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## Consequences of Commitment and the Relevance of Cognitively Bonded Values on Initial Attitude and Resistance to Attitude Change

Kenneth A. Marciniak  
*Loyola University Chicago*

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CONSEQUENCES OF COMMITMENT AND THE RELEVANCE  
OF COGNITIVELY BONDED VALUES ON INITIAL  
ATTITUDE AND RESISTANCE  
TO ATTITUDE CHANGE

by

Kenneth A. Marciniak

A Thesis Submitted to the Faculty of the Graduate School  
of Loyola University of Chicago in Partial Fulfillment  
of the Requirements for the Degree of  
Master of Arts  
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## ABSTRACT

This experiment was conducted to test the propositions (1) that attitudes which are cognitively related to personally important values would exhibit greater resistance to attempts at change of these attitudes; and, (2) that the level of relevance of these personal values would also affect the favorability of the attitude stand. A 2x3 completely randomized design was employed with the following 2 factors: (1) a self-rating commitment to the issue (presence vs. absence of pretest) and (2) cognitive bonding of the attitude to values (relevant values, irrelevant values, no values). 60 students, 10 per condition, took part in the study. All manipulations were conducted within a booklet type format. Dependent variables included (1) post discrepancy attitude, (2) a weighted average index of attitude, (3) an attitude structure measure, (4) pretest-posttest "change" scores, and (5) several manipulation checks. Results indicated that the favorability of the initial attitude stand was not affected by the level of relevance of bonded values. Resistance to attempts at attitude change was greatest when the attitude was cognitively bonded to relevant values but the favorability of final attitude was unaffected by value relevance and pretest. The study appeared to contribute an interpretation to

the value bonding model such that the process of bonding confers resistance to persuasion by allowing the person to adopt new content to his attitude while retaining an original self-rating.

## LIFE

Kenneth A. Marciniak was born in Chicago, Illinois, January 14, 1948. He graduated from Holy Cross High School, River Grove, Illinois, in June, 1965. He received the degree of Bachelor of Science, cum laude, from Loyola University of Chicago in June, 1969.

The author began his graduate studies at Loyola in September, 1969.

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## CHAPTER I

### INTRODUCTION

This paper examines the propositions that attitudes which are cognitively related to personally important values will exhibit greater resistance to attempts at change of these attitudes, and that the level of relatedness or relevance of these personal values will also affect the favorability of the attitude stand.

The above relationships between attitudes and values has been manifested by each of us in everyday encounters. The very fact that people have always appeared to differ in attitude even when considering the same issue lends evidence to the position that entirely objective considerations of any matter are rare. People have demonstrated that evaluations of issues are usually made on the basis of perceived links between that issue and certain personal values. For instance, Person X has a favorable attitude toward pollution control regulations for big business because he sees the realization of these regulations as leading to a cleaner, safer environment. However, Person Y may espouse a negative attitude concerning these same regulations because he considers them as the first step to widescale governmental intervention and to the demise of the free enterprise system. So, Person X has a positive attitude toward the issue since its realization would lead to his personal value of security and safety. Person Y's attitude appears to be based on the

perceived blocking of his values of freedom of enterprise by the realization of the issue. Such attitude-value relationships are responsible for neutral attitudes, also. A neutral attitude may indicate that the issue was not related to any personally important values. Thus, a positive attitude can be caused by a perceived link between an issue and certain personal values, as can a negative attitude or a neutral attitude.

### Attitude Formation

The foregoing discussion assumed that an essential difference exists between the terms "attitude" and "value." However, such a clearcut differentiation between these terms has often been difficult to obtain.

A number of courses have been pursued by social psychologists attempting to distinguish between attitude and value. One considers value as a broader attitude which lies along a continuum of opinion, attitude, interest, and value. (Allport, 1937). Another viewpoint regards values as determinants of attitudes. The work of Milton Rokeach (1970) is illustrative of this approach. Rokeach's research makes a firm operational distinction by defining values as more fundamental to human personality as well as serving as determinants of attitude and behavior. In fact, Rokeach has demonstrated long-range persistence of attitude change accomplished through instilling awareness of inconsistencies in value-attitude systems. More specifically, Rokeach

offers these definitions:

Belief: Simple proposition, inferred from what a person says or does, about underlying states of expectancy.

Attitude: Relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner.

Value: Abstract ideals, positive or negative, not tied to any specific attitude object or situation, representing a person's beliefs about ideal modes of conduct or end states of existence. (p. 548)

The distinctions between these concepts remain unclear.

Attitudes and values appear to be toned more with affect than are beliefs, but Rokeach maintains that all three have cognitive, affective, and behavioral components.

More clearly, attitudes are made up of two or more beliefs while a value is a single belief. Key emphasis is given to the fact that a value is on a much more general or abstract level than the ordinary belief or attitude.

Rokeach's work serves as an adequate model concerning the similarities and distinctions between attitude and value. However, the knowledge that the formation of attitudes is related to personal values and that value and attitude are conceptually different does not supply a reason for the initial formation of the attitude nor does it explain the diversity of issues to which attitudes are attached. People readily form attitudes on a wide range of topics and, often, on topics which little is actually

known. Common sense seems to dictate that this tendency must perform some type of function for the attitude holder. Several psychologists have theorized about the number and nature of these supposed "functions."

Sarnoff (1960, 1962) has developed a theory which brings Freudian psychology into the realm of attitude formation. Sarnoff defined attitude as a disposition to react favorably or unfavorably to a class of objects. Psychoanalytically speaking, these dispositions are developed in the process of making tension reducing responses to various classes of objects. This theory presented attitudes as serving an ego-defensive function.

Katz (1960) presented four functions of attitudes. Attitudes can serve an adaptive or utilitarian function. This function can also be termed the instrumental function since attitudes can dispose us towards objects and paths that are instrumental in achieving our valued goals. Another function, which closely parallels Sarnoff's concepts, is ego-defense. Attitudes are viewed as originating from the person's inner needs and so manifest only accidental relation to the object of the attitude. An attitude may serve a value-expressive function through which an individual derives satisfaction from expressing attitudes appropriate to personal values and self-concept. Finally, an attitude can give structure

to the universe through the knowledge function.

Smith, Bruner & White (1956) offered three functions of attitudes, which, although not identical to those posited by Katz, are similar enough to allow only a brief listing: social adjustment, object appraisal, and externalization.

A consistent trend runs through the work of the functional theorists which presents attitudes as purposive and somewhat deliberate attempts to reap satisfaction for the individual. Logically then, it follows that an attitude which adequately fulfills a function would be resistant to attempts at attitude change. For example, Kelman (1958) offered the internalization process of attitude. Theoretically, the internalization of an attitude would endow that attitude with great resistance to change. Other postulated functions might vary in conferred resistance to attitude change, depending upon the particular function involved and the efficiency with which that attitude fulfills the function.

Generally, attempts at dividing attitudes into components and describing their structure, as functional theorists have done, can be categorized as instrumentality value analyses or means-ends analyses. The implication is that an attitude toward some object is a composite of the positive or negative valence of all the values or

goals to which the object is perceived to have positive or negative instrumentality. In addition to the contributors already mentioned, others have offered related versions of this type of analysis (DiVesta & Merwin, 1960; Woodruff & DiVesta, 1948).

Woodruff and DiVesta (1948) offered an analysis of attitude structure in terms of the functional relationship between the attitude object and personal values. More specifically, they offered the hypothesis that the "strength of an attitudinal expression will be a function of the importance of the values to which the object or condition has any relationship and the extent to which the person feels the object or condition will affect his values."

Likewise, Helen Peak (1955) exhibited a similar approach while including a motivational flavor into her discussion of attitudes in the form of the need instrumentality approach. Peak summarizes the connection between attitude and motivation in this manner:

Attitudes as dependent variables are a function of (1) the instrumentality of their referent objects or situations for aiding or interfering with goal attainment, and (2) the satisfaction derived from reaching goals, and this in turn depends on the level of the motive state. (p. 158)

Milton Rosenberg (1956) gave the means-ends approach additional impetus. His model held that attitudes are



related to values by instrumental bonds. Theoretically, the degree and sign of affect aroused by an attitude object varies as a function of the algebraic sum of the products obtained by multiplying the rated importance of each value associated with that object by the rated potency of the object for achieving or blocking the realization of that value. Rosenberg defined the two determinants of attitude in this manner:

Value Importance: The level of satisfaction expected from the achievement of the goal which the value describes.

Perceived Instrumentality: The capacity of the attitude object to lead to or block the attainment of the value. (p. 367)

A strong positive attitude will exist toward an object that seems to lead to the attainment of strong positive values or to the blocking of strong negative values. A strong negative attitude occurs towards objects promoting negative values or hindering positive values.

Operationally, Rosenberg first determined an attitude score toward some object. Then the subject independently rated a list of values on a positive to negative personal satisfaction or importance scale. After these ratings, the subject rated the potency of the attitude object for attaining the values, again on a positive to negative scale. An index of "affective loading" was then obtained by taking the algebraic sum of the value importance scores.

multiplied by the perceived instrumentality scores. Correlations are calculated between the attitude score and the index of affective loading, and between the attitude score and the value importance and perceived instrumentality scores taken separately with the other component held constant. Theoretically, the degree and sign of attitude affect should vary as a function of either component taken separately or of both taken together as the index of affective loading. The correlational results of Rosenberg (1953, 1956) were taken as supporting the hypothesis that the affective significance of an attitude object is a function of whether or not it is perceived as facilitating or blocking attainment of values and whether or not these values are of importance. However, these results can be accounted for in other ways. The relationship between the several concepts might be an attempt on the part of subjects to appear consistent.

Carlson (1956) presented evidence consistent with the hypothesis that attitude change results from a change in the perceived relevance of the attitude object for the attainment of certain values. These results were also correlational in nature. Thus, Carlson considered attitude to be a function of a multiplicative relationship between perceived instrumentality and the value importance such that an alteration of instrumentality resulted in

attitude change. This paper basically considered attitude to be a function of the initial information about the attitude object added to a multiplicative relation between perceived instrumentality and importance of values.

Collectively, then, the means-ends or need instrumentality school of attitude formation upholds the belief that attitudes are formed by the person on the basis of the utility that these attitudes display in leading to or reaching valued goals or objects or in avoiding negatively valued goals or objects. Attitude change was accounted for by a change in the structure or function of the attitude. However, the previously mentioned research (Rosenberg, 1956; Woodruff & DiVesta, 1948; Helen Peak, 1955; Carlson, 1956) employed correlational techniques. Therefore, evidence for the statement that an attitude toward some object is a composite of the positive or negative valence of all the values to which the object is perceived to have positive or negative instrumentality is tenuous. This present research will employ non-correlational techniques in demonstrating this means-ends relationship.

#### Resistance To Attitude Change

An underlying assumption in a discussion of resistance to attitude change is that the state of the person's cognitions determines success or failure of influence

attempts. In other words, the type and degree of the relationships between the focal attitude and other cognitive elements within the person's cognitive structure dictates whether attempts at change of the focal attitude can be resisted. Several theories have been offered which attempt to describe those states of cognitive structure which successfully resist influence attempts.

McGuire (1960) developed the logical-affective consistency system which he based on two postulates. The cognitive consistency postulate states that there is a tendency for an individual's beliefs or expectations to be related in a manner required by the rules of formal logic. The wishful thinking postulate states that there is a tendency for an individual's beliefs to be consistent with his desires or wishes. The relationship between beliefs, then, is based upon some compromise between logical and affective consistency.

Abelson and Rosenberg (1958) and Rosenberg and Abelson (1960) outlined a theory called the affective cognitive consistency theory. Attitudes presumably consist of both affective and cognitive components related to other objects in an instrumental relationship. The interconnectedness of the dual components in attitude structure implies that change in one component will

result in a subsequent change in the second. Consistency of cognitive elements is the desired end state. The later version of this theory (1960) further differentiated types of cognitive elements and interrelationships but essentially preserved the fact that a consistent or cognitively balanced state is sought.

McGuire (1962 , 1964) offered a specific theory dealing with resistance to attitude change. The inoculation theory implied that the best method for making someone resistant to counterattitudinal propaganda is the presentation of weakened or refuted counterarguments. McGuire employed cultural truisms in his research, since these beliefs are commonly shared and rarely attacked. Basically, the presentation of counterarguments to cultural truisms supplies the practice and motivation to generate bolstering arguments on the subject's part. McGuire has presented several defensive variables whose consideration are essential for a full understanding of the theory. However, for our purposes, the fact that inoculation procedures eventually result in the person firming up a belief in his mind justifies the inclusion of this theory in the cognitive structure approach. Resistance is conferred through procedures which induce attempts at balancing cognitive elements and relationships, which, then, will be strengthened against later attacks.

The implications of the three cognitive structure theories reviewed is that balanced states between cognitive elements are most likely to be effective in resisting attempts at change. These states of balance can be further strengthened by the relevance or importance of the cognitive elements to the person involved. Those cognitive elements which generally are most relevant or important to the person are personal values. Thus, an attitude which exists in a consistent relationship with personal values is most likely to exhibit greater resistance to attitude change.

A particular theory of resistance to attitude change involving attitude-value links was formulated by Ostrom and Brock (1968). Of focal interest in this model is the personal importance of the cognitions to which an attitude is bonded. Values are defined as those cognitive elements which have personal importance as their primary property. A person who resists attitude change attempts due to the bond between the attitude and value is said to be ego-involved. Sherif and Cantril (1947) outlined the meaning and implications of ego-involvement as follows:

We have said that what an individual comes to regard as himself is a genetic development, a product of learning. In the normal course of affairs, the components of the ego include the individual's body and physical characteristics,...., together with a whole host of social values he also learns and with which he identifies himself .... (p. 117)

A consequence of being involved in an attitude is

This degree of ego-involvement, this intensity of attitudes, will determine in large part which attributes he will cling to, how annoyed or frustrated he will feel when his attitudes are opposed, what action he will take to further his point of view. (p.131)

The critical properties can be summarized by saying that the basic feature of an ego-involved attitude is its relation to the individual's definition of himself. This definition is primarily based on that distinct constellation of social and personal values he has acquired. The closer the relation between his attitude and these values, and the more central these related values are, the higher the degree of attitudinal involvement.

Ostrom and Brock integrated the concept of ego-involvement into broader cognitive models of attitude formation and change by focusing on the "clings to" aspect of involvement. Specifically, Ostrom and Brock viewed an ego-involved attitude as indicative of the manner in which the individual defines himself, particularly that "distinct constellation of social and personal values" he possesses. The Ostrom and Brock model posits three properties of value structure which determine the level of involvement and degree of attitude change resistance: a) Centrality is defined as the

extent to which the value is integral to the individual's self-definition or ego; b) The degree of relatedness of an attitude refers to the amount of similarity, relevance, association, dependency, or distance existing between the pairs of elements; c) The third structural property is the number of value elements which are engaged by the focal attitude. Specifically, the magnitude of ego involvement and therefore attitude change resistance of a value bonded attitude is a direct function of the sum of values of the products of the centrality and relatedness of each value. The consequence of these postulates was the assertion that a highly ego involved attitude is most resistant to change. The point of commonality between the Rosenberg model discussed above and the Ostrom and Brock model was that, although affect and ego involvement are different concepts, three similarly conceived variables are employed in both. A central value in Ostrom and Brock's model is operationally equivalent to an important value in Rosenberg's model. Likewise, relevance is analagous to instrumentality. Number, obviously, is equivalently defined in both models. The use of the term ego involvement by Ostrom and Brock has been supplanted by "cognitive bonding" in subsequent research, which has dealt primarily with resistance to attitude change, while Rosenberg's model concerned



attitude formation.

However, while Rosenberg maintained that the particular values to which an attitude was bonded determined its degree and direction, the Ostrom and Brock model implies that any attitudinal position, including neutrality, can be value bonded.

Since the Ostrom and Brock model of attitude change resistance served as the basis for the following experiment, relevant research concerning the model is reviewed to point out inconsistencies or failures in past research and to introduce and clarify the strategy of the present research.

Several problem areas have surfaced from past research concerning the Ostrom and Brock model. Briefly, these problems are: (1) a general failure to directly manipulate and interpret the unconfounded effect of relevance of values; (2) failure to achieve instrumental bonds during the process of value bonding; (3) an additional lack of control over the direction and degree of the bonds; (4) exclusive use of polarized initial attitudes when simultaneously testing the Rosenberg model; and (5) inadequate understanding of effect of a pretest commitment on the impact of value bonding. Each of these areas will be discussed in turn while noting the attempts of the present study to

further clarify the value-bonding model.

(1) The Ostrom and Brock model (1968) posited a dependency between each of the three independent variables relating to value bonding. If a highly important value were linked to some attitude, the overall strength of this cognitive bond as measured by resistance to attitude change may be minimal if the value was not of a relevant nature. The interrelationship of the importance and relevance of instrumental variables had also been advanced by Rosenberg (1956). However, the operational definitions of relevance in past research contained a confounding with value importance. Edwards and Ostrom (1969) attempted to circumvent this confounding by using equally important values which varied in relevance to a general issue rather than to a particular object. Edwards (1970) also performed relevance pre-scaling in reference to a particular object (Person X). This present study provides equally important values which vary in normative relevance to a particular issue, which is substantive in nature and more realistically related to the values employed.

(2) and (3) The problems of achievement of instrumental bonds and control over the direction and degree of these bonds were manifested in Ostrom and Brock (1969). This study featured a presumably unfamiliar issue which

required subjects to draw lines between key words in selected statements from the initial attitude inducing message and value statements. The bonds were then partially controlled by the subjects themselves and of a cognitive-perceptual nature. Although the Ostrom and Brock model does not specify the type of value bond necessary for bonding effects to occur, Rosenberg's model (1956) stipulates the need for instrumental bonds. A simultaneous test of the two models would require the formulation of instrumental bonds.

Impression formation tasks concerning a hypothetical person have been employed by Edwards (1970) and Edwards and Ostrom (1969). Results indicated that subjects formed attributional bonds following an attribution type essay, and tended to form such bonds in the absence of any examples. When instrumental essay examples were supplied, the majority of subjects wrote instrumental type bonds. However, the use of Person X as the issue forced the subjects to deal with two hypothetical concepts, i.e. "Person X" and "knowing Person X." The hypothetical nature of the subject's task is eliminated by using a real issue with which the subject has had actual experience.

(4) The Edwards and Ostrom (1970) study, mentioned above, further showed that value bonding during the

process of attitude formation did not significantly affect the extremity of initial interpersonal attitude. A possible explanation for this null effect was that the initial attitudes were already polarized in all value conditions. A possible "ceiling effect" would prohibit detection of differential enhancement due to value importance variation. The present study employed a substantive issue presumably unfamiliar to subjects, in order to gain neutrality of initial attitude.

(5) Finally, the role of a pretest commitment measure in value bonding needs clarification. The concept of resistance arousal by relating attitudes to values has counterparts in the literature on resistance conferred by commitment to initial attitude. Past research (Kiesler & Sakumura, 1966; Bennett, 1955) has suggested that commitment to some belief implies a consequent resistance to attempts at change, with private decision being the least powerful form of commitment and public commitment being the most powerful. Experimentally, commitment has often been induced through the use of a pretest attitude measure. The effectiveness of this general method was reviewed by Lana (1969). Comparing pre-post and after-only designs, Lana did not find any strengthening effects of prior, private decisions when subjects were presented with a single,

one sided communication. Lana reported other data which showed that a pretest can act as a form of commitment which produces significant resistance in the case of two sided communications.

The dual nature of "commitment" was noted by Ostrom and Upshaw (1968). The Ostrom and Upshaw judgmental model pointed out the need to be cognizant of both the content and self rating aspects of attitudinal commitment. In terms of attitude change, Ostrom and Upshaw suggested two major kinds of discrepancies, that associated with cognitive content and that associated with affective self rating. Both aspects of commitment were dealt with in this study.

Further value bonding studies indicate that a pretest (commitment) may be necessary for bonding to work. Operationally, bonding has been to particular cognitive content while theory requires bonding to a particular stand. The post-bonding self rating pretest may act as a summarizing function which makes discrepancy easier to refute or discount. By varying presence-absence of pretest, the summarizing function may be examined. In the present study, measures of both self rating and content were employed. The pretest encouraged commitment to the self rating aspect of initial position, while the content aspect was provided in the attitude structure measure described below.

Thus, the present research investigated the effects of both value bonding and commitment in the form of pre-discrepancy self rating on resistance to discrepancy. This allowed the investigation of the possibility that the combination of pretest and the relevance variable might produce greater resistance than either factor alone.

### Hypotheses

Summarizing, the purpose of the present study was to examine the effects of relevance of value and presence or absence of pretest on extremity of initial attitude and resistance to attitude change. A substantive issue was employed to facilitate the formation of instrumental bonds, while serving as the basis for a non-polarized attitude. Control over the direction and degree of instrumental bonds was attempted. A pretest commitment variable was included to induce further resistance to attitude change. Thus, Rosenberg's model was tested by the measure of extremity of initial attitude while the Ostrom and Brock model was tested by measures of attitude change resistance.

Specific hypotheses are: (1) in reference to the means-ends model, it is predicted that the bonding of relevant or irrelevant values will increase the favorability of newly formed attitudes as compared to

a no-value bonding situation; (2) the order of results will be that the relevant bond group will exhibit greater favorability of newly formed attitude than the irrelevant value group, which in turn will exhibit greater favorability than the no-bonding condition; (3) on the basis of the cognitive bonding models, it is predicted that value bonding will increase resistance to attitude change; (4) the order of results will be that highly relevant values will confer greater resistance to attitude change than the low relevance condition, which in turn will confer greater resistance than the no value bonding condition; (5) the pretest conditions will manifest less attitude change than the no-pretest condition; and (6) the pretest-relevant bond condition will manifest less attitude change than the pretest irrelevant condition, which in turn will manifest less change than the pretest-no bond condition.

## CHAPTER II

### METHOD

Initial phases of the present research required selection of an appropriate issue, scaling of materials to be used, employing those materials in a pilot study, and subsequently revising aspects of the materials for the main experiment.

#### Prescaling and Pilot Testing

Selection of an appropriate issue of substantive nature, which would be initially neutral for the Ss was accomplished by employing the educational institution's own physical facilities as the attitude object. After consideration of several possible issues, the choice was narrowed to two: 1) increased usage of the intercom system and 2) increased speed of the escalator system.

The selection of the one issue for the research was based upon the outcome of a value relevance ratings procedure. Forty Ss were required to judge a series of 30 value statements on a scale of relevance to each issue. Two completely different sets of statements were employed. Initial selection of these statements was based on intuition and examination of other lists of value statements. Ss rated the relevance of each value statement toward the particular issue on a scale labeled 1 - highly relevant to 7 - highly irrelevant.



The ratings of relevance were examined to determine which of the issues elicited the widest range of relevance of value statements. The final page of the prescaling booklet asked Ss to generate three favorable and three unfavorable statements concerning each of the two issues. These responses were used to develop a pool of belief statements about the attitude objects. These Ss were also required to rate each of the 60 value statements on a scale of personal importance, i.e. according to how much satisfaction they would receive from the situation described by the value statement. The scale was labeled 1 - highly important to 7 - highly unimportant.

Comparisons were then made between mean ratings and standard deviations of the statements for both issues. A final decision for selection of the issue was made on the basis of which issue produced the "best sets" of values to use in manipulating value relevance in the actual experiment. On this basis the issue of escalator speed was chosen. From the list of 30 value statements for this issue certain statements were consistently judged to be highly relevant, while others were judged as highly irrelevant. Neutral statements were also obtained. Ratings of personal importance did not differ extensively between issues. On the basis of this scaling

procedure, five value statements ranked as highly relevant and five value statements judged as highly irrelevant concerning the issue of escalator speed were chosen for inclusion in the pilot study and main study. Attempts were made while choosing these statements to consider those with the lowest standard deviations and highest importance ratings. Means, standard deviations, and importance ratings for the 10 value statements employed are included in the appendix.

A second scaling procedure was performed to gain information concerning the favorability of statements concerning the target issue for use as initial and discrepant cognitions and for the attitude structure measure, which is explained more fully later. Twenty-five Ss were asked to judge a list of statements concerning the issue of escalator speed on a scale of favorability. Ss rated 35 statements on rating scales labeled 1 - highly favorable to 7 - highly unfavorable. Each statement was to be judged as objectively as possible. Four favorable and four unfavorable statements were chosen as initial and discrepant for the pilot study and main study. Selections were made on the basis of appropriate mean ratings and low standard deviations. The general criterion was the four highest means with accompanying low standard deviation and the four lowest means with low standard deviations.

Twelve other statements were selected from the most favorable, neutral, and most unfavorable regions of the scale for the measure of attitude structure employed in the pilot study.

### Pilot Study

A 2x3 design was employed with 11 Ss per cell. The independent variables were pretest vs. no pretest and relevant value bonding vs. irrelevant value bonding vs. no value bonding. Dependent measures included pre-post change scores, an attitude structure measure, and several manipulation checks.. Hypotheses were those presented earlier. The design and purpose of experimental booklets were similar to the main study, which is described in detail below. Differences will be noted when pertinent. The general procedure was: initial information, value bonding, commitment (or not), discrepant information, post tests. Significant results were generally lacking apparently due to lack of real involvement of Ss in the value bonding task. The most serious problem arose in the irrelevant bond conditions. Ss apparently viewed the irrelevant values as irrelevant but also as unrealistic and somewhat unbelievable. These conclusions were based on Ss essays during value bonding procedures. Additional prescaling of irrelevant values was deemed necessary. The attitude structure measure was also

inadequate. This device consisted of 12 statements about the issue to which the S rated his degree of agreement. However, these statements did not represent the entire scale of favorability.

Therefore, a final set of prescaled materials was obtained before the main study was undertaken. Forty additional value statements were judged by 15 Ss on relevance to the escalator issue as well as personal importance. Ss also rated the favorability of 20 additional statements pertaining to the focal issue.

Materials for the final experiment were selected in this manner. Relevant values were identical to those from the pilot research. Irrelevant values were chosen from the later prescaling. Final selections of favorability statements employed the combined favorability ratings of two equivalent samples of judges. A comprehensive listing of 55 scaled favorability statements was constructed. Fifteen statements were chosen on the basis of equal intervals, i.e. each statement's mean rating differed from the next statement by approximately the same interval. The entire range of ratings was represented. A list of the means and standard deviations for the final attitude structure measure appears in the appendix, as well as means and standard deviations for the irrelevant values employed in the main study.

### Main Study

A 2x3 completely randomized design was employed. The independent variables were pretest vs. no pretest and relevant bonds vs. irrelevant bonds vs. no bonds. Dependent variables included a pre-discrepancy self rating, post-discrepancy measure of attitude, a pre-post attitude change score, a "quasi" change score, an attitude structure measure, and a series of manipulation checks. Descriptions of these variables and their purposes and construction follows below.

Sixty Ss, 10 per condition, were gathered from a student population at Loyola University. Ss ranged from 18-60, with the majority in the 18-20 year range. Ss were obtained from two campuses of Loyola: main and downtown. Many of the Ss participated in the experiment to fulfill a course requirement. Other Ss participated on a more voluntary basis, without a course requirement. Sex of Ss was about equally divided. The focal issue was pertinent to the main campus.

To recapitulate, the main differences from the pilot study were that the attitude structure measure was reconstructed by combining all the prescaling data on favorability ratings and by using equal intervals of differences between means as the criterion for inclusion in the final measure; the irrelevant values were altered

to provide some realism and pertinence to the focal issue; and manipulation checks were increased, in order to be better able to evaluate the effects of the manipulations. The particulars of these changes and details of the experimental booklet are illustrated and explained in sequence below.

### Procedure

The sequence of events which occurred within the booklet were these: a general introduction and cover story, presentation of initial information, concerning the issue, value bonding procedures in appropriate conditions, pretest vs. no pretest, presentation of discrepant information, and the dependent variables. A sample of each page that appeared in the various booklets appears in the appendix.

Cover Story (Page 1): The Ss were asked to indicate name, age, sex, and class rank in order to induce some type of involvement or responsibility for the tasks to follow. A cover story was presented as an introduction to the type of research supposedly represented within the booklet. The story was described as a joint project of the Department of Environmental Studies and the English Department. The story consisted of an explanation of the relation between perception of the environment and language habits as manifested through descriptions of

these perceptions. This guise was designed to prepare Ss for the value bonding task in which they would draw verbal connections between the attitude object (an aspect of the physical environment) and values (linguistic categories).

Orientation (Page 2) The pilot study indicated a need to emphasize the correct procedure and manners of response required by Ss. Therefore, an orientation section was included in the main study. Ss were informed that this orientation and the materials included within it came from past research concerning the "intercom" issue.

Two favorable statements concerning the issue were presented and attributed to a member of the university administration. Following these statements, a short essay was presented which supposedly reflected the reactions of a previous S. Ss were asked to write a short essay discussing his feelings about these statements.

Orientation. (Page 3) Only Ss within one of the four value bonding conditions received this page. The intercom issue was employed. Three "general ideas" (values) were presented which pertained to the issue.

A sample essay was also presented in which a hypothetical S considered the intercom issue in relation to the previous ideas. The essay emphasized the utility the issue's realization would have in attaining each of the

values. Ss were instructed to underline important words and phrases in the development of the essay and also to rewrite it in their own words. This section was designed to familiarize the S with the value bonding technique by influencing the correct cognitive set needed in the following sections of the study.

Orientation (Page 4) The close of the orientation section was accomplished by informing Ss that a new issue was to follow.

Initial Information (Page 5) The issue of increasing escalator speed was introduced as the focus of the remaining pages. Four favorable statements with an obtained mean scale value of 2.64 were presented concerning this issue and were attributed to a co-chairman of the University Building Committee. Ss were asked to demonstrate understanding of this position by writing an essay concerning their feelings about the statements and the issue. All Ss received these same four favorable statements to insure an equality of initial information.

Value Bonding (Page 6) Only Ss in the value bonding conditions received this page. The S was told that an examination of his present feeling concerning the issue was to follow in the form of an essay writing about the relationship of the issue to some "general ideas."



Specifically, it was asked that Ss indicate how escalator speed might lead to or interfere with each of the general ideas.

Value Bonding (Page 7) Ss were instructed to write an essay relating feelings about the focal issue to each of five general ideas. Ss in relevant bond conditions received the same set of values. The mean scale value of relevance was 2.23, and the corresponding mean scale value of importance was 2.59. Ss in the irrelevant conditions received values derived from the second prescaling. The mean scale value of relevance for these values was 6.20, and the mean scale value of importance was 3.01. The two no value bond conditions did not receive this page. The purpose of this essay writing was to encourage the formation of cognitive bonds between cognitions about the issue and value statements. The type, degree, and direction of bonds formed were determined by the S, but it was expected that the orientation section would induce the formation of positive instrumental bonds in all conditions.

Value Relevance Ratings (Page 8) Ss in value bonding conditions were asked to rate each of the "general ideas" on a 7-point scale with endpoints 1 - extremely irrelevant to 7 - extremely relevant to the escalator issue. The task served as a check to ascertain whether the

manipulation of relevance was successful.

Self Rating (Page 9) Ss in the three pretest conditions were instructed to encircle the one item from an eight item list of self rating ranging from highly unfavorable to highly favorable which best exemplified their present feeling toward the focal issue. Also to test the Rosenberg model, this self rating served as initial attitude. Discrepant Information (Page 10) All Ss received this page. Four unfavorable statements with a mean scale value of 5.20 concerning the focal issue were attributed to another co-chairman from the Building Committee. Ss were not required to write an essay concerning these statements.

Attitude Level and Structure (Pages 11 & 12) Ss were asked to rate personal agreement with 15 statements about the attitude object. These statements represented various points on the favorability spectrum relating to the issue of escalator speed. These 15 items were selected from the prescaling data on the basis of favorability scale values. Alongside each statement was a scale with endpoints labeled 1 - extreme disagreement to 7 - extreme agreement. These ratings coupled with the item scale values were employed in deriving a weighted average index of overall attitude and a profile of affective cognitive structure to be described later.

Additional Dependent Measures (Page 13) All Ss were asked to answer several questions which served as manipulation checks. The first question served as a posttest and it consisted of a rating of the Ss' overall feeling toward the focal issue on an 8-point scale of favorability. The next two questions, in turn, asked Ss to rate the importance of the focal issue and the general ideas on a 7-point scale. The next three questions ascertained the general favorability of the information from the first co-chairman, the second co-chairman, and finally a comparison of which of the two sets of information was most important in forming the final attitude. A final question tapped the behavioral component of attitude by asking whether action would be taken by the S to see the realization of the issue.

Additional Dependent Measures (Page 14) Ss in the pretest condition were asked whether they had formed an attitude before the self rating or when the self rating was completed.

Additional Dependent Measures (Page 15) Ss in the value bonding condition were asked to write about the effect the essay writing concerning the general ideas had in forming the final attitude.

## CHAPTER III

### RESULTS

#### Attitude Formation

The hypotheses which concern attitude formation were: 1) in reference to the means-ends model, it was predicted that the bonding of relevant or irrelevant values will increase the favorability of newly formed attitudes as compared to a no value bonding situation; 2) the order of results will be that the relevant value group will exhibit greater favorability of newly formed attitude than the irrelevant group, which in turn will exhibit greater favorability than the no bonding condition.

#### Initial Attitude

A 1x3 analysis of variance of the pre-discrepancy attitude ratings of favorability to the focal issue did not yield a significant effect ( $F=1.91$ ;  $df=2,27$ ;  $p>.20$ )\* and the predicted order effects were not obtained. The overall mean for the three conditions was 4.53 which corresponds to a point between "slightly favorable" and "slightly unfavorable" on the 8-point favorability scale. The cell means are shown in Table 1.

\* Complete AVOVA summary tables for all reported analyses are given in the appendix.

TABLE 1

Pre-discrepancy Attitude as a Function  
of Relevance of Value Bond

	Type of Bond		
	Relevant	Irrelevant	No
Pretest	3.80	5.50	4.30

All n's = 10

The attempt at creating an overall attitude which was not polarized was successful. The obtained greater favorability to the issue in the irrelevant bond and no bond conditions compared to the relevant condition was marginally contradictory to the means-ends analysis. The means-ends analysis predicts greater favorability in the relevant bond condition followed by the irrelevant condition which, in turn, is followed by the no bond condition.

Value Relevance Ratings

In order to investigate one possible reason for the failure to obtain the predicted order effects concerning the initial attitude, the values employed in the bonding conditions were examined to determine whether the intended differences in relevance were successfully perceived. A 2x2 analysis of variance on the four value bond conditions yielded a significant main effect of

relevance ( $F=5.20$ ;  $df=1,36$ ;  $p<.05$ ). The manipulation of relevance was successful.

TABLE 2

Average Value Ratings as a Function of  
Relevance of Bonds and Pretest

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	4.26	2.46	3.36
No Pretest	<u>4.26</u>	<u>2.40</u>	3.33
$\bar{X}$	4.26	2.43	

All n's = 10

As shown in Table 2, the average value rating for the relevant bond conditions corresponds to a point between "neutral" and "slightly irrelevant." The average rating for the relevant bond conditions was lowered by an average rating of 2.70 for the third listed value statement, "innovation in the pursuit of progress." Nevertheless, the lack of effect of relevance on the pretest scores is probably not attributable to the lack of difference in perceived relevance of the values presented for bonding.

#### Instrumental Bonds

Another possible reason for the nonsupportive results concerning the initial attitude was failure to form the necessary instrumental bonds between the issue

and the values. A content analysis was performed on the value bonding essays written by Ss in each of the four bonding conditions. All 40 Ss apparently construed the instructions correctly and wrote essays containing instrumental bonds between the issue and the values. A more sensitive coding system was devised in which every positive instrumental relationship (i.e. realization that the advocated attitude would lead to the value) between the issue and a value was coded +1; every negative instrumental relationship (i.e. realization would not lead to the value) was coded -1; omission of a value was coded 0. Summing over the five values yielded a possible range of instrumentality from -5 to +5. A pair of judges separately rated the value bonding essays; 99% of the ratings did not differ by more than one point. The average of summed ratings are shown in Table 3.

TABLE 3

Average Rating of Value Bonding Essays as  
a Function of Relevance and Pretest

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	-0.70	-2.60	-1.65
No Pretest	<u>-2.00</u>	<u>-1.90</u>	-1.95
$\bar{X}$	-1.35	-2.25	

All n's = 10

These results consistently indicated that Ss formed predominantly negatively directed instrumental bonds contrary to the experimental plan. It had been hoped that bonds in all conditions would be equal, high and positive. The degree of observed negativity was not consistent across conditions, but a 2x2 analysis of variance on these ratings indicated no significant effects. However, as will be shown in later sections, bond direction was related to final attitude and to attitude change.

An explanation of the initial attitude scores on the basis of the bond ratings is theoretically possible. A consistency theory interpretation would dictate that the negative bonds obtained in the irrelevant bond pretest condition (-2.60) coupled with the somewhat negative relevance ratings (2.46 or -1.54 when the 1 to 7 relevance scale is converted to a bipolar -3 - highly irrelevant to +3 - highly relevant scale) might account for the high pretest (5.5) and would also contribute to some resistance to attitude change. In other words, initial attitudes may have been enhanced in the irrelevant condition when Ss chose to negate the relationship between the attitude issue and negatively valenced value statements. The resultant balanced value-attitude structure would be somewhat resistant



to change both from balance theory and cognitive bonding theory points of view. The nominally "relevant" condition can also be viewed in consistency terms in that essentially null bonds ( $-0.70$ ) were formed with essentially neutral values ( $4.26$  or  $0.26$  on a  $-3$  to  $+3$  scale). Initial attitude would presumably not be affected by such bonding, nor should such bonding arouse much resistance. The implications of this analysis for resistance to change will be presented in a later section.

The absence of significant enhancement of initial attitude due to the bonding of relevant values does not, of course, disconfirm the means-ends hypothesis. It may be that Ss in the different relevance conditions arrived at their similar initially neutral positions via different routes. The slight differences in bonding direction coupled with differences in perceived irrelevance noted above suggest that this may have been the case. Obviously, additional control groups such as pretest with no initial information and pretest after initial information but before bonding would be somewhat informative. Here it can only be assumed on the basis of random assignment of Ss to conditions that the trend noted in Table 1 is not due to pre-experimental attitudes.

Further information about the "different routes" notion can be gained by investigating possible differences

in perceived importance of the attitude issue and possible confounding of value relevance with the second component of the multiplicative means-ends model, i.e. value importance.

### Issue Importance

A 2x3 analysis of variance was performed on Ss' ratings of personal importance of the issue after all manipulations were completed. The main effect of relevance was not significant ( $F = 1.83$ ;  $df = 2.54$ ;  $p > .20$ ). However, inspection of the cell means shown in Table 4 provided further useful information.

TABLE 4

Average Ratings of Issue Importance as a  
Function of Relevance and Pretest

	Type of Bond			$\bar{X}$
	Relevant	Irrelevant	No	
Pretest	3.10	2.40	2.90	2.80
No Pretest	<u>4.10</u>	<u>1.90</u>	<u>3.20</u>	3.06
$\bar{X}$	3.60	2.15	3.05	

All n's = 10

Ratings were made on a 7-point scale with 1 - extremely unimportant to 7 - extremely important. In general, Ss felt that the issue was somewhat unimportant especially in the irrelevant value condition and least so in the

relevant condition. The correlation between these ratings and pretest was not significant. ( $r = .25$ ;  $p > .05$ ). Apparently, perceived importance of the issue bore little relationship to level of initial position.

### Idea Importance

A 2x2 analysis of variance was performed on Ss' responses rating the personal importance of the "general ideas" presented for value bonding. Only Ss in the four bonding conditions received this question. Ratings are presented in Table 5.

TABLE 5

Average Ratings of Idea Importance as a  
Function of Relevance and Pretest

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	4.80	3.40	4.10
No Pretest	<u>3.60</u>	<u>3.60</u>	<u>3.60</u>
$\bar{X}$	4.20	3.50	3.60

All n's = 10

Since no significant effects were found, it may be presumed that as planned, importance was not confounded with relevance ( $r = .12$ ;  $p > .05$ ). The relevant bond pretest condition manifested greater personal importance of the "general ideas" than in the other three conditions.

In summary, these results indicated that the initial

attitude in all conditions was nonpolarized as planned, but the predicted order effects of increasing favorability with increasing relevance were not obtained. The value relevance was apparently perceived correctly by Ss indicating that this was not the reason for the somewhat contradictory initial attitude results. Also, as planned, Ss did write value bonding essays with instrumental bonds between the issue and the values. However, these instrumental bonds were formed primarily in a negative direction. An explanation for the initial attitude results was offered on the basis of the nature of instrumental bonds. It was suggested that the negative bonds coupled with the negative relevance ratings in the irrelevant conditions compared with null bonds to neutral values in the relevant condition might account for the pretest scores. Analysis of the importance of the attitude issue and importance of the values indicated that these variables were somewhat confounded with relevance which further complicated the interpretation of the initial attitude scores.

#### Resistance to Attitude Change

The hypotheses concerning predictions about resistance to change were: 1) on the basis of the cognitive bonding models, it was predicted that value bonding would increase resistance to attitude change; 2) that

highly relevant values would confer greater resistance to attitude change than the low relevance condition, which in turn would confer greater resistance than the no bonding condition; 3) the pretest condition would manifest less attitude change than the no pretest condition; and 4) the pretest-relevant bond condition would manifest less attitude change than the pretest irrelevant condition, which in turn would manifest less change than the pretest-no bond condition.

### Posttest Attitude

This attitude measure served as one indication of Ss' general feeling toward the focal issue. The Ss rated final attitude on a 8-point favorability scale, ranging from 1 - extremely unfavorable to 8 - extremely favorable. Cell means are given in Table 6.

TABLE 6  
Final Attitude as a Function  
of Revelance and Pretest

	Type of Bond			$\bar{X}$
	Relevant	Irrelevant	No	
Pretest	3.70	3.10	3.30	3.36
No Pretest	<u>4.50</u>	<u>3.40</u>	<u>5.10</u>	4.33
$\bar{X}$	4.10	3.25	4.20	

All n's = 10

All ratings averaged about neutral or slightly unfavorable. A main effect of pretest was significant ( $F = 3.56$ ;  $df = 2, 54$ ;  $p < .05$ ). As shown in Table 6, the nature of this result was contrary to the hypothesis that the pretest conditions would manifest greater resistance to attitude change and, thus, more favorable final attitude. The main effect of relevance was not significant but as predicted,  $\bar{S}_s$  in the relevant condition tended to be more favorable than  $\bar{S}_s$  in the irrelevant condition. It should be recalled that there were slight differences in initial attitude due to the relevance factor, so a more sensitive test of resistance would be an attitude change score which is discussed later.

The post-discrepancy attitude measure was correlated with the sum of the value relevance ratings. Theoretically, a high degree of relevance rating should confer greater resistance while a high posttest attitude score indicates less change from the pretest measure. The overall rank order correlation was significant ( $\rho = .54$ ;  $p < .01$ ). Within cells rank order correlations were performed to further break down this relationship. See Table 7.

TABLE 7

Correlation of Sum of Value Ratings and  
Post-discrepancy Attitude as a Function  
of Relevance and Pretest

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	.846	.419	.632
No Pretest	<u>.150</u>	<u>.660</u>	.405
$\bar{X}$	.498	.539	

The highest correlation was expected in the relevant-pretest condition while the lowest correlation was expected in the irrelevant-no pretest condition. These expectations were partially borne out.

TABLE 8

Rank Order Correlations of Instrumental Bonds  
and Posttest Attitude Measure as a Function  
of Pretest and Relevance

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	.200	.330	.265
No Pretest	<u>.055</u>	<u>.463</u>	.259
$\bar{X}$	.127	.390	

All n's = 10

A high correlation indicates resistance to attitude change. The irrelevant-no pretest condition was expected to yield the lowest correlation. The combined results of Tables 7&8 indicate greater resistance to attitude change in the irrelevant-no pretest condition than was expected. Further discussion of this result

will follow below.

### Change Scores

Because of the inequality of the initial attitude measure, a more informative index was constructed by subtracting the post-discrepancy attitude from the pretest attitude measure. A  $1 \times 3$  analysis of variance yielded marginal significance ( $F = 3.09$ ;  $df = 2, 27$ ;  $.05 < p < .10$ ) for the value bonding effect.

A quasi-change score index was constructed for the no pretest conditions by using the mean pretest value in corresponding value conditions for the pretest score. The relevant bond-no pretest received a "pretest" score of 3.8; irrelevant bond-no pretest received 5.5; no value bond-no pretest received 4.3. Table 9 shows the mean change scores.

TABLE 9  
Attitude Change as a Function  
of Relevance and Pretest

	Type of Bond			$\bar{X}$
	Relevant	Irrelevant	No	
Pretest	.10	2.40	1.00	1.16
No Pretest	<u>-.60</u>	<u>2.10</u>	<u>-.80</u>	.26
$\bar{X}$	-.25	2.25	.10	

All n's = 10



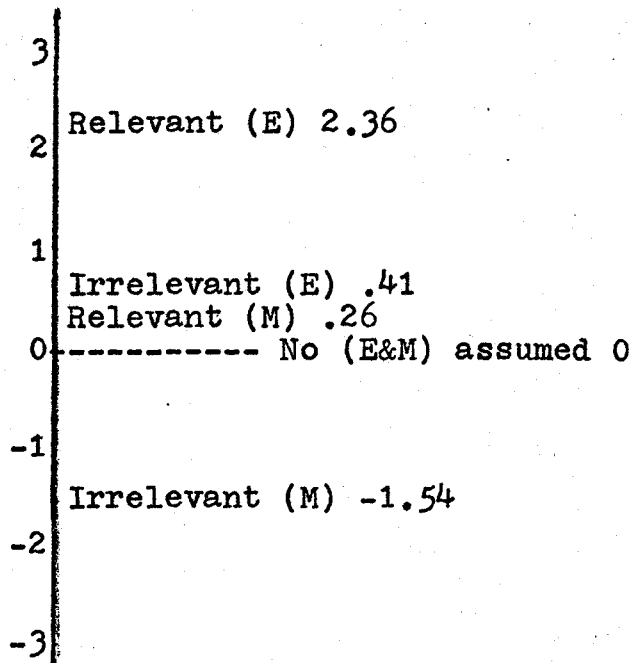
The main effect of pretest was marginal ( $F = 2.95$ ;  $df = 1, 54$ ;  $.10 > p > .05$ ); and contrary to prediction. The main effect of relevance was significant ( $F = 8.28$ ;  $df = 2, 54$ ;  $p < .01$ ); and was generally supportive. A  $t$ -test was performed on the relevant vs. irrelevant conditions with significant results ( $t = 16.6$ ;  $p < .001$ ). As predicted, relevant bond conditions resisted attitude change attempts significantly more than the irrelevant bond conditions. However, there was no significant difference between the relevant bond conditions and the no bond conditions ( $t = 1.50$ ;  $p < .10$ ) and the direction of difference was opposite to expectation.

A probable explanation for the latter finding comes from Edwards (1970). These results indicated no difference in resistance to attitude change between the irrelevant bond condition and the no value bond condition, while the present study showed no difference between the relevant and no bonding conditions. When the results of both studies are plotted on a bipolar scale of relevance, a plausible explanation of these divergent outcomes is apparent.

FIGURE 1

## Comparison of Bipolar Relevance Ratings from

Edwards (E) and the Present Study (M)



Relevance ratings from both studies were converted to a -3 to +3 scale. Levels of relevance in the Edwards study (E) were higher on the continuum of relevance than in the present study (M). Corresponding results from this study indicated that the no value bonding conditions were equivalent to Edwards' results. However, the relevant condition existed at a lower point of the continuum than Edwards. Further, the irrelevant condition for this study fell on the negative end of the relevance continuum. If it is assumed that negative relevance can

reduce attitude change resistance, the results appear sound. The explanation, then, rests upon the quantitative difference in irrelevant conditions between the two studies.

The data in Table 9 imply that resistance to change was mediated in part by the relevance of bonded values. To assess the degree of this relationship, rank order correlations (within cells) were performed on the change scores and the sum of the value relevance ratings. The results in Table 10 indicated that perceived relevance was not significantly related to change.

TABLE 10  
Correlation of Change Scores and  
Sum of Value Ratings

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	.131	-.033	.049

All n's = 10

While this calls to question the validity of value relevance as a mediator of change resistance, it may also be the case that relevance effects take place at a low level of awareness.

As previously noted, Tables 7 and 8 indicated resistance in the irrelevant-no pretest condition on the basis of rank order correlations between the sum of

value ratings and posttest, and instrumental bonds and posttest. However, the posttest attitude measure is not the best indicator of resistance to attitude change. Therefore, rank order correlations were performed on instrumental bond ratings and pretest-posttest change scores, a more accurate measure of resistance. Table 11 summarizes the results.

TABLE 11

Rank Order Correlations of Instrumental Bonds and Change Scores as a Function of Pretest and Relevance

	Type of Bond		$\bar{X}$
	Relevant	Irrelevant	
Pretest	.038	.307	.172
No Pretest	<u>.170</u>	<u>.445</u>	.307
$\bar{X}$	.104	.370	

All n's = 10

The relevant-pretest condition was expected to manifest the lowest correlation (greater resistance) while the irrelevant-no pretest condition was expected to yield the highest correlation (less resistance). The expected pattern of results was obtained. However, the combined results of Tables 7, 8, and 11 evidence the indeterminant nature of the total relationship

#### Weighted Average Index of Attitude

A single score of attitude (which reflects acceptance of content) was calculated from agreement scores

given by Ss on the attitude structure measure. The measure consisted of 15 statements to which Ss indicated personal agreement on a 7-point scale. Each statement had a scale value of favorability associated with it on the basis of the prescaling. The scale values are listed in the appendix.

Several authors (Anderson, 1968; Manis, Gleason & Dawes, 1966) have concluded that a person's attitude is equal to the sum over beliefs of the product of each attitudinal belief times its weight, all divided by the sum of the weights. This statement is summarized in Equation 1.

$$\text{Attitude} = \frac{\sum_{i=1}^N w_i B_i}{\sum_{i=1}^N w_i} \quad \text{Equation 1}$$

Where  $B_i$  is the favorability of belief<sub>i</sub> and  $w_i$  is the degree of agreement with that belief.

A 2x3 analysis of variance of these attitude scores yielded no significant effects. The weighted average index correlated with pretest attitude scores ( $r = .61$ ;  $p < .05$ ), which reflected a consistency of attitude. The correlation of the post-discrepancy attitude and the weighted average index was .41 while the sum of the value ratings and weighted average index correlated at .15.

An analysis of covariance was performed on the weighted average attitude index with pretest as the covariate. Therefore, the effects of the relevance manipulations on the weighted average index are being tapped through this analysis. No significant effects were obtained. These results corresponded to the results of the analysis of variance reported earlier.

Generally, the results of the several statistical analyses of the weighted average attitude were non-supportive. The index did not seem to differentiate between conditions. Value bonding, therefore, seemed to slightly affect change in self ratings, but not degree of agreement with evaluation laden cognitions. In other words, the affective component of attitudes was more susceptible to influence in this study than the cognitive component. This is somewhat surprising in that initial and discrepant information employed here were content (cognitive) rather than self rating (affect) oriented. Further information about the effects of relevance and pretest on content can be gained by examining cognitive-affective structure.

#### Attitude Structure

A measure of cognitive-affective structure was constructed by noting the degree of agreement with the 15-statement dependent variable as a function of relevance

and pretest and as a function of the favorability of the statements used. For simplification, the 15 statements composing the attitude structure measure were grouped into three categories based on predetermined scale values. Category 1 consisted of the five most favorable statements; category 2 consisted of the five middle favorability statements; and category 3 of the five least favorable statements. A summed agreement for each of the three categories was computed for all 60 Ss. A  $2 \times 3 \times 3$  analysis of variance was performed with favorability groups treated as a within S factor. The interactions of favorability groups x pretest and favorability groups x relevance were of main interest. The analysis of variance performed on these interactions yielded no significance. It was expected that the pretest condition would agree more with the favorable group and disagree more with the unfavorable group. Likewise, the relevant bond condition was expected to agree more with the favorable group and disagree more with the unfavorable group.

Figure 2 shows that Ss in the no pretest condition had a neutral attitude pattern, i.e. disagreement with extreme beliefs, while Ss in the pretest condition had a slightly negative attitude pattern, i.e.

increasing disagreement with increasingly favorable cognitions.

FIGURE 2

Attitude Structure as a Function of

Pretest vs. No Pretest

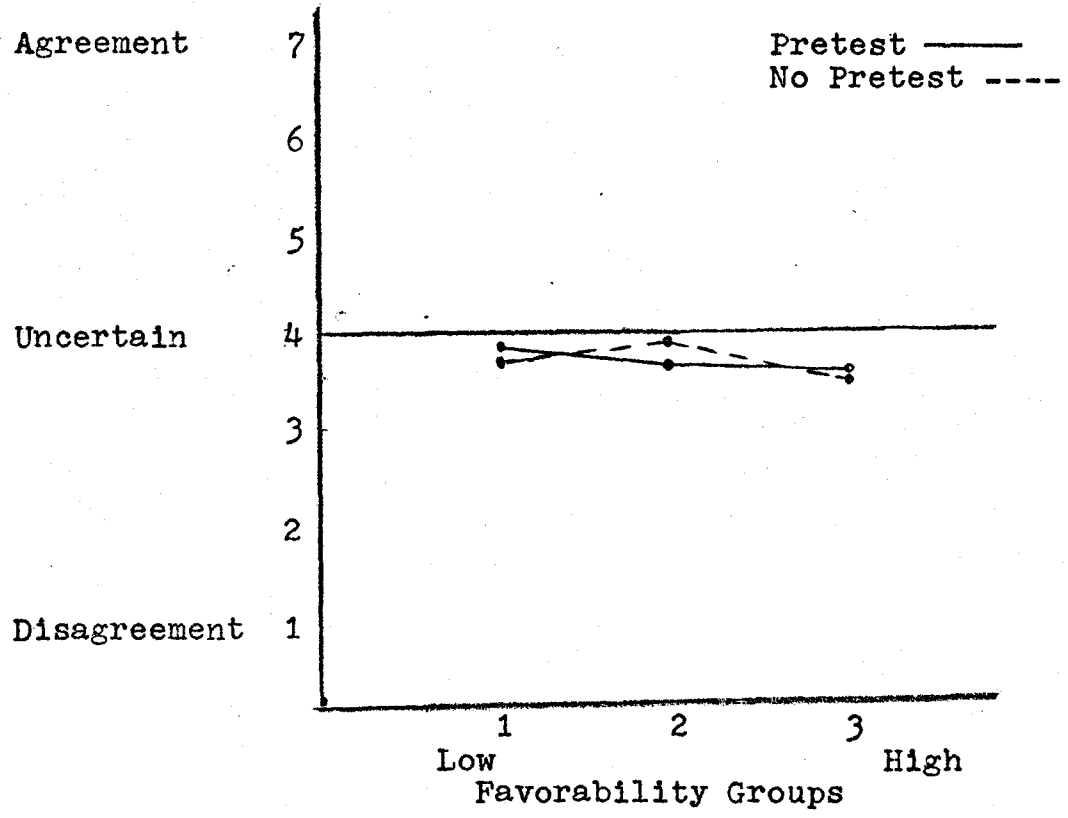
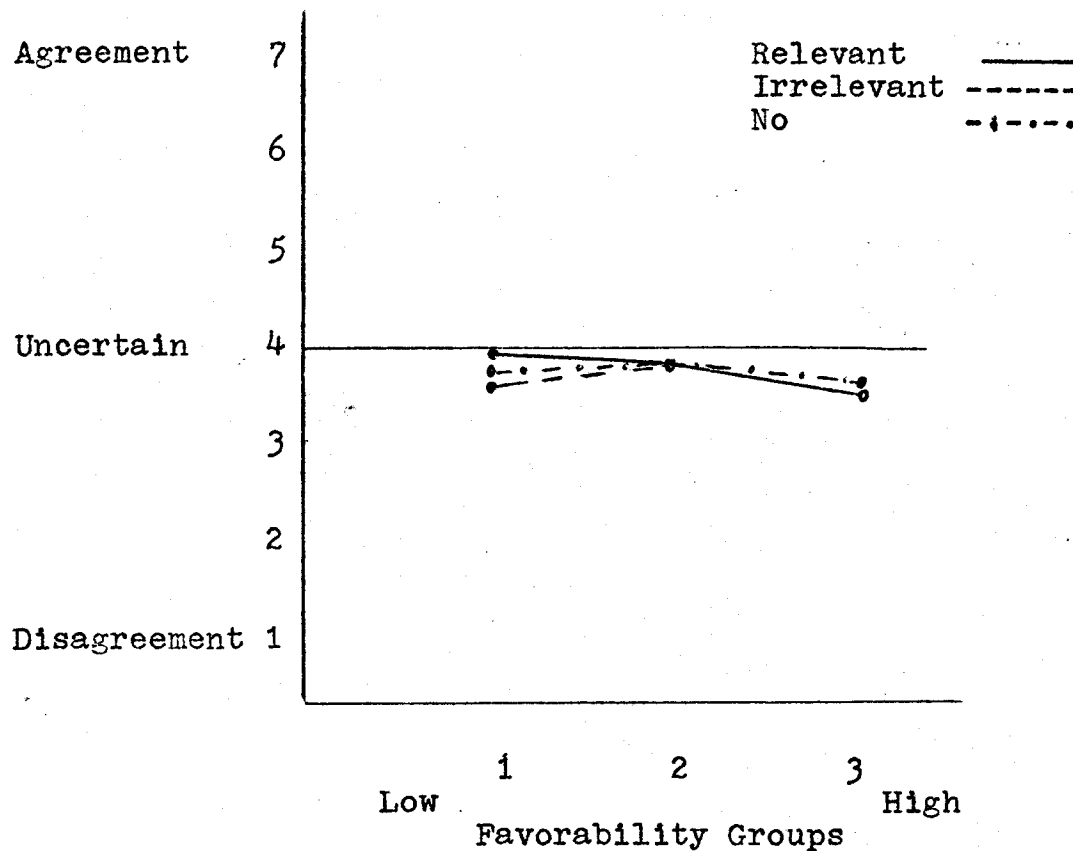


Figure 3 shows a similar pattern in all three conditions. The only differences occurred in the low favorability group with irrelevant conditions disagreeing most and relevant conditions disagreeing least with the unfavorable items.



FIGURE 3  
Attitude Structure as a Function  
of Bonding Relevance



Obviously, the content aspect of attitude as manifested in the attitude structure measure was virtually unaffected by the manipulation of the independent variables.

#### Other Analyses

The attitude structure measure results generally indicated an overall uncertainty toward evaluative belief statements in pretest vs. no pretest and

relevant vs. irrelevant vs. no groups. This could result either from a predominance of uncertain ratings or from a mixture of agree, disagree, and uncertain responses. To further analyze this agreement uncertainty, the 1 to 7 scale of agreement was converted to a -3 to +3 bipolar scale. The converted agreement scores were then summed by taking the absolute value of the scores. The sum was labeled the attitude extremity score. A low score indicates a preponderance of neutral responses. A 2x3 analysis of variance yielded no significant effects. Table 12 shows cell means.

TABLE 12

Absolute Extremity Scores as a Function  
of Relevance and Pretest

	Type of Bond			$\bar{X}$
	Relevant	Irrelevant	No	
Pretest	29.5	27.2	27.7	28.1
No Pretest	<u>29.8</u>	<u>25.8</u>	<u>27.2</u>	27.6
$\bar{X}$	29.6	26.5	27.4	

All n's = 10

Possible scores range from 0 to 45 with 0 indicating neutrality and 45 indicating that all statements met with highest agreement or disagreement.

Ss in the relevant conditions tended to give more extreme ratings but in general a pattern of moderation prevailed. Cell means indicated nonsignificantly

greater scores in the relevant bond condition. This might indicate that Ss in these two conditions consistently responded at either end of the bipolar agreement scale, indicating extreme agreement or disagreement to the statements. This tendency is masked when the results from the 1 to 7 point scale are examined since a S responding to all 15 statements with neutral agreement (4) would be approximately equivalent to a S who divided his responses at both extreme ends of the agreement scale.

Finally, several analyses were performed on those dependent variables which were measured after the posttest. A 2x3 analysis of variance on the perceived importance of initial and discrepant information to final attitude formation yielded no significant effects. Cell means generally revealed neutral responses to both sets of information across bonding conditions.

A 2x2 analysis of variance on the comparative importance of the two sets of information yielded no significant effects. See Table 13.

TABLE 13  
Information Importance as a Function  
of Relevance and Pretest

	Type of Bond			$\bar{X}$
	Relevant	Irrelevant	No	
Pretest	5.4	4.5	3.1	4.3
No Pretest	<u>5.0</u>	<u>6.2</u>	<u>5.1</u>	5.4
$\bar{X}$	5.2	5.3	4.1	

All n's = 10

Scores range from 1 - initial information counts most to 7 - discrepant information counts most.

In general, it was reported that the discrepant information counted more than initial information. This, of course, is consistent with the general negative trends on the post-discrepancy attitude measures.

## CHAPTER IV

### DISCUSSION AND SUMMARY

#### Attitude Formation

The intended results of this section can be summarized briefly. A nonpolarized initial attitude with the relevant bond condition being most favorable to the focal issue, followed by the irrelevant and no bond conditions was sought. Relevant bond conditions were also to have judged the values as more relevant and important than the irrelevant bond conditions. Instrumental bonds were to be formed, with the relevant conditions exhibiting the strongest positive bonds. Attained results indicated the attempt at creating an overall nonpolarized attitude was successful, although the irrelevant and no bond conditions surpassed the relevant bond in favorability to the focal issue. Ss significantly judged the relevance of values as predicted. Ss did write instrumentally bonded essays but the predominance of the negatively directed bonds was unexpected. Relevant bond Ss manifested a non significantly greater perceived importance of the values and issue. The results generally indicated success in formation of attitude, relevance and importance of issue and values, and instrumental bonds, although this success was not as pervasive as predicted.

Two recommendations are offered in lieu of the results concerning the initial portion of this study, attitude formation. The first concerns the rather large variability encountered on the pretest measure of attitude. It appears plausible to assume that the insertion of the pretest after bonding manipulations may have resulted in some effect on initial attitude level by the process of value bonding. Future research should include a pretest prior to any manipulations. Of further use would be the inclusion of attitude measures after value bonding and also after all manipulations have been presented. The differential effects of the manipulations upon level of initial attitude could then be ascertained.

The second recommendation concerns the direction and degree of instrumental bond formation. Attempts should be made to generate "values" for use in the study which lie at a higher absolute level on a relevance continuum for relevant bond conditions. Likewise, irrelevant values should lie at the opposite end of the relevance continuum while still remaining "positive" in nature. The process of value bonding might then result in positive instrumental bonds, as dictated by the model.

### Resistance to Attitude Change

Hypothesized results were that post discrepancy attitude would be most favorable for the relevant bond condition, followed by the irrelevant and no bond conditions. Change scores were to indicate greatest resistance to change in the relevant bond condition, followed by the irrelevant and no bond conditions. The weighted average index, as expected, paralleled the results of the post discrepancy attitude measure. The attitude structure measure was to indicate that relevant bond Ss agreed most with favorable statements and disagreed most with unfavorable statements, with the irrelevant and no bond conditions manifesting significantly lower levels of agreement and higher disagreement to unfavorable and favorable statements respectively. Likewise, relevant Ss were to exhibit greater perceived importance of initial information and were to judge this information as most influential in their final attitude.

Obtained results indicated that the post discrepancy attitude did not manifest the hypothesized relationship to relevance and pretest. A "quasi" change score showed a significant effect of relevance while nonsignificant correlations were obtained between this change score and pretest and sum of value ratings. The weighted

average index yielded non-differentiating results while Ss exhibited widescale uncertainty on the attitude structure measure. Ss expressed a neutral attitude to both initial and discrepant sets of information with relevant bond Ss judging discrepant information as most important in their final attitude.

Although the change scores did exhibit the hypothesized relationship with relevance manipulations, the rest of the dependent measures generally evidenced an uncertainty or neutrality of response. The pervasiveness of this neutrality appears to indict issue selection itself. Ss did not appear to be involved in the focal issue and appeared to manifest this non-involvement on the dependent measures. A substantive issue of more obvious pertinence and importance to Ss must be employed in future research.

#### Methodological Problems

The size of the sample may have hampered attainment of significant differences between conditions. Doubling the sample size would help clarify various trends in the present data. The nature of the sample was also troublesome. The sample was partly composed of Ss from the subject pool at the main campus who fulfilled a course requirement through participation. Other Ss were gathered on a voluntary basis from the downtown



campus of Loyola University. Further, the focal issue was "increasing escalator speed in Damen Hall," which is located on Loyola's main campus. Although verbal attempts were made to generalize the issue to any educational institution, the fact that the issue was linked to a specific location may have weakened the impact of the issue and manipulations, especially for downtown Ss who may never have visited Damen Hall. Finally, prescaling was performed on the main campus while the main study employed a majority of downtown Ss. Since specific majors are located on a certain campus, equality of the samples may have been contaminated.

The foregoing statements concerning problems encountered in issue selection, achievement of instrumental bonds, etc. prompt a proposed procedural change for future research. A substantive issue of present day pertinence, i.e. pollution control, might be employed to which Ss can generate a series of personal values. Although initial attitude would probably be polarized, the S's involvement in the issue would be assumed. Furthermore, since value relevance has been so difficult to define for an entire sample, an individual rating of perceived relevance and importance

of the self-generated values would yield a very accurate indication of true levels on these factors. The combination of a substantive issue and personal values of known relevance and importance would help facilitate the formation of positively directed instrumental bonds by some bonding technique, i.e. essay writing. The ratings of the relevance and importance of the generated values coupled with a simple count of the number of values reported would provide all three of the variables comprising the Ostrom and Brock value bonding model. Although this idiographic technique exhibits lack of control over the absolute level of the independent variable, the assurance of issue involvement and personal relevance to all Ss outweighs this concern.

### Conclusions

The present study appeared to contribute an interpretation of value bonding in terms of the Ostrom-Upshaw content-self rating distinction. Ss appeared to begin with a neutral, nonpolarized attitude as indicated by the pretest, the self rating aspect of commitment. Ss in the relevant bond conditions then assimilated the additional contents of the experiment but remained neutral in attitude. However, Ss in the irrelevant bond conditions became less favorable in

attitude through addition of new contents. The initial and discrepant information was content oriented, as well as the attitude structure measure and the value bonding process. The implication is that value bonding confers resistance to persuasion by allowing the S to adopt new content while retaining self rating. Future research should examine effects of value bonding on self rating per se.

Finally, the possibility remains that value bonding is ineffective with neutral attitudes. The Ostrom and Brock model does not specifically deal theoretically with such neutrality of attitude and, therefore, this study may lie outside the range of the value bonding theory, in its present stage.

APPENDIX A

EXPERIMENTAL MATERIALS

Name \_\_\_\_\_

Age \_\_\_\_\_

Sex \_\_\_\_\_

Class Rank \_\_\_\_\_

Please do not open this booklet until you have finished reading this page.

### Introduction

The present experiment bridges the gap between two academic disciplines. Interdisciplinary research has assumed a position of importance in today's modern complex society. Real progress is most rapidly achieved when experts from different areas combine their skills and knowledge. This method combines a wide spectrum of viewpoints and sometimes, in the early stages, leads to the impression of inefficiency. However, significant advances often require the multidisciplinary approach. For example, consider this nation's space effort. These fantastic accomplishments were the product of a team of physicists, pilots, geographers, astronomers, and many others.

The present research is the product of a joint effort by the English Department and the Department of Environmental Studies. Its purpose is to investigate the effects of language habits on the perception of the physical environment. Each of us possesses

a uniquely characteristic view of our physical environment which is both affected and mirrored by linguistic habits. Thus, perception and judgment depend upon the language categories which we have developed for describing the world around us, and these perceptions and judgments are manifested through verbal descriptions. This study, then, is an attempt to investigate and clarify the link between language habits and perception of the physical environment.

## Orientation

In order to familiarize you with the type of research being done and to orient you for the tasks to follow, we are providing you with an example of the information obtained from some of our previous studies. The research team is concerned with the use of the school's physical facilities and aimed at making the university's operations more efficient. In particular, past experiments have dealt with perceptions and judgments of the intercom system in Damen Hall.

Part I: Below are two statements provided by a member of the administration who is favorable to a proposal to increase the usage of the intercom system in Damen Hall.

A) Increasing usage of the intercom system would facilitate a general ability to communicate by speech.

B) The proposed increase would also lead to a greater rapport between administration and students.

This paragraph is an example of one person's reactions to these statements as related to the intercom issue:

"I feel that increased usage will help communication among all of us. However, to predict better rapport between students and

administration because of the intercom is  
ridiculous."

In order to insure us that you understand the type  
of task involved here, please write a brief essay  
discussing your feelings on the issue with respect to  
each of the statements in the space below.



Part II: The issue of increased usage of the intercom system was also considered in terms of the following categories or ideas:

- A) Acquiring an appreciation of ideas
- B) Having new kinds of experience
- C) Involvement in the affairs of others

Considering the issue in relation to these general ideas allows us to directly tap the connection between your linguistic habits and your perception of the physical environment. We are providing a particular set of ideas so that everyone will be considering the same types of cognitive relations. Below is presented a sample paragraph written by a previous subject in this project who considered the intercom system in terms of the foregoing general ideas.

"Increased usage of the intercom system would undoubtedly mean that more information would be available to each student. This would allow each individual the opportunity to choose whether he would like to become involved in the affairs of others. Also, a student in the know would be more likely to have new kinds of experience. Finally, the individual would probably begin to appreciate everyone's ideas generally and be able to tolerate discrepant viewpoints."

Please underline those phrases or words which you think were the main points in the development of the passage. Then briefly paraphrase or rewrite the essay, in your own words, preserving the main points in the space below.

This completes the orientation section of this survey. Its purpose was merely to provide instructions and examples for the material which follows. For the remainder, we will be considering a new issue. Please go on to the next page.

The particular aspect of the physical environment with which we will deal in the present survey is the speed of the escalator system in Damen Hall. To insure that all readers will begin with approximately equal levels and types of information concerning the issue at hand, a number of statements concerning the issue are presented.

These statements are excerpts from a speech by the co-chairman of the University Building Committee. His position is favorable toward increasing escalator speed, and, in this vein, he offered the following potential benefits which would be realized through this change:

Punctuality in keeping appointments

Increase of physical comfort

Alleviation of "jam-ups" on each floor

Demonstration of innovations to improve school

To insure us that you understand the position taken here, we are asking that you convey your feelings on the issue in terms of the statements provided. In the space below, write a brief paragraph discussing your feelings on the issue with respect to each of the statements.

At this point, we would like to examine how your present feelings concerning the proposed increase in escalator speed relate to several general ideas. Your views on the relationship of the issue to these ideas, expressed in and through your linguistic habits, will help us further understand this phenomenon.

You are asked to write an essay describing the relationship between the issue of escalator speed and each of the general ideas. More specifically, we are interested in seeing how you think the escalator speed in Damen Hall will help achieve or interfere with each of the general ideas presented on the next page.

In the space below, write a brief paragraph relating your feelings about escalator speed to each of the following ideas.

Safety

Efficiency

Innovation in the pursuit of progress

Punctuality in keeping appointments

Physical comfort

In the space below, write a brief paragraph relating your feelings about escalator speed to each of the following ideas.

Associating with members of the opposite sex

Accepting the idiosyncrasies of others

Freedom to make own decisions

Society's responsibility for individual behavior

Need for privacy

Now, on the scale below, please indicate the degree of relevance between the issue of increasing escalator speed and each of the 5 general ideas. The scales are coded in this manner: EI - extremely irrelevant; MI - moderately irrelevant; SI - slightly irrelevant; U - uncertain; SR - slightly relevant; MR - moderately relevant; ER - extremely relevant. Make your response by placing a checkmark between the slashes, e.g. /✓/.

Safety

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Efficiency

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Innovation in the pursuit of progress

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Punctuality in keeping appointments

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Physical Comfort

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER



Now, on the scales below, please indicate the degree of relevance between the issue of increasing escalator speed and each of the 5 general ideas. The scales are coded in this manner: EI - extremely irrelevant; MI - moderately irrelevant; SI - slightly irrelevant; U - uncertain; SR - slightly relevant; MR - moderately relevant; ER - extremely relevant. Make your response by placing a checkmark between the slashes, e.g. / ✓ /.

Associating with members of the opposite sex

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Accepting the idiosyncrasies of others

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Freedom to make own decisions

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Society's responsibility for individual behavior

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Need for privacy

\_\_\_\_\_  
EI   /   MI   /   SI   /   U   /   SR   /   MR   /   ER

Please indicate on the scale below your general feeling concerning the issue of increasing escalator speed in Damen Hall. Make your response by circling one of the following phrases.

highly favorable

very favorable

moderately favorable

slightly favorable

slightly unfavorable

moderately unfavorable

very unfavorable

highly unfavorable

So far, you have been considering only a limited set of information concerning this issue which consisted entirely of the opinions of one co-chairman. We are able to provide additional information in the form of some excerpts from a speech given by the other co-chairman of the Building Committee, whose viewpoint is rather negative concerning the proposed change. He offered the following potentially detrimental results of such a change.

Propagation of a spirit of unfriendliness and coldness among students

Make the pace of college life more hectic

Use of the escalator potentially more hazardous for many students, especially the handicapped

Accidents more prevalent, since students would "bunch up" on each floor

After carefully considering this information and your other thoughts on the issue, go on to the next page.

Please indicate whether you personally agree with each of the fifteen statements presented below. Indicate this opinion on the accompanying rating scales by placing a checkmark between the slashes, e.g. / ☒ /.

The rating scales are coded in this manner: ED - extreme disagreement; MD - moderate disagreement; SD - slight disagreement; U - uncertain; SA - slight agreement; MA - moderate agreement; EA - extreme agreement.

1. Increasing escalator speed would facilitate easy access to class.

/ / / / / / /  
ED MD SD U SA MA EA

2. Habitually late students might reach class on time.

/ / / / / / /  
ED MD SD U SA MA EA

3. More students might be enrolled due to the increased efficiency in handling them.

/ / / / / / /  
ED MD SD U SA MA EA

4. "Chain reaction" accidents involving large numbers of students more possible.

/ / / / / / /  
ED MD SD U SA MA EA

5. Speeding up the escalator would alleviate the necessity of walking up the escalator.

/ / / / / / /  
ED MD SD U SA MA EA

6. Elevator might become obsolete.

/ / / / / / /  
ED MD SD U SA MA EA

7. More leisure time..

/ / / / / / /  
ED MD SD U SA MA EA

8. More students could be accomodated at one time.

/ / / / / / /  
ED MD SD U SA MA EA

9. See a greater variety of people and events.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

10. Machines are taking over the work of man.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

11. Increased speed decreases the students' feelings of individuality.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

12. Increases physical comfort.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

13. Aid education by allowing more time to converse with teachers after class.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

14. Emergencies could be handled more easily.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

15. More difficult to hand out flyers at the foot of the escalator.

/	/	/	/	/	/	/
ED	MD	SD	U	SA	MA	EA

Some require a short written answer; others can be answered on the rating scales provided by placing a checkmark between the slashes, e.g. / ☒ /.

highly unfavorable highly favorable

/ / . / / /

---

highly    highly  
unimportant                                      important

highly unimportant highly important

highly unfavorable \_\_\_\_\_ highly favorable

highly unfavorable \_\_\_\_\_ highly favorable

1st set / / / / / 2nd set

Would you take action to get the proposed change passed ?

Did the task of rating your own attitude concerning the issue midway through the survey help form a real attitude; in other words, did you have an attitude before you were asked to indicate one ?

What effect did writing the essay concerning the issue and the general ideas have with respect to your overall attitude concerning escalator speed ?



## APPENDIX B

TABLE A  
Means and Standard Deviations of Relevance  
and Personal Importance Ratings  
of Value Statements

<u>Relevant Values</u>	<u>Mean (R)</u>	<u>SD</u>	<u>Mean (I)</u>	<u>SD</u>
Safety	2.25	1.37	2.40	1.29
Efficiency	1.52	0.90	2.45	1.39
Innovation in the pursuit of progress	2.67	1.53	2.75	1.44
Punctuality	1.95	1.28	2.75	1.35
Physical Comfort	2.75	1.79	2.62	1.29
<u>Irrelevant Values</u>				
Having a good family life	6.02	1.91	2.17	1.59
World Peace	6.17	1.87	2.02	1.86
People being strongly patriotic	6.22	1.60	4.67	1.83
Relationship between self and a higher being	6.40	1.42	3.97	2.27
Racial and ethnic tolerance	6.17	1.58	2.32	2.00

Ratings of relevance (R) and importance (I) were made on a 1 to 7 point scale, with 1 - extremely relevant (important) and 7 - extremely irrelevant (unimportant). Relevant values were employed in both the pilot and main study. The irrelevant values were employed only in the pilot study.

TABLE B

Means and Standard Deviations for the  
Irrelevant Values of the Main Study

<u>Irrelevant Values</u>	<u>Mean (R)</u>	<u>SD</u>	<u>Mean (I)</u>	<u>SD</u>
Associating with members of the opposite sex	6.20	1.61	2.00	0.90
Accepting the idiosyncrasies of others	6.00	1.41	2.80	1.56
Freedom to make own decisions	5.93	1.75	2.73	2.54
Society's responsibility for individual behavior	5.93	1.57	4.86	0.99
Need for privacy	6.46	1.06	2.93	2.08

R = Relevance    I = Importance

Ratings were made on a 7 point scale labeled  
1 - extremely relevant (important) to 7 - extremely  
irrelevant (unimportant).

TABLE C

Means and Standard Deviations of Favorability  
for the 15 Statements Employed as the Final  
Attitude Structure Measure in the Main Study

		<u>Mean</u>	<u>SD</u>
1. Increasing escalator speed would facilitate easy access to class	(1)	1.88	0.88
2. Habitually late students might reach class on time.	(1)	2.96	1.33
3. More students might be enrolled due to the increased efficiency in handling them.	(1)	5.32	1.10
4. "Chain reaction" accidents involving large numbers of students more possible.	(2)	6.20	1.52
5. Speeding up the escalators would alleviate the necessity of walking up the escalator.	(2)	3.73	2.40
6. Elevator might become obsolete.	(1)	4.40	1.19
7. More leisure time.	(1)	2.36	1.80
8. More students could be accomodated at one time.	(1)	4.72	1.70
9. See a greater variety of people and events.	(2)	3.20	1.97
10. Machines are taking over the work of man.	(1)	5.00	1.58
11. Increased speed decreases the students' feelings of individuality.	(1)	5.76	1.26
12. Increases physical comfort.	(2)	2.60	1.80

TABLE C (cont'd)

Means and Standard Deviations of Favorability for  
 the 15 Statements Employed as the Final Attitude  
 Structure Measure in the Main Study

		<u>Mean</u>	<u>SD</u>
13. Aid education by allowing more time to converse with teachers after class	(1)	4.16	1.37
14. Emergencies could be handled more easily.	(1)	3.44	1.52
15. More difficult to hand our flyers at the foot of the escalator.	(2)	4.00	1.85

Favorability ratings to the focal issue were made  
 on a 1 - extremely favorable to 7 - extremely unfavorable  
 scale. Items coded (1) were obtained during the first  
 prescaling; items coded (2) were obtained during the  
 second prescaling.

TABLE D

Means and Standard Deviations of Rated Favorability  
for Statements Employed as Initial and Discrepant  
Information Concerning the Focal Issue

<u>Initial Information</u>	Mean	SD
Punctuality in keeping appointments	2.80	1.00
Alleviation of "jam-ups" on each floor	2.40	1.32
Increase of physical comfort	2.40	0.81
Demonstration of innovations to improve school	2.96	1.33
<u>Discrepant Information</u>		
Propagation of a spirit of unfriendliness and coldness among students	5.16	1.34
Make the pace of college life more hectic	5.08	1.49
Use of escalator potentially more hazardous for many students, especially the handicapped	5.08	1.93
Accidents more prevalent, since students would "bunch up" on each floor	5.08	2.05

Favorability ratings were obtained on a 1 -  
extremely favorable to 7 - extremely unfavorable scale.

## APPENDIX C

TABLE A

Analysis of Variance Summary for Pre-discrepancy  
 Attitude as a Function of Relevance (R)  
 of Value Bond

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
R	2	7.63	1.90	.20
error	27	4.01		

TABLE B

Analysis of Variance Summary for Average Value  
 Ratings as a Function of Relevance of  
 Bonds (R) and Pretest (P)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	4.10	0.57	.10
R	1	36.04	5.20	.05
PxR	1	0.68	0.09	-
error	36	7.20		



TABLE C

Analysis of Variance Summary for Average Ratings  
of Issue Importance as a Function of  
Relevance (R) and Pretest (P)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p&lt;</u>
P	1	1.06	0.18	-
R	2	10.71	1.83	.20
PxR	2	2.81	0.48	-
error	54	5.84		

TABLE D

Analysis of Variance Summary for Average Ratings  
of Idea Importance as a Function of  
Relevance (R) and Pretest (P)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p&lt;</u>
P	1	2.40	0.43	-
R	2	3.27	0.58	-
PxR	2	2.60	0.46	-
error	54	5.63		

TABLE E

Analysis of Variance Summary for Post-discrepancy  
 Attitude as a Function of Pretest (P)  
 and Relevance (R)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	14.01	3.55	.05
R	2	5.45	1.38	.30
PxR	2	2.91	0.74	-
error	54	3.94		

TABLE F

Analysis of Variance Summary for Attitude Change as  
 a Function of Relevance (R) and Pretest (P)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	13.07	2.95	.10
R	2	36.65	8.28	.01
PxR	2	3.02	0.68	-
error	54	4.43		

TABLE G

Analysis of Covariance Summary for Weighted  
Average Index with Pretest  
as the Covariate

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
R	2	0.04	0.81	-
within replicates	26	0.15		

TABLE H

Analysis of Variance for the Attitude Structure  
Measure as a Function of Relevance (R),  
Pretest (P), and Favorability (F)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	0.35	0.01	-
R	2	7.73	0.15	-
PxR	2	10.37	0.20	-
error	54	53.45		
F	2	61.37	3.21	.05
FxP	2	7.50	0.39	-
FxR	4	6.31	0.34	-
FxPxR	4	5.19	0.27	-
error	108	19.10		

TABLE I

Analysis of Variance for Attitude Extremity as a  
Function of Pretest (P) and Relevance (R)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	3.75	0.07	-
R	2	51.30	1.07	.30
PxR	2	4.04	0.08	-
error	54	47.89		

TABLE J

Analysis of Variance Summary for Importance  
of Initial Information as a Function  
of Pretest (P) and Relevance (R)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	0.15	0.02	-
R	2	0.94	0.15	-
PxR	2	10.90	1.82	.20
error	54	6.01		

TABLE K

Analysis of Variance Summary for Importance of  
Discrepant Information as a Function of  
Pretest (P) and Relevance (R)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	8.06	1.28	.30
R	2	1.40	0.22	-
PxR	2	2.40	0.39	-
error	54	6.27		

TABLE L

Analysis of Variance for Comparative Importance  
of Both Sets of Information as a Function  
of Pretest (P) and Relevance (R)

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u> <
P	1	18.14	3.44	.10
R	2	9.31	1.76	.20
PxR	2	8.54	1.62	.20
error	54	5.26		

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APPROVAL SHEET

The Thesis submitted by Kenneth Marciniak has been read and approved by members of the Department of Psychology.

The final copies have been examined by the director of the Thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the Thesis is now given final approval with reference to content and form.

The Thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

December 17, 1971

Date

John D. Edwards

Signature of Advisor