

A STUDY OF THREE FACTORS UNDERLYING THE  
"OWN CATEGORIES PROCEDURE"

By

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"OWN CATEGORIES PROCEDURE"

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## CHAPTER I

### INTRODUCTION

Various variables have been explored in relation to the judgment of social stimuli.

The available literature is not in complete agreement on the manner in which these variables affect the judgment of social stimuli. One relevant variable is that of cognitive sophistication. Although there is agreement that different individuals have differences in "cognitive style," there is disagreement as to its basis and function (Bruner & Tajfel, 1965a; Gardner & Schoes, 1965; Bruner & Tajfel, 1965b).

Upshaw (1965) in discussing the differences in cognitive style of "broad" and "narrow" categorizers suggests that the "sophisticated judge with a broad view makes less fine distinctions than does his provincial counterpart among elements which they both consider (p. 63)." The findings of Leventhal and Singer (1964) indicate that individuals of differing cognitive complexity tend to be differentially sensitive to informational content. Tripodi and Bieri (1966) found that cognitively complex subjects tend to conceptualize the interpersonal world in more elaborate terms than less sophisticated subjects. Zajonc (1968), in reviewing the available literature, concludes that the ways in which individuals organize the world about them differs, but that the systematic basis for this is not clear.

With regard to the stimulus dimension, a study by Sherif, C (1951)

is relevant. Indian and white children performed differently when the test items were changed from digits preceded by dollar signs (simple) to statements of socially valued items (complex). The results of the study revealed that the white children performed slightly better in the simple situation and significantly better in the complex situation. These findings would seem to infer that subjects who do not have the same background of experience will perform differently comparing complex items to simple items. Osler & Trautman (1961) and Wolff (1967) have shown that increasing the stimulus complexity of the same meaning domain has differential effects on concept attainment and utilization although the nature of these effects has not been definitively ascertained.

Sherif and Hovland (1952), Sherif & Hovland (1961), and Sherif, Sherif, and Nebergall (1965) all have employed the "own category" technique for data collection. In 1952, Sherif and Hovland outlined the importance of the "own category" technique in attitude assessment:

"An individual's tendency to adopt a constricted extended scale and his characteristic pattern for distributing items within the scale may indirectly reveal the individual's attitude more clearly than the answers given to standard attitude scale items when one is conscious of the possible interpretation by others of each item he answers (ch. Campbell's (1950) discussion of "disguised-Structured" methods of indirect attitude assessment)." page 1.

Based on this earlier work of Sherif, Sherif, and Nebergall (1965) postulated the following in relation to research conducted in relation to the 1960 presidential election.

- A. If a person has an attitude toward the stimulus domain, his judgments of specific objects in that domain are to some extent, relative to the categories of his own reference scale, in addition to the context of immediate and preceding stimulation.
- B. To the extent that the domain has high priority in his

scheme of personal relatedness with his social world, his latitude of acceptance becomes an anchor or standard for his placement of other items in the domain. In other words, the range of positions acceptable to him becomes an anchor proportional to his personal involvement in upholding it.

- C. To the extent that his own position becomes the most salient anchor in the situation, the individual's categorization of items is evaluation of the items. There is now a considerable body of research supporting this statement (Sherif, Sherif, and Nebergall 1965). Even when instructed to heed only the stimulus attributes of the items and categorize them on an impersonal dimension, the highly involved individual performs the task in terms of his agreements-disagreements with the items, including his assessments of their truth and falsity. One may temporarily force him to follow instructions by insisting that he compare one item with another, as in the method of paired comparisons. He can discriminate among the items but, barring special arrangements requiring him to do so, he simply does not divorce the task of judging the items from his evaluations of them.
- D. When his own stand is the anchor, other items will be displaced toward his acceptable category (assimilation) or away from it (contrast), proportional to their proximity or difference from his own stand. The additional, necessary condition for these systematic displacements is that the objects lack, in some degree, objective properties which are readily and uniformly perceived as defining membership in a particular category. For example, strongly worded statements of an extreme position on a social issue are not displaced systematically to any significant degree. These are readily identified as extreme positions in terms of the prevailing social realities. Systematic displacements are found, however, for less extreme and intermediate positions on the same issues. (Sherif, C., Page 357).

A consistent finding using this technique has been the tendency of ego-involved individuals holding an extreme attitude to see things in "black" and "white." Sherif and Hovland expressed the results of their work in these terms: "...highly involved persons, judging these statements in terms of their favorableness-unfavorableness to negroes, produced bimodal distributions of the statements into categories. Intermediate categories were neglected while disproportionate numbers of

items were placed in the extreme category farthest removed from the position the individual found most acceptable."

Atkins, Deaux, and Bieri (1967) and Ostrom (1966) have called for the exploration of variables other than ego-involvement and/or extreme attitude in relation to the dynamics of social judgment and attitude change. While extremity of attitude and ego-involvement can be shown to be independent (Ward, 1965), they are usually concomittant. Developmental level (age), intelligence and education are related to concept availability and utilization (e.g., Denny, 1966: Stone, 1968: Davey, 1968).

This work explored the "own-category" judgment of social stimuli by cognitively sophisticated and cognitively naive individuals of pro, neutral, and anti attitudes in relation to two sets of stimuli, simple and complex. The main purpose was to explore variables other than extremity-involvement as they may affect the judgment process--specifically, cognitive complexity and stimulus complexity--as well as to collect more evidence towards the saliency or non-saliency of the extremity-involvement factor.



## CHAPTER II

### METHOD AND PROCEDURE

#### Subjects

Ninety four male subjects were employed in the experiment. Forty of the subjects were individuals holding the Ph.D. (cognitive complex, CC) and 54 were individuals who were freshmen at Oklahoma State University. Subjects holding the Ph.D. were staff at Oklahoma State University. Subjects were classified as pro (P), neutral (N), or anti (A) with respect to their attitude about the subject of the test instrument. This was done by a method independent of the "own-category" items, by having the subject give a written statement as to his position. Subjects were then arranged in the following manner: CCP-12 subjects; CCN-14 subjects; CCA-14 subjects; CSP-19 subjects; CSN-20 subjects; CSA-15 subjects.

#### Stimulus Material

Stimulus material consisted of two sets of 28 statements concerning the social use of alcohol. One set consisted of stimulus-simple (SS) items and the other set consisted of stimulus-complex (SC) items. The 28 SS items had previously been shown to be reliably capable of placement on a 7 point continuum (1-7) ranging from anti to pro by neutral judges operating under an objective instructional set. Sets of 4 statements defined each of the 7 continuum points. A parallel set of

items of equivalent meaning but greater conceptual elaboration was generated. A panel of 3 Ph.D.'s unfamiliar with the nature and purpose of the experiment compared the appropriate pairs of stimulus statements for semantic equivalence and relative complexity. In all instances, SC items as compared to SS items were equal in meaning while more elaborate conceptually. Of the CC subjects, 17 were exposed to the SS series and 23 were exposed to the SC series while 28 of the CS subjects were exposed to the SS series and 26 to the SC series.

#### Procedure

All subjects were run on an individual basis. The data was collected in a room set aside for the experiment. The subject was brought into the room and asked to be seated facing the experimenter. The subject was then given a deck of three by five cards on which the stimulus items were printed. The following instructions were then presented verbally: "You have before you items which are statements concerning the social use of alcohol. Categorize these statements, putting the pro alcohol statements to your right and the anti alcohol statements to your left. Make as many piles as you wish. Always put the statements you feel belong together in the same pile." The instructions were repeated. Any question relevant to the task was answered prior to the start of the judgment of the items. After the subject had sorted the items into as many piles as he felt was needed he was asked to verbally tell the experimenter what pile(s) was the most acceptable to him. He was asked then to state which pile(s) was the most unacceptable. Following this the subject was asked to state those piles that he found acceptable and those that he found unacceptable.

The last stage of the experiment required the subject to write a statement about his position concerning the social use of alcohol and make a mark indicating his position along a 6 inch line which was marked pro on the end to the subject's left and anti to the subject's right. The middle was marked don't know. (See sample data sheet in appendix).

## CHAPTER III

### RESULTS

As a check on the validity of the statement and line basis for assigning a subject to the P, N, or A sample population and the reliability of the stimulus items, most acceptable category (MA) mean values were examined. Own attitude (P, N, A) main effects were significant beyond the .001 level,  $F(2,82)=107.02$ . Mean values of P, N, and A subjects were 5.29, 3.95, and 2.21. Based on the continuum used in the experiment in which 7.00 represents an extreme pro position, 1.00 represents an extreme anti position and 4.00 represents a neutral or indifferent position, the independent data on own position (MA category) lend credibility to the validity of the line and statement and the reliability of the discriminability and rank-orderability of the stimulus statements.

A crucial dependent measure is the number of categories utilized by subjects in their judgmental organization of the stimulus statements. Table I summarizes these effects. CC Subjects averaged 6.82 categories and CS subjects utilized a mean of 4.32 categories in judging the statements. The mean number of categories utilized by own attitude were:  $P = 6.05$ ,  $N = 6.59$ ,  $A = 4.06$ .

Differences in the number of stimulus statements falling into the MA category were significant for cognitive complexity,  $F(1,82)=4.96$ ,  $p .05$  and attitude,  $F(2,82)=3.74$ ,  $p .05$ . Mean values for the cognitive

complexity variable were  $CC = 5.53$  and  $CS = 7.36$ , while mean values for attitude were  $P = 5.98$ ,  $N = 5.36$ ,  $A = 7.99$ . The number of stimulus statements falling into the most unacceptable category (MUA) were significant for attitude,  $F(2,82) = 8.89$ ,  $p .0005$  with mean values  $P = 6.28$ ,  $N = 5.27$ ,  $A = 9.89$ .

Table II summarizes the number of category differences for latitudes of acceptance and Table III summarizes the number of category differences for latitudes of rejection. Only attitude main effects were significant for the number of categories in the latitude of acceptance with mean values of  $P = 2.42$ ,  $N = 2.35$ ,  $A = 1.47$ . The number of category differences for the latitude of rejection approached significance for the cognitive complexity variable with mean values of  $CC = 2.14$  and  $CS = 1.63$ .

The analysis of variance for the number of stimulus statements utilized within the latitude of acceptance was significant for cognitive complexity  $F(1,82) = 11.68$ ,  $p .005$  with mean values of  $CC = 9.55$  and  $CS = 13.11$ .

The number of stimulus statements utilized within latitudes of rejection was significant for attitude,  $F(2,82) = 4.47$ ,  $p .025$ , with mean values of  $P = 11.71$ ,  $N = 9.55$ , and  $A = 13.27$ .

Tables IV and V summarize the analysis of variance of category utilization for latitudes of noncommitment and stimulus statement utilization within those latitudes. Mean values for number of categories utilized for latitudes of noncommitment were  $C = 2.48$  and  $CS = 0.70$ , while mean values for the number of noncommitment were  $CC = 7.38$  and  $CS = 2.91$ .

Table VI through Table X give a detailed breakdown of the number of

items falling into the MA category (Table VI), the MUA category (Table VII), the number of items falling into the latitude of rejection (Table VIII), the number of items falling into the latitude of acceptance (Table IX) and the number of items falling into the latitude of indifference (Table X).

## CHAPTER IV

### INTERPRETATION OF RESULTS

#### Summary and Conclusions

All significant results were due to main effects. Interaction effects did not approach significance. The dominant finding of this study is the importance of the level of cognitive sophistication in the judgment of social stimuli. This is in keeping with the work of Gardner & Schoen (1965), Bruner & Tajfel (1965a, 1965b), Upshaw (1965), Leventhal & Singer (1964), Zajonc (1968), Tripodi & Bieri (1966), in that it supports the notion that a relatively high level of education and intelligence results in a "narrow categorizer" cognitive style. This is directly borne out by the highly significant tendency of Ph.D.s to use more categories as compared to their more unsophisticated counterparts when exposed to the same set of stimuli. Cognitively sophisticated subjects as compared to cognitively naive subjects also accepted fewer stimulus statements into the most acceptable category and fewer stimulus statements into the latitude of acceptance. Of particular interest in addition is the fact that cognitively sophisticated subjects as compared to naive subjects were much more inclined to establish a latitude of noncommitment (mean number of categories  $CC = 2.48$ ,  $CS = 0.70$ ) and to relegate a significant number of items to their latitude of noncommitment. This suggests that educated and intelligent people tend to use not only restrictive or narrow

categories of judgment but to generate judgmental categories that are outside their latitudes of acceptance or rejection. From another standpoint this can be interpreted as a tolerance for ambiguity and a capacity for subtle social stimulus differentiation that is not subject to an overriding need for structuredness which would "force" ambiguous items into the latitude of acceptance or rejection.

The two levels of stimulus complexity were not significant for any of the dependent variables. This may have been the effect of two factors. First, the complexity of the stimulus items may have been such that differentiation was not significant. Second, the sample from which this data was drawn appeared to be non-normal for the cell of data that served to neutralize the significance of the stimulus complexity dimension. In all probability future research will find that stimulus complexity is indeed a significant factor.

In general, the relevance of attitudinal factors in terms of extremeness and ego-involvement in influencing social judgment was supported. The anti subjects were particularly responsible for establishing respectable significance levels, a finding consistent with the qualitative nature of the written statements where strong language suggested ego-involvement in the A position. Non-neutral subjects used fewer categories than neutral subjects with a greater number of items falling into the most acceptable category. In addition non-neutral subjects piled up more items in the latitude of rejection than did neutral subjects. The extremeness-involvement judgment model was partially confirmed by the dependent variable of number of categories in the latitude of acceptance. Anti subjects used fewer categories than N subjects, but P subjects recorded a slightly higher value than a



subjects. Another significant effect for attitude, that of number of items in the most acceptable category, ran counter to the extremeness-involvement expectation. Non-neutral subjects utilized more items than neutral subjects. While this is explainable as a function of the arithmetic of broad categorization which is itself a dependent effect of attitude, the A subjects in particular from the standpoint of an extremeness-involvement model should have recorded fewer items than the P subjects (if not the N subjects) as a function of greater MA category item selectivity.

This research indicated that cognitive sophistication is probably as important as attitude extremeness and involvement in determining the nature of social stimulus judgment effects. While extremeness of attitude and ego-involvement tend to result in seeing things in "black and white," increasing the level of cognitive sophistication seems to oppose such effects. From the standpoint of cognitive style, it appears that increasing the variable(s) of extremeness-involvement results in a "broad categorizer" and that increasing the variable of cognitive complexity results in a "narrow categorizer."

#### Implications for Future Research

An obvious implication of this research is that researchers in the future must attend carefully to the manner in which the results of the "own category" technique are interpreted. This should be done with the knowledge that the placement of items may well be a function of factors other than simply the individual's own position in relation to the attitude being studied. The subject population dictates the manner in which the scale is judged. A person with a high ego-involvement in his

position and little education may perform quite differently as compared to his educated counterpart, even though involvement level and attitude are quite similar. Results should be interpreted with cognitive complexity, stimulus complexity, and attitude factors taken into account.

The manner in which the "own category" technique is given is basically a test of the verbal ability of the subject. The higher the degree of verbal ability of the subject the higher will be the degree of differentiation of the stimulus items. This is demonstrated by the fact that freshman subjects on the average used fewer categories than did their Ph.D. counterparts. In some instances however this was not true as some freshman subjects used more categories than did some Ph.D. subjects, all with the same experimental block. This points to the important fact that the selection of the subject population in relation to the cognitive complexity factor may not be possible along the lines of a simple dichotomy. It may well be that pre-testing or addition of the verbal ability variable into the experimental design may be necessary. Several levels of cognitive complexity could be usefully established in a factorial design where cognitive complexity was to be investigated in relation to other independent variables.

The control of cognitive complexity should enable the experimenter to maximize the efficiency of data gathering using the "own category" procedure and to more effectively explore other factors affecting social judgment.

The stimulus complexity variable should thus be more fully differentiated into categories of simple and complex to see if the lack of significance obtained in this study is spurious or basic.

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TABLES

TABLE I

ANALYSIS OF VARIANCE FOR NUMBER  
OF CATEGORY UTILIZATION

Source of variation	MS	de	F
Cognitive complexity (A)	138.62	1	12.13**
Stimulus complexity (B)	9.01	1	0.79
Attitude (C)	52.96	2	4.63*
A x B	8.72	1	0.76
A x C	8.78	2	0.77
B x C	5.71	2	0.50
A x B x C	18.50	2	1.62
Error	11.43	82	

\*\*p .001

\*p .025

TABLE II

ANALYSIS OF VARIANCE FOR NUMBER OF CATEGORIES UTILIZED  
IN LATITUDE OF ACCEPTANCE

Source of variation	MS	df	F
Cognitive complexity (A)	0.77	1	0.64
Stimulus complexity (B)	1.55	1	1.30
Attitude (C)	8.33	2	6.99**
A x B	1.87	1	1.57
A x C	1.97	2	1.65
B x C	2.64	2	2.22
A x B x C	2.33	2	1.95
Error	1.19	82	

\*\*p .005

TABLE III

ANALYSIS OF VARIANCE FOR NUMBER OF CATEGORIES UTILIZED  
IN LATITUDE OF REJECTION

Source of variation	MS	df	F
Cognitive complexity (A)	5.74	1	3.40*
Stimulus complexity (B)	0.20	1	0.12
Attitude (C)	4.00	2	2.37
A x B	0.61	1	0.36
A x C	0.12	2	0.07
B x C	2.35	2	1.39
A x B x C	2.60	2	1.54
Error	1.69	82	

\*p .05



TABLE IV

ANALYSIS OF VARIANCE FOR NUMBER OF CATEGORIES IN  
LATITUDE OF NONCOMMITMENT

Source of variation	MS	df	F
Cognitive complexity (A)	70.39	1	7.69*
Stimulus complexity (B)	21.00	1	2.30
Attitude (C)	10.91	2	1.19
A x B	24.89	1	2.72
A x C	13.92	2	1.52
B x C	4.44	2	0.48
A x B x C	4.23	2	0.46
Error	9.15	82	

\*p .01

TABLE V

ANALYSIS OF VARIANCE FOR STIMULUS STATEMENT UTILIZATION  
WITHIN NONCOMMITMENT LATITUDE

Source of variation	MS	df	F
Cognitive complexity (A)	443.77	1	14.61**
Stimulus complexity (B)	10.02	1	0.33
Attitude (C)	65.77	2	2.16
A x B	111.27	1	3.66
A x C	47.90	2	1.58
B x C	65.13	2	2.14
A x B x C	42.73	2	1.41
Error	30.38	82	

\*\*p .0005

TABLE VI

THE NUMBER OF ITEMS IN THE MA CATEGORY AS DEFINED BY  
THE TREATMENT COMBINATION MATRIX

Treatment Combination	XBAR	N	SD
CSP-E	5.400	5.000	3.720
CSN-E	4.000	7.000	4.000
CSA-E	7.800	5.000	4.069
CCP-E	4.714	7.000	2.373
CCN-E	5.143	7.000	2.099
CCA-E	6.111	9.000	2.283
CSP-N	6.900	10.000	4.011
CSN-N	7.600	10.000	5.044
CSA-N	8.625	8.000	4.608
CCP-N	6.889	9.000	2.846
CCN-N	4.700	10.000	1.345
CCA-N	9.429	7.000	4.982

TABLE VII

THE NUMBER OF ITEMS IN THE NUA CATEGORY AS DEFINED  
BY THE TREATMENT COMBINATION MATRIX

Treatment Combination	XBAR	N	SD
CSP-E	5.400	5.000	3.441
CSN-E	4.000	7.000	4.721
CSA-E	10.400	5.000	4.224
CCP-E	5.423	7.000	3.375
CCN-E	4.286	7.000	2.548
CCA-E	8.222	9.000	4.565
CSP-N	8.400	10.000	3.826
CSN-N	6.200	10.000	4.377
CSA-N	8.500	8.000	6.103
CCP-N	5.888	9.000	4.864
CCN-N	6.600	10.000	2.906
CCA-N	12.429	7.000	2.969

TABLE VIII

THE NUMBER OF CATEGORIES IN THE LATITUDE OF REJECTION AS  
DEFINED BY THE TREATMENT COMBINATION MATRIX

Treatment Combination	XBAR	N	SD
CSP-E	1.800	5.000	1.167
CSN-E	2.429	7.000	2.195
CSA-E	1.800	5.000	1.167
CCP-E	3.286	7.000	1.161
CCN-E	1.857	7.000	1.125
CCA-E	1.667	9.000	0.943
CSP-N	1.900	10.000	1.136
CSN-N	1.600	10.000	1.114
CSA-N	1.500	8.000	0.707
CCP-E	1.889	9.000	1.197
CCN-N	1.900	10.000	1.513
CCA-N	1.000	7.000	0.000

TABLE IX

THE NUMBER OF CATEGORIES IN THE LATITUDE OF ACCEPTANCE  
AS DEFINED BY THE TREATMENT COMBINATION MATRIX

Treatment Combination	XBAR	N	SD
CSP-E	1.800	5.000	1.166
CSN-E	2.286	7.000	1.749
CSA-E	1.600	5.000	0.489
CCP-E	3.571	7.000	1.591
CCN-E	2.000	7.000	1.069
CCA-E	1.778	9.000	0.629
CSP-N	2.100	10.000	0.943
CSN-N	2.400	10.000	0.917
CSA-N	1.500	8.000	0.500
CCP-N	2.222	9.000	1.030
CCN-N	2.700	10.000	1.005
CCA-N	1.000	7.000	0.000

TABLE X

THE NUMBER OF CATEGORIES IN THE LATITUDE OF  
INDIFFERENCE AS DEFINED BY THE TREATMENT  
COMBINATION MATRIX

Treatment Combination	XBAR	N	SD
CSP-E	3.800	5.000	2.316
CSN-E	5.286	7.000	9.483
CSA-E	1.400	5.000	1.019
CCP-E	1.000	7.000	1.069
CCN-E	2.286	7.000	1.161
CCA-E	1.111	9.000	0.994
CSP-N	0.500	10.000	1.500
CSN-N	0.600	10.000	1.019
CSA-N	0.875	8.000	1.268
CCP-N	0.333	9.000	0.668
CCN-N	0.900	10.000	0.943
CCA-N	1.000	7.000	0.756

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