<sup>1</sup> Test not made because of small n in male zs group.



test. (There is no difference for zs Ss by definition.)

Table 4

Differences Between Mean Number of Categories  
on Sort I and Sort II by Shift and Sex

Sex	Shift					
	ns		ps		Total	
	<u>t</u>	p	<u>t</u>	p	<u>t</u>	p
Male	3.63	< .005	1.32	< .15	1.29	< .15
Female	2.487	< .025	1.778	< .05	.921	
Total	3.341	< .005	3.058	< .005	.585	

Tabled p values are for one-tail test.

The difference between the means for the total of each shift group is significant at the .005 level. There is no significant difference for the totals within each sex. Within the groups, the difference is significant for the male ns Ss at the .005 level, the female ns Ss at the .025 level, and the female ps Ss at the .05 level. There is no significant difference for the male ps Ss. The importance of these statistics is not only in the differences that appear but in the fact that no difference in categorizing behavior as a function of ego-involvement would have been noted if the subjects had not been separated according to the differential responses.

### 3. Dsi and Categorizing Behavior.

a. The first part of this question inquires into the relationship of self-ideal discrepancy (Dsi) and categorizing behavior when ego-involvement is minimal. To obtain an answer to this question a Pearson  $r$  was obtained for each of the groups and for totals as shown in Table 5. The probabilities are for a two-tail test.

Table 5  
Correlation of Number of Categories on  
Sort I with Dsi by Shift and Sex

Sex	<u>ns</u>		<u>ps</u>		<u>zs</u>		Total	
	r	p	r	p	r	p	r	p
Male	-.6228	< .10	.4929		.1740		.1918	
Female	.0059		.5546		.4550		.1704	
Total	-.1136		.4656	< .10	.4027		.1763	

Tabled  $p$  values are for two-tail test.

Of the six groups only the male ns Ss show a relationship ( $r = -.6228$ ) in the direction that would be predicted on the basis of previous research into the relationship of stress and categorizing behavior (Wolfe, 1966). The ps Ss, when combined across sex show a relationship ( $r = .4656$ ) but in the opposite direction. The female ns Ss show a zero correlation ( $R = .0059$ ). This is the first evidence of a sex differential in the response patterns. A review

of the correlations across shift and sex reveals how, with the exception of the ps Ss, differences by both sex and shift are cancelled when data is combined. It is interesting to note that here the ps and zs Ss appear more nearly alike, whereas in the preceding section when means were compared the ns and zs Ss were more nearly alike.

To explore further the extent to which these groups are different,  $z'$  tests of the difference between correlations were done. The probability associated with the difference between the correlations of male ns and ps Ss is .02. From the correlations and their differences it appears that male ns and ps Ss represent different populations. The probability of the difference between female ns and ps Ss is .12. For the difference in correlations between male and female ns Ss the probability is .08. The probability for the difference between all ns and ps Ss is .08.

b. The second part of the third question is concerned with the relationship of Dsi and number of categories under the condition of greater ego-involvement on Sort II. The correlations between these two measures is shown in Table 6.

The correlations are significantly different from zero for the male ps Ss and for the total ps Ss. There is no significant correlation in either of the female groups. Again, the combination of male and female ps Ss produces a

Table 6  
Correlation of Number of Categories on  
Sort II with Dsi by Shift and Sex

Sex	<u>ns</u>		<u>ps</u>		<u>zs</u>		Total	
	r	p	r	p	r	p	r	p
Male	-.2213		.7249	< .05	.1740		.1766	
Female	.1720		.4716		.4550		.2965	
Total	.0059		.5772	< .02	.4027		.2387	

Tabled p values are for two-tail test.

more significant correlation. The combination of male and female ns Ss produces a zero correlation apparently due to the opposite direction of the correlations obtained within each sex group.

The  $z'$  test of differences between correlations of the male ns and ps groups yielded a probability of .07. Between the correlations of female ns and ps groups the probability is .54. The probability associated with the differences between the r for male and female ns Ss is .22, for male and female ps Ss, .26, and for total ns and ps Ss is .07. It is clear that male and female Ss are not as strongly differentiated as on Sort I and Dsi correlations. The same is true for female ns and ps Ss and for male and female ns Ss. The failure of the female ps Ss to increase in correlation is probably due to one subject. The

correlations between number of categories on Sort II and Dsi for the zs Ss are, of course, identical with those obtained of Sort I and Dsi.

4. Using the sum of difference scores ( $\sum ad$ ) on the semantic differential as a gross measure of a kind of cognitive style appropriate to that task, the questions were asked about the relationship of: a)  $\sum ad$  and the number of categories under both conditions of ego-involvement, and b)  $\sum ad$  and Dsi.

a. The correlations between these two measures are presented in Table 7. The only group in which a correlation was obtained which even approached significance was the Total zs group. This correlation is of interest because it is the only evidence in this study which might suggest that zs Ss differ from the other groups in ways other than the shift itself.

b.  $\sum ad$  and Dsi. This relationship was investigated on the assumption that Dsi may very well be a function of the typical number of differentiations a subject makes on self-related concepts within the limits imposed by the instrument. These relationships are presented in Table 8. The correlations are significantly different from zero for the male ps Ss ( $r = .773$ ), female ps Ss ( $r = .907$ ), and all ps Ss ( $r = .813$ ). The correlation for total zs Ss (.722) is significantly different from zero. The totals within sex and total for all Ss are also significant. The difference

Table 7

Correlation of Number of Categories  
and  $\sum ad$  by Shift, Sex, and Sort

Sort	Sex	Shift							
		ns		ps		zs		Total	
		r	p	r	p	r	p	r	p
I	Male	-.133		.158		.532		.101	
	Female	.053		.439		.605		.257	
	Total	-.007		.177		.576	<.10	.178	
II	Male	.078		.216		.532		.038	
	Female	.179		.486		.605		.107	
	Total	.107		.333		.576	<.10	.070	

Tabled  $p$  values are for two-tail test.

Table 8

Correlations of  $\sum ad$  and Dsi by Shift and Sex

Sex	Shift							
	ns		ps		zs		Total	
	r	p	r	p	r	p	r	p
Male	.391		.773	<.05	.666		.624	<.01
Female	.430		.907	<.01	.756	<.10	.567	<.01
Total	.390		.813	<.001	.722	<.02	.575	<.001

Tabled  $p$  values are for two-tail test.

between the correlations of male ns and ps Ss, and of female ns and ps Ss is not significant. However, the z' test of difference of the total ns and ps Ss is significant at the .05 level.

5. To facilitate a comparison of the results of this study and the Glixman study (1965) the correlations of the number of categories between Sort I and II were obtained. These correlations are presented in Table 9.

Table 9  
Correlations of Number of Categories on  
Sorts I and II by Sex and Shift

	Shift			Total
	ns	ps	zs	
Male	.1494	.5821	1.00	.7098 <sup>c</sup>
Female	.7855 <sup>c</sup>	.7953 <sup>a</sup>	1.00	.4874 <sup>b</sup>
Total	.7400 <sup>c</sup>	.6377 <sup>b</sup>	1.00	.5243 <sup>c</sup>

<sup>a</sup>Significant at .05 level.

<sup>b</sup>Significant at .01 level.

<sup>c</sup>Significant at .001 level.

Table 10 contains the relevant data from the Glixman (1965) study. Of particular concern are the correlations between War and Self. This aspect of the two studies will be discussed in the next chapter.

Table 11 is also from Glixman's 1965 study and contains the mean number of categories used in the different meaning domains by men and women.

Table 10

Interdomain Correlation Coefficients  
for Men, Women, and Total<sup>1</sup>

	Men		Women		Total	
	War	Self	War	Self	War	Self
Objects	.44	.20	.40	.59 <sup>*</sup>	.47 <sup>**</sup>	.47 <sup>**</sup>
War		.80 <sup>**</sup>		.45		.66 <sup>**</sup>

<sup>\*</sup> Significant at .05 level.

<sup>\*\*</sup> Significant at .01 level.

<sup>1</sup> Taken from Glixman (1965, p. 372).

Table 11

Distribution of means over Sex and Meaning  
Domain Number of Categories<sup>1</sup>

Sex	Meaning Domain			Total
	Objects	War	Self	
Male	13.00	5.42	5.53	7.98
Female	17.82	10.18	11.71	13.24
Total	15.28	7.67	8.44	10.46

<sup>1</sup> Taken from Glixman (1965, p. 373).



Reliability of the grouping by differential response. The answer to the first question posed by this study may be answered categorically: the number of Ss who used fewer, more, or the same number of categories in the condition of greater ego-involvement was not significantly different from a chance distribution, either within sex or for the total (see Table 1). The remaining questions were asked so that, regardless of the distribution, it might be discovered whether or not the differential response was accompanied by similar differential response patterns on other measures.

The difference found between ns Ss and ps Ss on Sort II is emphasized by the fact that they were not different on Sort I. They may thus be described as representing divergent responses to the ego-involving instructions. The results of the t tests in Table 4 emphasize the divergence in that, for the ps group the increase in number of categories was significant at the .005 level, while the decrease for the ns group was also significant at the .005 level. It should be emphasized that no differences between Sort I and Sort II appear when the data is analyzed only by sex or for the total. In other words, the differences are such that they cancel each other when the Ss are grouped only by sex or total. Hence, had not the Ss been segregated according to their differential response it would have been necessary to conclude that manipulation of ego-involvement

by instructions had no effect on these Ss.

The opposite signs of the correlations between Dsi and number of categories on both sorts, plus the significance of the difference between correlations for the male ns Ss and the male ps Ss, offers additional support for the discriminatory power of the differential response.

From the two sets of correlations involving Dsi and number of categories, the ps group appears to be rather homogeneous. This is not true with the ns Ss where a marked sex difference appears. The position of the zs Ss is somewhat ambiguous.

With the possible exception of the zs Ss the relationship of number of categories to  $\sum ad$  offers no further support to the notion that the shift variable reliably discriminates a mode of cognitive organization. The correlation (.576) for these Ss is the only quantitative evidence in the study which suggests zs Ss are different from the other groups. Even though the discriminating power of zs is quite tenuous, not including it in future research would possibly reduce the discriminating power of the other two differential responses.

The most conclusive evidence for the consistent differentiating capacity of shift is found in the relationship of Dsi and  $\sum ad$ . Here the correlations for ns and ps Ss is significantly different at the .05 level. The fact that these two measures are independent of the operations

on the sorting tasks which provides the criteria response for separating them gives considerable weight to the reliability of the discriminating power of the shift response. The  $z_s$   $S_s$  are again, in the  $D_{si} - \sum a_d$  relationship, undifferentiated. This variable has the least claim as a discriminating variable.

To summarize, a divergent pattern of categorizing behavior emerges, both in relation to ego-involvement and to self-ideal discrepancy. The diverging pattern reliably delineates two populations according to the change in mode of response as a consequence of an increase in ego-involvement. This pattern is inconsistent with the usual expectation that ego-involvement has a linearly inverse relationship with categorizing behavior. Further, self-ideal discrepancy, whether taken as a measure of internal stress or of a particular ego-relevant domain, shows no linearly inverse relationship with categorizing behavior. Rather, the present results suggest a more general reformulation is in order: a) Within individuals it appears that increased ego-involvement results in cognitive reorganization; the nature or mode of the reorganization cannot be predicted from the stimulus situation. b) The relationship of self-ideal discrepancy and categorizing behavior is a function of the ego-relevance of the situation and of the mode of reorganization when ego-involvement is increased.

In addition to the two main groups identified, the

data suggests a sex difference for the ns group and a slightly differentiated zs group.

The data for this study is presented in Appendix B.

## CHAPTER V

### DISCUSSION

Introduction. The purpose of this study is to determine whether or not differential categorizing behavior in two different degrees of ego-involvement reflects different modes of cognitive organization. The particular formal aspect of cognitive organization under consideration is conceptual differentiation which categorizing behavior is assumed to represent. After a description of the restrictions placed on the generalizability of the results, the discussion will focus on various aspects of the results in the following order: interpretation of ego-involvement in the study, a description of and speculation about the cognitive processes in each of the groups and theoretical implications, and a summary of the research suggested throughout the body of the discussion.

Limitations of study. There are certain aspects of this study which need to be taken into account in considering the generalizations of the results.

1. The subjects in this study may be seen as self-selected on two counts. First, only 49 of the 100 invited

to participate responded. Secondly, the subjects have all made the same vocational choice of teaching. The personality factors related to these two behaviors may also be related to the variables under study here.

2. The use of the mailing procedure leaves many aspects of the experimental situation uncontrolled. It is not known, for example, if Ss provided themselves enough space to sort the cards, whether or not they were interrupted, or whether or not they had adequate time for the tasks. A major effect may have occurred as a function of not controlling for sequence of exposure to the two sorting tasks.

3. Another bias probably occurred as a function of the E's position with the educational system from which the teacher-subjects were drawn. In view of the importance of source in communication, it seems likely that this factor was related to the self-selecting process as well as the responses, in spite of the assurances of anonymity.

4. A stack of 50 blank cards was given each S to separate the categories. This, of course, limited the number of categories to a maximum of 50 in both sorts. It should be noted none of the subjects used all of these cards. However, the number of these cards may have had an effect on some particular groups of subjects in this study. The basis of this speculation is the finding that dependency on external cues for cognitive organization is a variable

with differential importance for the various groups of subjects. In short, the number of these cards may have constituted a demand effect (Orne, 1962).

5. The most severe restriction placed on this study is the small n in each of the sex by shift groups which this study sought to delineate.

Ego-involvement. The salient features of the results are: a) failure of a significant number of Ss to use fewer categories in the condition that has been called "greater ego-involvement," and b) the subsequent finding that a particular segment of those who do not use fewer categories in that condition (ps Ss) manifest an internal consistency of response patterns and are reliably different from the Ss (ns) who do follow expectations.

The difficulty comes in trying to account for the behavior of ps Ss. In terms of the accumulated evidence in the studies of ego-involvement and ego-relevant domains, the self-reflexive instructions should set the stage for an obvious condition of ego-involvement. This would also appear to be congruent with common language usage; that is, self-evaluation is ego-involvement.

It is, of course, plausible to say that the ps Ss simply were not ego-involved. But something systematic apparently occurred, and it seems reasonable to assume that it had something to do with these instructions. With no independent measure of ego-involvement with self it is

clear that the only statement that can be made is in terms of an a priori assumption that the stimulus condition defined that particular form of ego-involvement. If this position can be tentatively accepted it might then be said, pursuant to further investigation, that differential response reflects quite different modes of organizing experience of self. Further, that one of these modes (ps) is probably quite different from ego-involvement in the way the term is usually used. It is suggested that though the denotative meaning of the instruction for the two kinds of Ss is the same, the connotative meaning is probably quite different.

In any case, it seems clear that the progression from Sort I to Sort II cannot be seen as a linear extension of increased ego-involvement in terms of the response as, for instance, the progression from objects to war.

A comparison of the means of the self sorts in Glixman's (1965, 1967; Glixman & Wolfe, 1967) studies with the means in this study suggests the presence of a differential preference for one or the other of two modes of responding to the statements. Instructions which simply ask S to sort the statements in whatever way the S feels is appropriate are likely to result in considerable variance of response. That is, they may sort them as statements, as on Sort I in this study, or they may sort them as self-reflexive as on Sort II. In the latter case, according to



the results here, another level of differential response to the self-reflexive domain takes place.

In this context, it seems appropriate to refer to the two instructional sets as defining a self-statement domain and a self-reflexive domain. The variable with which this study is chiefly concerned, the shift variable, can then be best described as a differential response to the self-reflexive domain. The operation, however, requires responses to the self-statement domain to establish a base line for defining the differential response. Further study is needed to establish whether there is a response set for using the statements self-reflexively or as object-statements and, if so, whether it is related to the differential response.

The issue of the relationship of differential response to the self-reflexive domain and ego-involvement in a social issue domain can then be addressed with at least two possible strategies: a) establish a sample of ns and ps Ss and test whether there is a differential response to categorizing statements concerning a relevant issue with which the sample would likely be ego-involved. (For example, it seems likely that the present Ss would see the current legislative program for education as extremely ego-involving.) b) Using the reverse approach, discover a sample presumably involved in an issue and test with own categories procedure and the two self domains to determine

whether ns and ps Ss are differentially ego-involved. The latter strategy would appear to be more economical.

Description of the cognitive processes. In order to explore the characteristics of the cognitive organization of the groups a tentative analysis of the tasks will be offered at this point. Since the measures obtained are assumed to represent levels of differentiation, this analysis will be in terms of the differentiative-integrative dimension.

The categorizing task and semantic differential both require differentiative and integrative processes, but in different ways. The categorizing task, simply through the rubric of the instruction "to put together into groups the statements that seem to belong together" spells out the minimal integrative task. That is, the task is to find statements that are like one another (to the S) in some way. But the result of this operation is to define other statements as "not like" which is a concomitant differentiating process and the one which becomes visible in these procedures. However, these statements may be seen as alike to begin with in that they are all self-referring, first person statements. Hence, the logic of the situation requires, if further sorting is to be done at all, the extraction of some additional dimension (or abstraction) to organize the items within categories. The capacity and/or readiness to extract these dimensions is then a determinant of the number

of categories used.

From this analysis it may be tentatively inferred that both the use of a very few or a great many categories is an index of an unsuccessful interaction with the statements to extract an added dimension to organize the statements within categories. The mid-range may then be seen as representing an optimal level of integration of both within and between categories. In other words, the mid-range appears to offer more possibility for integration between categories.

The differentiative-integrative tasks on the semantic differential are considerably simplified relative to the categorizing tasks. The recorded response is on an ordinal position of likeness between the concept (e.g., My Ideal Self) and the selected polar word (e.g., good). The vehicle of integration is thus provided by the instrument itself in the ordinal scales and the S does not have to rely on his own resources for this factor as on the sorting task. It should be emphasized that the present data is only of the differentiative aspect of the differentiative-integrative dimension.

Although this task analysis emphasizes differences between the two instruments, there is a possibility of a common factor which was instrumental in the results obtained. Of the 15 scales used in the semantic differential, 7 load heavily on the evaluative factor according to various studies

reported by Osgood (1964). An inspection of the Butler-Haigh statements (see Appendix A) leads one to suspect that most of them would also load on an evaluative factor. This similarity suggests the possibility that the two tasks may more nearly tap the same levels of personality than the comparison of the cognitive aspects of the tasks would suggest.

From the postulated requirements of the tasks the ps group in using more differentiations perform in the way Gardner (1959) describes narrow equivalence range Ss, i.e., as adhering more closely to the criteria for inclusion in a category.

In view of the consistency of the positive correlations on various measures ps Ss appear to maintain a consistent level of differentiation whether they supply their integrative vehicle or whether it is supplied by the instrument.

In the presumed optimal range the increase in differentiation may reflect a realistic reliance on the capacity to make differentiations and integrations in such a way as to add to the richness of experience.

The extended or extreme result of a cognitive operation based on increased differentiation would result in one item per category. It is of interest to note that one-half of the ps Ss used 15 or more categories on Sort II; 4 used 22 or more; the highest number of categories was 29. It

seems reasonable to suspect that the extreme of this range represents diminished returns on the side of integration, i.e., isolation or compartmentalization. In the Lewinian sense the extreme differentiation may represent more impermeable boundaries. It is suspected that Witkin's description of field-independent subjects is applicable here:

. . . although field-independent people are often able to function with a fair degree of autonomy from others, some of them are strikingly isolated individuals, overcontrolled, cold and distant, and unaware of their stimulus value (Witkin, et. al., 1962, p. 3).

The salient characteristic of this group is the pervasiveness of cognitive style. It is almost as if adhering more strictly to criteria is a fundamental trait of their personality organization.

Since Dsi is highly correlated with the two measures of cognitive differentiation (number of categories on Sort II and  $\sum ad$ ), interpreting Dsi for ps Ss as something other than another measure of this general style is untenable with the present data. This is not to say there is no motivational properties related to the magnitude of the discrepancies. Indeed, if the suspected lack of integration at the extreme levels of differentiation does hold in further investigation it seems reasonable such motives could be inferred.

For ns Ss Sort II is a movement toward dedifferentiation. In other respects, too, they appear to be opposite the ps Ss. For example, they presumably are looser in the

strictness of meeting criteria for inclusion of an item within a category, and consequently become less sensitive to subtler differences. It may, however, eventually be found that, rather than laxness in meeting criteria, they may perceive or develop less precise or more ambiguous criteria.

Ns Ss rely less on the capacity to interact with the material and extract added dimensions to integrate within categories. 41% of these Ss used only 2, 3, or 4 categories. Speculating further, it is as if, in the absence of the contributed dimension, scales or abstractions, these Ss attempted to achieve precision by dichotomizing the statements.

The statistical analysis also strongly suggests a sex difference for ns Ss; hence further discussion of these Ss will be by sex.

Male ns Ss have a relatively strong negative correlation between Dsi and Sort I, a non-significant negative correlation between Dsi and Sort II, and a non-significant positive correlation between Dsi and  $\sum ad$ . Two salient features emerge from this pattern. The first is the lack of similarity in the extent of differentiation across instruments and across content. The second feature is the inverse relationship between categorizing and Dsi. From these features these Ss seem to be characterized by a greater reliance on external cues for organization in

inverse proportion to their use of internal resources.

The female ns Ss show no relationships between any of the sets of measures. This seems to be due to clustering within a relatively narrow range on all measures. The only statistically significant aspect of their data is the difference in number of categories on Sort I and Sort II. However, inspection reveals some interesting aspects of the data from this group.

Further reliability studies will have to determine whether or not shift will differentiate Ss who use the same number of categories under the condition of greater ego-involvement on other independent measures. In the present study the range of overlap of ns and ps Ss in number of categories on Sort II is 5 through 13. In checking the data further it is seen that dichotomizing the female ns Ss into two groups the overlap group who used 5 - 13 categories and those who used 2, 3, or 4 categories isolated the latter group as one where Ss attained low scores on all measures. In this sense the cognitive style of the female low categorizers may be said to be pervasive, as is the ps group. In this instance, however, little differentiation is made irrespective of content or instrument. Borrowing Witkin's term, these Ss appear to make extreme use of global thinking.

Further examination of the scores of the female high categorizers (ns) reveals a strong negative correlation

between Dsi and Sort II ( $-.8769$ , significant beyond the .05 level, 4 d.f.). The probability would thus seem to be high that female ns Ss represent two populations with the high category group being different from the male ns group only in the use of slightly more categories on both sorts. Thus, what originally appeared to be a between sex difference now appears to be a within sex difference.

For ns Ss (excluding the female low categorizers) Dsi seems to emerge as a special component of cognitive organization with specialized meaning. It is speculated that the imbalance or motivational property imputed to this measure is a function not only of its magnitude but of the lack of integration with other components of personality organization. This is similar to Kaplan and Shannon's (1966) suggestion that self-ideal discrepancy reflects anxieties concerning inconsistencies in the self rather than inconsistency itself. In terms of the task analysis reliance on external cues to differentiate self and ideal self increases inversely with the degree of reliance on internal resources to make differentiation about self. Thus, a high Dsi and a low number of categories seem to be reciprocal reflections of failure of self, a failure which is exacerbated by self-reflexive involvement. For these Ss it would seem reasonable to suspect that Dsi does represent stress as a function of its magnitude.

The obtained correlations for zs Ss between Dsi and



the two sorts must be discounted for two reasons. First, there is a very low  $n$ , and second, one  $S$  accounts for most of the variance in each of the two groups.

Since the previous analysis is concerned with differentiation of self, a brief comparison with Witkin's (1962) differentiation hypothesis seems in order. For Witkin, differentiation generally refers to the complexity of a system's structure. In terms of the tests used in research (Rod and Frame, Embedded Figures Test), it specifically refers to the ability to experience the body as a discrete entity, as a special manifestation of a more general capacity to keep things apart in experience (Witkin, et. al., 1962). The procedures used in this study identify subjects according to whether they differentiate or dedifferentiate on a self-reflexive sorting task relative to a self-statement sorting task. Field-articulation measures and differential response as used in this study thus appear to have commonality of both content and cognitive organization sufficient to warrant further investigation.

Summary of suggested research. Further study has been suggested at several points in the preceding discussion. They may be summarized as follows:

1. Elaboration and refinement of procedures to discover modes of integration.
2. Test the relationship of shift and field-dependence measures.

3. Further investigation of the relationship between ego-involvement as measured by own-categories procedures and differential response to the self-reflexive domain.

4. Modification of the present procedures to include a larger n and other independent measures to

- a. test the validity of the shift variable.
- b. factor analyze the content of semantic differential and Butler-Haigh statements.
- c. explore relationships of shift with interpersonal style.
- d. test the apparent within sex difference of female ns Ss.

## CHAPTER VI

### SUMMARY

This study attempted to explore two sets of relationships, ego-involvement and categorizing behavior, and self-ideal discrepancy and categorizing behavior. The expectation has been for fewer categories to be used under greater degrees of ego-involvement, and for greater degree of self-ideal discrepancy. Since relevant studies report a minority of Ss who do not conform to expectations, this study sought to explore the possibility that those responses were also systematic. The procedures here made it possible to discover more about cognitive organization as it is related to number of categories on a self-reflexive sorting task relative to the number used on a self-statement sorting task.

Of protocols mailed to 100 randomly selected elementary school teachers, 49 Ss, 20 male and 29 female subjects returned completed protocols. The protocols consisted of two sorting tasks and a semantic differential consisting of 4 concepts and 15 scales. The two sorting tasks consisted of two identical sets of 50 of the Butler-Haigh (1950)

self-statements. The instructions were modifications of Gardner's Object Sorting Test (Gardner, et. al., 1959). The modifications were such as to define two modes of responding to self domain statements: the self-statement domain and the self-reflexive domain. The concepts on the semantic differential were "My Own Self", "My Ideal Self", "Other's Notion of Ideal Teacher", and "Own Notion of Ideal Teacher". From this instrument two measures were obtained, Dsi (self-ideal discrepancy) and  $\sum ad$  which was used as an index of cognitive style appropriate for that instrument with self-related concepts.

The subjects were separated into sex by shift groups. Shift was defined by whether a subject used fewer, more, or the same number of categories on a self-reflexive sort relative to the number of categories used on a self-statement sort. The distribution was tested by  $\chi^2$  and found to be non-significant. The difference in number of categories between shift groups within and across sex, between sex groups within and across shift, and between and within the two sorts were tested with student t. Correlations were obtained for the relationships between number of categories on both sorts, self-ideal discrepancy, and sum of all other difference scores on the semantic differential.

The findings of the study may be summarized as follows:

1. The number of Ss who used fewer, more, or the

same number of categories on the self-reflexive sort relative to a self-statement sort was not significantly different from chance. The relationship of these two categorizing tasks thus cannot be seen as a linear extension of a dimension of ego-involvement.

2. The use of fewer and more categories identified two groups of Ss (male negative shift and all positive shift subjects) who are different on other measures.

3. Task analysis and exploration of consistencies of other patterns reveals two sub-groups in the female negative shift group. This sex difference offers some possibility of clarifying what has been seen previously as between sex differences.

4. A fourth group, those who used the same number of categories on both sorting tasks (zero shift), are least differentiated on other measures in this study.

The presence or absence of cues to make the sorting task self-reflexive appears to be a determinant of categorizing behavior using self-statements. A comparison of the present study with the Glixman study suggests a differential preference for making the statements self-reflexive in the absence of such cues.

Self-Ideal discrepancy has no linear relationship with categorizing behavior of self-statements. The meaning of this construct should be interpreted not only in terms of its magnitude, but whether or not the level of

differentiation is congruent with the cognitive style in other measures. There appears to be no reason to consider self-ideal discrepancy a unitary construct.

Several restrictions limit generalizing these results. The most severe of these is the small n in each group.

Possibilities for further research were suggested and summarized in the previous chapter.

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**APPENDIX A**  
**SELF STATEMENTS**

## Self Statements

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Item Number	Statements
1	I feel uncomfortable while talking with someone.
5	I often kick myself for the things I do.
6	I often feel humiliated.
7	I doubt my sexual powers.
9	I have a warm emotional relationship with others.
11	I am responsible for my troubles.
15	I can accept most social values and standards.
17	I have a hard time controlling my sexual desires.
18	It is difficult to control my aggression.
20	I am often down in the dumps.
21	I am really self-centered.
26	I can usually live comfortably with the people around me.
27	My hardest battles are with myself.
28	I tend to be on my guard with people who are somewhat more friendly than I had expected.
29	I am optimistic.
30	I am just sort of stubborn.
36	I feel helpless.
37	I can usually make up my mind and stick to it.
38	My decisions are not my own.
39	I often feel guilty.
40	I am a hostile person.
41	I am contented.
42	I am disorganized.
44	I am poised.
47	I am impulsive.
52	I have the feeling that I am just not facing things.
53	I am tolerant.
58	I feel inferior.
59	I am no one. Nothing seems to really be me.
60	I am afraid of what other people think of me.
61	I am ambitious.
62	I despise myself.
65	I just don't respect myself.
66	I am a dominant person.
68	I am assertive.
71	I am confused.
72	I am satisfied with myself.
73	I am a failure.
74	I am likable.
78	I am relaxed, and nothing really bothers me.
79	I am a hard worker.
80	I feel emotionally mature.

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Item Number	Statements
83	I really am disturbed.
85	I feel insecure within myself.
88	I am intelligent.
90	I feel hopeless.
93	I am inhibited.
95	I am unreliable.
98	I feel adequate.
99	I am worthless.

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## APPENDIX B

### RAW DATA

## Raw Data

	Male				Female			
	Sort		Dsi	$\Sigma$ ad	Sort		Dsi	$\Sigma$ ad
	I	II			I	II		
Negative Shift	10	3	22	112	8	4	12	46
	6	2	32	109	6	2	6	40
	12	3	11	81	23	10	18	72
	6	5	28	102	5	3	10	75
	5	2	17	42	5	2	14	69
	9	8	15	59	22	4	12	98
	7	5	21	224	4	2	14	85
	9	4	15	30	15	8	16	86
					3	2	11	88
					10	5	34	93
					7	6	28	157
					23	13	13	111
					7	4	13	156
					16	12	13	80
Positive Shift	10	14	26	188	8	10	8	23
	7	16	14	43	11	23	8	24
	23	24	18	56	5	6	14	32
	14	15	19	64	6	9	6	51
	9	29	23	85	12	22	33	155
	11	12	15	101	10	16	26	95
	4	5	5	20	7	8	13	52
	5	6	4	35	14	15	20	58
Zero Shift	3	3	13	65	4	4	2	12
	3	3	9	32	5	5	26	60
	3	3	9	57	6	6	21	72
	14	14	11	69	6	6	21	72
					7	7	33	84
					7	7	13	86
					18	18	28	93