Forced resettlement and attitude change: A study of cognitive dissonance

Vincent Joel Webb
University of Nebraska at Omaha

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FORCED RESETTLEMENT AND ATTITUDE CHANGE:
A STUDY OF COGNITIVE DISSONANCE

A Thesis
Presented to the
Department of Sociology
and the
Faculty of the College of Graduate Studies
University of Nebraska at Omaha

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Vincent Joel Webb
October 1969
Accepted for the faculty of the College of Graduate Studies and the Department of Sociology of the University of Nebraska at Omaha, in partial fulfillment of the requirements for the degree Master of Arts.

Chairman

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Chapter 1

INTRODUCTION

Water Resource Development History

The United States during the 20th century has been characterized by an ever increasing amount of Federal responsibility and intervention in effecting change in the lives of the local citizenery. This Federal intervention and responsibility takes many varied forms; it is the aim of this research to deal with only one of these forms - the Civil Works Program of the United States Army Corps of Engineers as it relates to water resources development.

It was not until 1824 that the Supreme Court began to interpret the Constitution as permitting the Federal government to undertake internal improvements in the states of the union. Chief Justice John Marshall established that "the power of Congress.... comprehends navigation within the limits of every state in the union..."\(^1\) In that same year Congress appropriated the first Federal funds that were specifically designated for the improvement of an internal waterway. The actual job of making the improvement was delegated to the Corps of Engineers. This improvement took

the form of clearing the Ohio River in order to aid navigation. For the next 78 years Congress limited Federal responsibility in water resource development to the improvement of harbors and waterways. This limited the concept of water resource development because the whole emphasis was on navigation.

In the 1840's people of the lower Mississippi Valley began to organize in an effort to seek Federal help in controlling the lower Mississippi River so that the flooding of fertile bottomland could be prevented. As organized pressure increased, Congressional support increased as well. The catastrophic floods of 1849 and 1850 made it imperative for Congress to act, and they passed a series of Acts referred to as the Swamp Land Acts. These Acts allowed the states to sell certain portions of public domain and utilize the proceeds in flood control.

No more significant water resource development legislation was passed until after the war between the states. Once again in the 1870's Congress began to make a greater commitment. "Between 1879 and 1917, Federal funds were made available for some flood control work by the Mississippi River Commission, but throughout this period the Congress insisted that navigation be the stated purpose of these appropriations."² A major flood on the Mississippi in 1916

²Ibid., p. 11
to have been the final catalyst, and in 1917 the first clear-cut legislation was enacted into law. Although this legislative action broadened Federal water policy, it failed to solve the flood control problem.

In 1927 Congress authorized the Corps of Engineers to make comprehensive surveys of the Nation's river basins. These reports in their final form are generally referred to as the "308" reports. They were to become foundation of a Federal Action Program that was later initiated by legislation in 1936. The effects of the depression in the early thirties led to the acceptance of the 1936 Federal legislation. The depression created a need for work relief projects and it placed communities in a financial situation that rendered impossible for them to solve their own flood problems.

With the passage of the 1936 Act Congress had:

1. Established a national policy on flood control;
2. Authorized the construction of some 250 projects and the appropriation of $310 million to initiate construction, as well as the use of work relief funds; and
3. Authorized numerous examinations and surveys, and the appropriation of $10 million to initiate these investigations.

The major elements of the policy that were established by this Act are:

1. The Federal government would cooperate with
"States, their political subdivisions and localities thereof" in flood control projects;

2. A two-pronged attack would be made on the flood problem. The Corps of Engineers would develop engineering plans, and the Department of Agriculture land treatment plans, for the reduction of flood damages;

3. To qualify as a Federal project under the Act the benefits attributable to a project would have to exceed the cost;

4. Projects would be recommended in survey reports, but could not be built until specifically recommended by law;

5. Non-Federal interests would provide land easements and rights-of-way, would protect the Federal government from damage claims, and would operate and maintain the flood control works provided by the Federal government. Since 1936 subsequent legislation has increased the activities that are permissible by Federal agencies working in the area of water resource development. Such things as recreational development, fish and wildlife conservation, water quality improvement, the production of hydroelectric power, and the provision of water supply for domestic and industrial use are now important considerations in the civil works projects of the Corps of Engineers.

Ibid., p. 12.
The Problem. As Federal water resource policy has developed, a bias which favors the urban dweller has been built into it. This is especially evident in the problem of flood control. This bias is a consequence of two major factors: the first being the legislative requirement of economic justification, and the second is a consequence of the relationship between human settlement patterns and the distribution of the Nation's rivers.

The 1936 Act states: "To qualify as a Federal project, the benefits attributable to a project will have to exceed the costs."\(^4\) In the process of economic justification of flood control projects, a major source of benefits is derived from damages to be prevented by the construction of the project. The greatest amount of damages occurs in urban areas. This is explained by the fact that it is in urban areas where the greatest concentration of people and their products (housing, places of business, and places of manufacturing) are located. In effect, most flood damages are urban damages. It follows from this, that the major source of benefits will be derived from projects which prevent urban damages. Major flood control projects are in effect based upon urban protection. It is the urban portion of the population which receives the basic benefits of Federal flood control works.

\(^4\)Public Law 738, 74th Congress, 2nd Session, June 22, 1936.
If a flood control project in the form of a reservoir is to be effective in preventing urban damages, it must be located upstream from the urban area that it is designed to protect. Other considerations in locating a reservoir are based upon: Geological criteria, land values, drainage systems, and the locations of a suitable type of terrain. The lower the land values, the lower the project cost. Relatively narrow river valleys with flat bottomland provide the most suitable terrain for reservoir construction. Generally, it turns out that the cheapest lands are agricultural and the ideal construction locations (river valleys) are inhabited by rural people engaged in agricultural enterprise based on the fertile bottomlands where they reside. Inevitably, it is the rural dwellers who are required to give up their farmlands, places of residence, and sometimes whole community areas, so that downstream urban areas can receive flood protection.

When a flood control project is proposed conflict and opposition almost always follow. By definition, at least two interests are involved in a conflict situation. In the case of flood control reservoir construction, the nature of the conflict can be seen in terms of sub-issues and themes of the larger issue (reservoir construction).

Historically, the conflict situation has been resolved in such a way that urban interests win out over rural
interests. The rural interests characteristically are out-numbered and out-powered relative to the urban interests. In addition to this, the urban interests have another critical factor in their favor—the Federal construction agency in the form of the Army Corps of Engineers.

Figure 1
Sub-Issues and Themes in Opposition to Reservoir Construction

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<td>political</td>
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<tr>
<td>population (size)</td>
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<tr>
<td>economic</td>
<td>individual enterprise vs. big business</td>
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The Army Corps of Engineers has as one of its primary civil works goals the control of flooding of the Nation's rivers. This, along with the maintenance of the Nation's navigable waterways, constitutes two of the major civil works duties delegated to the Corps through Federal legislation. Aside from meeting their formal goals, the Corps also has a less formally-recognized series of self interests
or reasons for desiring the construction of projects. The Corps, in order to continue its existence, is dependent upon the funding and construction of new projects. New projects and the funds that come with them maintain jobs for the Corps work force, increase the potential for vertical mobility within the organization, and provide the Corps with a sense of growth in terms of accomplishment. In light of these "self interests", it is a necessity for the Corps to push for new projects. In order to obtain enough benefits to offset the cost of a new project the Corps must rely on projects which are mainly oriented towards urban protection. In this way the Corps' self interest coincides with the urban interests; the result being a conflict situation with the Corps and urban interests on one side and local-rural interest on the other.

The planning and construction of a new reservoir project is often carried on by the Corps in the face of opposition by many local residents living in the proposed reservoir area. Such local opposition cannot be (totally) ignored. Correspondence is carried on by the Corps in the form of replying to inquiries, acknowledging letters of protest, and in handling real estate matters. Corps representatives are located in the field among the local residents, real estate appraisers and negotiators dealing with the local residents in person. Nevertheless, the primary aim of the
Corps is to build the project, in spite of the protest and opposition on the part of the local people.

In any specific project that is characterized by conflict and local opposition, it would seem reasonable to expect to find a rationale within the Corps which justifies construction in spite of opposition. Such a rationale does exist, it takes the form of a common-sense declaration based upon a limited amount of empirical evidence. Although the specific content of that declaration may vary, it generally is expressed like this: "After it's done and over with, they realize that it was the best thing for them" or "After it's done they are glad it was built." In other words, there has been a "change of heart on the part of the local opposition". This serves as a rationale for the Corps. The working assumption is: The local opponents of a project are unable to foresee the positive outcome that will result from construction of the project. The "logic" of the rationale goes something like this:

We know that in past projects, after it was all over, the people that originally opposed the project ended up being glad it was built. They realized that they were a lot better off because of it. They have a good water recreation area and the reservoir has enhanced the economic value of the area. The same will be true in this case. Even though they may be opposed now, we'll proceed to construct the project since we know, and they will eventually know that when it's finished, they will be better off.

There are two major implications contained in this rationale.
First, it implies that the attitudes of the local opponents toward the project change over time. Prior to and during the construction the opponents possess a negative set of attitudes about the project. After the project is completed these same people possess a positive set of attitudes toward the project. Attitude change from a negative to a positive state has occurred. The second of these two implications is derived from the generalized way in which the rationale is expressed. The rationale is in fact expressed as a generalization. No room is left for variation as to the degree of change, nor is there any consideration given to the possibility that only certain people may change their attitudes. The generalization is applied to all of the local people who were affected as if they all responded in the same way and subsequently changed their attitudes in the same way.

One would expect to find a universal set of positive attitudes of similar intensity only if all the people affected by the project responded to it in the same way and experienced the same consequences as a result of their response. If, on the other hand, the people who were directly affected by a project respond to the project in different ways, and if they experience different consequences as a result of their response, it would seem reasonable to expect to find variations in attitude.

\footnote{Attitude as it is used throughout this thesis refers to an individual's feelings, thoughts, and predispositions to act toward some aspect of his environment. See Paul F. Secord and Carl W. Backman, Social Psychology, (New York: McGraw-Hill Book Company, 1964), p. 97.}
in the attitudes that they have toward the project at the present time.

The rationale that the local opponents change their attitude to a position that favors the fact of reservoir construction is supported by the generalized form in which it is expressed. Its functional attributes are similar to those of a stereotype. By referring to all-inclusive categories, no attention is given to exceptions to the general proposition. For the rationale to be really effective it must be general.

The topical area under consideration has been defined so far as attitude change, but attitude change to this point is only a possibility. It has already been pointed out that the "common-sense" assumption is that persons who (oppose and) have a negative set of attitudes about a reservoir, change their attitude set to a positive or favorable position once the reservoir is constructed. More is involved than attitude change. Reservoir construction which requires resettlement and relocation affects changes in patterns of behavior.

The basis for much of the opposition surrounds the issues of losing one's farmland or community, displacement, and relocation.\(^6\) When governmental exercise of the power of eminent

domain results in the displacement of people, important consequences result in a disruption of the life pattern of the group so affected. Certain inevitable adjustments must be faced regardless of the size of the group affected, its social characteristics, or the actual reason requiring the population removal. It need not be assumed that the changes produced by relocation are, of necessity, undesirable or tragic. Nevertheless, virtually all daily routines are disrupted for a time and frequently permanent changes are made in basic aspects of personal and community life.

Relocation disrupts normal activity in earning a living among many of the people to be moved. Persons whose livelihood has been derived from farming or other direct use of natural resources of the area to be taken face actual separation from the economic base. Likewise, merchants, manufacturers, and professionals such as lawyers and doctors must relocate their equipment and activities, and, not uncommonly, they are confronted with dispersal of both labor force and clientele. For some, this results in leaving old livelihoods and seeking new employment. Others set out to re-establish themselves in their former occupations at new locations.

In situations where whole communities are to be removed from an area, most formal and informal associational groupings are subjected to severe stress and may dissolve. If most of
the residents of a community decide to relocate as a group, it is possible for many of the mutual dependency and mutual aid customs to serve during the difficult days of the move. If, on the other hand, no such decision is made, families work out their plans individually, and relatively few community patterns of mutual assistance continue to function. Neither the local government nor other organizations can exercise a leadership role when the upheaval of relocation fractures communities into small groups of individual families which disperse both physically and interest-wise. In such situations new leadership may emerge; the land-speculator or the real estate development agent may exert far more influence on where people relocate than the community's former leaders, who become immersed in their own personal relocation problems.

Removal of communities from an area raises administrative and fiscal questions for formally organized community institutions. For example, church organizations, school boards, and lodges receive compensation for the physical property taken. Where communities relocate as groups, it is difficult to build or acquire new facilities with the compensation received for depreciated, older property. When people disperse and communities disolve in relocation, institutional trustees must make arbitrary decisions as to the disposal or investment of the funds received from government acquisition of
their property. These decisions are often controversial.

No aspect of the relocation process is more important or more complex than the uprooting of families resident in the area to be taken. For many, there are strong sentimental ties. Families long resident in an area may be faced with conflicts as they weigh the problems of moving to a new location.

For example, they must often decide between staying near family and old friends or a move to an entirely new environment to seek a livelihood. Decisions must be made as to whether the old dwelling will be relocated, if possible, or whether a new dwelling should be built or purchased. The actual physical move itself, with its work and upsetting circumstances, becomes a major task. The full effect of relocation cannot be evaluated for a particular family until it is known whether or not the family is reasonably satisfied in its new location, and what this relative satisfaction means to the personal adjustment of the family members.

In the case of reservoir construction which brings about forced resettlement, it seems reasonable to deal with attitude change in the context of behavioral change. Whereas attitude change to this point can be only an assumption, behavioral change is a certainty. Forced resettlement, as a consequence of governed acquisition of lands, requires a migration decision on the part of the individuals whose land has been acquired.
The individual who is faced with the problem of resettlement may have migration alternatives available to him. Each alternative requires a different amount of behavioral change. A hypothetical example may help to clarify this point. Take the case of a farmer who is faced with the problem of migration. Even if this farmer elects to move to another farm, behavioral change will take place. Patterns of interaction with old neighbors may change in terms of frequency and quality. New patterns of interaction with new neighbors may emerge. The physical aspects of the new farm may require changes in farm practice and operations. These, too, will be reflected in behavioral changes. If the farmer chooses either the rural nonfarm or urban situations, a greater amount of behavioral change will take place. For example, in an urban situation, an occupational change or change in employment status will probably take place. Patterns of social participation and life styles will also probably change.

**Figure 2**
Migration Alternatives and Behavioral Change

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The reason for this discussion of behavioral change as a consequence of migration is to place the assumption of attitude change in context. It has already been pointed out that the assumption of attitude change from negative to positive was applied in a general way to all those directly affected by reservoir construction. But, in the case of resettlement, not all people select the same migration alternative. Some choose to remain on a farm; others to move to a small town or large city. Different migration alternatives and decisions result in different experiences and in different behaviors. In light of these behavioral differences it seems doubtful that the assumption of attitude change from a negative to positive state (about a reservoir project) can be successfully expressed as a generalization for all those who are required to resettle. The problem then is not simply one of attitude change but also of behavioral change; therefore, they should be studied together. This then is the basic aim of the thesis: To study the relationship between attitude change and behavioral change in a forced-resettlement situation.

Three other questions of interest also to be dealt with are:

1. Do the attitudes of local opponents to Corps reservoirs change over time from a negative to a positive position?

2. Is there any variation as to who changes and how much they change, i.e., does the generalization hold?

3. What specifically are the bases for variations of attitude change and the intensity with which an attitude is held? In order to deal adequately with the attitude change - behavioral change topic, the guidance of theory is utilized.
Chapter 2

THEORETICAL CONSIDERATIONS

Attitudes and Behavior

Having stated that the basic topic under study is the relationship between attitude change and behavioral change, the problem becomes one of arriving at an adequate theory which is capable of dealing with that relationship. Before doing this though, a review of the thought on the relationship between attitudes and behavior is in order.

"It is commonly assumed that attitudes and behaviors are closely related in natural settings". But historically there have been a number of studies which have demonstrated that attitudes and behavior are often inconsistent. LaPiere conducted a study dealing with the apparent inconsistency between attitudes and behavior created when motel and restaurant proprietors actually served a Chinese couple even though they said they would not do so when asked by letter. Minoid found obvious differences in patterns of social behavior during working hours in the coal mine and non-working hours.


in the community. Almost 60 percent of the white miners were (apparently) free from prejudice when they were working with Negroes in the mine. When they returned from work to the community the same 60 percent shifted their role and status and were prejudicial.

These two research examples are often used to support the ideas that attitudes and behavior may be inconsistent. Kiesler, Collins, and Miller maintain that "What we actually have here is not an inconsistency between attitudes and behavior. If anything, it is an 'inconsistency' between behavior in two different situations."\(^9\) In the case of LaPiere, the accepting or rejecting of a request for reservations can be considered as overt behavior on the part of the interpreter, thus rejecting a reservation request and later serving the same couple is an "inconsistency" between two different behavior situations.

On the other hand, a good deal of evidence exists for attitude-behavior consistency. Studies by Nettler and Golding and by Sherif and Hovland provide such evidence.\(^11\) Nettler

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\(^10\) Kiesler, Collins, and Miller, op. cit., p. 25.

and Golding found that items of their Thurstone scale on attitudes toward the Japanese successfully discriminated between members of avidly pro-Japanese and members of avidly anti-Japanese organizations. Sherif and Hovland found that joiners of prohibitionistic organizations indicated attitudes significantly different from joiners of other organizations.

The consistency-inconsistency issue still exists. Data is available with which to support either side of the question. Nevertheless, many social scientists have accepted consistency as a working principle. For example, Secord and Backman state: "One of the prevailing characteristics of human thought and behavior is the tendency to be consistent."12 They go on to say that:

Serious thinkers throughout the ages have often referred to the consistency in human thought, feelings, and behavior, but only in recent years have behavioral scientists given serious attention to this concept.13 Summer, Wertheimer, Kohler, Koffka, and Lewis and Kecky are discussed as historic examples of men who have worked with the concept of consistency. Roger Brown is in concurrence. He states:

The human mind, it seems, has a strong need for consistency, and attitudes are generally changed in order to eliminate some inconsistency.14

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13 Ibid.

Though the "principle of consistency" has had a place in the history of behavioral science for a period of several years, it has only been in the last two decades that it has become the basis for systematic theories of attitude organization and attitude change. The principle of consistency as an organizing principle is used in different ways by different theorists. Although there is not complete agreement about the definition of the concept of attitude, most have come to recognize and accept the notion that there are three components of the concept which are:

1. The affective component or feelings;
2. The cognitive component or thoughts; and
3. The behavioral component or predisposition to act.\(^\text{15}\)

A review of the writings of major theorists discloses different ways in which the principle is used. It is used by some in a broad fashion to connote consistency between one's knowledge, attitudes, and behavior. It has already been pointed out that the consistency principle has become the basis for much formal theorizing about attitude organization and change. Before a theorists can ask how attitudes change, he must first deal with the question of how attitudes are organized.

**Theories of Attitude Organization**

Secord and Backman have provided a concise summary of

\(^{15}\)Secord and Backman, op. cit., p. 97.
the major theoretical developments based on consistency.  

Figure 3

Theories of Attitude Organization

HEIDER (1946, 1958) - A theory of balance. A positive or negative affect toward another person tends to be in a state of balance with an individual's affect toward an attitude object toward which the other person is also oriented. A state of balance is achieved either when the three signs of the relations are all positive or when two are negative. Balance and imbalance are related to cognitive structure, affect, person perception, influence, and attitude-change process.

NEWCOMB (1953) - A theory of symmetry in interpersonal communication. A person's attitude toward an object may be positive or negative; persons may be positively or negatively attracted to each other. These relations may also vary in intensity. Symmetry between two persons exists when signs of attraction are alike, signs of attitude are alike, and intensities are equal. Dissimilar but complementary relations of two persons toward an object may also be symmetrical. A variety of group processes are treated in terms of the theory.

OSGGQ and TANNENBAUM (1955) - A theory of congruity. Cognitive elements have positive, negative, or zero valence of varying intensity. Elements relevant to each other may also be positively or negatively related. Congruity exists when signs are all zero, or two are negative, and when intensities are equal. Cognitive structures and attitude change are treated in terms of the theory.

CARTWRIGHT and HARARY (1956) HARARY (1959) - A formalization and elaboration of Heider's theory in terms of mathematical theory of linear graphs. Takes into account more than three elements.

16Secord and Backman, op. cit., p. 110.
FESTINGER (1957) - A theory of cognitive dissonance. Two cognitive elements are dissonant with respect to each other if the obverse of one element follows from the other. The existence of dissonance gives rise to pressures to reduce it. Processes of dissonance reduction are related to cognitive or behavioral changes.

McGUIRE (1960) - A two-process theory of consistency. "Wishful thinking" is the tendency for the subjective probability of a proposition to be consistent with its desirability, and "logical thinking" is the tendency for a person's beliefs to relate to each other in the accord with the rules of formal logic.

ROSENBERG AND ABELSON (1960) - An extension of Heider's theory, which provides for positively- and negatively-signed elements as well as positively- and negatively-signed relations, takes into account more than three elements. The theory is very similar to Cartwright and Harary's system but is expressed in terms of matrix theory.

KATZ and STOTLAND (1959) - A theory of attitude change based upon four motivational bases for attitude: The adjustment function, the ego-defensive function, and the value-expressive function, and the knowledge function. Only the value-expressive function and the knowledge function make direct use of a consistency principle.

KELMAN (1969) - A three-process theory of attitude change. Compliance occurs as a result of reward or punishment by the influence agent, identification occurs through formation of a satisfying relation to the influence agent, and internalization occurs when the change is congruent with one's values. Only internalization makes use of a consistency principle.

Among these theoretical developments, the work of Heider, Newcomb, Osgood and Tannenbaum, Cartwright and Harary, Rosenberg and Abelson, and Festinger stand out in terms of the treatment they have received by others, and
in terms of the influence they have had upon research. Brown implies that the theories of attitude organization and change which make use of the consistency principle can be sub-categorized in terms of "three systematic uses" of the consistency principle. Out of these three uses of the principle three major models have developed; these are the congruity, balance, and dissonance models.

Figure 4
Three Major Consistency Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Major Theorists</th>
<th>Conditions of Equilibrium</th>
<th>Conditions of Disequilibrium</th>
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<tr>
<td>Congruity</td>
<td>Osgood Suci</td>
<td>Congruity--Incongruity</td>
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<td></td>
<td>Tannenbaum</td>
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<tr>
<td>Balance</td>
<td>Heider Rosenberg Cartwright Horary Newcomb</td>
<td>Balance--Imbalance</td>
<td></td>
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<tr>
<td>Dissonance</td>
<td>Festinger</td>
<td>Consonance--Dissonance</td>
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The three models differ on numerous points, but at the same time are in agreement with one another on basic points. The most obvious common characteristic is that all three

models are based upon the consistency principle. All recognize the disequilibrium of inconsistency as the factor that initiates change. They agree that change is in the direction of equilibrium or consistency.

Osgood finds a consensus among the theorists in the way in which they treat the interaction of the cognitive components of attitudes (knowledge or belief-disbelief). Hollander, in paraphrasing Osgood's summary, recognizes four common principles of cognitive interaction.18 These are:

1. Modification of cognitive structures, i.e., attitude change results from the psychological stress produced by cognitive inconsistency.

2. The interaction of cognitive elements depends upon their being brought into some kind of confrontation with one another.

3. The magnitude of stress toward attitude change increases with the degree of cognitive inconsistency.

4. The dynamics of cognitive interaction under stress operate to reduce total cognitive inconsistency.

All three of the major models then are based on the

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assumption that attitudes are organized so as to be consistent with one another. Inconsistency, when it arises, is a motivating force for attitude change which occurs in the direction of achieving consistency. The characteristics that these three models have in common have been summarized. Now the question is "How do they work?"; or stated in a different way, "How does each model deal with the dynamics of attitude change?" This question will be dealt with by briefly reviewing the congruity and balance models. The dissonance model will be dealt with in greater detail. It has the merit of linking attitude to overt behavior. Because of this, it is the most useful in dealing with the basic research problem; the relationship between attitude change and behavioral change.

The Balance Model

The balance model is concerned mainly with the relationship among three cognitive elements in a given person's phenomenological world. Cognitive elements can be either concrete or abstract. Cognitive elements are such things as persons, institutions, traits, grounds, and practices. The three cognitive elements in the relationship are two persons, a Perceiver and an Other, and an Object (P = per-

19The balance model as it is reviewed here is mainly concerned with the original work of Fritz Heider as it appears in Fritz Heider, "Attitudes and Cognitive Organization", Journal of Psychology, 21 (January 1946), pp. 107-112. See also Fritz Heider, The Psychology of Interpersonal Relations, (New York: John Wiley and Sons, 1958).
ceiver, O = Other, and X = Object) for which either the perceiver or other can hold an attitude. There are two types of relationships that can possibly exist between each pair of cognitive relations. These are the liking relation and the unit relation. The liking relation is relatively simple. The perceiver either likes the object or the perceiver does not like the object. The liking relation is a dichotomous relation. The unit relation is not quite as simple. Heider describes it when he says, "Separate entities comprise a unit when they are perceived as belonging together. For example, members of a family are seen as a unit; a person and his deed belong together." Unit relations are relations which are formed by the perception of cognitive elements as belonging together.

The central theoretical concept, balance, is defined by Heider as "... a situation in which the perceived units and the experienced sentiments (liking relations) co-exist without stress". A balanced state would be a situation in which P is positive toward O and X, and O is perceived as being positive toward X as well. All three relationships in this example are positive. Balance can also exist when two of the relationships are negative and one is positive. An example of this would be a situation where P likes O, P

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21Ibid.
dislikes X, and O dislikes X. Combinations other than these two result in an imbalanced state. Heider maintains that, "There is always movement to a balanced state, that is, a situation in which the relations among the entities fit together harmoniously; there is no stress toward change". Balanced states resist change and unbalanced states change to bring about balance. Attitude change occurs because "there is a tendency for individuals to resolve attitudes which are not similarly signed".

Although the balance model, (Heider in particular), has emphasized situations characterized by three cognitive elements, it also treats situations characterized by two-cognitive elements. The two-element situation is the case where a relationship exists between two people or one person and an object. Kiesler, Collins, and Miller give the following example of change in the two-element situation:

... the state P likes O 'induces' (produces a force toward or a tendency toward a particular state rather than actual production of the state). O likes P. P owns X (the unit relationship designated by U) induces P likes X. If P likes O and O does not like P, a state of unbalance exists. Other things being equal, and assuming that O continues to dislike P, then P should come to dislike O.

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22 Ibid., p. 201.
23 Hollander, op. cit., p. 155.
24 Kiesler, Collins, and Miller, op. cit., p. 159.
In this example the phrase "other things being equal" is extremely important. Even in the two-element situation, a liking relationship or a unit relationship can be extremely complex. Perhaps the most critical problem is that the model assumes, in the above example, that O's liking for P disappears simply because a third object (X) enters the field. There seems to be very little grounds for making such an assumption.

The research generated by this model is in general inconclusive. Jordan, using a role-playing technique, found that on the average subjects rate balanced situations as more pleasant than unbalanced ones. Burdick and Barnes, using GSR ratings as an indicator of tension, found greater tension exists when a subject disagreed with someone whom he liked (a situation of unbalance). They also found that subjects who liked the experiments changed their attitudes toward the position of the experimenter. This outcome is predictable by the balance model but also by all other consistency models. Other research has produced results which are quite inconsistent with the model.


Although many criticisms of the balance model can be made, only four major criticisms will be made:

1. Given a state of unbalance where attitude change occurs in the direction of balance, it is not very clear exactly how this change takes place. There are a number of possible alternative ways, but they are not specified by the model.

2. A state is characterized as either balanced or unbalanced. The model does not allow for variance as to the degree of balance or imbalance.

3. The model does not give consideration to possible variation in the intensity of the relationship between cognitive elements.

4. The model conceptually is vague and loosely constructed. This detracts from its ability to predict. It has already been mentioned that several other criticisms can be made. Some will not be made since they are not relevant to this research case; other criticisms will be reserved and presented in a general way after the congruity model has been reviewed.

The Congruity Model

The congruity model can be thought of as a special type of balance. Although it is quite similar to the basic

balance model, it deals with the specific problem of communication acceptance. In comparison to the balance model it has two major advantages; first, it makes explicit predictions about the direction of attitude change, and secondly, it predicts the extent of attitude change.

The basic assumption underlying the model is: "That attitudes in a particular mind can be represented by a vertical line from + to - with names of the objects of attitudes ranged along this line". The model also contains linkages between the attitude objects which are referred to as bonds. Bonds are of two types; associative and dissociative. "Associative bonds can be verbal expressions of approval or solidarity and they can be actions".

In the special situation (communication acceptance), with which the congruity model is concerned, there is a person (P), P's attitude toward another person (S - the source), who gives information pro or con about an object (matter) or other person (O) about which P also holds an attitude. A hypothetical example of the way in which the model works can now be presented.

P likes S, P likes O, S says something bad about O. O's good represents the communication by what S says about O. He indicates attitude change by the changes in P's evaluation of both S and O as

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29Brown, op. cit., p. 558.
30Ibid., p. 559.
a result of this communication. A state of con-
gruity depends on how much P likes O and S. If
P likes O just a little bit and likes S a great
deal, then incongruity exists and produces psy-
chological pressure for P to change his attitudes
toward both O and S.\textsuperscript{31}

The relationships are quantified by use of a seven-point
scale, which is usually referred to as the Semantic Differ-
ential. This scale, which ranges from +3 to -3 measures
the affective aspects of the relationships between P and O,
and P and S. Only the relationships are quantified, not the
affectivity of the communication. The affective nature of
the communication is labeled as either associative (good,
positive) or dissociative (bad, negative).

Two major hypotheses regarding the prediction of atti-
tude change are derived from the model. First, when incon-
gruity exists, P's attitudes toward both O and S will change.
Second, P's attitudes toward O and S will be modified in
inverse proportion to their intensity. The more extreme an
attitude, the less that attitude will change. Predictions
of attitude change are derived from the following formula.\textsuperscript{32}

\[
\text{Change} = \frac{1S1 - P}{101+1S1}
\]

In this formula $1S1$ and $1P1$ equal the degree of intensity of
P's attitude toward S and O; and P = the pressure toward

\textsuperscript{31}Kiesler, Collins, and Miller, op. cit., p. 178.
\textsuperscript{32}Ibid., p. 180.
congruity. Pressure toward congruity can be defined as the total amount of change necessary for perfect congruity to exist.

For associative bonds, (characterized by positive communications) the pressure toward congruity equals the algebraic difference in evaluation of S and O. For dissociative bonds, (characterized by negative communications) the pressure toward congruity is equivalent to the amount of change necessary for P's attitude toward the source and the object to be equidistant from zero.

Early research indicated that there were two basic problems with the congruity model. The first of these is that the model implies that the amount of attitude change for the source of the communication and the object of the communication will be equal. This implication is not supported by research data. Rokead and Rothman have suggested that this problem can be corrected (in terms of prediction) when one takes account of the importance of the separate items (the source and the items). The second problem is: That with a higher level of pressure toward congruity subjects tend not to accept the communication assertion, but instead, they reject it, which is opposite of what the model predicts. This has been referred to as the correction for incredulity.

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Using corrections for incredulity, the predictive power of the model is greatly increased.

Kerrick, exposing subjects to photographs and captions separately and then together, found that two things rated "good" alone, were rated better in combination than either of them alone. The congruity model predicts that the rating of the combination would always be somewhere between the two individual ratings. Other research has supported this same finding.

Some basic criticisms of the congruity model are:
1. The model is of narrow scope in that it is limited to the communication.
2. Much of the quantitative detail of the model is unsupported by research data.
3. The correction for incredulity may, by elimination, pass over important aspects of attitudinal processes.
4. The model fails to consider the strength or intensity of the associative or dissociative bonds between cognitive elements.

So far, two models based on the consistency principle


have been briefly received. In reviewing the basic balance model much more could have been said about additional developments and additions to it. Also, there is much more to be said about the congruity model. But the purpose in reviewing these two models is to first, use them as examples of models based on a notion consistency, which makes predictions about attitude organization and change. The second purpose has been to search for a model or theory that is capable of explicitly dealing with both attitude and behavioral change. So far this the crux of the research problem.

The question should certainly be raised as to where does behavior "fit" into these two models. Perhaps the answer is that behavioral change is only implied since the two models were not designed to deal with it. Both of these models are intra-personal: "They pertain to the relations of the three attitudes' components within an individual and specify various conditions that control these relations and produce changes in them". It has been noted that one component of an attitude is behavioral, i.e., a predisposition to act. It follows from this that a change in the behavioral component (predisposition to act) will bring about a behavioral change if behaviors and attitudes are consistent. If the components of an attitude are consistent with one

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36Secord and Backman, op. cit., p. 109.
another a change in either the cognitive or affective component could produce an inconsistency which could be resolved by a change in the behavioral component. Neither of these two theories allows one to make very accurate predictions about the part that behavior plays in attitude change and vice versa.

To repeat once again: The basic research problem is to study the relationship between attitude change and behavioral change as it is brought about through resettlement due to the construction of major reservoirs. The search is for a theory which will be useful in making explicit predictions about attitude change as it is related to overt behavior. The balance model and the congruity model are being "rejected" because of their limited applicability to the research problem. Instead, it appears that the third, and yet to be discussed, consistency model has the greatest utility in this research situation. This model, which has "... the greatest merit of linking attitude to overt behavior", is Leon Festinger's theory of cognitive dissonance.\textsuperscript{37}

\textbf{Dissonance Theory}\textsuperscript{38}

In reviewing balance and congruity, the term "model"

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\textsuperscript{37}Ibid., p. 115.

was used. As dissonance is dealt with, the term theory will be used. This is in accord with Roger Brown's usage of the terms model and theory. He suggests that balance and congruity are models since they are simulations of attitude change. In speaking of dissonance Brown says:

The third formulation is too loose to be considered a model or simulation of attitude change. We will call it a theory. The dissonance theory, even though the principles involved do not stand in the kind of deductive relation that the word theory implies. Dissonance theory is actually a collection of loosely-related ideas.\(^{39}\)

Dissonance theory begins with a basic consistency assumption,

...the individual strives toward consistency within himself...his opinions and attitudes exist on clusters that are internally consistent...there is the same kind of consistency between what a person knows or believes and what he does.\(^{40}\)

For dissonance theory, consistency is the norm. When inconsistency arises, (it is hypothesized that) a discomfort exists which acts as a motivating force for change. Festinger substitutes the terms consonance for consistency and dissonance for inconsistency.

Two basic propositions form the core of the theory. These are:

1. The existence of dissonance, being psychologically

\(^{39}\)Brown, op. cit., p. 550.

\(^{40}\)Festinger, op. cit., p. 1.
uncomfortable, will motivate the person to try and to reduce the dissonance and achieve consonance.\textsuperscript{41}

2. When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance.\textsuperscript{42}

Dissonance is defined as the existence of nonfitting relations among cognitions. A cognition is "any knowledge, opinion, or belief about the environment, about oneself, or about one's behavior".\textsuperscript{43} Both the conditions of dissonance and consonance refer to relations between pairs of cognitions. The content of a cognition is determined by reality which may be social, psychological, or physical. One's cognitions map or reflect one's reality.

...in other words, elements of cognition correspond for the most part with what the person actually does or feels or with what actually exists in the environment. In the case of opinions, beliefs, and values, the reality may be what others think or do; in other instances the reality may be what encountered experimentally or what others have told him.\textsuperscript{44}

Situations may arise where cognitions deviate from reality. In such a situation the reality which impinges will exert pressures in the direction of bringing the appropriate cognitive elements into correspondence.

\textsuperscript{41}Ibid., p. 3.
\textsuperscript{42}Festinger loc. cit.
\textsuperscript{43}Festinger, op. cit., p. 9.
\textsuperscript{44}Ibid., p. 10.
There are three types of relations which can exist between pairs of cognitive elements. The first of these is the irrelevant relation. Within a person's cognitive milieu there are bound to be a number of cognitions which are unrelated and irrelevant to one another. For example, valuing farming as the "good life" and enjoying football are two different cognitions which are not relevant to each other. The second type of relation between cognitive elements is the consonant relation, which is a relevant relation. Two cognitions are in consonance if one cognition follows from the other cognition. Holding the value of farming as the "good life" and being engaged in farming are two relevant cognitions which are consonant with one another. If a person believes that farming is the best or "good" way of life it is quite likely that the same person will be engaged in farming. The third relation is the dissonant relation. A dissonant relation exists where two cognitions are relevant but do not fit together. Festinger, in attempting formal conceptual definition, states that: "Two elements are in a dissonant relation if, considering these two alone the obverse of one element would follow from the other...x and y are dissonant if not-x follows from y."45 To revert to the farming example; if a person values farming as the "good life" and lives and works in the city, it is quite likely that a

dissonance exists. There are a number of reasons why relevant cognitions can be dissonant. A pair of cognitions could be logically inconsistent or contradictory. Cultural elements or group norms may define dissonance. Past experience can also contribute to the establishment of a dissonant relation. Given that these are the major bases for the arousal of dissonance, the question to be answered is: In what situations does dissonance arise?

Due to the nature of the definition of dissonance, it is almost impossible to enumerate and elaborate upon all possible dissonance situations. Dissonance, by definition, is a common, everyday occurrence which varies in strength and duration. To repeat: It occurs when people find themselves doing things which are contrary to what they believe, or when they find themselves holding attitudes or beliefs which are contrary to other attitudes and beliefs which they possess. There are two common situations where such contradictions arise. The first of these is the situation where a person receives new "knowledge" or cognitions which "do not fit" with existing "knowledges" or cognitions. As originally stated by Festinger:

New events may happen or new information may become known to a person, creating at least a momentary dissonance with existing knowledge, opinion, or cognition concerning behavior. Since
a person does not have complete and perfect control over the information that reaches him and over events that can happen in his environment, such dissonances may easily arise.\footnote{Festinger, op. cit., p. 4.}

An example may be useful in clarifying this type of dissonance situation. Take the case of a farmer or small town dweller who holds that his way of life and his farm or community is the best. He receives new knowledge in the form of a rumor (which is later confirmed) that his farm or community will be inundated as the result of a reservoir which will be built. According to dissonance theory, the cognition of having one's farm or community inundated does "not follow from" the cognition of believing that one's present way of life and farm or community is the best.

The second common dissonance situation takes place in a setting where there is an absence of new knowledge or cognitions. This situation is most closely related to decision making. Festinger maintains that: "Where an opinion must be formed or a decision taken, some dissonance is almost unavoidably created between the cognition of the action taken and those opinions or knowledges which tend to point to a different action."\footnote{Ibid., p. 5.} A thesis-related example of this type of dissonance situation would be the case of a farmer who is forced to make a migration decision as a result of a reservoir
project. Perhaps this individual must decide whether to move
to a new farm or to retire and move to a small community or
city. The action he finally takes is to move to the city,
in spite of the fact that his value system is oriented
toward agrarianism. Dissonance would be present because
the cognition of having moved to the city "does not follow
from" other residual cognitions which consist of agrarian
values.

"All dissonant relations, of course, are not of equal
magnitude." 48 Dissonance theory recognizes that cognitive
inconsistency can vary depending on the nature of the cog­
nitions involved, and it follows that the pressure to remove
inconsistency can vary in terms of intensity. If the theory
is to have predictive power it must be able to deal with the
variations in the intensity or magnitude of dissonance. Two
theoretical propositions have been provided to resolve this
problem.

1. If two elements are dissonant with one another, the
magnitude of dissonance will be a function of the importance
of the elements. 49

\[
D = \frac{\sum_{i=1}^{i} E P_{li}}{\sum_{j=1}^{j} E P_{2j}} = \frac{\sum_{i=1}^{i} E_{li}}{\sum_{j=1}^{j} E_{P2j}}
\]

48 Ibid., p. 16.
49 Festinger, op. cit., p. 17.
Where: \( D \) = magnitude of dissonance
\[ P_{li} \] = the importance of element \( i \) in Cluster 1
\[ P_{2j} \] = the importance of element \( j \) in Cluster 2
\( K \) = a constant

and Where: \( T_i \geq T_j \)

2. Assuming that all the elements relevant to the one in question are equally important, the total amount of dissonance between this element and the remainder of the person's cognition will depend on the portion of relevant elements that are dissonant with the one in question.\(^51\)

\[
\text{Dissonance} = \frac{\text{No. of dissonant elements}}{\text{No. of consonant elements}}
\]

The importance of these two propositions is that they provide direction in predicting that change will occur because:

The presence of dissonance gives rise to pressures to reduce or eliminate the dissonance. The strength of the pressures to reduce the dissonance is a function of the magnitude of the dissonance.\(^52\)

It has already been pointed out that dissonance, in itself, is a motivating force that leads to change. The change that takes place occurs in that direction which will result in having relevant pairs of cognitions in a relation in which one cognition follows from the other. This dissonance reduction results then in a state of consonance. More

\(^{50}\)Kiesler, Collins, and Miller, op. cit., p. 195.

\(^{51}\)Ibid.

\(^{52}\)Ibid., p. 18.
specifically, there are three major modes of dissonance reduction. The first mode of dissonance reduction is changing a behavioral cognitive element. Essentially, this involves changing one's behavior, denying one's behavior, or perceptually distorting one's behavior. The end result of this type of dissonance reduction is a situation where a behavior corresponds to the other elements of the person's cognitions. Take the case of a tenant farmer who must resettle as a result of reservoir construction but, because of lack of capital and greater competition for farmland (due to a shortage created by reservoir construction), is forced to migrate to a nonfarm situation. This same individual, whose values are basically agrarian, believes that farming is the best form of work and the best way of life, but realizes that he will no longer be able to farm "on his own". A dissonant relationship exists between cognitions which consist of agrarian values and the realization that he will no longer have his own farm. One possible way of reducing this dissonance would be to change occupational behavior from that of being an independent farmer to working in a farm-related business such as a co-op (this alternative being in contrast to another type of occupational behavior; such as working as a retail clerk).

The second mode of dissonance reduction is changing an environmental cognitive element. This mode involves changing the environment in some way. Changes may occur in
in the psychological or physical environment. An example would be the farmer who farms 400 acres but loses it all to a reservoir. He receives money enough to purchase only 250 new acres. This farmer could reduce dissonance by asserting that his 250 new acres have a much better quality of soil. This would be dissonance reduction through changing one's psychological reality.

The third mode of dissonance reduction is through the addition of new cognitive elements. New elements are added to either cognition or to both. This mode does not completely eliminate dissonance, it only reduces it to a level that can be tolerated by the individual. The magnitude of dissonance is reduced because the addition of new cognitive elements changes the proportion of relevant elements that are dissonant with a given cognition. As it has been stated: "The total amount of dissonance between a given element and the remainder of the person's cognition will depend on the proportion of relevant elements that are dissonant with the one in question." To use a resettlement example, one can take again the case of the farmer who loses a large farm to a reservoir but is only able to purchase a relatively small farm. To reduce the magnitude of the dissonance that exists in this situation, this same farmer may actively seek new information about the small farm, which, in effect, is the

53 Ibid., p. 27.
addition of consonant elements. New neighbors may tell him how productive the farm is per acre, or how easy it is to farm because of the terrain. With the addition of these new consonant elements, the proportion of consonant-to-dissonant elements increases and dissonance is reduced.

Common to all three modes of dissonance reduction is the changing of one or more cognitive elements. Some cognitive elements lend themselves to change more readily than do others. Being able to control for the variations in resistance to the changing of cognitive elements is necessary if predictive power is to be maintained. Festinger and other dissonance theorists have dealt with two types of resistance to change. The first type that is given consideration is the resistance to change of behavioral cognitive elements. Under this type of resistance there are three circumstances that make it difficult for a person to change his behavior. First, changing one's behavior may be a painful experience. A migration move which results in a financial loss is an example of this type of "painful experience". Second, an individual's present behavior may be satisfying. A person who is faced with forced resettlement in the future, and at present is doing poorly at farming, may still resist migration since he is pleased with his neighbors and local friends. His present pattern of social participation is satisfying behavior. Third, making
a behavioral change, may be impossible. For the elderly farmer, farming may be the only way of life he knows. An occupational change may be impossible. All three resistances to change (reduction of dissonance) are characterized by the fact that "the first and foremost source of resistance to change for any cognitive element is the responsiveness of such elements to reality".54

The second type of resistance to change involves the changing of environmental cognitive elements. These too are characterized by the source of resistance being determined by the responsiveness of the cognitive element to reality. "When there is a clear and equivocal reality corresponding to some cognitive element, the possibilities of change are almost nil."55 A more important source of resistance to the changing of an environmental cognition has been presented by Festinger. In speaking of this he says:

This source of resistance to change lies in the fact that an element is in relationship with a large number of other elements and to the extent that changing it would replace these consonances by dissonances, the elements will be resistant to change.56

Resistance to dissonance reduction is an important consideration when making predictions that are based upon dissonance theory. It is just as important to recognize

54Festinger, op. cit., p. 24.
55Ibid.
56Festinger, op. cit., p. 31.
that there are circumstances when the fear of dissonance is so strong that people actively avoid an increase in dissonance.

This then is the core of the theory of cognitive dissonance. Additional propositions and the body of research that this theory has generated have been applied to four situations. These situations are: (1) decision making; (2) forced compliance; (3) voluntary and involuntary exposure to information; and (4) social support. Only two of these dissonance situations are of direct relevance to the research problem; these are the decision-making and the forced-compliance situations. Before dealing with these situational aspects of the theory, a summary of the basic theoretical propositions is in order. Festinger summarizes them as follows:

1. There may exist dissonant or nonfitting relations among cognitive elements.

2. The existence of dissonance gives rise to pressures to reduce the dissonance and to avoid increases in dissonance.

3. Manifestations of the operation of these pressures include behavior changes, changes of cognition, and circumspect exposure to new information and new opinions.57

The Decision-Making Situation

The theory of cognitive dissonance is relevant in that situation where the individual chooses among two or more alternatives and in doing so rejects the remaining alternatives.

57 Festinger, op. cit., p. 31.
Merely preferring one alternative over another does not produce dissonance, nor is dissonance in the decision-making situation the same as pre-decisional conflict.

The person is in a conflict situation before making the decision. After having made the decision he is no longer in conflict; he has made his choice; he has, so to speak, resolved the conflict. He is no longer being pushed in two or more directions simultaneously. He is now committed to the chosen course of action. It is here that dissonance exists, and the pressure to reduce this dissonance is not pushing the person in two directions simultaneously.58

Four variables affect post-decisional dissonance:

1. The more important the decision the greater the dissonance.

2. The less attractive the chosen alternative the greater the dissonance.

3. The more attractive the unchosen alternative the greater the dissonance.

4. The greater the similarity between alternatives the less the dissonance.

Brehm made one of the first tests of dissonance predictions as they are related to decision making.59 Each subject in the laboratory setting rated a series of objects. The experimenter then offered the subject her choice of one or two objects. The subjects then rated the objects. A

58Ibid., p. 39.

high-dissonance condition was created by having subjects choose from two objects which were similar in attractiveness. In the low-dissonance condition the two objects were very dissimilar in attractiveness. The prediction was made that the subjects in the high-dissonance condition would show the greatest evidence of dissonance reduction. They would exaggerate the attractiveness of the chosen alternative and underestimate the attractiveness of the unchosen alternative to a greater extent than the subjects in the low-dissonance condition. In general, the prediction was confirmed.

Cohen, in trying to demonstrate that the same findings had application in a natural setting, administered a questionnaire to 30 college students who were considering becoming engaged over Christmas vacation. Before vacation started the students were asked questions dealing with the negative and positive aspects of engagement. Also, an attempt was made at measuring the degree of affect toward the prospective mate. If a student perceived more negative aspects to engagement than positive aspects, the more dissonance that student would feel if he became engaged. The experimenters felt that the easiest cognitive element to change in the engagement setting would be the degree of affect toward.

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the fiance. The main hypothesis was that the greater the number of negative aspects perceived by the student before engagement, the more he would increase positive affect toward his fiance. Students who actually became engaged were then divided into high- and low-dissonance groups depending on the number of negative aspects they perceived before engagement. The hypothesis was supported, with the high-dissonance groups showing a marked increase in the degree of positive affect. A host of other researchers has provided similar evidence which substantiates the dissonance hypotheses in the decision-making situation.\textsuperscript{61} Although much of the evidence is open to criticism, the criticism revolves around methodological concerns more frequently than around theoretical concerns. General criticisms will be commented on later.

The Forced-Compliance Situation

The forced compliance situation is where a person is induced to behave in a manner contrary to his own personal attitudes or beliefs. "There are circumstances in which persons will behave in a manner counter to their convictions or will publicly make statements which they do not really believe."\textsuperscript{62} In this case the dissonance exists because the relevant behavioral and attitudinal cognitions do not follow

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\textsuperscript{61}Brehm and Cohen in \textit{Explorations in Cognitive Dissonance} cite supporting evidence from forty research cases.

\textsuperscript{62}Festinger, op. cit., p. 84.
from one another. For this type of dissonance to occur, an agent which can influence, pressure, or induce the person holding the cognitions of concern must be present. Public compliance comes about in two ways.

First, a person is forced to comply to a situation through the use of the threat of punishment. "If the threatened punishment is stronger than whatever resistance he has to showing compliance, he will overtly change his behavior or statements." For example, a farmer who opposes a reservoir, but is forced off his land through eminent domain, can change his behavior without changing his attitude toward the reservoir.

The second way in which compliance is forced is through the use of rewards. Given a certain degree of resistance to change some cognition, the attractiveness of a reward may be great enough to overcome the resistance. If the reward is accepted and compliance follows, dissonance will follow. Accepting the reward and compliance are overt behavior, but private attitudes remain the same. Since there exists a discrepancy between private attitude and overt behavior, dissonance will ensue. Using the example of the farmer once again; the farmer who opposes reservoir construction, and is living on poor farmland, may perceive a good offer for his land as an inducement to resettle somewhere else. Behavior

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Ibid., p. 85.
changes; but private attitudes may remain the same.

In determining the magnitude of dissonance in the forced-compliance situation, it is important to determine the number and importance of cognitive elements that are dissonant with the cognition of one's overt behavior. If this is done, something about the proportion of dissonant elements in the relationship will then be known. Obviously, this is no simple task; but dissonance theorists have provided some guidelines which are useful in serving this purpose. The specification of dissonance will be dealt with when the hypotheses of this research are presented. However, it should be made clear at this point that in the forced-compliance situation the intensity of one's attitude will contribute to the magnitude of dissonance. If one is to specify dissonance and its magnitude, some measure of attitudinal intensity and importance is necessary. In the case of being opposed to a reservoir project, there appear to be differing degrees to which the local people are opposed. If resettlement is viewed as a forced-compliance situation, it is just as important to determine the intensity of opposition as well as resulting overt behavior. As in all dissonant situations, the greater the amounts of dissonance the greater the pressure to reduce the dissonance. If the inducement (reward or threat) to comply is too strong, little dissonance will be created, and a minimal amount of attitude
change will occur. If one desires both compliance behavior and attitudes "the best way would be to offer just enough reward or punishment to elicit the overt compliance": This because any new cognitive elements consonant with the behavior will lessen the dissonance.64

Two possibilities exist for dissonance reduction in the forced-compliance situation. Recalling that forced-compliance dissonance is basically that situation where one is induced to behave in a manner that is contrary to his beliefs and attitudes, one mode of dissonance reduction is changing one's attitudes and beliefs so that they are consonant with one's overt behavior. The farmer who resettles in the city can reduce dissonance by changing his attitudes toward the reservoir project; or, using the second mode of dissonance reduction, he can "magnify the reward or punishment to increase the consonance with the overt complaint behavior".65 More specifically, the farmer who resettles in the city may magnify those things that he perceives as rewarding in his new surroundings. He may emphasize the attributes of his new job or home for example. Festinger summarizes the forced-compliance dissonance situation in the following way.

64Ibid., p. 95.

65Festinger, op. cit., p. 97.
... public compliance without accompanying change in private opinion occurs when a reward is offered for compliance or when some punishment is threatened for failure to comply. The dissonance thus established, the magnitude of which will be a function of the importance of the opinions involved and of the magnitude of the punishment or reward, may be reduced in either of two ways:

1. Subsequent change of private opinion to make it consonant with the overt behavior.

2. Magnification of the reward or punishment to increase the consonance with the overt compliant behavior.66

The Research
Festinger and Carlsmith tested the following two dissonance hypotheses in a forced-compliance situation.67

1. If a person is induced to say or do something opposite to his private attitude, he will tend to modify his attitude so as to make it consonant with the cognition of what he has said or done.

2. The greater the pressure used to elicit behavior contrary to one's private attitude (beyond the minimum needed to elicit it), the less his attitude will change. Subjects who had completed "boring" experimental tasks were told that student helpers usually brought the next subject in and told them how enjoyable the experiment would be, but on this particular day the student helper was not present. The

66 Festinger, loc. cit.

experimenter then offered the subject a monetary reward if he would take the helper's place. One group of subjects was offered $1.00 and the other group of students was offered $20.00. The subjects privately felt that the task was dull and boring; but, for a reward, agreed to tell others that it was interesting. After they had served as helpers, the subjects were interviewed, and they rated their opinion of the experiment on an 11-point scale. As Festinger and Carlsmith had predicted, those subjects who received the $1.00 rated the experiment higher in terms of enjoyment than the students who received the $20.00 reward. According to Secord and Backman, "The key to understanding the second hypothesis is the point that dissonance is at its maximum when the opposing cognitive elements are equal in strength and importance." 68

Brehm and Crocker report similar findings. 69 Hungry subjects were asked to undergo additional food deprivation. One group of subjects received no monetary reward, but another group of subjects received $5.00. As was predicted, the group who received no money reported that they were less hungry and actually ate less than the subjects who received the monetary reward. Cohen, 70 using four different levels

68 Secord and Backman, op. cit., p. 118.
70 Brown, op. cit., p. 595.
of monetary reward, found that with the lower level of reward used as an incentive—the greater the amount of attitude change. A great deal of other research evidence exists in support of these two "forced-compliance" hypotheses.

An additional hypothesis has been derived from the forced-compliance situation and has been tested. This hypothesis is: The greater the negative behavior a person performs, the greater the attitude change toward consonance with the act. This hypothesis has also received substantial support from a variety of research cases.

The attempt has been to provide a review of the theory of cognitive dissonance. Special emphasis has been placed on two types of situational dissonance, decision making and forced compliance. These two situations have special relevance for the study of resettlement and attitude change, since certain aspects of resettlement involve both of these. As the theory has been reviewed, little negative criticism has been presented. Before resettlement is analyzed in terms of dissonance theory, a review of the criticism (both positive and negative) is in order.

**Major Criticism of the Theory of Cognitive Dissonance**

Prior to beginning this review of three major theories of attitude change, it was stated that the basic topic under study was the relationship between attitude change and behavioral change. A search was then made for a theory which
had the potential of dealing adequately with both. The balance and congruence models were rejected because of limited ability to do this. These two models fail to deal directly with behavior since their main emphasis is on consistency between attitudes and within attitudes. It is important to recognize that while there are many similarities between dissonance theory, and the other two models, there are also genuine differences.

Dissonance theory maintains that any pair of cognitive elements must be relevant to one another before there can be a dissonant relationship. This has been labeled conceptually as psychological implication. The balance model possesses no equivalent concept, and for this reason the states of unbalance and dissonance are not the same. "I own a farm", "My wife is a hard worker", but "My wife does not own a farm", are three cognitions which exist in a state of unbalance, as defined by the basic balance model. For dissonance theory, no dissonance exists between these three cognitions since the first cognitions are not relevant to the third. The point is that although dissonance is a consistency theory, it does not define inconsistency identically to other consistency theories.

Another important difference is that dissonance theory can deal with varying magnitudes of dissonance and specifies theoretically the basis for such variations. The basic,
balance model fails to account for variations in magnitude. Modifications of the basic, balance model, while specifying variation, defines it differently.

The reduction of dissonance and the reduction of unbalance may occur in different ways. Unbalance and incongruence are resolved through changing a relationship or affective evaluation. In addition to this, dissonance theory deals with such modes as: Adding new cognitive elements, minimizing the importance of dissonance elements, and magnifying rewards.

These then are some of the basic differences between dissonance theory and the other models of attitude change. Because of these differences, the models work in different ways and have different limitations as to what types of phenomena they can be concerned with.

In criticizing the theory of cognitive dissonance, the appropriate place to begin is to criticize it as theory. As a theory in any ideal axiomatic sense, cognitive dissonance obviously falls short. The main reason for this is that the propositions involved are not deductively related. This appears to be a consequence of the loose logical structure of dissonance theory which in turn is a result of the conceptualization that is involved. The concept of cognitive element is defined by other obscure terms such as knowledge, belief, and opinion about one's feelings, one's self, one's behavior,
and one's environment. The theory also makes use of the concept of implications. Brown asks the question, "What does it mean to say that one element (a) implies the negation of another element (b)?"\(^1\) The concept of implication carries a connotation of logic, but Festinger maintains that not all dissonant relations are derived from logical contradiction. Other dissonance theorists have clarified this matter by pointing out that dissonance is not a matter of logical implication but rather a result of psychological expectation. Brehm and Cohen maintain that it's a question of "what else a person expects when he holds a given cognition".\(^2\) The concept of magnitude of dissonance, and the propositions built upon, offer little direction in measuring the concept.

The problems of conceptual clarity and definitions lead to a variety of additional problems that range from theoretical problems to problems of measurement. One of these problems is measuring the degree of dissonance which exists. In past experimentation, the degree of dissonance has been represented ordinally. The existence of dissonance has been amply demonstrated under laboratory conditions. Out of the laboratory and in a non-experimental setting it is probable that dissonance rarely exists in such large amounts. Smaller amounts of dissonance require more precise measurements, and

\(^1\)Brown, op. cit., p. 595.

\(^2\)Brehm and Cohen, op. cit., p. 3.
if ordinal measurements are used, they must have the capability of making finer distinctions.

Although dissonance theory suggests three different ways in which dissonance may be reduced, it does not specify which mode of reduction will be used, given a certain set of conditions. In the experimentation that has been generated by the theory, only one mode of reduction is possible since the experimenters close off alternative modes. For dissonance theory to have external validity, we need to know what modes of dissonance reduction are normative in particular situations. We need to make theoretical applications in natural settings.

The precision of the predictions made by the theory is limited by the problem of resistance to change. Precision would be enhanced if measures of resistance were established. In a given set of cognitions resistance to change may vary from one cognition to another. In predicting which cognitive element will change, it is helpful to know the relative strength of resistance to change of all the relevant cognitions.

Another measurement problem exists in regard to the importance of cognitions and cognitive elements. How can importance be measured? The theory provides little direction in achieving precise measurements of importance. At present, importance can be determined only through logical argument and ordinal specifications.

Individual differences in the ability to tolerate
dissonance and in patterns of dissonance reduction are two more questions that go unanswered. These two considerations are very relevant for making predictions, and research is lacking in this area. Until these two questions are answered, no predictions for individual subjects can be made. Dissonance theory, at present, is limited to making predictions about classes and categories of subjects.

Critics have taken issue with Festinger's use of the term "obverse". Festinger stated: "Two cognitions are in a dissonant relationship when one implies the obverse of the other." Brehm and Cohen feel that the use of obverse in this statement places too many limitations on the theory. Instead, they suggest that the phrase "in the direction of being obverse" be substituted for the word "obverse". This substitution gives the theory greater scope, and it makes the determination of dissonant relationship somewhat easier.

Perhaps the most extreme criticism that has been leveled at the theory of cognitive dissonance takes the form of asking if dissonance theory can be disproven. Some have maintained that dissonance theory, as a result of its vagueness, has the ability to explain everything, which in turn leads nowhere.

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73 Festinger, op. cit., p. 13.
74 Brehm and Cohen, op. cit., pp. 3-11.
75 Kiesler, Collins, and Miller, op. cit., p. 36.
In some cases, the students of cognitive dissonance have been too hasty in their rush to experimentation and overlooked Festinger's own directives for testing the theory.

But perhaps the best way of avoiding the loose usage of the concept of dissonance is to emphasize its clarity rather than its vagueness. Dissonance is not anything which exists by itself. It is a characterization of a relationship between cognitive elements. Thus, determining whether or not dissonance exists, should take the form of first specifying the cognitive elements, or clusters, which are under consideration and then examining whether, considering one alone, the obverse of the other follows. If it seems plausible to assert that the relation is dissonant, it is usually also helpful to specify on what grounds—logical, experimental, cultural or otherwise—the "follows from" holds in that instance. It is also clearly necessary to be able to specify what specific changes in cognition, or what new cognitive elements, would reduce the magnitude of the dissonance thus determined.76

Obviously, the theory of cognitive dissonance has its weak points and problems. In this respect, it is not unlike most theories in social science. At the same time, the theory does have positive features. First, the theory has produced a vast amount of data; it has been fruitful because of the amount of empirical research that is has generated. Second, it has led to unusual predictions which have been substantiated by research. In comparison to other theories, based on the consistency of principle, cognitive dissonance is a powerful theory because of its ability to make such predictions. Third, the theory of cognitive dissonance has been a productive tool in that the research it has generated

76Festinger, op. cit., p. 279.
has added substantially to the growing body of knowledge about attitude and cognitive change.

A positive attribute of the theory that is especially pertinent to the research at hand is the theory's ability to deal with behavioral change as it is related to attitude change. The theory explicitly considers the knowledge of behavior as a cognitive element and suggests that behavioral change and attitude change are inter-related phenomena. Behavior can change in the direction of being consonant with one's attitudes; or attitudes can change in the direction of being consonant with one's behavior. It is for this reason that the theory of cognitive dissonance should prove to be a useful tool in studying the relationship between attitude change and forced resettlement.

Placing forced resettlement in the theoretical framework of cognitive dissonance requires specifying the relevant cognitions involved in resettlement and their importance, determining if dissonance exists and for whom, and specifying which modes of dissonance reduction are feasible in the resettlement situation. This should result in arriving at testable hypotheses which will permit investigating the following questions.

1. Do the attitudes of local opponents to Corps reservoirs change over time from a negative position to a positive position?
2. Is there any variation as to who changes and how much they change, i.e., does the generalization hold?

3. What specifically are the bases for variation of attitude change and the intensity with which an attitude is held? These three questions, which are of practical interest, lead to the following theory-related activities.

1. A test of the predictive power of the theory of cognitive dissonance in a "natural" (non-experimental) setting.

2. A study of the problem of relating attitude change to behavior change.
Chapter 3

COGNITIVE DISSONANCE AND FORCED RESETTLEMENT

The Resettlement Process

When reservoirs are constructed, resettlement comes about as a result of the acquisition of land. Some land is permanently inundated by the reservoir; other acquired lands are inundated only periodically, in times of high water. Obviously, acquired lands must be abandoned as a safety procedure. Acquired agricultural lands that are inundated only periodically are most often leased back to someone engaged in farming. A reservoir may require that some give up all their land and others only part. It may also require partial or complete inundation of small towns, rural schools, and cemeteries.

Once Congress authorizes and appropriates funds for a reservoir project, land acquisition begins. The land can be acquired either through negotiation or condemnation. Federal and private appraisers evaluate the worth of each tract that will be acquired. Once a "fair price" is determined, government negotiators make the owner an offer. This first offer is not inflexible, and other offers can be made as negotiations proceed. If agreement through negotiation cannot be reached, the power of eminent domain is utilized and
condemnation proceedings take place in a division of the Federal District Court. Once the local landowner's lands have been acquired, he is faced with making a migration decision. The acquisition of lands also affects renters or tenants who farm or dwell on land that is acquired. The tenant must also make a migration decision.

Resettlement as a technical real estate term refers to the movement of persons and possessions from a federally-acquired tract of land to a new tract which has been acquired by the individual. In general, the cost of searching for a new home and the cost of moving are reimbursable. Since the local owners and tenants are forced to move by project construction and Federal land acquisition, it may be more accurate to consider the resettlement and migration that takes place as forced resettlement and forced migration. This is in contrast to resettlement and migration decisions that are arrived at independently by the individual.

**Forced Resettlement as a Dissonant Decision-Making Situation**

Once the local residents realize that their land will be acquired for a reservoir project and that they must resettle, a major decision must be made about where to resettle.\(^77\)

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\(^77\)The nature of the decision-making process and the considerations that are made are not of interest in this research case. The task is to ascertain whether or not dissonance exists as a consequence of the resettlement decision.
When a decision is made and the actual migration takes place, behavioral change is inevitable. It has already been pointed out that patterns of social interaction and participation, and occupational behavior will change. The more extreme the migration decision, the greater amount of behavioral change. The farmer who must make a migration decision will probably have at least three alternatives to select from. These alternatives are: (1) move to another farm; (2) move to a small rural town; and (3) move to an urban area. Each alternative involves a different amount of behavioral change—the first alternative, the smallest amount and the third alternative—the largest amount.

Figure 5
Forced Resettlement Alternatives
(Farm Origin)

<table>
<thead>
<tr>
<th>Behavioral Change</th>
<th>Migration Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Urban</td>
</tr>
<tr>
<td>Origin = Farm</td>
<td>Rural Nonfarm</td>
</tr>
<tr>
<td>Low</td>
<td>Rural Farm</td>
</tr>
</tbody>
</table>

Those persons who were living in a rural town and who are forced to resettle will also have alternatives available
in arriving at a decision. It is probable that they have only two available alternatives; (1) moving to another small town or (2) moving to an urban setting. Again, the first alternative would require less behavior change than the second alternative.

Figure 6
Forced Resettlement Alternatives
(Rural Nonfarm Origin)

<table>
<thead>
<tr>
<th>Behavioral Change</th>
<th>Migration Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Urban</td>
</tr>
<tr>
<td>Origin = Rural Nonfarm</td>
<td>Rural Nonfarm</td>
</tr>
<tr>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

Given that there are feasible resettlement alternatives in the migration decision, one alternative is acted upon and the others are rejected. When the migration decision is made, dissonance occurs. Surrounding each alternative is a cluster of consonant elements. One may perceive both positive and negative attributes for each alternative. The farmer who is forced to resettle may perceive that moving to another farm would allow him to remain independent, close to the soil, enjoy a quiet life, and so on. At the same time, in looking at the alternative of moving to the city, such things as a shorter work
week, greater income, and shopping conveniences may be perceived as positive attributes. The rural, nonfarm situation may be perceived as a good place to retire, a place where everybody is friendly, and the cost of living is low. There are consonant cognitions surrounding each alternative. They are consonant because they "follow from" and are consistent with the other attitudes, values, and beliefs possessed by the individual who is making the decision. One alternative is selected and acted on and dissonance occurs. Some of the individual cognitions are of course consonant with the decision he has made. Dissonance exists because in "passing up" the other alternative there are cognitions surrounding the other alternatives which are dissonant with the decision he has made. If the farmer decides to move to a new farm, (a) the cognitions surrounding the alternative of moving to a city (b) (such as a shorter work week and increased income) are dissonant with the values he possesses for these cognitions. These may be dissonant because "If I would have moved to the city, I'd have to work less."
Figure 7
Predecisional Consonant Relations

<table>
<thead>
<tr>
<th>Alternative #1</th>
<th>Alternative #2</th>
<th>Alternative #3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consonant Cognitions</strong></td>
<td><strong>Consonant Cognitions</strong></td>
<td><strong>Consonant Cognitions</strong></td>
</tr>
<tr>
<td>1, 2, 3</td>
<td>4, 5, 6</td>
<td>7, 8, 9</td>
</tr>
<tr>
<td>1, 2, 3</td>
<td>4, 5, 6</td>
<td>7, 8, 9</td>
</tr>
</tbody>
</table>

*Individual's Values, Attitudes, Beliefs*

- solid lines ______ consonant relations
- broken lines ----- dissonant relations

Figure 8
Post-Decisional Dissonant Relations

<table>
<thead>
<tr>
<th>Chosen Alternative #1</th>
<th>Rejected Alternative #2</th>
<th>Rejected Alternative #3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consonant Cognitions</strong></td>
<td><strong>Dissonant Cognitions</strong></td>
<td><strong>Dissonant Cognitions</strong></td>
</tr>
<tr>
<td>1, 2, 3</td>
<td>4, 5, 6</td>
<td>7, 8, 9</td>
</tr>
<tr>
<td>1, 2, 3</td>
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*Individual's Values, Attitudes, Beliefs*

- solid lines ______ consonant relations
- broken lines ----- dissonant relations
Theoretically, it appears that dissonance exists where forced resettlement has taken place as a result of decision making. For dissonance to occur, the individual must be committed to the decision and behave correspondingly. "The decision must imply the rejection of the unchosen alternative...if not, theoretically, there is no dissonance." 78

Given that dissonance exists, what is its magnitude?

Recalling:

Magnitude of Dissonance = \( \frac{\text{Cognitive elements dissonant with decision}}{\text{Cognitive elements consonant with decision}} \)

the problem becomes one of counting consonant and dissonant cognitive elements. If the hypothetical example is followed, the magnitude of decisional dissonance would be determined as follows:

\[
\text{Dissonance} = \frac{\text{Total number of dissonant cognitions for rejected alternatives (2) & (3)}}{\text{Total number of dissonant cognitions for chosen alternatives (1) & (4) & (5) & (6) & (7) & (8) & (9)}}
\]

An additional problem would be to determine the importance of each cognition for the three alternatives, since the importance of the decision will affect the magnitude of the dissonance. 79


The equation which allows for the quantification of importance is as follows:

\[ D = \frac{\sum_{i=1}^{i} P_{li}}{\sum_{j=1}^{j} P_{2j}} \times K \]

Where:
- \( D \) = magnitude of dissonance
- \( P_{li} \) = the importance of element \( i \) in Cluster 1
- \( P_{2j} \) = the importance of element \( j \) in Cluster 2
- \( K \) = a constant

Precisely quantifying dissonance in the forced-resettlement, decision-making situation would require information and techniques which are not yet available to social science. Yet, in a general way, the theoretical propositions about post-decisional dissonance do have utility in studying forced resettlement. Two theoretical propositions are especially pertinent; the first proposition being:

1. The more important the decision the greater the dissonance.\(^{81}\) This proposition suggests that a great deal of dissonance arises in the forced-resettlement situation as a consequence of making a migration decision. Few decisions can

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\(^{80}\)Kiesler, Collins, and Miller, op. cit., p. 195.

\(^{81}\)Festinger, op. cit., p. 37.
be more important than the resettlement-migration decision. Consideration of one's family, friends, community ties, income, occupation, and, in general, one's future are important cognitive elements that are involved in making the migration decision. Accepting then that the migration decision is indeed an important one, theoretically, a good deal of dissonance should exist after the migration decision is made. To recapitulate: "The post-decisional dissonance of being forced to resettle and make a migration decision cannot be quantified. The reason for discussing it is to argue and demonstrate that theoretically a good deal of dissonance does exist in the forced-resettlement situation. This suggests that all those who experience resettlement also experience dissonance; but a second proposition suggests that the magnitude of dissonance varies depending on the type of decision that is made.

2. The greater the similarity (cognitive overlap) between alternatives, the smaller the amount of dissonance. The farmer who has three new farms as his migration alternatives, and elects to move to one of the three, will experience less dissonance than the farmer who has a farm, a small town, or a city as his alternatives and elects to move to a farm. This is explained as follows:

The dissonance...exists between the cognitive elements that correspond to desirable features of

82Ibid., p. 41.
the unchosen alternative and to undesirable features of the chosen alternative. But let us consider that subset of the elements that identically corresponds to desirable features of both the unchosen and the chosen alternatives. Clearly, these elements are not dissonant with cognition about the action which has taken place since, considered alone, they would lead to the action taken just as cogently as they would lead to the rejected action.83

To follow this theoretical proposition in making predictions would require that one determine the perceptual alternatives available to the decision maker. This would present a complex task in studying mass forced resettlement. A modification of this proposition will allow one to make predictions about categories of persons who are forced to settle.

The more similar the chosen post-decisional alternative is to the pre-decisional situation, the smaller the magnitude of dissonance.

The basis for stating such a proposition is the theoretical statement that "the total amount of dissonance...will depend on the proportion of relevant elements that are dissonant with the one in question".84 An example may help to clarify this proposition. A farmer who decides to move to another farm will experience less dissonance than a farmer who moves to a city. His post-decisional behavior is more consonant with his pre-decisional behavior (farming). In comparison to the farmer who moves to a small town or city, there is a greater

83Ibid.

84Festinger, op. cit., p. 17.
proportion of consonant cognitions than dissonant cognitions about his new behavior.

Figure 9
Dissonant Relationships with New Farm as Selected Alternative

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>New Farm</th>
<th>Small Town</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitions</td>
<td>1,2,3,4,5</td>
<td>6,7,8,9</td>
<td></td>
</tr>
<tr>
<td>Farmer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

solid lines _______ consonant relations
broken lines ———— dissonant relations

The amount of similarity between the post-decisional alternative and the predecisional situation affects the ratio of dissonant-to-consonant elements universally.
Recalling that "the strength of the pressures to reduce the dissonance is a function of the magnitude of the dissonance", it then follows that: In forced resettlement, those persons whose migration decision is the most similar to their pre-settlement situation will experience the least pressure to reduce dissonance. The farmer who migrates to another farm will show less evidence of dissonance reduction than the farmer who migrates to the city.

Forced resettlement has been placed in a post-decisional dissonance framework since it requires that the people who will

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85Ibid., p. 18.
be affected by resettlement make a migration decision. In the case of a reservoir project that is to be built in a rural area, three types of general migration alternatives are available. These are new farm, small town, and city, and each requires varying amounts of behavioral change. Since the migration decision is such an important decision, theoretically, the magnitude of dissonance that arises is high. But, at the same time, it has been hypothesized that the magnitude varies depending on the amount of similarity between the post-decisional or chosen alternative and the pre-decisional situation. The greater the similarity the lower the magnitude of dissonance and, therefore, the lower the amount of pressures to reduce dissonance. The more the similarity between the pre-decisional situation and the post-decisional alternative the greater the proportion of consonants' cognitive elements.

Knowledge of one's behavior as a cognition is accounted for by the theory of cognitive dissonance. If one looks at the behavior change that the various migration decision alternatives require, it appears that selecting an alternative which is similar to one's pre-decisional situation requires less behavior change than selecting an alternative which is dissimilar to one's pre-decisional situation. This suggests the possibility of hypothesizing that: The greater the amount of behavioral change the greater the magnitude of dissonance; therefore, the greater the pressure to reduce dissonance.
This hypothesis becomes more tenable when one places forced resettlement in the framework of a forced-compliance situation. 

**Forced Resettlement as a Forced-Compliance Situation**

Forced compliance refers to that situation where a person is induced to behave in a manner contrary to his own personal attitudes or beliefs. Reservoir projects which are characterized by opposition, and are built in spite of this opposition, seem to be a "natural" forced-compliance situation. One of the major bases for much of the opposition to reservoir projects centers on leaving one's home and land. The local people oppose the reservoir project (in part) because it will require them to give up their homes, communities, and farmlands, and migrate or resettle. The expression of this opposition takes varied forms, and a cluster of negative attitudes or cognitions about the reservoir develop.

Projects are often constructed in spite of this opposition. Once the project is authorized and funded, land acquisition begins and the local people must resettle. The resettlement which occurs is, in a sense, forced resettlement. The migration which occurs in resettlement is "forced" because the local people do not make the resettlement choice; rather the choice is made for them. The behavioral changes that result from resettlement are contrary to (or do not follow from) the attitudes and beliefs expressed in opposing the reservoir project. The act of resettlement requires them to behave in
a manner contrary to their personal attitudes and beliefs.

That part of the local population which expresses opposition to a reservoir project, and is required to resettle, should experience dissonance—assuming that forced resettlement is really a forced-compliance situation. Since dissonance is in itself a motivating force for dissonance reduction, this same population should be expected to change cognitions to reduce dissonance. Two factors affect the magnitude of dissonance; and the magnitude of dissonance in turn affects the strength of the pressures to reduce it. According to Festinger, these two factors are: (1) the magnitude of punishment or reward and, (2) the intensity of the attitudes and beliefs which are discrepant with the "forced" behavior. In the case of punishment and reward, an increase in either results in a higher proportion of consonant elements and dissonance is decreased. The greater the intensity with which an attitude or belief is held the greater the magnitude of dissonance that exists.

In interpreting the magnitude of punishment, as it implies to forced resettlement, it seems feasible to consider "costs" as punishment. Costs in this sense include more than monetary loss; they include social costs as well.

86Ibid., p. 90.
Figure 11
Monetary and Social Cost Involved in Resettlement

<table>
<thead>
<tr>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary</td>
</tr>
<tr>
<td>Amount of land given up</td>
</tr>
<tr>
<td>Lower price received than asked</td>
</tr>
<tr>
<td>Owner vs. tenant</td>
</tr>
<tr>
<td>Decrease in income</td>
</tr>
<tr>
<td>Ability to purchase equivalent land</td>
</tr>
<tr>
<td>Distance of move</td>
</tr>
<tr>
<td>Social</td>
</tr>
<tr>
<td>Old age vs. young age</td>
</tr>
<tr>
<td>Long period of residency</td>
</tr>
<tr>
<td>Large family at home</td>
</tr>
<tr>
<td>Large degree of environmental change</td>
</tr>
<tr>
<td>Severed community ties</td>
</tr>
</tbody>
</table>

In forced resettlement those persons who have to give up the most (have the greatest cost), both socially and monetarily, should experience a relatively high degree of dissonance due to the high magnitude of cost. If dissonance is high, then the pressures for dissonance reduction are also high.

Interpreting the magnitude of rewards in the forced-resettlement situation does not seem feasible. The forced-resettlement situation is not a reward situation. People are not really rewarded for resettling. The benefits they receive come as a consequence of resettlement not as inducement to resettle.
Given that one can specify the magnitude of cost in forced resettlement, it is also necessary to determine the degree of intensity with which attitudes against the reservoir project and resettlement are held. An indication of attitudinal intensity is the way in which opposition to a reservoir was expressed. It seems reasonable to assume that a person who expressed opposition by writing his congressman held more intense attitudes against a project than a person who only signed a petition. It is felt that attitudinal intensity can be specified through documenting the form a person uses to express opposition. Determining the intensity of attitudes against a project and resettlement is necessary because the greater the intensity of an attitude that is discrepant with one's behavior, the greater the magnitude of dissonance; therefore, the greater the pressures to reduce dissonance.

Festinger then has accounted for the magnitude of cost and the intensity with which an attitude is held. He fails to explicitly account for variations in behavioral change. Behavioral change, as a cognitive change, is included theoretically, but from this point on it is treated as a constant. Variations in cost and attitude intensity have the effect of increasing or decreasing the ratio of consonant-to-dissonant cognitions. Theoretically, the degree of behavioral change should affect the magnitude of dissonance and dissonance reduction. The more that behavior is discrepant with one's existing attitudes and
beliefs, the greater the number of dissonant elements that exist. In applying this to forced resettlement: The greater the amount of change brought about by forced resettlement, the greater the magnitude of dissonance and, therefore, the greater the strength of the pressures to reduce dissonance. This suggests, for example, that a farmer who moves to a small town will experience a greater amount of dissonance than the farmer who moves to a new farm.

**Figure 12**

Migration Alternatives, Behavioral Change, and the Strength of Pressure to Reduce Dissonance

<table>
<thead>
<tr>
<th>From (Before Location)</th>
<th>To (After Location)</th>
<th>Magnitude of Dissonance</th>
<th>Strength of Pressure to Reduce Dissonance</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Farm</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Farm</td>
<td>Rural Nonfarm</td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td>Urban</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Rural Nonfarm</td>
<td>Urban</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Rural Nonfarm</td>
<td>Rural Nonfarm</td>
<td>Low</td>
</tr>
</tbody>
</table>
Forced resettlement has been placed in the framework of a forced-compliance dissonance situation. When a reservoir project is opposed by the local people, the behavior that is brought about by forced resettlement is discrepant with the attitudes and beliefs of the people. The magnitude of the dissonance can be determined by specifying punishment in terms of social and monetary cost and by specifying the degree of intensity with which an attitude is held. It has been argued that a third variable will also influence the magnitude of dissonance and the strength of the pressures to reduce it. This is the variable of behavioral change. The end result of resettlement is behavioral change. The amount of behavioral change that takes place will depend, to a great extent upon where the people resettle.

**Forced Resettlement and the Reduction of Dissonance**

Since forced resettlement has been placed in the framework of post-decisional and forced-compliance dissonance situations, it now becomes necessary to describe the ways in which that dissonance which arises as a consequence of resettlement can be reduced. There appear to be three theoretical ways in which forced-resettlement dissonance can be reduced. The first way is through the addition of new consonant cognitions. This has the effect of increasing the proportion of consonant-to-dissonant elements and thereby reduces dissonance. The second mode of dissonance reduction is changing a cognition so
that it is consonant with one's behavior, or, in other words, changing one's attitude and beliefs so that they are consistent with one's behavior. The third mode of dissonance reduction, which is applicable to forced resettlement, is the magnification of the importance of the cost to increase the consonance with one's behavior. As Festinger explains:

If forced compliance has been elicited, the number of consonant relations may be increased by magnifying the importance of the reward obtained or of the punishment (cost) avoided.87

In discussing forced resettlement in terms of post-decisional and forced-compliance dissonance situations, two general hypotheses were developed:

1. The more similarity between the chosen post-decisional alternative and the pre-decisional situation, the smaller the magnitude of dissonance.

2. The greater the amount of behavioral change brought about by forced compliance (forced-resettlement), the greater the magnitude of dissonance. Essentially, the above two hypotheses can be considered as sub-hypotheses of the following hypothesis that: The more that behavior changes in the direction of being discrepant with one's existing attitudes and beliefs, the greater the amount of dissonance that will be created. The two sub-hypotheses are similar in that the amount of dissonance created is really a function of behavioral change.

87 Festinger, op. cit., p. 96.
If the post-decisional alternative is similar to the pre-decisional situation, less behavioral change is required and less dissonance is created.

The theory of cognitive dissonance provides little direction in predicting which mode of dissonance reduction will be utilized, given a certain set of conditions. However, since greater magnitudes of dissonance create greater pressures to reduce dissonance, it seems reasonable to state that: Greater pressures to reduce dissonance will require more dramatic modes of dissonance reduction. In situations where a large amount of discrepant behavior exists, dramatic modes of dissonance reduction will come into play. Where little discrepant behavior exists, there is little pressure to reduce dissonance and less dramatic modes of reduction are required.

The following question, then, might be asked: Of the three modes of reduction that have applicability to forced resettlement, which is a dramatic mode? Festinger provides a clue to an answer when he states that:

> It is clear that in order to eliminate a dissonance completely, some cognitive element must be changed. It is also clear that this is not always possible. But even if it is impossible to eliminate a dissonance it is possible to reduce the total magnitude of dissonance by adding new cognitive elements.88

The most dramatic mode, it would seem, is that mode which involves a complete change of cognitive element and a complete

88Ibid., p. 21.
reduction of dissonance. This is in contrast to the addition of new cognitions which never completely eliminates dissonance. Changing one's attitudes and beliefs is the most dramatic mode of dissonance reduction.

In the forced-resettlement situation, those people who experience the greatest amount of dissonance will reduce it by changing their attitudes and beliefs about the source of resettlement, i.e., the reservoir project. Those people who experience little dissonance will reduce it through the addition of new cognitions and this will not require them to change their attitudes and beliefs. An example of this would be the farmer who opposed a reservoir and resettled in a city. Dissonance and the pressures to reduce dissonance are high. This farmer reduces dissonance by changing his attitudes and beliefs about the source or "cause" of his resettlement--the reservoir project. The farmer who moves to a new farm a few miles away from the reservoir will experience little dissonance and little pressure to reduce dissonance. He will not change his attitudes and beliefs about the project since there is not enough dissonance present. Rather, he will add new cognitions which in effect reinforce his attitudes and beliefs about the project. Theoretically, he is adding new consonant cognitions which increase the proportion of consonant-to-dissonant elements and thereby decreases dissonance.

**Summary and Hypothesis**

In discussing dissonance and forced resettlement, it has
been argued that resettlement gives rise to dissonance in two ways. First, dissonance arises out of the migration decision-making that is brought about by resettlement. Secondly, dissonance arises since forced resettlement is really a forced-compliance situation. People who resettle are "forced" to behave in a manner that is discrepant with their existing attitudes and beliefs. In both situations the source of dissonance is behavioral change. The more the behavior changes, the greater the discrepancy behavior and attitudes; therefore, the greater the magnitude of dissonance. More specifically, in the forced-resettlement situation the magnitude of dissonance and the strength of the pressure to reduce dissonance will be a function of: (1) the degree of similarity between the pre-decisional situation and the past-decisional alternative; (2) the degree of social and monetary cost incurred as a result of resettlement, (3) the degree of behavioral change that takes place as a result of resettlement, and (4) the intensity with which negative attitudes and beliefs about the source of resettlement (reservoir project) are held.

Two modes of dissonance reduction have been specified. Those people who experience a high magnitude of dissonance may reduce it by changing their attitudes and beliefs about the source or "cause" of resettlement. Attitudes may be changed so that they are consonant with behavior. Those people who experience little dissonance will not change their attitudes
and beliefs but will add new consonant elements which will reduce dissonance.

This then constitutes the essential considerations in formulating the research hypotheses which are now listed in order from the most abstract to the least abstract.

1. The greater the amount of behavioral change, the greater the amount of attitude change.
   a. Those individuals whose behavior has changed the most as a result of resettlement will experience the greatest amount of dissonance and the greatest pressures to reduce it.
   b. Those persons who experience large amounts of dissonance will reduce dissonance by changing their attitudes so as to make them consonant with their behavior.
   c. Those persons whose post-decisional alternative is the most similar to their pre-decisional situation will experience the least dissonance.
   d. Those individuals who experience little dissonance will not change their attitudes, but instead will reduce dissonance by adding new consonant cognitions which are consistent with their attitudes.

Additional hypotheses are:

1. Those people who experience the greatest amount of social and monetary cost will also experience the greatest amount of dissonance and the pressures to reduce dissonance.
   a. Those who experience the greatest amount of social
and monetary cost will reduce dissonance through attitude change.

b. Those who experience the least amount of social and monetary cost will reduce dissonance through the addition of new consonant cognitions.

In introducing the notions of forced resettlement and cognitive dissonance, five "problems" were listed, and it was stated that the discussion "...should result in arriving at testable hypotheses which will permit investigating the following questions". Three of these questions were:

1. Do the attitudes of local opponents to Corps reservoirs change over time from a negative position to a positive position.

2. Is there any variation as to when changes occur and how much they change.

3. What specifically are the bases for variation of attitude change and the intensity with which an attitude is held. Using the theory of cognitive dissonance, answers to these questions, in the form of hypotheses, have been offered. Predictions regarding type of attitude change, what kind of people change, and why they change have been made. To test these hypotheses they must be stated in specific terms capable of measurement. This will be done in the discussion of methodology, but prior to this it is important to describe the case history and field setting from which empirical data will be collected.
Tuttle Creek Reservoir - A Brief History

Tuttle Creek Reservoir received Congressional authorization in 1938. Initial funding and construction enabled work to begin in 1952 and completion was achieved in 1962. The reservoir is located six miles north of Manhattan, Kansas, in the Blue River Valley. Its boundaries, and the lands inundated, are parts of Marshall, Pottawatomie and Riley counties. Under normal operating conditions, the reservoir has a surface area of 15,800 acres and a storage of 2,346,000 acre-feet. The total cost of the project was $79,983,000. Tuttle Creek Reservoir was built as the key flood protection project for Topeka, Manhattan, Lawrence, and Kansas City. 89

Historically, the Blue Valley was one of Kansas' earliest settled river valleys. Its fertile bottomlands attracted a variety of pioneers, and in particular it was a drawing place for Swedish immigrants. Thirteen small rural communities developed in the valley along with the usual rural churches and cemeteries of an agricultural people. Many of the farms that were located in the valley were originally homesteads and had been passed down from father to son. Some of the communities were more than one hundred years old and the families of the valley had developed a strong attachment to their lands and communities. Not only were the lands valued as a source of

of livelihood, but there also existed an aesthetic appreciation which was a result of the pioneering and ethnic backgrounds of the valley dwellers. Perhaps it was this aesthetic appreciation and attachment to the lands which was the primary basis for the strong opposition and conflict which surrounded the construction of Tuttle Creek Reservoir.

The construction of Tuttle Creek Reservoir required the acquisition and inundation of 61,799 acres located in the Blue River Valley. Nine small communities were inundated along with several cemeteries, rural churches, and a children's home. Approximately 1,625 land ownerships were affected directly through total acquisition or partial severance of land. The school districts of three counties, 644 businesses, governmental tax bases, and public utilities were also disrupted. The Corps of Engineers resettlement register indicates that approximately 580 heads-of-households received resettlement payments. A conservative estimate of the total number of persons involved in resettlement is 2,000.

Opposition to the reservoir project began shortly after its authorization in 1938. This early opposition died out with the advent of the Second World War, but regained vitality after 1945. As the years passed and construction appeared to be a real possibility, opposition and conflict heightened. With an initial funding of $5,000,000 in 1952, the project became a reality and opposition to the project began.
The opposition to Tuttle Creek Reservoir was characterized by a variety of beliefs, sentiments, and behaviors which were essential components of the opposition against the reservoir project. Recognizing that a flood problem did exist, the local opposition placed themselves in a position of being able to offer an alternative solution. To the opposition, reservoirs the size of Tuttle Creek were "Big Dam Foolishness". Their solution, which was expressed as a belief, was the extensive use of small detention dams, contour terracing, and other soil conservation measures. They argued that America would need the bottomlands for the food requirements of her growing population. A commonly held belief was that the Army Engineers were responsible for the plight of the local opposition. A local newspaper editor declared, "So long as the Army Engineers keep the downstream people convinced that Tuttle Creek Dam is essential to flood protection, just so long will the agitation for the Blue Valley destruction continue."  

A report issued by the Blue Valley Study Association cautioned the local people "...not to pay much attention to the Army Engineers press releases. They were written to break our 'morale' and we must not let them do that."  

The expression of sentiments played an important part in

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91 Ibid.
forming the basis for opposition. Love for their homes, the beauty and productivity of their farms, the abhorance of having to move the graves of their loved ones, pride in local organizations and activities, and references to their pioneer ancestors were common expressions of sentiments by the local opposition. The common expression of these sentiments was a rallying point and unifying device for monetary opposition. Patriotic sentiments were commonly expressed—the Blue Valley fight was depicted as a fight to preserve the "American way of life".

One ramification of the opposition's behavior was a major political upheaval. In the November election of 1952, the Republican incumbent from the First Congressional District was defeated by a Democrat. This representative, who was "pro dam", had defeated Democrats by a margin of 2 to 1 four times since 1945. The Democrat who won the election was a 73-year old farmer who opposed the dam and supported conservation measures. Another common form of collective oppositional behavior was a number of "prayer meetings" held at the damsite and attended by several hundred valley residents. One function of these meetings was the building of religious support for the "righteousness of the opponent's course". At one meeting a local minister proclaimed that "Nothing so wrong can ultimately win".  

92Taken from an unidentified newspaper clipping located in the project history files of the U. S. Army Engineers, Kansas City District.
minister declared, "We are here to ask God's help in preventing the construction of the dam...Let us not underestimate the power of God, for the miracle of Phillipi is not impossible in our day". This particular meeting closed with Kipling's Recessional, "Lord God of Hosts be with us yet, /Lest we forget, /Lest we forget."

Hostility and vandalism were normative forms of expressing opposition. The Army Engineers were consistently refused permission to enter farmers' fields. In one incident they were threatened with stones and in another with a pitchfork. Vandalism to government vehicles and equipment was common occurrence. Even today, almost five years since completion, one farmer who has refused to leave his acquired farm greets government vehicles with a shotgun.

A great deal more could be said about the opposition to Tuttle Creek Reservoir, but for the purpose of this research, the research project is being used as a non-experimental case which will permit the testing of a theory. Tuttle Creek was selected because of the amount of opposition and conflict that surrounded it. Many personnel of the Corps of Engineers consider it as the most opposition and conflict-laden project they ever built.

In 1954 the Manhattan Chamber of Commerce found its members divided in opinion on whether Tuttle Creek Reservoir should be completed. In an attempt to resolve the conflict
among membership it was decided that the Chamber would sponsor a "referendum type of poll" of all citizens in the area. Apparently, the results of the survey would be used to undermine one of the two conflicting Chamber of Commerce opinions regarding completion. The "Mid-Kansas Research Institute" conducted the survey by mailing a questionnaire to "every family served by the United States Postal System in the area".  

Table 1 illustrates more specifically the location of those receiving the questionnaire.

Table 1  
Location of Respondents of the Mid-Kansas Research Institute Survey

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All families</td>
<td>7,839</td>
</tr>
<tr>
<td>Blue River Valley</td>
<td>532</td>
</tr>
<tr>
<td>Manhattan (city)</td>
<td>5,329</td>
</tr>
<tr>
<td>Manhattan (rural)</td>
<td>1,077</td>
</tr>
<tr>
<td>Rest of County</td>
<td>901</td>
</tr>
</tbody>
</table>

The results of the survey suggest that physical proximity to the reservoir and the urban-rural dimension are related to whether or not one favored or opposed completion of the Tuttle Creek Dam.

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93 Mid-Kansas Research Institute, F. L. Whan, Analyst, "Referendum Vote of Families in Riley County and the Blue River Valley on the Subject of Tuttle Creek Dam Completion", (June 1954).
project. Those families living in the river valley who would be directly affected in terms of land acquisition expressed the highest degree of opposition, whereas those families in urban Manhattan were the greatest source of those respondents in favor of completion.

Table 2

Results of Mid-Kansas Research Institute Survey (1954)

<table>
<thead>
<tr>
<th></th>
<th>Against</th>
<th>For</th>
<th>Don't Know</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Valley families</td>
<td>93.5</td>
<td>5.2</td>
<td>1.3</td>
<td>100</td>
</tr>
<tr>
<td>Manhattan urban</td>
<td>55.2</td>
<td>39.2</td>
<td>5.6</td>
<td>100</td>
</tr>
<tr>
<td>Manhattan rural</td>
<td>68.0</td>
<td>27.8</td>
<td>4.2</td>
<td>100</td>
</tr>
<tr>
<td>Rest of County</td>
<td>67.0</td>
<td>25.6</td>
<td>7.4</td>
<td>100</td>
</tr>
<tr>
<td>All families</td>
<td>61.3</td>
<td>33.5</td>
<td>5.2</td>
<td>100</td>
</tr>
</tbody>
</table>

The opposition achieved some success after 1952. When the initial construction funds ran out, no additional funds were appropriated until 1955. During this two-year lag, Congressional hearings on whether or not the project should be continued were held. Several of the local opponents appeared as witnesses at these hearings, and a special delegation of housewives made a trip to the White House where they requested the President's intervention. During this same period, the valley residents hired a film company to make a film depicting their struggle to save the valley. This film received
widespread distribution and the story that it told was supplemented by articles in several nationally circulated magazines.

The final decision was made by Congress in 1955. In appropriating additional construction funds, Congress gave approval to the continuance and eventually the completion of the reservoir. From 1955 through completion was the period in which most of the resettlement took place. The people who resettled, as a consequence of the construction of Tuttle Creek Reservoir, constitute the population for this research project.
Chapter 4

METHODOLOGY

The Hypotheses and Measurement

The Hypotheses

A brief description of the setting for the test of hypotheses has been presented. The specific measurements that will be used in testing the hypotheses must now be discussed. In discussing measurement and operations, methodological limitations will also be considered.

Perhaps the first question that requires consideration is "Can dissonance be measured?" Generally, attempts at measuring dissonance directly are uncommon. Indirect measurement of dissonance is the usual case and it is achieved by measuring the manifestations of dissonance reduction which are specified prior to measurement. Probably this emphasis on indirect measurement has resulted because researchers have been more interested in the consequences of dissonance than in dissonance itself. The consequences of dissonance are the bases of the theory's utility. The interest of this research is also in the consequence of dissonance, not in dissonance itself. For this reason, three of the hypotheses which have been presented will not be tested directly. Instead they will be treated as postulates. These three postulates are:
1. Those individuals whose behavior has changed most as a result of resettlement will experience the greatest amount of dissonance and the greatest pressures to reduce it.

2. Those persons whose post-decisional alternative is the most similar to their pre-decisional situation will experience the least dissonance.

3. Those people who experience the greatest amount of social and monetary cost experience the greatest amount and pressures to reduce dissonance.

These three hypotheses will receive indirect treatment through the testing of the following general (GH) and specific (SH) hypotheses.

(GH1) The greater the amount of behavioral change, the greater the amount of attitude change.

(SH1-1) Those persons who moved from a farm to a city, or from a small town to a city will have changed their attitudes about Tuttle Creek Reservoir.

(SH1-2) Those persons who moved from a farm to a new farm, or from a farm to a small town near the reservoir will not have changed their attitudes about Tuttle Creek Reservoir.

(SH1-3) Those persons who have not changed their attitudes will possess other attitudes which support their negative attitude about the reservoir project.

(SH1-4) Those persons who possessed the strongest negative attitudes about the reservoir project will have changed
their attitudes about Tuttle Creek.

(SH1-5) Those persons who experience the greatest amount of social and monetary cost will change their attitudes the most.

On the surface, two of the hypotheses appear to be in contradiction. One maintains that attitude change is a function of behavioral change; the other that attitude change is a function of cost. These two hypotheses will be brought out of contradiction by an additional hypothesis:

(SH1-6) Those persons who experience the greatest monetary and social cost as a result of resettlement will also experience the greatest amount of behavioral change.

To test the hypotheses, six measurements have to be made. These are: (1) attitude change, (2) pre-settlement attitude, (3) behavioral change, (4) attitude intensity, (5) social and monetary cost, and (6) new attitudes supporting anti-reservoir attitudes.

**Attitude Change**

To assess attitude change, a measure of attitudes before resettlement and after resettlement is necessary. The "before" attitudes were determined through existing documents which are of an opposition nature. The documents used were: Letters of opposition sent to the Corps, signatures on petitions opposing the project, records of Congressional testimony, and newspaper articles. These documents were used to determine whether or
not a given person opposed Tuttle Creek Reservoir. The assumption was that, if he opposed it, he had negative attitudes toward the project. The "after" measure of attitudes toward Tuttle Creek Reservoir was made using a questionnaire containing Likert-type items designed specifically for this purpose.

Attitude Intensity

Since the magnitude of dissonance is in part a function of the intensity with which an attitude is held, it was necessary to make an assessment of the intensity of the pre-settlement (before) attitudes about the project. An assessment of intensity was made by using the way in which a given person opposed the project as an indicator. For example, it is assumed that a person who joined and participated in an anti-reservoir organization possessed more intense anti-reservoir attitudes than did a person who only signed a petition. Five categories of intensity were developed based on the expression of opposition. The categories of opposition are listed in Figure 13. The category representing the highest degree of attitude intensity is "Participation in activities which demonstrated opposition" and the category representing the lowest degree of attitude intensity is "Word of mouth".
Attitude intensity as indicated by the expression of opposition was determined by using the same existing documents that were used to determine measure of the "before" attitudes.

**Behavioral Change**

It has been argued that certain types of migration alternatives are characterized by differing amounts of behavioral change. Moving from the farm to the city is defined as resulting in greater amounts of behavioral change than does moving from one farm to another farm. The indicator used to assess the degree of behavioral change that resulted as a consequence of resettlement was the migration destination itself. Figure 14 lists the possible migration moves and gives an indication of the degree of behavioral change characterized by each move.
### Migration Moves and Behavioral Change

<table>
<thead>
<tr>
<th>From (Before Location)</th>
<th>To (After Location)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Urban</td>
</tr>
<tr>
<td>Farm</td>
<td>Rural Nonfarm</td>
</tr>
<tr>
<td>Farm</td>
<td>Farm</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>High</td>
<td>Urban</td>
</tr>
<tr>
<td>Rural Nonfarm</td>
<td>Rural Nonfarm</td>
</tr>
<tr>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

### Social and Monetary Cost

Several items were used in evaluating the social and monetary cost for each subject. One set of items assessed monetary costs and a second set social cost.

### Figure 15
Social and Monetary Cost Items

<table>
<thead>
<tr>
<th>Monetary Cost</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease in Income</td>
<td>Years of residence prior to resettlement</td>
</tr>
<tr>
<td>Non-replacibility of land Owner vs. tenant</td>
<td>Age</td>
</tr>
<tr>
<td>Family size</td>
<td></td>
</tr>
</tbody>
</table>
The monetary items were concerned with possible financial losses that resulted from resettlement. These losses take different forms such as a loss of income, not being able to buy an equivalent number of acres, and whether or not one has a capital investment (owner). Social "costs" were more difficult to assess. Financial values can be more easily assessed than social cost. Conceptually, social costs are not well defined. In general, as they are used in this research case, they refer to social ties and established patterns of social interaction that are severed and disrupted as a result of resettlement. It was felt that the longer a person had resided in the valley prior to project construction, the older a person was, and the larger a person's family was, the more that person had to give up. In other words, this person experienced "high" social cost.

Supporting Anti-Reservoir Attitudes

One hypothesis maintained that those people who did not change their attitudes about the reservoir would add new cognitions in the form of attitudes which would support their existing anti-reservoir attitude. This hypothesis was referring to those persons who purchased a new farm or moved to a small town a short distance away from where they lived prior to project construction. At present, these persons would be living in the shadow of Tuttle Creek Reservoir. These same persons opposed the reservoir but nevertheless are living near
it. The project was built in spite of their opposition, and living near it is a daily reminder of its existence. Simply giving up the negative attitude would be a painful experience in that it would be like saying, "I was wrong and they were right". Instead of changing their attitudes the hypothesis maintained that they would possess new attitudes which supported the anti-reservoir attitude. For these people the reservoir project is still a "bad" project but the reason it was built is because of "bad" government, "bad" Congressmen, or some other similar reason. Before assessing these "new anti-reservoir attitudes" it was necessary to specify the characteristics of the attitudes. It was felt that they would in part be determined experimentally, based on the fact that these persons opposed the reservoir, yet it was built. Srole-type alienation items were included in the questionnaire. For example, "there is little use writing in public officials because often they are not really interested in the problems of the average man". In opposing the reservoir, many of these people wrote their Congressmen and yet the project was built. It was thought measures of alienation could be used as indicators of the possession of new supportive anti-reservoir attitudes. This same hypotheses is saying that those people who did not change their

attitude about the reservoir will score high on measures of alienation.

The Population and Sample

The population was defined as all those heads-of-households who opposed Tuttle Creek Reservoir and who were resettled as a consequence of its construction. Army Corps of Engineers resettlement research listed 580 persons. Using historic documents it was determined that 458 of these persons opposed the reservoir. This does not suggest that the remaining 122 persons who resettled did not oppose the project. Whether or not they opposed it could not be determined from the documents that were available. Using the criteria of opposition and resettlement resulted in a population of 458 cases. Initially, no sampling procedures were used since the total population was to be studied. Using random sampling techniques, a sample of the non-respondents was made after the initial data collection phase.

The Questionnaire

The questionnaire (Appendix A) was designed for use as a mail questionnaire. Basically, three types of items were included: (1) personal characteristics, (2) attitudes about the reservoir, and (3) selected items from measures of alienation. Initially, the questionnaire contained 76 items but through pre-testing and review, 22 items were eliminated due to unclarity and length. In its final form, the questionnaire contained
54 items. Extra items which would allow for consistency checks were also included. The control variables of social class, sex, age, and marital status are accounted for by questionnaire items.

Data Collection and Response

All of the population (458 cases) were mailed a questionnaire which was accompanied by an explanatory letter (Appendix B) and a stamped envelope. A cutoff date was set which would allow a four-week period for initial response. At the end of the four-week period 219 subjects had responded which made an initial return of 47.8 percent. A follow-up letter (Appendix C) with another Questionnaire was sent to the non-respondents. This follow-up resulted in an additional 44 responses which increased the total response by 9.6 percent. The total response received through the mail was 263 responses or 57.4 percent. The use of the mail questionnaire is characterized by the problem of self-selection which is likely to produce a bias. The possibility exists that non-respondents differ significantly from respondents. This problem was dealt with by drawing randomly a 15 percent sample of the non-respondents. Personal interviews were then conducted and responses were received from 31 of the 33 subjects in the sample. This increased the percentages of return by an additional 6.7 percent. The total return was 294 responses or 64.1 percent. Of the total return only seven of the responses were not usable. Letters
were received from next of kin indicating that four percent of the population were deceased. Collecting data from one part of the population by mail and another part through interviews can produce the additional problem of interviewer effect. The possibility exists that the presence of an interviewer may cause the subjects to respond differently than if they had responded by mail. To provide a control for this, five percent (12) of the respondents were also interviewed.

Table 3
Summary of Returns

<table>
<thead>
<tr>
<th>Collection Phase</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial mail</td>
<td>219</td>
<td>47.8</td>
</tr>
<tr>
<td>Follow up mail</td>
<td>44</td>
<td>9.6</td>
</tr>
<tr>
<td>Interviews</td>
<td>31</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>294</td>
<td>64.1</td>
</tr>
<tr>
<td>Non-usable responses</td>
<td>7</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>FINAL RETURN</strong></td>
<td>287</td>
<td>62.6</td>
</tr>
</tbody>
</table>

100 percent = 458

Comparison of Returns

A null hypothesis was tested to compare the differences in response between the mail-interview respondents (256), the interview respondents (31), and the mail-interview respondents (12). The null hypothesis was that the three different groups
were from a common population. An analysis of variance test was done and the plan was to use the F ratio as a test of significance. The three groups were compared on the attitude and alienation items. In conducting the analysis of variance, the mean square between the groups was smaller than the mean square within the groups; therefore, it was concluded that there was no reason to reject the null hypothesis.95

95"Only values of F, greater than 1 will provide evidence against the null hypothesis in which we are interested. If the mean square between groups is smaller than the mean square within groups, the value of F will be less than 1, and such values will not contradict the null hypothesis. In this case, there is no need to compute the F ratio for it is obvious that the data offers no evidence against the null hypothesis." In comparing the response, F ratios of .73 and .81 were obtained. See Allen L. Edwards, Statistical Methods for the Behavioral Sciences, (New York: Holt, Rinehart and Winston, 1964), p. 322.
Chapter 5

THE FINDINGS

Analysis

The seven testable hypotheses will now be stated in the null form and tested.

The first general hypothesis (GH1) is: The greater the amount of behavior change, the greater the amount of attitude change. Stated as a null hypothesis (ho-1):

There is no difference in attitude change between those who change behavior and those who do not change behavior.

In this hypothesis behavior is treated as the independent variable and attitude change as the dependent variable. In the discussion of methodology it was pointed out that migration destination would be used as an indicator of behavioral change.

Table 4
Frequency of Migration Destinations and Behavioral Change

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
<th>Amount of Behavioral Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>93</td>
<td>32.4</td>
<td>High</td>
</tr>
<tr>
<td>Rural Nonfarm</td>
<td>133</td>
<td>46.3</td>
<td></td>
</tr>
<tr>
<td>Rural Farm</td>
<td>61</td>
<td>29.2</td>
<td>Low</td>
</tr>
<tr>
<td>TOTAL</td>
<td>287</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 provides a breakdown of the frequency of migration destinations and behavioral change. Of the 287 respondents, 32.4 percent resettled in urban settings, 46.3 percent in rural nonfarm settings, and 29.2 percent in farm settings. The dependent variable, attitude change, was measured with Likert-type items which offered the respondent five alternatives. If a respondent had a mean score of three or greater on the attitude items, that respondent was placed in the "no change" category. A score of less than three indicated attitude change and the respondent was placed in the "change" category. As shown in Table 5, 42.2 percent of the respondents changed their attitudes about Tuttle Creek Reservoir and 57.8 percent gave no indication of attitude change.

Table 5
Attitude Change

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Change</td>
<td>121</td>
<td>42.2</td>
</tr>
<tr>
<td>No Attitude Change</td>
<td>166</td>
<td>57.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>287</td>
<td>100.0</td>
</tr>
</tbody>
</table>

This general hypothesis relating behavioral change and attitude change can be tested as it stands, and also receive additional treatment by testing two specific hypotheses.
(SH1-1) Those persons who moved from a farm to a city or from a small town to a city will have changed their attitudes about Tuttle Creek Reservoir.

(SH1-2) Those persons who moved from a farm to a new farm, or from a farm to a small town will not have changed their attitudes about Tuttle Creek Reservoir. Since migration destinations and attitude change can be dealt with as discrete variables, they are susceptible to treatment with the chi square statistic.

Table 6

Behavioral Change and Attitude Change

<table>
<thead>
<tr>
<th>Behavioral Change</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>89</td>
<td>24</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonfarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>102.65</td>
<td>2</td>
</tr>
</tbody>
</table>

A chi square value of 102.65 was obtained and in entering the chi square table with two degrees of freedom (k-1) the value

96In analyzing this thesis data, statistical values which fail to meet or surpass the .05 level will result in non-rejection of the null hypotheses.
is significant at the .01 level. Since the obtained results would occur by chance only once in a hundred times, the null hypothesis that:

There is no difference in attitude change between those who change behavior and those who do not is therefore rejected. The conclusion is that it is highly probable that the greater the behavioral change the greater the attitude change.

Comparing attitude change for the migration destination categories, urban - rural farm; urban - rural nonfarm; and rural nonfarm - rural farm; provides a more detailed analysis. Table 7 provides a comparison of migration alternatives and the frequency of attitude change.

Table 7

Summary Table for all Migration Destinations and Attitude Change

<table>
<thead>
<tr>
<th></th>
<th>Urban Rural Farm</th>
<th>Urban Rural Nonfarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>89</td>
<td>8</td>
</tr>
<tr>
<td>Attitude Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Change</td>
<td>4</td>
<td>53</td>
</tr>
</tbody>
</table>

\[ X_{c}^2 = 104.34 \]
\[ df = 1 \]

<table>
<thead>
<tr>
<th></th>
<th>Rural Nonfarm Rural Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>24</td>
</tr>
<tr>
<td>Attitude Change</td>
<td></td>
</tr>
<tr>
<td>No Change</td>
<td>109</td>
</tr>
</tbody>
</table>

\[ X_{c}^2 = .37 \]
\[ df = 1 \]
Essentially, the results for urban-rural farm and urban-rural nonfarm comparisons are the same.

Table 8
Comparison of Attitude Change for Urban and Rural Nonfarm Respondents

<table>
<thead>
<tr>
<th>Attitude Change</th>
<th>Urban</th>
<th>Rural Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>89</td>
<td>8</td>
</tr>
<tr>
<td>No Change</td>
<td>4</td>
<td>53</td>
</tr>
</tbody>
</table>

\[ X^2_{c} = 104.34 \]
\[ df = 1 \]

Again, the chi square statistic can be used in making the urban-rural farm comparison. Since there is only one degree of freedom, chi square was corrected for continuity and an \( X^2_{c} \) (chi square corrected) value of 104.34 was obtained. \(^97\) Entering the chi square table with one degree of freedom, the \( X^2_{c} \) value is significant at the .01 level. The null hypothesis (hol-1) that is rejected is:

no difference exists in attitude change between those who resettle in an urban setting and those who resettle in a rural farm setting.

In comparing urban and rural nonfarm on attitude change, there is only one degree of freedom. Chi square was corrected for continuity and a value of 123.3 was obtained. Entering the chi square table with one degree of freedom and an $X^2$ value of 123.3 results in the level of significance being .01. This results in rejecting the null hypothesis and suggests that there are significant differences in attitude change between those who resettle in urban settings and those who resettled in rural nonfarm settings.

Table 9
Comparison of Attitude Change for Urban and Rural-Nonfarm Respondents

<table>
<thead>
<tr>
<th>Attitude Change</th>
<th>Urban</th>
<th>Rural-Nonfarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>89</td>
<td>24</td>
</tr>
<tr>
<td>No Change</td>
<td>4</td>
<td>109</td>
</tr>
</tbody>
</table>

$X^2 = 123.3$
$df = 1$

A comparison of rural nonfarm and rural farm results in a $X^2$ of .37. A $X^2$ of .37 is not a significant value and, therefore, it is concluded that the difference in attitude change that exists between those who resettled in rural-nonfarm settings and those who resettled in rural-farm settings occur
by chance. The null hypothesis (hol-2) cannot be rejected that:

    a significant difference in attitude change exists between those who resettle in rural-nonfarm and rural-farm settings.

Table 10
Comparison of Attitude Change for Rural Nonfarm and Rural Farm

<table>
<thead>
<tr>
<th></th>
<th>Rural Nonfarm</th>
<th>Rural Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change</strong></td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td><strong>No Change</strong></td>
<td>109</td>
<td>53</td>
</tr>
</tbody>
</table>

\[ X^2 = .37 \]
\[ df = 1 \]

Attitude Change and Alienation

One of the hypotheses (SH1-3) held that: Those persons who have not changed their attitudes will possess other attitudes which support their negative attitudes about the reservoir project. The null hypothesis (hol-3) is:

that those persons who have not changed their attitudes will not possess other attitudes which support their negative attitudes about the reservoir project.

In the discussion on methodology it was specified that these
"other attitudes" would be indicated by agreement with measures of alienation. Those persons who have not changed their attitudes will score high on alienation measures. In this hypothesis, attitude change is the independent variable and alienation is the dependent variable. Standardized alienation items were used to assess whether or not a respondent was alienated. Both three-alternative and five-alternative items were used. A mean score of 3 or greater on the five alternative items indicated alienation, and a mean score of two on the three alternative items indicated alienation. An alienation score was computed by averaging the final scores of the three and five alternative items. A respondent whose final average score was 2.5 or greater was placed in the "alienated category". With one degree of freedom, chi square was corrected for continuity and an $X_c^2$ value of 123.3 was obtained. This value ($X_c^2 = 123.3$) is significant at the .01 level; therefore, the null hypothesis is rejected.

Table 11
Attitude Change and Alienation

<table>
<thead>
<tr>
<th></th>
<th>Change</th>
<th>No Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alienated</td>
<td>8</td>
<td>121</td>
</tr>
<tr>
<td>Non-Alienated</td>
<td>113</td>
<td>45</td>
</tr>
</tbody>
</table>

$N = 287$

$X_c^2 = 123.3$
Attitude Intensity and Attitude Change

It was hypothesized that: (SH1-4) Those persons who possessed the strongest negative attitudes about the reservoir project will have changed their attitudes the most. In the null form (hol-4):

No difference in attitude change will exist between those who possessed strongest negative attitudes and those who possessed the weakest negative attitudes.

Data was collected using five categories of attitude intensity which were assigned a weighted value. These categories are presented in Table 12.

Table 12

Weighted Values for the Measurement of Attitude Intensity

<table>
<thead>
<tr>
<th>Weighted Value</th>
<th>Forms of Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Participated in activities which demonstrated opposition</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Attitude Intensity</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Low</td>
<td>5</td>
</tr>
</tbody>
</table>

They are not exclusive since a respondent can be placed in any
or all categories. The nonrespondents were divided into two groups, those who changed their attitudes and those who did not change their attitudes. A mean value for each attitude intensity category was then calculated for each group. In examining the mean values for attitude-change and no-change groups (Table 13), very little difference exists. An analysis of variance was conducted and the F ratio used to test for significance. Since the F ratio obtained was not larger than 1, no evidence existed for rejecting the null hypothesis.

The low F value of .058 largely results from the low amount of variation between groups (Table 14). The obtained value of the sum of squares for variation between groups was only .12.

Table 13

<table>
<thead>
<tr>
<th></th>
<th>Attitude Change</th>
<th>No Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participated in activities</td>
<td>.387</td>
<td>.442</td>
</tr>
<tr>
<td>which demonstrated opposition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joined an organization</td>
<td>.839</td>
<td>1.368</td>
</tr>
<tr>
<td>Wrote a government official</td>
<td>1.484</td>
<td>1.587</td>
</tr>
<tr>
<td>Signed a petition</td>
<td>3.258</td>
<td>3.351</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>2.140</td>
<td>2.451</td>
</tr>
</tbody>
</table>
The low F value of .058 provides no basis for rejecting the null hypothesis. Therefore, it is concluded that no support exists for the hypothesis that: Those persons who possessed the strongest negative attitudes about the reservoir project will have changed their attitudes the most.

Table 14

Variation Between and Within Attitude-Change and No-Change Groups on Attitude Intensity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>.12</td>
<td>1</td>
<td>.12</td>
</tr>
<tr>
<td>Within groups</td>
<td>6.36</td>
<td>8</td>
<td>.79</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6.48</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

F = .658 \( df = (kn-1) \)

Cost and Attitude Change

The hypothesis (SH1-5) that: Those persons who experience the greatest amount of social and monetary cost will change their attitudes the most, can also be tested by conducting an analysis of variance and an F test. Once again the respondents are divided into two groups, those who changed their attitudes and those who did not change their attitudes. The null hypothesis (hol-5) is that:
No significant difference exists on the cost item scores of the two groups.
Mean scores were calculated on each cost item for the two groups.

Table 15
Mean Values of Social and Monetary Cost Scores for Attitude-Change and No-Change Groups

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Attitude-Change Group</th>
<th>No-Attitude Change Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>55.20</td>
<td>52.50</td>
</tr>
<tr>
<td>Marital Status</td>
<td>1.34</td>
<td>1.40</td>
</tr>
<tr>
<td>Family Size</td>
<td>2.38</td>
<td>2.12</td>
</tr>
<tr>
<td>Income Decrease</td>
<td>2.94</td>
<td>2.55</td>
</tr>
<tr>
<td>Land Ownership</td>
<td>1.30</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Table 16
Variation Between and Within Attitude-Change and No-Change Groups on Social and Monetary Cost

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>76.80</td>
<td>1</td>
<td>76.80</td>
</tr>
<tr>
<td>Within groups</td>
<td>4,249.26</td>
<td>8</td>
<td>547.75</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,326.06</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

F = 7.03   df = (kn-1)

In taking the obtained F ratio value of 7.03 and entering the
F table with eight and one degrees of freedom, it is found that the value is not large enough to reject the null hypothesis. Thus, the variation between groups (Table 16) as expressed in terms of the sum of squares is quite low in comparison to the variation within groups. There is reason to believe that the two groups come from the same population. Therefore, differences which occur in regard to the cost items probably occur by chance.

Cost and Behavioral Change

The remaining hypothesis (SH1-6) to be tested is: Those persons who experience the greatest monetary and social cost as a result of resettlement will also experience the greatest behavioral change. As a null hypothesis (hol-6):

No differences exist in behavioral change between those who experience high social and monetary cost and those who experience low social and monetary cost.

The same procedure used to test the two other "cost" hypotheses can be used to test this one. Average cost values are calculated for each behavioral change group. These average cost values are presented in Table 17.
Table 17

Mean Values of Social and Monetary Cost Scores for Behavioral Change Groups

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>High</th>
<th>Behavioral Change</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
<td>Nonfarm</td>
</tr>
<tr>
<td>Age</td>
<td>55.20</td>
<td>53.20</td>
<td>51.90</td>
</tr>
<tr>
<td>Marital Status</td>
<td>1.34</td>
<td>1.44</td>
<td>1.36</td>
</tr>
<tr>
<td>Family Size</td>
<td>2.38</td>
<td>1.64</td>
<td>2.60</td>
</tr>
<tr>
<td>Income Decrease</td>
<td>2.94</td>
<td>2.17</td>
<td>3.00</td>
</tr>
<tr>
<td>Land Ownership</td>
<td>1.30</td>
<td>1.05</td>
<td>1.20</td>
</tr>
</tbody>
</table>

As can be seen in Table 18, the variation within groups was much greater than the variation between groups. In entering the F table with two and twelve degrees of freedom, the obtained F of 1.31 is not large enough to reject the null hypothesis; therefore, the original hypothesis is not supported and must be rejected.

Table 18

Variation Between and Within Behavioral Change Groups on Social and Monetary Cost

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>486.76</td>
<td>2</td>
<td>243.30</td>
</tr>
<tr>
<td>Within groups</td>
<td>2,225.89</td>
<td>12</td>
<td>185.49</td>
</tr>
</tbody>
</table>

F = 1.3  df = (kn-1)
Some hypotheses have been supported and others have been rejected. The statistical results and the acceptance and rejection of hypotheses require interpretation in order to make them meaningful. This is the goal of the final chapter.
Chapter 6

INTERPRETATION OF THE FINDINGS AND CONCLUSIONS

In an earlier discussion, it was pointed out that the problem under consideration was relating attitude change to behavioral change. By dealing with this problem it was felt that three practical problems could be studied.

1. Do the attitudes of local opponents to Corps of Engineers reservoirs change over time from a negative position to a positive position?

2. Is there any variation as to who changes and how much they change, i.e., does the generalization hold?

3. What specifically are the bases for variation of attitude change and variation in the intensity with which an attitude is held?

In order to collect data which would offer tentative answers to these questions, it was felt that the guidance of a theory capable of relating attitude change to behavioral change was necessary. The search for such a theory led to the use of the cognitive dissonance theory, with forced resettlement, attitude change, and behavioral change being placed within the general framework of the theory. This led to predictions in the form of hypotheses about attitude change and its basis in the forced resettlement situation. The testing of these
hypotheses provided an opportunity to test the predictiveness of the theory of cognitive dissonance. The data collected to test the hypotheses also provides tentative answers to the practical questions.

Resettlement and Attitude Change

In the study of Tuttle Creek Reservoir, one of the goals was to discover how many of the persons who had opposed the construction changed their attitudes after the project was completed. Two other goals were to discover who changed and what was the basis for change. The data collected from 287 persons who opposed Tuttle Creek Reservoir and were resettled provides some of the following tentative answers. In considering attitude change, 42.2 percent of the respondents had changed their attitudes about Tuttle Creek Reservoir since it was completed.

Table 19
Frequency of Attitude Change

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Change</td>
<td>121</td>
<td>42.2</td>
</tr>
<tr>
<td>No Attitude Change</td>
<td>166</td>
<td>57.8</td>
</tr>
<tr>
<td></td>
<td>287</td>
<td>100.0</td>
</tr>
</tbody>
</table>

It was hypothesized that those persons who changed their attitudes would be those persons whose behavior had changed the
most. It was defined that those persons whose behavior changed the greatest would be those persons who resettled in urban places. The data provided support for these contentions since 95.6 percent of those respondents who resettled in urban places changed their attitudes, and only 18.0 percent and 13.1 percent of the rural nonfarm and rural farm resettlers, respectively, changed their attitudes.

These results suggest that those persons who move to urban places from rural farm and rural nonfarm places will change their attitudes the most.

Table 20

Frequency of Resettlement Alternatives and Attitude Change

<table>
<thead>
<tr>
<th>Resettlement</th>
<th>Frequency</th>
<th>Attitude</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>93</td>
<td>32.4</td>
<td>89</td>
</tr>
<tr>
<td>Rural Nonfarm</td>
<td>133</td>
<td>46.3</td>
<td>24</td>
</tr>
<tr>
<td>Rural Farm</td>
<td>61</td>
<td>29.2</td>
<td>8</td>
</tr>
</tbody>
</table>

If the argument that the urban migration destination brings about the greatest amount of behavioral change is correct, then the data appears to suggest that the basis for attitude change is behavioral change. The values for the measures of association ($\rho = .72$) and test of significance ($X^2 = 102.65$) support
the behavioral change—attitude change hypothesis at highly probable levels. Since no significant differences in attitude change existed between those who resettled on farms and those resettled in rural towns, it is assumed that selecting these migration alternatives does not require a sufficient amount of behavioral change to bring about attitude change. In collapsing the rural nonfarm respondents and the farm respondents into one category (Table 21), the attitude change relationship receives even greater support.

Table 21
Frequency of Behavioral Change and Attitude Change

<table>
<thead>
<tr>
<th>Behavioral Change</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Change</td>
<td>89</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>31.0%</td>
<td>11.1%</td>
</tr>
<tr>
<td>No Attitude Change</td>
<td>4</td>
<td>162</td>
</tr>
<tr>
<td></td>
<td>1.4%</td>
<td>56.4%</td>
</tr>
</tbody>
</table>

N = 287 = 100.0%

Some tentative answers can now be given to the three practical questions that were raised. First, the research results suggest that at least part of the opponents change their attitudes over time about the reservoir project. Second, the generalization that "all" or even "most" of the opponents
to a reservoir project change their attitudes from a negative to a positive state is not supported by this research case, since 57.8 percent of the respondents had not changed their attitudes. Thirdly, it appears that the basis for attitude change in the forced-resettlement situation is behavioral change as it is brought about by difference in migration alternatives. It must be emphasized that in concluding that behavioral change is the basis for attitude change the conclusion is only tentative. The correctness of this conclusion rests upon the correctness of the definition that the amount of behavioral change is determined by and therefore indicated by different types of migration alternatives. This research did not investigate the correctness of the definition. Instead, the definition was presented and its correctness was assumed.

An alternative explanation for attitude change might revolve around financial gains as the basis for attitude change. This explanation would contend that those people who resettled and as a consequence increased their income would change their attitude about Tuttle Creek Reservoir. The result of this research can offer no support for such a contention. In conducting an analysis of variance for the cost items, no significant differences were obtained for the attitude change versus the no-attitude change groups. Although this suggests no relationship between income and attitude change, there is at least one methodological reason why no significant relationship was
established. Income distribution for the population studied was quite homogeneous. Only six respondents reported incomes of $9,000 or more, and the majority (83.4 percent) reported incomes of $2,000 - $4,000. Of the six cases earning over $9,000, three showed evidence of attitude change and three had not changed their attitudes. Because of the homogeneity in income, not enough difference exists to provide an adequate test of the contention that attitude change is a function of financial increase. This possibility would have to be tested in a case where greater disparity in income exists.

Attitude Change and Alienation

One hypothesis derived from the theory of cognitive dissonance was that those persons who did not change their attitudes would score high on measures of alienation. The theoretical contention is that dissonance can be reduced by adding new consonant cognitive elements which have the effect of changing the ratio of dissonant to consonant elements. It was argued that those persons who chose to remain in the Tuttle Creek area would not change their attitudes but would retain their anti-reservoir attitudes and support them with new attitudes about the construction of the reservoir. It was specified that these new attitudes would be experientially derived and take the form of alienation. Those persons who opposed the project experienced many of the things measured by alienation scales. This experience of alienation is true for
all who opposed the project regardless of where they moved. The research results demonstrate that only certain segments of the study population are characterized by alienation at the present time.

Table 22
Frequency of Alienation and Attitude Change

<table>
<thead>
<tr>
<th>Frequency of Alienation</th>
<th>Attitude Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Change</td>
</tr>
<tr>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Alienated</td>
<td></td>
</tr>
<tr>
<td>Non-Alienated</td>
<td></td>
</tr>
</tbody>
</table>

Of those persons who did not change their attitudes, 93.8 percent scored high on the alienation items. It should be recalled those persons who did not change their behavior did not change their attitudes. Generally speaking, these were the people who remained in the Tuttle Creek area. The measure of association ($r^2 = .66$) demonstrated a strong relationship between attitude change and alienation, and the $X^2$ value (123.3) indicated the relationship to be highly significant. The evidence does appear to support the hypothesis that: Those persons who have not changed their attitudes will possess other attitudes which support their negative attitudes about the reservoir project.
A functional explanation can be offered for the fact that those persons who did not change their attitude about Tuttle Creek at present score high on items of alienation. It appears that alienation can be functional in reducing dissonance. Alienation provides support to existing dissonant relationships by changing the ratio of consonant to dissonant relations. Anti-reservoir attitudes, plus alienation, make the previously dissonant relations consonant.

**Attitude Change and Cost**

No evidence exists for the hypotheses that attitude change is a function of social and financial cost. The low F ratios (7.03, 1.31) obtained in testing the hypotheses suggest that they should not be retained. These hypotheses were directly derived from the theory of cognitive dissonance. Lack of support for the hypothesis can possibly be accounted for by the homogeneity of the population. Little differences existed between the attitude change versus no-attitude change groups with respect to the cost items that were measured (Table 23).

**Table 23**

Attitude Change and Mean Scores on Cost Items

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attitude Change</td>
</tr>
<tr>
<td>Age</td>
<td>55.20</td>
</tr>
<tr>
<td>Marital Status</td>
<td>1.34</td>
</tr>
<tr>
<td>Family Size</td>
<td>2.38</td>
</tr>
<tr>
<td>Income Decrease</td>
<td>2.94</td>
</tr>
<tr>
<td>Land Ownership</td>
<td>1.30</td>
</tr>
</tbody>
</table>
Because of this homogeneity no crucial test of the hypothesis could be made. Tentative support or nonsupport would require a population much more diverse with respect to the cost items. Another reason the cost hypothesis may have not been supported is misinterpretation of cost. The concept of social cost was not well defined. It was suggested that cost refers to "social ties and established patterns of social interaction that are severed and disrupted as a result of resettlement". The cost items were designed to assess these disruptions and severences, but perhaps they were inadequate. If social cost refers to what a person has to give up socially through disruption, perhaps the best indicator is really migration destination and behavioral change. Perhaps the more one changes behavior the greater the disruption and severance with the past, and therefore the greater the social cost. Unfortunately, no empirical evidence resulted for this research to test this possibility, but additional research might provide such evidence.

**Attitude Intensity and Attitude Change**

No support exists for the hypothesis that the magnitude of dissonance and therefore attitude change is a function of intensity with which an attitude is held. This lack of support may be a result of inadequate indicators of intensity, or because of the history of the case studied. As was pointed out in the discussion of the history of Tuttle Creek Reservoir, this particular project was characterized by an unusual amount
of opposition. It appears that most respondents opposed the project with an equally high degree of intensity (as measured). Sufficient variability in the degree of intensity probably did not exist to provide an adequate test. Methodologically, the assumption surrounding the indicators of intensity, may not have been valid. It was assumed for example that joining an opposition organization characterized a stronger negative attitude than signing a petition. Perhaps both involve the same amount of intensity, and opportunity to join, or individual differences may account for the form of opposition expression selected by an individual. Since no support exists for the hypothesis, a very real possibility exists that the theory is inadequate or inaccurate in contending that dissonance and the pressure to reduce dissonance is a function of the intensity with which an attitude is held.

The Utility of the Theory of Cognitive Dissonance

If the test of the utility of a theory is its ability to predict, one way of assessing its utility is to establish how well it predicts when applied to a "national setting". This was one goal of the research to assess the utility of the theory of cognitive dissonance. The predictions about attitude change being a function of behavioral change, and about attitude change and alienation have been supported when applied to the field situation. The hypothesis about cost and attitude change was not supported. Although there is a possibility that
the theory is inadequate with respect to the proposition that
the magnitude of dissonance is in part a function of cost and
the intensity with which a cognition is held, such inadequacy
cannot be shown by this research. When cost and attitude in­
tensity were treated as independent variables, little difference
among the groups (with regard to the independent variable)
existed. It may be that such homogeneity is unique to the
Tuttle Creek resettlement population or perhaps is applicable
to many resettlement populations. But as was pointed out, this
results in a limited ability to make a crucial test.

The theory of cognitive dissonance does appear to have
utility in making predictions about real-life situations,
especially when a change in overt behavior is apparent. Compared
to other theories, its ability to relate behavioral change to
attitude change is substantial. The evidence resulting from
this research suggests that in certain situations behavioral
change results in attitude change, and this prediction was de­
rived from the theory.

One weakness of the theory is demonstrated by the re­
jection of the attitude intensity and costs hypotheses.
Festinger has failed to consider explicitly situations which
arise when all individuals hold equally intense attitudes and
experience similar amounts of cost. Festinger's theory pre­
dicts that given such a situation one would expect to find the
same amount of dissonance reduction and change for all
individuals. The data shows that in the Tuttle Creek situation, where the respondents were relatively homogeneous with regard to cost and attitude intensity, the amount of dissonance reduction varied greatly. If one can assume that the indicators used in this research to assess cost and attitude intensity are valid, then, given the results, the implication is that the theory of cognitive dissonance is inadequate in its considerations of cost and attitude intensity.

Summary

It has been found that in the forced-resettlement situation those persons whose behavior changes the greatest amount (as indicated by migration destinations) will change their attitudes (about the reservoir project they opposed) the greatest amount. Those persons who do not change their behavior and attitudes reinforce their negative attitudes through alienation. No support exists for the contention that attitude change in the forced-resettlement situation is a function of social or financial cost, or of attitude intensity. This may be a result of inadequate theory or of inappropriate methodology. The most significant finding is the support which exists for contending that there is a direct relationship between behavioral change and attitude change.

Research Recommendation

Additional research should be done of reservoir projects characterized by slight opposition and those characterized by a great deal of opposition in order to make crucial comparisons.
Research should be done using a design which will permit investigating the relationships of social and financial cost to attitude change. Before this is done, the concept of social cost needs clarification. The results of this study may have been confounded by the length of time which elapsed between actual resettlement and the time of the study. The time lapse involved was from nine to 13 years, depending upon the respondent. In order to control for intervening events, additional research should be done at a time much closer to an actual resettlement. Research greatly needed is an investigation of the behavioral change which occurs as a result of resettlement or migration. Behavioral change as a result of resettlement was assumed in this thesis. Because it is an assumption, it needs to be tested, and this can only be done through an in-depth study of forced migration and behavioral change.
BIBLIOGRAPHY

Single-Volume Work


Huntsberger, David V. *Elements of Statistical Inference*. Allyn and Bacon, Boston, 1967.


Periodicals


**Government Documents**

Public Law 738. 74th Congress, 2nd Session, June 22, 1936.


**Unpublished Works**


Whan, F. L., Analyst. "Referendum Vote of Families in Riley County and the Blue River Valley on the Subject of Tuttle Creek Dam Completion", Mid-Kansas Research Institute, June 1954.
APPENDIX A

Resettlement Questionnaire

Section I

1. What is your age? ___________

2. Marital status:  married single widowed divorced
   (Please circle correct answer)

3. (If ever married) How many children do you have? _____

4. Are you: employed full time retired
   (Please circle correct answer) employed part time unemployed

5. What was your approximate average income for the last three
   years?  (Please check one)

   ___ less than $1,999  ___ $6,000 - 8,999
   ___ $2,000 - 3,999  ___ $9,000 - 11,999
   ___ $4,000 - 5,999  ___ $12,000 or more

6. What is the major source of your income?  (Please check one)

   ___ salary or wages  ___ dividends & interest
   ___ rents  ___ savings
   ___ business earnings  ___ pensions
   ___ net farm income  ___ Gov. payment

7. What is your occupation?  ________________

8. Are you self employed?   ___ Yes   ___ No  (Please check)

9. (If retired) What was your main occupation?  ________________

10. Do you own ___ or rent ___ your home?  (Please check one)

11. (If a farmer) How many acres do you farm?  ________________

12. (If a farmer) What type of farming operation are you en-
    gaged in?  (Please check the most accurate category)

   ___ cash grain  ___ beef livestock
   ___ other field crops  ___ pork livestock
   ___ poultry  ___ other livestock
   ___ dairy  ___ mixed operation
   ___ other  ____________
13. (If a farmer) Do you own ___ or rent ___ the majority of your farm land. (Please check one)

14. What was your marital status before the construction of Tuttle Creek Reservoir? (Please circle correct answer)

    married    single    widowed    divorced

15. What do you consider as your state of health:

    excellent    good    fair    poor

16. How many children did you have living at home before 1955?

17. Did you own ___ or rent ___ your home prior to the construction of Tuttle Creek Reservoir? (Please check one)

18. If you were a farmer prior to the construction of Tuttle Creek Reservoir, how many acres did you farm?

19. Did you then own ___ or rent ___ the majority of your farm land? (Please check one)

20. Before the construction of Tuttle Creek Reservoir, what type of farming operation were you engaged in? (Please check the most accurate category)

    ___ cash grain    ___ beef livestock
    ___ other field crops    ___ pork livestock
    ___ poultry    ___ other livestock
    ___ dairy    ___ mixed operation
    ___ dairy

21. What was your approximate average income for the three-year period 1952-1955? (Please check one)

    ___ less than $1,999    ___ $6,000 - 8,999
    ___ $2,000 - 3,999    ___ $9,000 - 11,999
    ___ $4,000 - 5,999    ___ $12,000 or more

22. Before the construction of Tuttle Creek Reservoir, what was the major source of your income? (Please check one)

    ___ salary or wages    ___ dividends & interest
    ___ rents    ___ savings
    ___ business earnings    ___ pensions
    ___ net farm income    ___ government

23. Did you oppose the construction of Tuttle Creek Reservoir?

    ___ Yes    ___ No
24. If you opposed the construction of Tuttle Creek Reservoir, how did you oppose it? (Please check all of the following that apply)

   ___ Joined an organization that was against it.
   ___ Signed a petition.
   ___ Wrote a government official.
   ___ Expressed opposition by word of mouth.
   ___ Participated in activities which demonstrated opposition.
   ___ Other ________________________________

25. What were your main reasons for opposing the construction of Tuttle Creek Reservoir? (Please check all categories that apply)

   ___ I didn't want to see good farmland ruined.
   ___ I thought it was a waste of the taxpayers' money.
   ___ I didn't think that the hardship and suffering it could cause would be justifiable.
   ___ I didn't think that big dams were the answer to flood control.
   ___ I thought it would ruin my source of livelihood.
   ___ Other (Please feel free to comment)

26. Did the construction of Tuttle Creek Reservoir require you to move (resettle)? (Please check all the categories that apply)

   ___ It required me to move myself and all of my personal property.
   ___ It required me to move myself and part of my personal property.
   ___ It required me to move only part of my personal property.
   ___ It required me to move to a different home.
   ___ It required me to move to a different farm.
   ___ It required me only to secure new farm land in order to continue my farm operation.
   ___ Other ________________________________

27. How many times have you moved since construction of Tuttle Creek Reservoir?

28. If the construction of Tuttle Creek Reservoir required you to move, where did you first move to? (Name community)
29. How many years have you resided in the community in which you now live? ____________________

Section II

Most of Section II of the questionnaire contains statements made by other people who have experienced resettlement. We are interested in seeing if you agree with what they have said. (Please circle your answer)

30. THE CHANGES IN MY LIFE THAT WERE BROUGHT ABOUT BY THE CONSTRUCTION OF TUTTLE CREEK RESERVOIR HAVE BEEN FOR THE BEST.

Strongly agree Agree Don't know Disagree Strongly disagree

31. LAWS ARE SO OFTEN MADE FOR THE BENEFIT OF SMALL SELFISH GROUPS THAT A MAN CANNOT RESPECT THE LAW.

Strongly agree Agree Don't know Disagree Strongly disagree

32. ALMOST EVERYONE IS POLITE AND COURTEOUS TO YOU IN OUR COMMUNITY.

Very true True Undecided Untrue Definitely untrue

33. IN THE LONG RUN I'M BETTER OFF BECAUSE TUTTLE CREEK RESERVOIR WAS BUILT.

Strongly agree Agree Don't know Disagree Strongly disagree

34. DO YOU BELONG TO ANY SOCIAL CLUB OR GROUP SUCH AS A BRIDGE CLUB, GYMNASIUM CLASS, DANCING CLUB, SEWING CLUB, OR ANY SIMILAR ORGANIZATIONS IN YOUR NEIGHBORHOOD?

Yes No

35. A PERSON CAN PLAN HIS FUTURE SO THAT EVERYTHING WILL COME OUT ALL RIGHT IN THE LONG RUN.

Strongly agree Agree Undecided Disagree Strongly disagree

36. WOULD YOU RATHER LIVE IN SOME OTHER NEIGHBORHOOD?

Yes No
37. REAL FRIENDS ARE HARD TO FIND IN THIS COMMUNITY.
   Very true True Undecided Untrue Definitely untrue

38. HOW ABOUT YOUR OWN CASE, ARE YOU SATISFIED WITH THE WAY THINGS HAVE BEEN WORKING OUT FOR YOU SINCE THE CONSTRUCTION OF TUTTLE CREEK RESERVOIR?
   Very Satisfied Don't know Dissatisfied Very Satisfied

39. ABOUT HOW MANY OF THE PEOPLE WHO LIVE IN YOUR NEIGHBORHOOD WOULD YOU RECOGNIZE BY SIGHT IF YOU SAW THEM IN A LARGE CROWD?
   None Few Some Many Most All

40. THINGS HAVE USUALLY GONE AGAINST ME IN LIFE.
   Agree Don't know Disagree

41. HOW SATISFIED ARE YOU WITH YOUR CHANCES OF GETTING MORE INCOME?
   Very Satisfied Don't know Dissatisfied Very Satisfied

42. THERE IS LITTLE USE WRITING TO PUBLIC OFFICIALS BECAUSE OFTEN THEY ARE NOT REALLY INTERESTED IN THE PROBLEMS OF THE AVERAGE MAN.
   Agree Don't know Disagree

43. DO YOUR BEST FRIENDS LIVE IN YOUR PRESENT NEIGHBORHOOD?
   None Few Some Many

44. IN SPITE OF WHAT SOME PEOPLE SAY THE LOT OF THE AVERAGE MAN IS GETTING WORSE.
   Agree Don't know Disagree

45. LOCAL CONCERNS DEAL FAIRLY AND SQUARELY WITH EVERYONE IN OUR COMMUNITY.
   Very true True Undecided Untrue Definitely untrue

46. HOW WELL ARE YOU SATISFIED WITH YOUR INCOME?
   Very Satisfied Don't know Dissatisfied Very Satisfied
47. AFTER ALL IS DONE AND SAID, TUTTLE CREEK RESERVOIR WAS THE BEST THING THAT COULD HAVE HAPPENED TO THE PEOPLE OF THE BLUE VALLEY.

Strongly agree Agree Undecided Disagree Strongly disagree

48. LIFE IS JUST ONE WORRY AFTER ANOTHER.

Strongly agree Agree Undecided Disagree Strongly disagree

49. THESE DAYS, A PERSON DOES NOT REALLY KNOW WHOM HE CAN COUNT ON.

Agree Don't know Disagree

50. MY LIFE IS A LOT BETTER NOW THAN IT WAS BEFORE THE CONSTRUCTION OF TUTTLE CREEK RESERVOIR.

Strongly agree Agree Don't know Disagree Strongly disagree

51. LIFE IS JUST A SERIES OF DISAPPOINTMENTS.

Strongly agree Agree Undecided Disagree Strongly disagree

52. NOWADAYS A PERSON HAS TO LIVE PRETTY MUCH FOR TODAY AND LET TOMORROW TAKE CARE OF ITSELF.

Agree Don't know Disagree

53. THE GOVERNMENT DID THE RIGHT THING WHEN THEY BUILT TUTTLE CREEK RESERVOIR.

Strongly agree Agree Don't know Disagree Strongly disagree

54. TUTTLE CREEK RESERVOIR HAS BEEN A BIG BENEFIT TO MOST OF THE PEOPLE WHO LIVE IN THE AREA.

Strongly agree Agree Don't know Disagree Strongly disagree
Dear Respondent:

We at the University of Nebraska are currently doing research in an area in which you can render us valuable assistance. We are interested in finding out about the effects of resettlement on people who were required to relocate themselves. As our Nation grows and more land is required for the construction of such things as highways, airports, and reservoirs, we need to know ahead of time something about what the effects on people will be.

Only you who have a personal experience in resettlement are in a position to tell us what the effects are. As we understand it, you were required to move as a result of the construction of Tuttle Creek Reservoir.

This puts you in the unique situation of allowing us to learn from your own personal experience. Enclosed is a questionnaire which we would like you to fill out. It will take only a few minutes of your time. Let us assure you that any information that you give us will be held in strict confidence. When we summarize our findings no reference will be made to you personally. Let us re-emphasize this point: ALL INFORMATION IS CONFIDENTIAL.

Your cooperation with us in this research project will be most gratefully appreciated. We hope you will return this questionnaire as soon as possible.

Sincerely yours,

Vincent J. Webb
Research Associate

Encl.

as
Dear Respondent:

Recently you and several other persons from the Tuttle Creek area were mailed a research questionnaire dealing with the effects of Tuttle Creek Reservoir. We emphasized the need for information that only you could give us in the letter that was enclosed with your copy of the questionnaire. As was pointed out, this information is needed in planning for the future. Perhaps you misplaced your copy of the questionnaire or have not had the time to fill it out. We have enclosed another copy of the questionnaire for you to fill out. We hope you will return the completed questionnaire as soon as possible. An addressed and stamped envelope has been enclosed for your mailing convenience. All information will be held in strict confidentiality.

Sincerely yours,

Vincent J. Webb
Research Associate

Encl.