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Effects of Attitude Direction, Attitude Intensity and
Structure of Beliefs Upon Differentiation¹

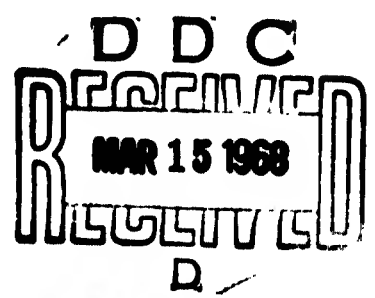
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Abstract

To test the interactive effects of attitudinal direction, attitudinal intensity and belief structure upon differentiation, concrete and abstract subjects made ratings of positive, negative and neutral instances of the stimulus domains of social beliefs and interpersonal relations toward which they varied in the intensity of their feeling.

Neutral stimuli were better differentiated than were either positive or negative stimuli between which there was no difference. Attitudinal intensity significantly affected one of the two measures of differentiation and also interacted significantly with concreteness-abstractness on both measures. Concrete Ss differentiated more highly than abstract Ss under low intensity while the reverse was true under high intensity.

The results were interpreted as indicating that attitudinal intensity and not direction is a major determinant of differentiation, in contradiction to both the vigilance and exploration theory of differentiation, and that the optimum intensity for differentiation by concrete persons is much lower than that for abstract individuals.

While extensive theoretical and empirical exploration has been made of the effects of dispositional factors upon the process of stimulus differentiation or discrimination (e.g., Allport, 1955; Dukes & Bevan, 1952; Easterbrook, 1959; Harvey, Hunt & Schroder, 1961; Jones & Kohler, 1958; Krech & Crutchfield, 1958; Levine & Murphy, 1943; Rokeach, 1960; Sherif & Cantril, 1947; Waly & Cook, 1966, Ward, 1965; Weiner, 1966), most of this effort has focussed upon one determinant at a time. How these variables interact with one another, and with characteristics of the particular stimuli being judged remains unclear. To help clarify this general issue, this study investigated the interactive effects of three variables suggested by previous research as affecting the degree to which an individual differentiates stimuli: the direction of the attitude or quality of regard toward the stimuli, the intensity of the attitude or degree of involvement, and characteristics of the belief system of the respondent.

The effect of the direction of one's attitude toward an object on differentiation of that object can be predicted from at least two different theoretical positions. On the one hand, as a means of potentially enhancing survival (cf. Troland, 1928), the individual may be more vigilant toward and discriminate more finely both among and within negatively valued objects than neutral or positively regarded objects. On the other hand, the individual may seek more frequent contact with positively regarded objects than with negative or neutral objects, and by virtue of the greater experience with them differentiate the positive objects more finely. This latter possibility is more in accord with reinforcement

theory, which assumes that rewarding stimuli acquire approach properties while negative and potentially punishing stimuli come to have avoidance characteristics.

Evidence exists which favors each position. Supnick (1965), found that liked persons were better differentiated than disliked persons. Contrarily, Harvey, Wyer and Hautaluoma (1963), as well as Irwin, Tripodi and Bieri (1967), found subjects to differentiate more highly among persons they felt negative toward than persons they regarded positively. Harvey, et al (1961) found in addition, however, that while negative institutions and inanimate objects were also better differentiated than positive ones, none of the negative stimuli was better differentiated than their neutral counterparts. In fact, in one stimulus domain, of inanimate objects, neutral instances were differentiated significantly more highly than either positive or negative ones.

This latter finding raises the possibility that not only the direction but also the intensity of the attitude(s) toward or involvement in a stimulus object affects the extent to which it is differentiated. This possibility is not inconsistent with either the results of Supnick (1965) or Irwin et al (1967), since neither compared the differentiation of positive and negative stimulus persons to the differentiation of neutral ones.

Like arousal, to which it is closely akin, particularly operationally, attitudinal intensity or involvement probably is related curvilinearly to differentiation and other behaviors dependent upon it. While varying with such task attributes as complexity (Bieri, 1967) the optimum of intensity

should also depend upon such conceptual characteristics of the respondent as his concreteness-abstractness, as this construct was defined by Harvey, et al (1961). Low involvement and a simple task should maximize the differentiation of the concrete individual while the differentiation of the more abstract person should be enhanced by higher intensity and greater task complexity (Harvey, 1967; Harvey, et al, 1961; Schroder, Driver & Struefert, 1967). With task complexity held constant, as in the present study, concrete subjects should perform as well as or better than abstract subjects under low involvement; but under high involvement the reverse should be true.

Several studies have shown, with individual differences disregarded, that high involvement results in poorer differentiation than does low involvement. Easterbrook (1959) cited evidence that high arousal limits the range of cue utilization. Glixman (1965) found that subjects differentiated more highly among attributes of inanimate objects than among characteristics of war and self. Sherif and Hovland (1953) showed that white subjects, presumably because of less intense attitudes, used more categories than did Negro subjects in judging the favorableness of statements about the Negro. In the same vein, LaFave and Sherif (1962) demonstrated that unselected white subjects used fewer categories than anti-Negro whites in evaluating the same materials. While open to more than one interpretation (Upshaw, 1962), these findings are consistent with the notion that intense involvement in an object or issue tends to impair the differentiation of it.

Evidence exists which also supports our postulation of an interaction between concreteness-abstractness and intensity of involvement. White and Harvey (1965), as well as Alter (1967) found that in judging the favorableness of statements about the LDS (Mormon) Church, an issue in which they could be assumed to be highly involved, concrete members of the Church used fewer categories, had more category gaps and used more extreme categories than did abstract members of the Church. In judging the heaviness of weights, however, concrete and abstract subjects did not differ in category usage (White & Harvey, 1965; White & Alter, 1967). Similarly, White, Alter and Rardin (1965), using a combination of scores from the D and F Scales that has been found to discriminate between concrete and abstract functioning (Harvey, 1966), found that High D-High F subjects did not differ in category usage from Low D-Low F subjects in judging McGarvey's fairly neutral list of occupations; but in judging McGarvey's more involving list of acts, subjects high on both D and F differed significantly in category usage from subjects low on both of these measures. While intensity of involvement was assumed rather than specifically measured in this series of studies, the results lend credence to our anticipation that concreteness-abstractness and intensity of involvement will interact in their effect on differentiation.

In the present study quality of regard, intensity of involvement and concreteness-abstractness were manipulated by having two groups of subjects, one concrete and the other abstract, make ratings of social beliefs and interpersonal relations which they regarded positively, negatively or

neutrally and toward which they felt high or low intensity. To reduce measurement error and at the same time explore the relationship of within to between stimulus differentiation, two measures of differentiation were obtained from these ratings, one of the differentiation among stimulus objects (i.e., stimulus differentiation) and the other of differentiation within stimuli (i.e., dimensional differentiation).

Hypotheses

No main effect and only one interactional effect was hypothesized: Under low involvement concrete subjects will differentiate as well as abstract subjects (on both measures of differentiation) while under high involvement abstract individuals will manifest higher differentiation than their counterparts.

No prediction was made for the interactions or main effect of quality of regard because of ambiguities in both theory and relevant research. No main effect for either concreteness-abstractness or involvement was hypothesized since it was expected that the effect of each would depend upon the other.

Method

Subjects

Forty enrollees in the Introductory Psychology course at the University of Colorado served as subjects (Ss). This number was selected from a larger sample of approximately 150 students on the basis of their response to the "This I Believe" Test. All Ss were paid for their participation in the study.

Instruments and Procedure

Concreteness-Abstractness

This property of belief systems was assessed by the "This I Believe" (TIB) Test. This test requires S to indicate his beliefs about a number of socially and personally relevant concept referents, such as "the American way of life," "marriage," and "religion," by completing in two or three sentences the phrase, "This I believe about _____," the blank being replaced successively by one of 12 referents. From the normativeness, absolutism, evaluativeness, entertainment of alternatives, amount of information and attitudinal direction, together with criteria outlined in earlier reports (e.g., Harvey, 1964, 1965, 1966; Harvey & Ware, 1967; Ware & Harvey, 1967; White & Harvey, 1965), respondents may be classified into one of the four principal belief systems or levels of abstractness posited by Harvey et al. (1961) or into some admixture of two or more systems.

The 40 Ss in this study were comprised of 10 representatives of each of the four systems depicted by Harvey et al. (1961). Each S had been unanimously classified by three trained judges as representing one of the four principal belief systems. However, since the interest in this study was on concreteness-abstractness and not on content differences among the four systems, representatives of System 1 and 2 were combined into the Concrete group while Ss of Systems 3 and 4 were combined into the Abstract group.

At the beginning of the experimental session, Ss were informed that the purpose of the study was to build a "perception test". To minimize "evaluation apprehension"

(Rosenberg, 1965), Ss were told that the experimenter was interested only in their responses, and that they would not be required to sign their names. Through a simple device, each S's identity was determined after completion of the experiment.

To obtain data in the domain of social beliefs, Ss were asked to select eight attributes they believed were "most important in describing and evaluating social beliefs". A list of examples (e.g., constructive, authoritative, moralistic, etc.) was provided from which Ss could choose if they wished. Subjects were then asked to select eight social beliefs toward which they felt positive, eight toward which they felt negative, and eight toward which they felt neutral. A list of examples of such beliefs was also provided. Using a specially prepared grid, each of the 24 beliefs was then rated on a scale from 1 (very low) to 4 (very high) according to the amount of each of the eight attributes it possessed.

A similar procedure was used in obtaining data pertaining to positive, neutral and negative interpersonal relations. The order in which social beliefs and interpersonal relations were rated was counterbalanced.

A score on each measure of differentiation was subsequently calculated for ratings of stimuli at each combination of regard (positive, negative and neutral) and stimulus domain (social beliefs and interpersonal relations). Stimulus differentiation, defined as the degree to which stimuli are differentiated along each of a set of dimensions, was measured by calculating the index of dispersion of ratings of each set of stimuli over the eight attribute dimensions

(cf. Hammond & Householder, 1961), and then averaging these indices over stimuli . Dimensional differentiation, defined as the degree to which the dimensions used in rating stimuli are differentiated, was measured by first calculating the index of dispersion of stimulus ratings along each dimension, and then averaging these indices over dimensions.

After rating each of the 24 instances in each of the stimulus domains according to its possession of the eight attributes, Ss rated the intensity of their feeling toward each domain instance. Ratings were made on a 10-point scale with 10 defined as the "most intense" feeling which the Ss could imagine anyone, including themselves, could hold toward anything, regardless of whether it was included among the instances just rated and irrespective of whether it was positive or negative. In instructing Ss to use this definition of 10 as the standard for their ratings, it was stressed that "you would rate the intensity of your feeling as 10 only if it is as strong as the most intense feeling you imagined anyone could have; otherwise, you would rate the strength of your feeling as some proportion of 10."

Three intensity scores were computed for each subject, the mean intensity of stimuli contained in each of the positive, negative and neutral domains.

Results

To simplify the analyses and interpretation of results by reducing the possible number of independent variables, a t-test was computed for each measure of differentiation between social beliefs and interpersonal relations. Since on

neither measure did the comparison yield a significant difference, scores from the two domains were combined within each measure of differentiation. Subsequently the effects of concreteness-abstractness and direction of attitude and intensity of involvement were determined for each measure of differentiation by a three-way analysis of variance for replicated measures and unequal N's (the unequal N's resulting from a median split on intensity). With the exception of the hypothesized interaction between concreteness-abstractness and intensity of involvement, all effects were evaluated by a two-tailed test of probability.

The appropriateness of separate analyses of stimulus and dimensional differentiation is demonstrated by the correlation of .63 between these measures.

Stimulus Differentiation

The analysis summarized in Table 1 shows that of the

Table 1 about here

three variables, only quality of regard exercised a significant main effect on domain differentiation. The neutral domains were differentiated (\bar{X} -66.10) significantly more highly than either the positive (\bar{X} -51.67, $t = 6.34$, $p < .001$) or the negative domains (\bar{X} -48.97, $t = 6.64$, $p < .001$). The differentiation of positive and negative domains, however, did not differ ($t = 1.65$, $p > .10$).

Moreover, the influence of quality of regard depended upon the intensity of involvement, as shown in Table 2.

Table 2 about here

While the differentiation of neutral domains was unaffected by intensity, both the positive and negative domains were differentiated more highly, the negative domains significantly more highly ($t = 2.76, p < .01$), under low than under high involvement.

Intensity of involvement and concreteness-abstractness also interacted significantly, and in the way predicted, as shown in Table 3. When attitudes toward stimuli were of low intensity, concrete Ss achieved higher differentiation than

Table 3 about here

the abstract Ss ($t = 1.67, p < .10$). However, when attitudes toward stimuli were of high intensity, the reverse was true, the abstract Ss differentiating significantly more highly than their counterparts ($t = 1.78, p < .05$).

Concreteness-abstractness and quality of regard did not interact; nor were there any significant second-order interactions.

Dimensional Differentiation

The pattern of influence on stimulus differentiation held even more clearly for dimensional differentiation. Table 4 indicates that the significant effects obtained in the analyses of stimulus differentiation were repeated. In addition, a significant main effect of attitudinal intensity occurred.

Table 4 about here

That is, dimensions were more highly differentiated when rating less intensely valued stimuli ($\bar{X} = 69.79$) than when evaluating stimuli toward which attitudes were highly intense ($\bar{X} = 58.94$) ($t = 4.36, p < .001$).

Neutral domains were dimensionalized more highly ($\bar{X} = 65.98$) than either positive ($\bar{X} = 63.65$) or negative domains ($\bar{X} = 59.86$). However, the only difference among qualities of regard that attained significance was between the neutral and negative domains ($t = 2.28, p < .05$).

Data in Table 5 suggest that the interaction between quality of regard and intensity is attributable to the fact that, as in the case of domain differentiation, both

Table 5 about here

positive and negative domains were dimensionalized more highly when attitudes were low in intensity than when they were high in intensity (t for positive = 3.89, $p < .001$; t for negative = 3.03, $p < .01$) while the neutral domains were dimensionalized equally well under both levels of involvement ($t = .86$).

Table 6 about here

Table 6 shows the nature of the interaction between intensity of the attitude and concreteness-abstractness. Under low intensity concrete Ss used significantly more dimensions than abstract Rs in making their ratings ($t = 2.10$, $p < .05$). But under high involvement abstract Ss used significantly more dimensions than concrete Ss ($t = 4.36$, $p < .001$).

Discussion

The effects of attitudinal direction obtained in this study run counter to both the vigilance-survival hypothesis and the approach-exploration hypothesis of differentiation. For a vigilance hypothesis to be supported, negative stimuli should be differentiated more highly than either positive or neutral stimuli (cf. Irwin, et al, 1967). For an approach-exploration hypothesis to be supported, positive stimuli should be differentiated more highly than either negative or neutral stimuli. The finding of this study, as well as of a subsequent one by Reich (1968), that neutral stimuli were differentiated significantly more highly than either positive or negative stimuli, while the differentiation of positive and negative stimuli did not differ, fails to support either the vigilance or exploration hypothesis. It also suggests that the direction of attitudes toward stimuli is not an important determinant of the differentiation among or within these stimuli.

According to these results, however, the intensity of one's attitude toward an object, independent of its direction, is clearly an important determinant of differentiation.

While intensity exercised a significant main effect on dimensional differentiation, its influence on both stimulus and dimensional differentiation was found to depend also upon the belief structure of the respondents. Specifically, under low intensity concrete Ss achieved higher differentiation on both measures than did the abstract Ss; but under high intensity concrete Ss differentiated markedly more poorly than their counterparts, who differentiated equally well under both levels of involvement.

The greater sensitivity of the concrete Ss to the effects of intensity may be highlighted by a comparison of their differentiation to that of the abstract Ss at the three levels of intensity resulting from dividing the overall intensity distribution into thirds instead of splitting it at the median into only High and Low. The mean intensity of the concrete Ss at the lowest, middle and highest level was 3.89, 5.78 and 7.24, respectively; the values for the abstract Ss were 3.28, 5.85 and 7.33, none of which differed significantly from the corresponding value of the concrete Ss.

Figure 1 about here

As shown in Figure 1, the concrete Ss achieved their highest scores on both measures of differentiation under the lowest intensity and decreased their performance linearly with increased intensity. The differentiation of the abstract Ss on both measures remained similarly high or increased slightly across the three levels of increasing intensity. Thus the optimum intensity for concrete Ss was surpassed at some very low point, certainly at some point less the mean of the middle

level of intensity, while the optimum for the abstract Ss was not surpassed, and probably not even reached, by the highest intensity treated in this study.

The differential effect of intensity of attitudes upon the concrete and abstract Ss is consistent with the assumptions concerning the developmental histories of these individuals (Harvey, 1967; Harvey, et al., 1961). Concrete individuals presumably have a high level of arousal conditioned to stimuli about which they report intense attitudes. The rating of these stimuli may elicit this arousal which impairs their differentiation. On the other hand, abstract persons either do not have conditioned emotional responses to stimuli toward which they have intense attitudes, or their differentiation is not impaired by arousal. Possible reasons for this difference are receiving further investigation.

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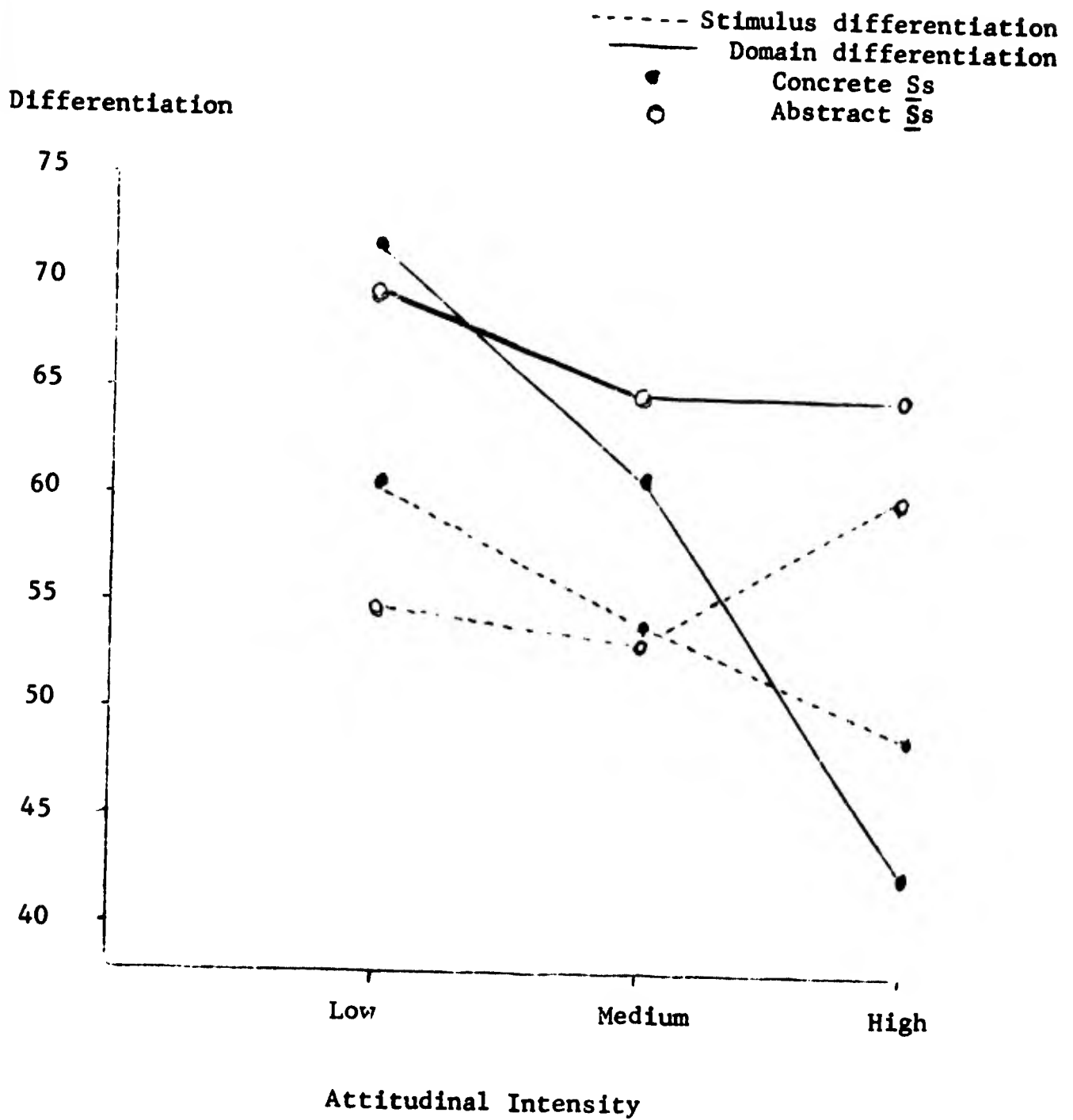


Figure 1. Stimulus and Domain Differentiation of Concrete and Abstract Ss under Three Levels of Attitudinal Intensity.

Table 1

Analysis of Variance of Stimulus Differentiation

Source	SS	df	MS	F
Between	<u>14,301.50</u>	<u>39</u>		
A Involvement	1,029.10	1	1,029.10	3.15
B (Conc.-Abst.)	1.22	1	1.22	.00
AB	1,500.63	1	1,500.63	4.59*
<u>Ss within groups</u> (error)	11,770.55	36	326.96	
<u>Within</u>	<u>16,594.00</u>	<u>80</u>		
C Regard	6,963.73	2	3,481.86	31.31***
AC	867.25	2	433.62	3.90*
BC	270.41	2	135.20	1.22
ABC	485.87	2	242.94	2.18
CxS within groups (error)	8,006.74	72	111.20	

* p<.05

*** p<.001

Table 2

Stimulus Differentiation of Positive, Negative and Neutral
Domains under Low and High Involvement

Involvement	Quality of Regard					
	Positive		Negative		Neutral	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Low	53.84	15.75	54.91	13.03	65.81	12.11
High	48.23	16.21	42.34	15.51	66.41	9.69

Table 3

Stimulus Differentiation of Concrete and
Abstract Ss Under Low and High Involvement

Belief System	Intensity of Involvement			
	Low		High	
	\bar{X}	SD	\bar{X}	SD
Concrete	60.82	13.56	47.51	18.62
Abstract	54.68	15.32	55.81	15.62

Table 4

Analysis of Variance of Dimensional Differentiation

Source	SS	df	MS	F
Between	<u>25,998.25</u>	<u>39</u>		
A Involvement	5,823.37	1	5,823.37	15.53***
B (Conc.-Abst.)	648.21	1	648.21	1.73
AB	6,026.26	1	6,026.26	16.07***
<u>Ss</u> within groups (error)	13,500.41	36	375.01	
Within	<u>9,428.74</u>	<u>80</u>		
C Direction	764.14	2	382.07	4.38*
AC	1,728.74	2	864.37	9.90**
BC	167.67	2	83.84	.96
ABC	484.30	2	242.15	2.77
CxS within groups (error)	6,283.89	72	87.28	

* p<.05
 ** p<.01
 *** p<.001

Table 5

Dimensional Differentiation of Positive, Negative
and Neutral Stimuli Under Low and High Involvement

Involvement	Quality of Regard					
	Positive		Negative		Neutral	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Low	73.17	8.28	68.71	11.73	67.51	11.83
High	53.16	20.98	50.07	24.35	64.28	11.76

Table 6

Mean Dimensional Differentiation of Concrete
and Abstract Ss Under Low and High Involvement

Belief System	Intensity of Involvement			
	Low		High	
	X	SD	X	SD
Concrete	72.29	9.49	43.66	20.12
Abstract	66.45	11.91	64.70	14.56

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14. KEY WORDS	LINK A		LINK B		LINK C	
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	arousal attitudinal intensity attitudinal direction concreteness-abstractness differentiation exploration vigilance					

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