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A Structural-Functional Approach to Attitudes: Development and Application of a Theoretical Framework

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A Dissertation  
Presented in Partial Fulfillment 
of the Requirements for the Degree 
Doctor of Education

by

Alberto M. B. dos Santos  
October 1976
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Alberto M. B. dos Santos

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ABSTRACT

A STRUCTURAL-FUNCTIONAL APPROACH TO ATTITUDES:
DEVELOPMENT AND APPLICATION OF A
THEORETICAL FRAMEWORK

by

Alberto M. B. dos Santos

Chairperson: Dr. Conrad Reichert
Title: A STRUCTURAL-FUNCTIONAL APPROACH TO ATTITUDES: DEVELOPMENT AND APPLICATION OF A THEORETICAL FRAMEWORK

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Date completed: October 1976

Purpose

The purpose of the study was to present a theoretical framework for the concept of attitude and to examine the attitudes of selected subjects within this frame of reference. It was hoped that the results would clarify the concept of "attitude" and that they would provide solutions for problems in education.

Method

A theoretical framework which consisted of sixteen propositions dealing with organization, structure, function, and change of attitudes was presented as the frame of reference.

The 180 subjects who responded to the questionnaire that was prepared for this study were selected from the student body of Andrews
University, Michigan. They included male and female students in the first and third years of college and in graduate school. They responded to attitude statements which measured the affective, the cognitive, and the action components of their attitudes toward national defense, politics, and religion.

The scores were used to determine component loadings and the intercorrelations between the components. These were used to locate the attitude objects in the attitude space, to draw the attitude structures, and to examine attitude changes.

Eleven hypotheses were formulated. The first four hypotheses dealt with the usefulness of the framework and formed the first part of the analysis of the data. They dealt with the organization of attitudes, the hierarchical order of the components, and the role of arousal in attitude study.

The remaining hypotheses considered the differences in subject groups, in terms of the theoretical frame of reference, and formed the second part of the analysis of the data.

Results

The following results were obtained:

1. The organization of attitudes toward religion is not more consistent than attitudes toward the other two areas.

2. The attitude components are hierarchical.

3. Attitudes of subjects who have aroused attitudes are better organized than those in groups with non-aroused attitudes.

4. The arousal scores in related areas correlate with each other.

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5. The value profiles of the subjects are very similar.

6. Female subjects' attitudes tend to be more expressive than males'.

7. Male subjects' attitudes are more instrumental than those of female subjects.

8. The attitudes of graduate students toward religion are more positive than those of students in the college levels.

9. There is no difference between males and females in the degree of positiveness in attitudes toward national defense and politics.

10. There is no difference in males' and females' attitudes toward religion.

11. The various attitude areas have a higher correlation in the groups of college students than in the groups of graduate students.

Conclusions

The theoretical framework proved useful in the study of attitudes. It permitted the investigator to gather information about structures of attitudes; structural changes; differences in attitude structures between groups; and the relationships between different attitude components. This information can be useful in clarifying the concept of "attitude" and in finding solutions to problems in education, the behavioral sciences, and so forth.
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Not much more than a century ago, the term "attitude" was used exclusively with reference to a person's posture. People were often described as "adopting a threatening attitude" or "defiant attitude." These terms referred to the individual's physical mien. Today, the word is still used in this manner; but "attitude" increasingly connotes the psychological rather than the physical orientation of an individual; his mental state rather than bodily stance.

Problems may be caused when the same term is used in both scientific and everyday language. The scientific use of a term may not be intended to carry connotations identical to the common meaning of the word. The opposite alternative—the invention of technical terms of impeccable Greek or Latin etymology—does not solve the problem either. The advantage of using a term which is available in some sense to all is that it can be used in a discussion of attitudes without causing anyone to back off for fear of undergoing the difficult procedure of defining the term.

This in not to say that there are no difficulties in defining the concept of attitude. Indeed, there are. For several decades there has been a continuous undercurrent of controversy over both the theoretical and the operational definition of the term. A study of atti-
tude researchers reveals this conflict. At the same time, such study shows that it is often better to examine the concepts as a continual procedure in conjunction with usage of the concepts formed. It is better, in other words, to turn back on the concept with the benefit of hindsight than to endeavor a precise specification in advance.

Research on attitude defies the meticulous division of the social sciences into separate disciplines with closed boundaries. "Attitudes" was once the concern of philosophy. As the different social sciences acquired separate identities, they claimed property rights on certain themes and concepts. "Intelligence" became the property of psychology, "social class" of sociology, for example. But the property rights on "attitude" are not clear-cut in favor of any one discipline. "Attitude" bridges psychology and sociology. "Attitudes" have their social reference in their origins, their development, and in their objects, while, simultaneously, they have a psychological reference in the inherent make-up of an individual and the way he functions.

Attitude Theory

One striking fact stands out when one leafs back through the history of attitude theory. With rare exceptions, usage of the phrase "attitude theory" was literally non-existent. Even in the 1954 Handbook of Social Psychology (Lindzey, 1954) this was so, despite the extent of interest in theory-building. In the Handbook of Social Psychology, field and role theories and cognitive and psychoanalytic theories were included, but the book did not include a specific chapter on theory of attitudes. Even the attitude-relevant chapters...
on prejudice and mass communications focused on empirical findings to the near exclusion of theoretical analysis. Likewise, a more recent text entitled *Theories of Social Psychology* (Deutsch & Krause, 1965) and two otherwise comprehensive literature reviews (McGuire, 1966; Moscovice, 1963) did not provide a separate discussion on attitude theories. It was only in 1967 that books dealing specifically with attitude theory were first published (Fishbein, 1967; Insko, 1967). Past reluctance to apply the label of theory to attitudes can be attributed, in part, to a desire to reserve that term for the more traditional areas of perception, learning, cognition, and motivation. However, attitudes possess the basic characteristics required of a theoretical construct, that of having multiple antecedents and of affecting multiple responses.

Since 1967, attitude research has concentrated on theoretical treatments of the processes underlying attitude change. Problems of definition and measurement are discussed only when required for understanding the determinants of attitude change in any particular theoretical position.

The early work on attitudes (Allport, 1935; Kurphy, Murphy & Newcomb, 1937; Sherif & Cantril, 1945, 1946, 1947) was concerned with descriptive analysis, the influence of gross environmental variables, and individual differences. The value of this work lies in the demonstration of the applicability of attitude as a psychological construct, and in proving that an attitude was a situationally modifiable characteristic of the individual.

Fleming (1967) surveyed the conceptual properties of attitudes.
and emphasized the evolution of the affective, cognitive, and action components. Greenwald, Brock, and Ostrom (1968) review the work and theories that exist today. Their survey encompasses such theories as learning-behavior theory, the eidetic theory, and the cognitive-integration theory. These theories relate the structure of attitudes to a general psychological theory. This is specifically the case of the cognitive consistency models which are abundant today. However, each of these theories emphasize only one or two of the above components.

The affective aspect of attitudes has always been emphasized. While the relevance of other non-affective aspects of attitudes was recognized (Krech & Crutchfield, 1948; Smith, 1947) and measurement procedures were available (Abelson, 1955; Lazarsfield, 1950; Thrustone, 1947), researchers appeared satisfied with this single aspect of attitudes for their attention. This emphasis continues today. The bulk of attitude research and, consequently, the theory developed to understand the attitude process continue to focus primarily on affect, to the detriment of understanding the other characteristics of attitudes.

Attitude as an Object of Educational Research

The aim of education is change. Consequently, the most important variables in educational research are those which describe the process of change. Generally, the variables studied by educational researchers are classified into three groups, namely, stimulus, organism, and response variables. Attitude research has emphasized the first and third groups. But it is impracticable to describe and explain learning and teaching processes by concentrating on the study of two
variables. The intervening variables—organism variables—must be taken into account. Attitudes belong to this group of variables.

Attitude is commonly defined as an established manner of responding to a particular object. If a particular object generates in an individual a consistent response which can be described as "positive" or "negative", it is said that such an individual has an attitude toward this object. Educational research is interested in attitudes because: (1) the knowledge thus obtained facilitates the prediction of an individual's behavior towards an attitude object, (2) attitudes will influence the extent and the kind of information concerning the attitude object which will be accepted, (3) the teaching process is, very often, a function of the teacher's attitudes, and (4) attitude education is an integral part of education's socialization function.

It is generally accepted that there exists a relationship between attitudes and behavior, although the correlations between them are not very clear. If a researcher tries to discover the relationships in an effort to facilitate educational decision-making, he must take into account attitude formation and attitude change. This is important.

Attitudes toward the source and the object of information have an impact on how the information is accepted by the learner. Attitudes appear to work like a filter. The stronger the attitude is, the less information contrary to it will get through. Also educators must be aware of the effects of attitudes in communication processes if their efforts are to be relevant to the learner.
The teacher's own attitudes have a bearing on the educational process. Attitudes toward educational objects will determine the choice of policies and procedures in real-life situations. It is, therefore, necessary to account for the origin of attitudes and to investigate the correlation between attitudes and behavior.

Finally, the so-called normative expectations of a society are directed to the behavior of its individuals and controlled by its sanctions. To teach these expectations is a part of the socialization function of education. The normative inclinations to approve or disapprove may be called normative attitudes. One must include, therefore, questions related to attitude-learning within the scope of educational research.

Purpose of the Study

The purpose of the study was to present a theoretical framework for the concept of attitude and to examine the attitudes of selected students. In order to accomplish this the following steps were taken:

1. A theoretical framework is discussed in chapter III. This framework formed the central part of this study and was used as a frame of reference.

2. An empirical explanation of the framework was carried out by analyzing how the attitude components interrelated to form structures; by examining the changes in attitude structures of the subject groups at the different levels of training; and by searching into the role of arousal in the formation and change of attitude structures.

3. The results obtained were used in an attempt to clarify
the concept of attitude and to relate the function of attitudes to the search for solutions to the problems of education.
CHAPTER II

REVIEW OF LITERATURE

The interpretation of the results of attitude research has often been arduous and fruitless. This is partly due to the fact that many researchers operate with the same concepts in different ways and partly because attitudes have been considered global and unstructured. The frustration that this causes has motivated some researchers to call for the rejection of the concept of attitudes as totally fruitless (Doob, 1947). The research on attitudes is going through a period of crisis, as intelligence research did in the past. The global and unstructured concept is slowly being rejected, and a closer scrutiny is being made of the inner structures of attitudes. At the same time it has been observed that it is worthwhile to discover the reason for having attitudes and which functions of the personality system are served by them.

In this study an attempt shall be made to find what attitudes "might be". It is a temptation to attempt to find what attitudes "really" are, but a discussion of how attitudes could be meaningfully described in terms of applied research will have to be satisfactory. To accomplish this past must be drawn up and built upon. Consequently, this review of literature will consist of the following sections:

1. History of the concept of attitude
2. Underlying processes
3. Functions of attitudes

4. Theories of attitudes

History of the Concept of Attitude

The concept of attitude is a distinctive and indispensable concept in social psychology. It is a favored term because it is not the property of any one psychological school of thought. It, also, escapes the controversial polemics concerning the relative influence of maturation and environment. As it combines heredity and habits in any proportion, it does not commit itself either to environmentalism or to phenomenology. The term may also be applied in single individuals or in broad patterns of culture. The term has, therefore, been accepted and has been established as the keystone of social psychology; so much so, that some writers (Bogardus, 1931; Folsom, 1931) define social psychology as the scientific study of attitudes. The term has become something of a factotum for both psychologists and sociologists. It has become universal and plays a central role in most of the systematic studies in social and individual psychology. It deserves, therefore, unusual attention.

The word "attitude" is derived from the Latin *aptus*. It means fitness or adaptness and connotes a subjective mental state of preparation for action. With usage the term can refer to the outward or visible posture of a figure in statuary or painting. Psychologists have preserved those meanings when they speak of "mental attitudes" and "motor attitudes." Herbert Spencer (1862) talks of the "attitude of the mind," and Bain (1868) spoke of the forces of the mind which go into a "set track of attitude."
Later on the concept of "motor attitudes" became more popular. Lange (1888) developed a theory in which perception was seen as a consequence of muscular preparation or "set." Fére (1890) postulated that a balanced condition of tension in the muscles was a determining condition of selective consciousness. In 1895, Baldwin suggested that motor attitudes served as the basis for a better understanding of emotional expression.

In recent years the term appears without adjectives and implicitly retains both shades of meaning—a mental aptness and a motor set. Fishbein (1967) says that attitude connotes a neuropsychic state of readiness for mental and physical activities.

Perhaps the first time the role of attitudes was recognized was in 1888 when L. Lange discovered that a consciously prepared subject depressed a key faster than one who directed his attention to incoming stimuli rather than to the expected reaction. After this experiment, the task-attitude was discovered to play a role in most psychological experiments. Experiments in perception, recall, thought, and so forth revealed the importance of the subjects' preparedness. This preparedness was labeled with a variety of names: conscious purpose, idea of direction, idea of the goal, and posture or lay of consciousness.

The use of the method of introspection by the Wurzburg school yielded meager results. They agreed, however, that attitudes were neither sensation, nor imagery, nor affection, nor any combination of these facts. Due to the work of the Wurzburg school all psychologists came to accept attitudes, even though some of them felt they could be palpable and reducible. In general, the followers of Wundt considered
attitudes to be accounted for as feelings (Clarke, 1911).

The disagreement on the nature of attitudes continued for some time. Most writers believed that attitudes had something to do with neurograms, incitograms, brain-patterns, and the like. Washburn (1916), for instance, defined attitudes as "static movement systems" within the organs of the body and the brain. And so attitudes were forced, as it were, to take refuge in nervous tissue and were identified with cortical sets and brain fields. There the introspectionist is disinclined to pursue them further.

It was the influence of Freud that brought attitudes from that position and endowed them with vitality, identifying them with prejudice, love, longing, and hatred. They came to be identified with the unconscious life. It was the work of psychoanalysts that made attitudes to be established in the field of psychology. And yet, the search for a definition of the concept continued.

Sociologists were seeking the mechanisms through which culture is carried. The instinct theory did not satisfy social scientists for long, for the nature of their work forced them to recognize the importance of custom and environment in shaping social behavior. They needed a concept which was attached neither to the impersonality of custom nor to nativism. Gradually they adopted the concept of attitude. Dewey (1917) leaned towards the instinct theory as a basis for social behavior. In 1922 he no longer found instincts adequate and attempted to replace them with a concept which did not favor heredity; which had a certain ordering of elements of action; which is projective and dynamic, ready for overt manifestation; and which is operative even
when not dominating activity. To express the idea he chose the term "habit" but admitted as its equivalent either "disposition" or "attitude."

The concept of attitude was permanently established in social literature by Thomas and Znaniecki (1918) who gave it constant priority in a study of Polish peasants. According to them attitudes are individual mental processes which determine both the actual and potential responses of each person in the social world. They defined attitude as a "state of mind of the individual toward a value" because it is always directed toward some object.

Following closely with a similar idea, Faris (1925) proposed the distinction between conscious and unconscious attitudes, between mental and motor attitudes, between individual and group attitudes, and between latent and kinetic attitudes.

As can be expected with the term attitude which has been used by many psychologists and sociologists over a long period of time, its definition is varied. However, there is a common element which appears to run through them all—the "readiness to respond" to a situation. Baldwin (1901-1905) defines attitudes as "readiness for attention or action of a definite sort"; Morgan (1934) talks of a state of readiness of mental organization which predisposes an individual to react in a characteristic way to any object or situation with which it is related; Droba (1933) defines attitude as a "mental disposition of the human individual to act for or against a definite object"; and Cantril (1934) says that attitudes are guides for conduct to which each new experience is referred before a response is made.
Allport (1929) refers to an attitude as a disposition to act which is built up by the integration of numerous specific responses of a similar type, but which exists as a neural 'set' and which results in behavior which is more a function of the disposition than of the activating stimulus; and Murphy and Murphy (1931) define the concept as a way of being set toward or against things.

It is not easy to construct a definition which is broad enough to cover the many kinds of attitudinal determination which psychologists today recognize and yet narrow enough to exclude those types of determination not referred to as attitudes. Fishbein (1967) attempts such a definition. He says that an attitude is a mental and neural state of readiness, organization through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. A more useful definition by Triandis (1967) is that an attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situations.

The latter definition, it must be noted, introduces the suggestion that attitudes have three components: a cognitive component, an affective component, and an action component.

Underlying Processes

The preceding section ended with a definition which expressed that attitude might be explained in terms of three components, namely the cognitive, the affective, and the action component. Mention was made, also, of the predispositions for responses. It is necessary to study how attitudes appear and what the underlying components of such
attitudes are before any empirical study of attitude structures is attempted.

The formation of response tendencies is a learning process. First one learns to discriminate a certain object from other objects. One's response to such an object will be either rewarded, not rewarded, or punished. In this way, the individual will develop a consistent positive or negative response to the object. The individual will eventually begin to act toward the object in a way which can be described in terms of "approach" or "avoidance."

Some researchers look at attitude learning as the process of learning approach and avoidance techniques. For such, the amount of pleasure or lack of pleasure attached to the object determines which association is linked to the object. Others (Katz & Stotland, 1959; Scott, 1957; Thorndike, 1935) bring up the similitude of attitude and concept-formation processes. Ripple and Klausmeire (1971) introduce the possibility of imitation as a way of learning attitudes, although the reward of imitation can be the origin of the attitude, especially if one emulates an admired person.

Affective, cognitive, and action associations of various degrees of strength may be attached to an object thereby resulting in different response tendencies. It is appropriate to evaluate a person's global attitude with an investigation that involves the stable responses in all three response areas.

Attitudes as such are not measurable. They are measured in terms of responses. Rosenberg and Hovland (1960) represented attitudes as they are displayed in the diagram in figure 1.
Fig. 1. Attitudes According to Rosenberg and Hovland.
This diagram illustrates schematically how attitudes influence responses and how they are measured. Obviously, overt action in all three responses may vary from situation to situation even though attitudes remain unchanged. Environmental factors will either permit or inhibit a response, or the probability of the recurrence of a specific behavior in the presence of a fixed pattern of stimuli. However, from the point of view of empirical measurements, it does not matter whether attitudes are defined in terms of probability of responding or in terms of response tendency.

It appears that the best way of describing global attitudes is to measure separately each attitude component. This is done so that the response tendencies of an individual toward an object being examined are measured in the affective, cognitive, and action areas.

The Affective Component

The affective components linked to the stimulus determine how pleasant or unpleasant feelings aroused by the object will be. The strength of the affective element varies in different attitudes. Some of these are rather irrational and do not include many cognitive elements. Yet the action component may be quite strong. On the other hand, there are attitudes whose affective loading is very small and which are primarily cognitive elements (Katz & Stotland, 1960).

Affective responses are characteristically learned rapidly but changed slowly thereafter. They are among the first responses to be learned and become, consequently, strongly anchored to the dynamics of personality. Affective associations are dominant when
they are compared with several other associations, and thus the affective response tendency also becomes very important in attitude structure.

Triandis (1971) states that cognitive categories precede the appearance of the affective element. But he continues by stating that once a category is formed, it is possible for it to be associated with pleasant or unpleasant states, and through conditioning it can acquire the property of arousing positive or negative states in the individual.

Attitude researchers have treated the affective component as the main factor of attitudes and have even defined the existence of attitudes by means of it. Katz and Stotland (1960) go so far as stating that if there is no affective association linked to the object, there is no attitude toward it. However, if it is accepted that the positivity-negativity dimension is also present in the other components, nothing prevents defining of attitudes without giving the affective component a special position.

The position taken by Katz and Stotland (1960) reflects the research pattern in the study of attitudes. Triandis (1964, 1967), in an attempt to adopt a middle-ground position, employs three components, but he provides for the explicit operational measurement of each one separately. More will be said when the functions of attitudes are reviewed.

The Cognitive Component

The human environment has an infinite number of noticeable differences. The human attention is not capable of discriminating such differences. Therefore, man treats the stimuli as instances of the same thing. In other words, he categorizes stimuli. Such categori-
zation simplifies the task of responding to the environment; however, it involves a great loss of information.

An equivalent way of describing the cognitive component is the tendency to make positive or negative evaluations on the basis of factual knowledge. The evaluation process is not based on objective information only. The whole personality system plays a role in the evaluation. Rosenberg (1960) says that the cognitive component of attitudes is determined by the relationships which exist between the beliefs concerning the attitude object and the beliefs concerning other objects important to the personality system of an individual.

Some attitudes have very weak loadings in the cognitive component. People may have a negative attitude toward a political or ethnic group, even though they may have no information concerning it. On the other hand, their attitude toward a political party may be determined by the affectiveness of the party in defending their side, without having any pure affective "feelings" about the political party. The emphasis is, in this case, on the cognitive component. In most cases, the affective and the cognitive components are likely to covary closely.

Some attitudes are general and the responses to a great number of objects are consistent. Others are more specific so that a certain response tendency concerns only a few objects. Degrees of differentiation means the number of the beliefs and their integration connected with an attitude. Whether the role of the cognitive component can be described by means of these dimensions is questionable. Neither the generality of an attitude nor the number of beliefs gives any information whether the beliefs attached to an attitude are positive or neg-
ative. When one investigates the cognitive component of an attitude one must be able to determine the direction and strength of values. The loading of a cognitive component depends on the way in which the attitude object is located in an individual's value system.

The Action Component

The role of the action component in attitude theories seems somewhat obscure. In most cases the researchers discussing the components have confined their considerations to the affective and cognitive components, and the action component has been dismissed with vague statements like "components affecting overt action may be connected with an attitude!"

The vagueness is partly due to the fact that overt action has originally been employed as a criterion for attitude measurement. Nothing prevents the researcher from including the dimension of action-tendency into the concept of attitude itself and from saying that attitude is manifested, among other things, as a tendency to act toward an attitude object. Attitude has been defined as a response tendency in the affective and cognitive response areas of the personality. It can also be correspondingly defined as a tendency to overt action disposition.

It must be remembered that an individual responds to stimuli, first by categorizing them and then relating their categories to other objects. Some of these categories are normative, that is, they involve ideas about what is correct behavior toward members of a given category (Triandis, 1971). Himmelstrand (1960) has comprehensively discussed the relation of the affective component to the verbal ex-
pressions of attitude and behavior, but he employs a terminology based on a different kind of starting point. The conceptual confusion of the action component may be partly due to the open choice as to which responses are included in overt activity, or which are included in the categories of the affective and cognitive response areas. This question is closely connected with the problem of attitude measurement. Nevertheless, a person's behavioral intention, that is, what he would do toward an attitude object, is very closely related to norms of behavior, that is, to what people think he should do. In several studies, correlations in the order of .60 have been observed between behavior norms and behavioral intentions (Bastides & Van der Berghe, 1957; Triandis, Vassilou & Nassiakou, 1968).

When attitude is defined as a "resultant" of three components, the emphasis of observation is transferred into its inner structure. While attitude research is still interested in the relationship between attitudes and behavior, it specifically focuses on accounting for the intercorrelations of attitude components.

Attitude Theory

There is evidence that the three components of attitude are highly interrelated. Rosenberg (1956), for example, specifies that (a) the greater the perceived link between an attitude object and a person's values and (b) the more salient these values, the more affect will this person experience. Similarly, Fishbein (1965) shows that the greater the connection between an attitude object and certain beliefs and the greater the affect associated with these beliefs, the greater is the affect toward the attitude object.
It must be said, however, that there is also evidence that suggests that the three components should be conceptualized and measured independently (Debaty, 1967; Gardner, Wonnacott & Taylor, 1968; McGuiness, 1973). The study of the perceptions of French Canadians carried out by Gardner, Wonnacott, and Taylor (1968) revealed a separation of the affective and cognitive components and also revealed factors that show the form of the cognitive component for subjects who are positive, as opposed to subjects who are negative, toward the attitude object. Fehling and Triandis (1969) found through factor analysis that when measures of the cognitive, affective, and action components of interpersonal attitudes are placed in the same analysis, the dimensions that are extracted are independent and correspond to the three kinds of components. When the categories under investigation are very specific, factor analysis will lead to factors that correspond to the three kinds of components (Woodmanse & Cook, 1967).

In agreement with Triandis (1961), the author felt that it is better to investigate independently the affective, cognitive, and action ratings of subjects regarding a variety of attitude objects and then to examine empirically the extent to which the ratings are interrelated. In this study, the three attitude components will be measured separately, and then they will be viewed in terms of a structure where the attitude objects are located in an attitude space spanned by three bipolar, orthogonal dimensions.

In recent years, a number of important theories have been proposed that incorporate some variation of the theme that inconsistency among cognitive elements is unpleasant to the subject and that
subjects will naturally attempt to reduce these inconsistencies. The earliest of these theories was proposed by Heider (1946).

Heider argued that if a person, p, likes another person, o, who likes an object, x, there will be a tendency for p to like x. The three elements—p, o, x—may be connected with a positive link (p likes x) or a negative link (p dislikes x). There is balance when all three links are positive (everybody likes everybody else) or when there are two negative links (i.e. p dislikes x, o dislikes x, p likes o). If only one of the three or all three links are negative, the system is under strain because it is unbalanced. When this happens there is a tendency to change some of the links in the direction of balance. For example, when p likes x and o dislikes x while p likes o, there will be a tendency for one of these links to change sign. Balance can be restored if p learns to dislike x, or if p persuades o to like x, or if p decides to dislike o. The change in the link will depend on the strength of the links.

Newcomb (1953, 1956) applied Heider's system to communicative acts. And Cartwright and Harary (1959, 1967) generalized the system to structures of any number of elements. Abelson and Rosenberg (1958) generalized it further so that it deals with cognitive consistency among cognitive elements.

Data collected from studies which experimented with hypothetical social structures suggest that subjects learn the balanced structures more easily than they do unbalanced ones and that they rate the balanced more pleasant and less likely to change than the unbalanced (Burstein, 1967; Feather, 1967).
McGuire (1960a, 1960c) proposed a theoretical model which assumes that an individual's desires and his beliefs or expectations are related to each other according to the rules of formal logic. On one hand the individual's beliefs tend to be consistent with his desires. Inconsistencies between his beliefs and desires are minimized by the individual. If he is made aware that inconsistencies exist, he feels discomfort which results in attitude change. McGuire called this the Socratic Effect.

There is evidence of consistency among affective and cognitive components of attitudes. Porier and Lott (1967) used as a measure of affect the subject's Galvanic Skin Response and as a measure of cognitive their responses to a self-report attitude scale. They found a correlation between the two measures. When affect and cognition are inconsistent, there is a tendency for one or the other to change. But it is possible that change may not occur. A restructuring of an individual's cognitions may be made and his affect may not change. Carlson (1956) showed that attitudes towards "open occupancy" can be changed by creating cognitive linkages which result in affective changes, creating a new attitude with a new component and a different quantity of affect. Rosenberg (1960) showed that a converse is also true: if the affect is changed, it results in changes in the subjects' cognitions.

In the case in which two attitude objects have affective values, what would the result be if there were an object that combines the two? Anderson (1962) proposed a very simple model to handle this problem. It involves averaging. The affective values of certain adjectives were
averaged, and it was shown that the model provided an excellent fit with the obtained responses. However, Anderson and Jacobson (1965) tried to discover the source of such discrepancies from additivity, but thus far have met with limited success.

Another model is provided by Fishbein's summation theory. According to Fishbein (1961, 1965) an individual's affect toward an attitude object is related to his beliefs (cognitive component) about this object and his affect associated with these beliefs. An individual holds many beliefs about an object; all categories that are associated with the category in which the subject places the attitude object constitute these beliefs. The individual attaches affect to each of these categories. His affect toward the attitude object depends on the sum of his affect toward all these related categories.

Fishbein has postulated that some beliefs are higher in the individual's hierarchy of beliefs than others and that they should have a greater influence on affect than the beliefs that are lower in the individual's hierarchy.

When Fishbein's model is applied to the problem of stimulus-pooling, it predicts that, if the affect towards two objects is slightly positive, the affect toward the combined A and B will be even more positive than the affect toward either of the two stimuli. Kerrick (1958) and Fishbein and Hunter (1964) obtained results which clearly support this model.

Osgood and Tannenbaum (1955) introduced the "congruity principle." This means that if one feels strongly about an attitude object and has rather weak attitudes concerning another, his attitude
toward an object involving the former objects together will fall somewhere between the attitudes toward the two elements. Tannenbaum and Gengel (1966) predicted and demonstrated that a change in affect toward a concept will move in the direction of a source which previously made an assertion about the same concept.

McGuire (1964) summarized a theory dealing with a person's inoculation against persuasion. According to his theory a person does not develop any defenses against attitude change if he has never been exposed to arguments which oppose his own beliefs. He argues that one way to avoid attitude change is to expose a person to arguments that are inconsistent with his own beliefs and then refute these arguments. Such a treatment allows the person to resist persuasive attempts.

Now that the consistencies of cognition and affect and their role in attitude change have been dealt with, it is necessary to cover also the role of action in the cognitive-consistency theories.

Festinger (1957) proposed a theory of cognitive dissonance. According to this theory, any kind of cognitive inconsistency is uncomfortable and the organism will do something to get rid of it. This means that an inconsistency among the affective, cognitive, or action elements of an attitude, or between two cognitive elements, or any sort of cognitive inconsistency will produce pressures toward consistency. Festinger postulated that the existence of dissonance gives rise to pressures to (1) reduce dissonance and (2) avoid increases in dissonance. Manifestation of the operations of these pressures include (a) behavior changes, (b) changes of cognition, and (c) circumspect exposure of new information.
It was already known that one who behaves in ways which are inconsistent with his attitude tends to change his attitude to make them consistent with his behavior (Janis & King, 1954; Kelman, 1953). The first two researchers also demonstrated (1954) that role-playing can influence attitudes. Subjects who were induced to engage in role-playing that was inconsistent with their private attitudes tended to change their attitudes to make them consistent with their behavior. Festinger (1957) explained this phenomenon arguing that when the subjects play a position opposite to their own they experience dissonance, and attitude change occurs to reduce dissonance.

The dissonance theory resulted in numerous experiments which supported it (Festinger & Carlsmith, 1959) and opposed it (Kiesler, 1968; Nuttin, 1966; Rosenberg, 1965a). Kiesler (1968) introduced the idea of commitment: (a) unless the subject is committed, one cannot make an unequivocal prediction from dissonance theory; (b) unless the subject is committed, there may not be any dissonance; and (c) the more the subject is committed, the greater the dissonance.

The incentive theory states that the greater the reward the greater the attitude change. Rosenberg's position has been criticized in a study which showed that either the incentive-theory prediction or the dissonance-theory prediction can be obtained depending on how free the subject feels to comply (Linder, Cooper & Jones, 1967). If the subject is free not to comply, the dissonance theory will be obtained. If the freedom is reduced, the incentive prediction will be obtained. McGuire (1969) attempted a reconciliation of these views arguing that the two theories are not opposed, but they are con-
cerned with what is happening at different points in time. Dissonance is concerned up to the point when the subject commits himself, before he carries out his commitment. Incentive theory is adequate in describing what happens after the subject carries out the counter-attitudinal behavior.

An important point to note is that attitude change will disappear unless the environment is supportive of the behavioral changes which accompanied attitude change. If no real environmental change exists to support his attitude change, the individual will go back to his earlier attitude. In other words, if the person is removed from situations that modified his behavior, he may go back to his earlier attitude, since the latter is more consistent with his more fundamental values.

Conclusion

This review of literature dealt in particular with attitude theory and with the components of attitudes. One point which must be stressed is that while the cognitive, affective, and action components are generally mentioned and accepted as integral parts of attitudes, the studies reviewed dealt with one or two of these components and no effort was made to describe attitudes in terms of their complete structural framework.

Using this review of literature as the background, it is appropriate to present a framework which includes ideas from many of the researchers mentioned and yet stresses the inner structure of attitudes in its totality. This framework will serve as the frame of reference for the survey of students' attitudes.
CHAPTER III

THEORETICAL FRAMEWORK

General Structure of Attitudes

This theoretical framework forms the central part of the study. It borrows heavily from the literature on the subject of attitudes. Attitude is defined here as the result of three components; however the emphasis is placed, not on the overt manifestations of attitudes, but on the way the components interrelate to form structures. In this report attitudes will always be referred to as a system of three elements.

Proposition 1  Attitudes are dispositions to respond to a particular psychological object—dispositions which are manifested in the cognitive, affective, and action areas.

Proposition 2  Attitude objects are situated in an attitude "space" defined by three bipolar, orthogonal dimensions. Each dimension has a zero point which is located in the intersection of the three axes.

An attitude toward a particular object can be described by determining the projections or "loadings" of attitude space in the affective, cognitive, and action dimensions.

Attitudes have a direction, positive or negative, and an intensity which is determined by the location of the attitude object in the attitude space.
Fig. 2. Hypothetical Location of Object, 0, in an Attitude Space.

In figure 2, a person's attitude toward an object, 0, has been demonstrated by locating the object, 0, in the three-dimensional space determined by the attitude components. Suppose that the object, 0, is a religious group. The person's affective feelings towards this groups is strongly positive. The reasons for these feelings are vague and few. An analysis of his overt action reveals that he is not a member of the group, nor did he ever do anything for it. This person's attitude toward the group consists of a strong affective
component, of a weaker cognitive component, and of a very weak action component.

The description of attitudes based on three orthogonal dimensions seems relevant because it encompasses the three dimensions in a consistent system. Whether the attitude components are independent will be studied empirically. This study is based on the belief that the components correlate with each other.

The Hierarchy of Components

Researchers have emphasized the primary role of the affective dimension. It may be deduced, therefore, that the attitude components are not of an equal value in the attitude structure. As it was said before, during the discussion on the underlying processes, the affective tendencies are learned rapidly and change very slowly. Furthermore, they seem to be tightly bound to the personality system. Even where researchers suggest that cognitive tendencies appear first (Triandis, 1971), it is acknowledged that the affective tendencies become more prominent as the individual develops.

**Proposition 3a** The attitude components are hierarchical.

**Proposition 3b** Change resistance is greatest within the affective component and weakest within the action component.

As the affective component dominates in the attitude structure, it can be said that if attitude measurements could be made accurately by observing overt behavior, the most reliable would be the measurement of the affective component, and the least reliable would be the measurement of the action component. The overt manifestation of the action component is determined to a great extent by the circumstances
that call for its appearance. For example, the individual who has a negative attitude towards ethnic minorities does not always reveal by his actions what he feels or believes. He becomes a "diplomat" as the circumstances demand it.

In this study attitude is tentatively defined as a positive-negative response disposition toward a psychological object. When could such a disposition be said to be well organized within a particular individual? It seems reasonable to say that a response tendency is well organized if a given kind of reaction is consistently manifested. This may happen within the different components. Due to the fact that responses depend on other factors besides attitudes, the question is raised: when can one unequivocally state from responses that the existence of a particular attitude is a fact?

The first criterion concerns the covariance of attitude components. When one learns to link positive or negative associations to a particular object, it is reasonable to assume that the associations to be learned in the different response areas have the same "sign". If negative affects are linked to some object, it is likely that negative beliefs and negative overt behavior are also linked to the same object. It could be stated, therefore, that for an attitude to be well organized, the loadings of measurements of the attitude components must each have the same "plus" or "minus" sign.

Empirical research has, however, shown that a person's affects, cognitions, and actions toward the same object are often strongly inconsistent (Scott, 1959). One explanation for the discrepancy observed between the various components is the instability of the trait.
Another explanation for the differences among various attitude studies in this respect is that various attitudes have different structures.

Although the affections, cognitions, and actions directed to the same object may differ, the variations may not be so great that the "loadings" of attitude components could be considered to have different signs. In other words, when the response disposition toward an object is a positive affective response, the response tendency of the cognitive area is of the same kind. The same applies to the action component. However, as far as the intensity of the response tendencies in each area are concerned, great differences may appear.

Now the first definition can be completed and refined. Attitude is a stable response-disposition system composed of three components existing when, and only when, the loadings of the different component dimension have the same sign. If this is not the case, the existence of an attitude cannot be defended. If the loadings on dimension of the attitude space are contradictory, that is, positive affects but negative cognitions, it can be merely said that affective response tendencies and cognitive beliefs are attached to the object, but they have not, as yet, become integrated into a totality of structured response tendency for which the term attitude is used.

**Proposition 4** An attitude is said to be well organized if the affective cognitive and action components have the same sign.

The Function of Attitudes

Attitudes can be viewed as instruments through which individuals attempt to achieve specific values. It can be stated that values
determine the kind of attitudes and norms an individual possesses. It appears, therefore, that attitudes have important functions in terms of the personality system, and that individuals try to maintain the attitudes they have learned.

Some researchers have divided attitudes into two large groups: instrumental and expressive. Instrumental attitudes is a term used of the response patterns formed on the basis of cognition. Through these responses an individual endeavors to attain some distant goal. An expressive attitude is defined as having a more transitory function: that of bringing about satisfaction through its manifestation. In the expressive attitudes, affective response tendencies are prominent. In the instrumental attitudes, the cognitive area of personality is fundamental.

However, there are, in addition, attitudes which cannot be regarded as belonging to either of these two categories. It is appropriate to speak first about attitudes through which an individual reveals to himself and to others the nature of his value system and what kind of person he would like to be. These attitudes will be called valuation attitudes. Also, positive or negative stimuli coming from the environment are classified because it facilitates the control of the various stimuli. These attitudes can be called orientation attitudes.

**Instrumental Attitudes**

There are many objects in the environment which can be used as instruments to reach goals. There are also objects which by their existence or by their action are obstacles for the goal attainment.
Both of these object categories are connected with response tendencies which will integrate into attitudes. Since here one is dealing with the individual's reactions to the instrumentality of the objects the term instrumental attitudes can be used to designate them.

Instrumental attitudes would undoubtedly include evaluative responses connected with the object and which are important in view of the goals sought. Instrumental attitudes would be formed toward objects which are important as means for the attainment of goals (Parson & Shills, 1951). For instance, if the church is seen as a means of attaining immortality, the attitude toward the church is an instrumental one. Further, the attitudes expressed to gain social approval or inner rewards can also be classified as instrumental, in accordance with the above definition. The more closely the object is connected with goal attainment, the more important the individual finds the goal; and the more clearly the object is seen as relevant to the goal, the greater is the probability that a consistent instrumental attitude will be formed.

When an individual discriminates an attitude object from other objects and when he reflects on its relevance and importance in view of his goals, his behavior is mainly cognitive. Thus, instrumental attitudes are learned through cognitive, conscious reasoning. Therefore, the cognitive component is of central importance in instrumental attitudes. When a person applies rational thinking in decision-making he usually tries to avoid disturbing effects of affective factors. It may be presumed that the affective component is of minor importance in instrumental attitudes.
Expressive Attitudes

Outbursts of emotions are used for the reduction of heightened tension, for immediate satisfaction. Attitudes guarding the ego against repressed impulses may also manifest themselves as an affective outlet of emotions. Here attitudes "behave" as defense mechanisms (Katz & Stotland, 1959). By the use of defenses, an individual attempts to reduce anxiety caused by conflict between his real ego and his ego-ideal. However, those impulses and qualities which the individual experiences as condemnable and rejectable, in view of his ideals, are rejected from the consciousness and projected onto the outside world. These very qualities and traits are now easily detected in other persons, and negative affective responses can be directed toward them (Adorno et al., 1950; Katz, 1960).

Defense attitudes originate in the personality system. Probably every individual has defensive attitudes, but some personality systems make more use of them than others. Presumably, attitudes also vary as to their content of defense.

In expressive attitudes the affective component plays a predominant part. Defenses are often unconscious and in this respect "non-cognitive". However, it must be stated that findings of psycho-analytical research show that many of these responses which appear to be purely affective also include "unconscious beliefs" (Rosenberg, 1960; Sarnoff, 1960). At any rate one assumes that reasoning or the cognitive dimension is of little importance in these attitudes.

Valuation Attitudes

An individual wants to communicate to others what value he
prefers and what kind of person he really is. He also wants to disclose these things to himself. Preference for certain values is connected with preference for certain attitudes, that is, when one has "adopted" a certain system of values, a system of attitudes is adopted at the same time. These attitudes which serve as indicators of values are here called valuation attitudes. When the formation of valuation attitudes is studied, it is observed that not all behavior is directed towards the reduction of tension caused by expressing the value he favors, his ego-ideal. Rewards of this kind of behavior are partly social in nature—social acceptability of behavior, compliance with norms, and so forth—but the individual is also intrinsically rewarded as his ego-identity is strengthened and his belief in himself as he would like to be is reinforced. Just as one gets satisfaction from the exercise of abilities and skills, he also gets it from the expression of qualities possessed by the ego-ideal (Katz & Stotland, 1959).

The child's conception of himself is established during the socialization process. Educators habitually teach what it means to be a "good" or a "respectable" citizen. Every organization strives to incorporate each new member into its own system of values. The existence and quality of valuation attitudes thus makes it possible to draw conclusions as to the success of the socialization process of an individual.

Valuation attitudes can be considered stable attitudes. They indicate an organized and integrated way of thinking, feeling, and reacting to objects (Lambert & Lambert, 1964). It may be presumed that
in these attitudes the cognitive and the affective components are
similar in intensity.

**Orientation Attitudes**

Faced with the stimuli in his field of perception an individual attempts to organize and classify them in order to be able to control their great diversity. As a result of this organizing process, attitudes are formed. Children listening to a fairy-tale want to know which of the protagonists are good and which are bad because that makes it easier for them to understand the events. Similar tendencies can be observed in many situations of adult life. One understands the seemingly eccentric reactions of a person by making the remark that "anything can be expected of him! After all, he is one of the radicals" (Katz, 1960).

Orientation attitudes are not always included in the category of attitudes. This can be seen in the situation where an investigator using an attitude questionnaire considers the responses of the subjects to be logical but not in line with expectations. He calls these attitudes "pseudo-attitudes." What has actually happened is that the subject has been trying to organize the seemingly complex situation facing him. In this situation, a certain attitudinal classification system concerning the items of the questionnaire has been formed, and this classification principle--an orientation attitude--has influenced his responses. The organizing attitudes are, in these cases, referred to as "response sets," and the researchers try by all means to prevent their formation and to forestall their influence.
Presumably, the components of these attitudes fall in the category of weak intensity.

**Attitude Typology**

In this study attitudes have been discussed in terms of three-dimensional systems. In the above discussion it was presumed that the structures of attitudes depend on the functions of the attitudes. This means that at attitude serving a certain function has a certain general structure. In this context it is especially noted that the function of attitudes does not determine their direction; a positive or negative attitude can perform similar functions.

If one considers the main components of attitudes and uses them as variables having two categories of intensity and tabulates them, the typology, as it is shown in figure 3, is obtained.

![Attitude Typology Diagram](image)

**Fig. 3.** Attitude Typology.
Proposition 5  Attitudes serve the personality system by performing certain tasks or functions.

Proposition 6  Attitudes serving different functions have different structures.

Obviously, the dichotomization of the intensity of the components is an oversimplification of reality, but it also gives the concept greater clarity. Intensities are, of course, to be understood to be relative so that the frame of reference covers the whole system of attitudes, that is, all their functions. When all existing attitudes are taken into account the following observation can be made about their components:

Instrumental attitudes: Affective Component—Weak
  Cognitive Component—Intensive
  Action Component—Intensive

Valuation attitudes: Affective Component—Intensive
  Cognitive Component—Intensive
  Action Component—Intensive

Expressive attitudes: Affective Component—Intensive
  Cognitive Component—Weak
  Action Component—Weak

Orientation attitudes: Affective Component—Weak
  Cognitive Component—Weak
  Action Component—Weak

It is possible to make some predictions based on the typology. Proposition 4 is defined as a criterion of the existence of an attitude that the components be of identical sign. However, the intensities
can be different. The attitude typology shows the range of variation that can be expected. Consequently, it is easier to make predictions from one attitude component to another in the given functions of the attitudes. It is difficult to make predictions concerning weak attitude components because the measurement of these components may not be as reliable as the measurement of the others.

It would be an oversimplification to assume that an attitude toward an object has only one function. However, it can be presumed that each attitude has one main function and that, if this function is known, possibilities of prediction in the attitude measurement are increased.

**Change of Attitudes—Formation and Arousal**

It can be considered that attitudes are formed through a learning process in accordance with the same models presented to explain the learning of cognitive structures (Thorndike, 1935). It seems probable that the formation of attitudes serving different functions varies so that the theory of reinforcement may explain the formation of some attitudes, while the model of concept formation is better adapted to characterize the learning of other attitudes.

Allusion has been made to the research of Scott (1957) and of Festinger and Carlsmith (1959) which revealed that there was a significant change of attitudes in the direction of the opinions they had defended. This seems to support the reinforcement theory.

Investigators examining attitude formation from the view of concept formation presume that all concepts to be learned possess qualities indicating values. The indicating qualities are learned in
the same manner as any other attribute (Rhine, 1959; Rhine & Silun, 1958). Osgood seems to agree with this line of thought, since the attitude dimension is defined as one of the most important dimensions in the meaning space (Osgood, Suci & Tannenbaum, 1957).

The weak correlations between attitudes and overt behavior are partly due to the fact that an individual does not always react in accordance with his attitudes. It is reasonable to assume that attitudes influence reactions particularly when they are alerted. Some attitudes may change with circumstances. Attitudes in time of peace may be different in time of war. In this respect, there may be great differences between attitudes; there may be attitudes which are aroused almost continually, influencing reactions in nearly all situations. Therefore, one has to examine the conditions which determine whether or not a certain attitude will be aroused (Katz, 1960).

The functional approach emphasizes the role of needs in the arousal of attitudes. Arousal is defined here as a process by which an individual gets into a state of preparedness or alertness. As attitudes are considered instrumental to attain certain needs or goals, they are naturally alerted when the need is created. During a serious illness many people express positive attitudes towards religion, but after recovery these attitudes may again be reduced to non-activity (Sarnoff, 1960).

Another cause for the arousal of attitudes is the presence of relevant cue stimuli. In the absence of certain cue stimuli one does not often express religious attitudes in the situations of everyday life. However, when and where these cues are present, attitudes
are aroused. Investigators seem to presume that the stimuli presented by attitude-measurement devices may function as cues which activate the attitudes. This problem will be brought up again when the measurement of attitudes is discussed.

Proposition 7 An individual reacts in accordance with his attitudes when the attitudes are aroused.

Proposition 8 The arousal of an attitude is a function of the needs connected to the attitude and of the perception of relevant cue stimuli in the environment.

Conditions for Attitude Change

Research on the change of attitudes is particularly important to educators. An attitude is a system resisting its own change (Jones & Kohler, 1958). To be able to produce desired changes in attitudes during the educational process, it is necessary to know under what conditions attitude change occurs. The functional-structural approach emphasizes in this connection the need connected with the attitude and the importance of the changes to be produced by the manipulation of the attitude structure.

When needs change, the attitudes connected with these needs also change. If a new need is present, the attitude serving the former need may not be able to fulfill its function any more. The attitude will become useless; it has no function. In order to meet the requirement of the new need it must either change or be replaced by a completely new attitude (Katz, 1960). Even if the need remains the same, the former attitude may become useless if there are better ways to satisfy the need. In this case, too, the attitude cannot serve
the function it originally served.

The structural approach emphasizes the importance of the internal structure of the attitude. This viewpoint is based on the theory of cognitive consistency, which was discussed previously.

**Proposition 9** It is possible to change an attitude if the needs which motivate the individual are changed, or

**Proposition 10** if a conflict between motives and attitudes is indicated, or

**Proposition 11** if a conflict between attitudes is indicated, or

**Proposition 12** if a conflict between attitude components is indicated.

Proposition 12 will be better understood when the model of hierarchical components is discussed. It was included at this point because it is related to propositions 9, 10, and 11.

Usually, a change of attitude can be produced by creating a conflict situation and then indicating it to the individual.

**Model of Hierarchical Components for Attitude Change**

From the standpoint of research it would be necessary to develop a model whereby predictions would not be based merely on the relationships between the source, the quality, and the information. In school learning situations, the source of information, as a rule, remains the same: the teacher, the textbook, and so forth. Here a model of attitude change emphasizing the manipulation of the internal structure of the attitude might prove more fruitful than the models where the communication situation is emphasized. Researchers who have construc-
ted the balance model developed their model in this direction (Rosenberg & Abelson, 1960). In the following paragraphs an attempt to outline a model of this kind will be made. It is to be noted, of course, that the idea is not a new one. It has its origin in the theory of two components developed by Rosenberg. But the application to the attitude theory of components and to the attitude typology is a further development.

It is necessary to start with Heider's hypothesis and then to extend its range of application. The processes, dispositions, and responses of personality systems form a consistent and, in a certain respect, balanced totality. Or, at least, it can be presumed it strives to achieve this balance. Thus the principle of consistency is not considered to be limited to the cognitive area only. In the approach under consideration the hypothesis denotes that the loadings of the different attitude dimensions must shift their positions in order to achieve stability. It has already been stated that as a criterion of the organization of attitudes the loadings of attitude objects are to be identical in sign for the separate components.

The covariation of the attitude component is modified by an important variable: the function of the attitude. The structure of the attitudes serving different functions varies according to the attitude typology, and the covariation of the components can also vary. Thus, the conditions for a balanced state show individual variation according to the attitude type from one attitude to another. Furthermore, individual variation has yet to be taken into account. Individuals vary in their estimations of what they consider to be
balanced or unbalanced states. This variable, in accordance with the established usage, will be called the tolerance of ambiguity. Consequently the following propositions can be stated:

Proposition 13 An attitude is either in a balanced or unbalanced state.

Proposition 14 A state of balance in an attitude is determined by the relationships of the loadings of attitude objects on the separate dimensions of the attitude space.

Proposition 15 If the component loadings agree with each other as to the function of the attitude, a state of balance prevails. The point where the components are perceived to differ is a function of the individual's tolerance of ambiguity.

In analyzing the structure of attitudes the components can be presumed to be unequal, hierarchical. In the cases where it has been possible to modify one component, this hierarchy will have an effect on the change in the loadings of the other components.

Proposition 16 When the loading of one component has been modified to such an extent that the attitude has reached a state of imbalance, the loadings of the other components will be altered in accordance with the assumption of component hierarchy (Proposition 3b).

In developing the above model for attitude change, it was necessary to use as a starting point the attempt to construct a framework in which attitude change could be examined profitably from the viewpoint of behavioral research. The model is based on the atti-
Attitude theory of three components and the attitude typology. When both these viewpoints are combined, a model based on the balance of attitude components seems reasonable.

To be able to judge the validity of the model one must first examine empirically the attitude theory on which the model of attitude change is based. If no empirical correlation can be found, the model of attitude change will also prove fruitless.

Hypotheses

It is now possible to consider the hypotheses which must be examined empirically. The expediency of the theoretical framework must be taken into consideration. Therefore, one must select the kind of hypotheses which, when tested, yield such results as to make it possible to say whether the frame of reference works rationally or not. One criterion has already been stated: it is reasonable to describe attitudes as a system of three components if this kind of description provides additional information relevant for research. Another criterion is the problem of the organization of attitudes. If the frame of reference employed in this study indicates that stable attitudes are well organized and unstable attitudes are not, it could be stated that the frame works rationally.

It is assumed, therefore, that the loadings of attitude object are more consistent in the attitudes which are better organized. To test this hypothesis, it is essential to find out which attitudes in the group being studied are more stable than others. It is reasonable to assume that in attitude areas where the subjects have had a great many experiences and where intentional attitude education has been
offered, attitudes are more crystallized. This can be considered to be the case in the area of religious attitudes. On the other hand, the experiences in the area of political activity at a parochial university, such as the one used in the study, are few. Moreover, the American school system does not provide any systematic education in the area of political attitudes. Thus it can be presumed that the attitudes toward political activity are much less stable.

Information on the hierarchy of the attitude components can be obtained by investigating the correlations between the different components. If the affective component is predominant one can expect it to exert the greatest "influence" on the other components. The cognitive component would be the second in strength, and the action component would have the lightest correlation with the other components. Thus one can presume that whenever the affective component is correlated with the action component, the correlation coefficient will be higher than the correlation between the cognitive and action components. Again, the correlation between the affective and cognitive component will be higher than the correlation between the cognitive and action components.

The arousal of attitudes is related to the structure and change of attitudes. One may assume that students in whom a certain attitude area has been aroused have a greater probability of having attitudes belonging to such area than those who are not interested in the issues in question. Thus the existence of attitudes is interpreted as a consistent manifestation of the response tendencies in the empirical attitude measurement. Accordingly, it can be stated that
aroused attitudes have a greater consistency than non-aroused attitudes and that in attitude areas which are connected with each other in contents, even the scores of arousal correlate with each other. In this study, it is felt that the areas of national defense and of politics are connected in this respect. The area of religious attitudes is presumed to be independent of these.

Attitudes of Various Student Groups

The attitudes of students can be studied from two aspects. It is possible to study the characteristics belonging equally to all students and to study the perceived differences in the attitudes between various student groups. In the latter case, the classification of the group is based on two variables:

1. Sex: females and males
2. Year of Training: college 1, college 3, and graduate students

Persons going to college have, at least in some respects, very similar characteristics. The role expectations connected with college training are quite well structured, and students in similar lines of study have similar motives for their choice of occupation. It can be presumed that the value profiles of college and graduate students in similar lines of study are very much alike. It is difficult to make predictions of the attitude structures. However, in order to demonstrate the usefulness of the framework, one can assume that the affective component is more dominant in the attitudes of women, and, again, that the cognitive component is stronger in the attitudes of men. These assumptions are based on propositions 5 and 6. According
to the operational definition of attitude functions this would imply that the attitudes of female students are more expressive than the attitudes of male students and, correspondingly, the attitudes of men are more instrumental. Predictions of attitude changes will not be attempted here.

College and graduate students in private institutions differ from each other in some respects which can be presumed to have some effect on the relationships between attitude components. As the majority of college students in the private parochial institution selected for this study are boarding at the school, they are often obliged to participate in specific activities or to direct their activity in specific directions. In this group, the accumulation of interests ought to be verifiable. Graduate students make a choice between various interests, emphasizing some aspects and neglecting the others. If this is true, it should be possible to prove that the two groups differ from each other in that there are higher correlations between various attitude components among college students than among graduate students.

In comparing the students in different years of study, one can assume that the attitudes towards religion are more positive in the group of graduate students than in the group of college students. This assumption is made because graduate students select the private institution used in the study primarily because of its religious connotations, their life-work having been decided at an earlier date. The same could be stated using the more general concept of conservatism: graduate students in private parochial schools are more conservative
than college students in the same schools. Also, in order to determine the relationship between attitude structures and sex, it is arbitrarily presumed that women are more religious than men. To defend or reject this hypothesis will oblige the investigator to study the structures in terms of the sex of the subjects. Similarly, it is presumed that male students' attitudes towards national defense and politics are more positive than female students'.

Specification of Hypotheses

Hypothesis 1 Attitudes toward religion are better organized than attitudes toward national defense or politics.

Hypothesis 2 The affective component has the highest average correlation with the other components; the cognitive component, the next highest correlation; and the action component, the lowest correlation.

Hypothesis 3 The attitudes in the subject groups with aroused attitudes are better organized than those in the groups with non-aroused attitudes.

Hypothesis 4 The arousal scores in the attitude areas of national defense and political activity correlate with each other. The religious attitude area is independent of the others.

Hypothesis 5 The value profiles of students in different years of studies are very similar.

Hypothesis 6 The attitudes of female students are more expressive than those of male students.

Hypothesis 7 The attitudes of male students are more instrumental than those of female students.
Hypothesis 8 Graduate students have more positive attitudes toward religion than college students.

Hypothesis 9 Male students' attitudes toward national defense and politics are more positive than female students'.

Hypothesis 10 The various attitude components have a higher correlation in the groups of college students than in the groups of graduate students.
CHAPTER IV

METHODOLOGY

The empirical part of the study consisted of two stages. In the first stage, the degree of usefulness and expediency of the frame of reference developed in chapter 3 was examined. In the second stage, the frame of reference was used to describe the attitudes of different student groups. In this latter stage, an attempt was made to investigate attitude changes by means of the cross-section technique.

This chapter describes the methodology and procedures employed, the instruments used, and the data-analysis techniques employed.

Independent Variables

As the most important objective of this study was to examine the attitude structures of students in different settings, the independent variables in this study consisted of:

I. Training level:
   Three classifications--college 1 students, college 3 students, and graduate students

II. Sex:
   Two classifications--females and males

The time intervals between college 1, college 3, and graduate students are not constant. In many cases, graduate students had already been away from the classroom for several years, whereas the time interval between college 1 and college 3 students was, in general, two calendar
years. This difference was not disturbing since the purpose of the study was to examine students' attitudes in terms of the theoretical framework. On the contrary, it was an ideal situation to study changes in structures over a period of many years.

Females and males were chosen, not because the interest was in the difference between the sexes but because the relationship between sex and attitude structure was relevant to the study.

Dependent Variables

Three types of dependent variables were used:

I. Variables concerning attitude contents
   1. Attitudes toward national defense
   2. Attitudes toward politics
   3. Attitudes toward religion

II. Variables concerning attitude structure
   1. Affective component
   2. Cognitive component
   3. Action component

III. Variables concerning attitude arousal

In this study, national defense includes more than just military struggle in the defense of the country. It also comprises any activity related to the support and maintenance of those traditions which enhance the prestige of the country in the life of the individual. It covers areas such as patriotic festivals, civil defense, national culture, armed forces, and so forth.

Politics includes activities such as political speeches, political stickers, political campaigns, and the like.
Religion, in this study, does not deal with specific doctrines of the church but rather with the general questions which appear relevant to the daily life of the individual.

More will be said when the instruments are discussed.

It must be noted that there are weaknesses in studies which use the cross-section technique. First, it is difficult to trace changes at the level of individual subjects. Second, it is virtually impossible to say to what extent the investigated groups—young and advanced students—were similar in their initial scores. These weaknesses were considered when the final results were interpreted.

Research and Statistical Design

This study is more than a survey. It is correlational in nature because of the type of statistics used. However, the main goal was to examine structures in terms of the framework developed in the previous chapter.

The organization and structures of attitudes were examined by following the steps listed below:

1. The means and standard deviations of the total subject group were obtained: that is, the scores of college 1, college 3, and graduate students in each attitude area were used as a frame of reference.

2. The mean and standard deviation of the total subject group were the means by which the raw scores of each individual group were transformed into standardized scores.

3. The means of the standardized scores for each individual group was obtained. These means served as the loadings of the attitude
components. These loadings were used in locating the attitude object in the attitude space.

4. The correlation coefficient between the attitude components of each individual group was determined by using Pearson's Product-Moment Correlation.

5. For each subject group, raw scores were transformed into T-scores.

6. Attitude structures were examined by constructing attitude representations as systems defined by the affective and cognitive components. The angle between the vectors that represented the components in the system was determined by the cosine which is equal to the correlation coefficient. The original formula is $r_{ij} = h_i h_j \cos \theta_{ij}$, where $r_{ij}$ is the correlation coefficient between the $i$th and $j$th components, and where $\theta_{ij}$ is the angle formed by $h_i$ and $h_j$.

Intercorrelations between attitude components were used to determine $\theta$ in the formula above and to establish the hierarchical order of the components.

One-way analysis of variance was used whenever it was necessary to make inferences or to test for significance between the means of the different test units and between scores of male and female subjects.

The characteristics of the instruments used were examined by factor-analysis: the communalities being used as a measure of reliability.

More details on the analysis of data are given in chapter 4.
Population and Sample

The subjects were selected from the student population of Andrews University in the state of Michigan. Andrews University is a parochial university which is part of the educational system of the Seventh-day Adventist Church. The student body is made up of students who come from most of the fifty United States and from many countries outside of the United States.

There was no random sample taken from the population. The selection of subjects was made on the basis of availability and willingness to respond to the questionnaires.

Although no sampling procedures were carried out to select the students, a few of the questionnaires were randomly withdrawn in order to equalize the number of subjects from each classification of educational level and sex. The subjects were distributed as shown in table 1.

<table>
<thead>
<tr>
<th></th>
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<th>College 3</th>
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<th>Total</th>
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</thead>
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<td>30</td>
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<td>90</td>
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<tr>
<td>Males</td>
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<tr>
<td>Total</td>
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<td>60</td>
<td>60</td>
<td>180</td>
</tr>
</tbody>
</table>

Instruments Used

The development of instruments is one of the most important parts of any study. Because of its importance, it is necessary to
examine at length the underlying principles of attitude questionnaires and the characteristics and development of each section of the questionnaire used in this study. See appendix F for the actual questionnaire used.

Principles Underlying the Construction of the Instruments

Originally, attitudes have been viewed as global traits. Attitudes have been defined as affective predispositions, and, accordingly, measurement has also been directed to the affective response area. This has been done by constructing verbal scales which include statements concerning attitude objects. These scales are then used to measure the direction and intensity of the predisposition.

The popularity of the verbal attitude scale is due to the fact that it is the easiest way to measure attitudes on the group level. It does not seem justifiable that verbal attitude measurement is concentrated on one of the attitude components, especially if the expediency of the more comprehensive concept and the importance of the multidimensional measurement is accepted. It must be assumed, therefore, that verbal techniques can also be used to measure other attitude components.

It has been claimed that attitudes, when aroused, influence our reactions. As conditions for the arousal the activation of a drive state and the occurrence of relevant stimuli in the environment have been mentioned. It is possible to obtain information about attitudes by means of attitude measurement only when the attitudes exert an influence on the reactions in the measurement situation, that is, on the responses given to the attitude statements. This presupposes that
the drive state connected with the attitude has been aroused and that there are relevant cue stimuli in the environment, in this case, the questionnaire. It is not easy to say when a drive which is connected with an attitude is aroused; but one can presume that a constant state of arousal is most unlikely. Therefore the investigator must attempt to produce a state of arousal by using the appropriate measuring technique.

In the traditional attitude measurement the examiner assumes that the statement included in the questionnaire has sufficient conditioning effect both to arouse the drive state and to operate as a relevant set of stimuli. This assumption is open to criticism because it can be presumed that it is only on rare occasions that both of the requirements conducive to the arousal of attitudes are adequately met. This might be one reason for the unreliability and nonconformity in the findings of attitude studies. Of course, attitude statements do arouse responses. But by what factors and in what degree these responses are determined is another question.

The less the attitude has been aroused, the less significant this attitude is an explanatory factor of the overt response, of the answer given to the test item. The subjects are often confronted with large numbers of miscellaneous statements which are formulated to yield measures of very heterogeneous issues. The same questionnaire may easily include some ten scales which can be very heterogeneous in regard to content. To ensure that the subject will not be able to anticipate what is being investigated, the statements are "converted"; that is, they appear to state opinions contrary to those which follow.
the pattern of presentation. These measures are taken as means of controlling the negative effects of response sets. There may be, however, other consequences. The individual tends to organize the different stimuli, and orientation attitudes are formed. It is not possible to infer how this cognitive structuring occurs in different individuals. It is, however, feasible to presume that the principles of structuring vary from one individual to another and that this variation is the greater the more heterogeneous the series of stimuli in one manner, some in another manner, and others in a third manner. Possibly, it is to take too optimistic a view to assume that the similarity is perceived in the very manner aimed at by the investigator who has constructed the questionnaire. The response of the subject to the attitude item may depend on how he has organized the total situation, and this again may be determined by the heterogeneity or homogeneity, the number, the order, and the contents of the attitude statements.

The presentation of the statements measuring the same object in close order may produce more consistency in the structuring of the situation among the respondents than there is when the statements are presented in mixed order. This procedure, however, will produce pseudo-attitudes, and the results of the measurement will lack validity. If, however, the criterion for the existence of an attitude outlined in this study is employed, the effect of this inadequacy is eliminated. On the whole, the empirical validity of attitude assessment is improved as a result of using a variety of measurement procedures.
batteries (Cook & Selltiz, 1964).

The requirement for the relevance of the attitude items should also be considered. In the first place, the statements should be relevant in respect that they belong, both logically and psychologically, to the range of the attitude being studied. Secondly, they should be stimulating enough for the attitude to be aroused. These requirements are especially important in scales used for the measurement of the affective component of the attitude. All in all this study is concerned with the expediency of the stimulus sampling in each separate case. Attitude items are usually selected or constructed by means of logical analysis, and their "behavior" in the empirical situation is studied later. After response analysis, the final battery of statements is finally adopted.

Measurement of the Affective Component

Affective responses are mainly reactions of the autonomic nervous system. They might, most effectively, be studied by measurements of physiological variables such as blood pressure, pulse-rate, psycho-galvanic responses, various reflexes, and so forth (Hess & Polt, 1960; Rankin & Campbell, 1955).

Attitude measurement has in most cases been concentrated on differences between groups. It is no simple task to measure physiological variables in group-test situations, although techniques for it have been developed.

The affective predisposition is most readily aroused by stimuli with a highly affective content. As the traditional statement technique was used, this aspect had to be taken into consideration.
Statements with low affectivity will be answered by using some
cognitive reasoning. The more cognitive reasoning is used, the more
neutral the statement is with regard to affective content.

Some affective predispositions have been developed through
verbal learning processes. They can be assessed most appropriately by
verbal techniques. However, there are, differences between various
types of attitudes in this respect. It is therefore not necessary
to take as a criterion of the suitability of verbal scales whether
the obtained score correlates with the behavior connected with
the predictions made of the relationships between the structure and the
function of attitudes. That is to say that, if the affective compo­
nent in expressive attitudes is assumed to be independent of the
cognitive component and if the results of the verbal attitude scale
are in accordance with this, the measuring technique is valid in this
respect.

The investigator used verbal-attitude scales, the statements
of which contained enough affective potential to arouse the affective-
response tendency.

The scale consisted of fifty statements. The affective-
response tendency to each of the three attitude objects is measured
by ten statements. The remaining statements were introduced to
prevent the formation of response sets, or pseudo-attitudes.

The scale followed the Likert method of presentation and
scaling. The subject was instructed to indicate his personal opinion
of the statements by selecting and writing down before each statement
the letter which best fitted his degree of agreement.
The letters used were as follows:

A = Strongly agree
B = Agree
C = Uncertain
D = Disagree
E = Strongly disagree

A numerical value of one was assigned to one extreme of the attitude continuum and of five to the other. The undecided position was assigned the value of three.

**Measurement of the Cognitive Component**

The cognitive response tendency of an individual is based on the belief about the importance of the attitude object to him. One might say that it depends on how the individual perceives the attitude object to be instrumental in helping or preventing the attainment of certain goals or values.

The beliefs concerning the attitude object may be connected with various elements of the cognitive areas. In order to determine whether the merging cognitive network is positive or negative toward the attitude object, one obviously has to attempt to map the cognitive structure of the attitude object. This mapping can be accomplished by the selection of a number of psychological objects, general in nature and considered to be relevant to the attitude object—values, goals, and so forth—and by the examination of their connection with the attitude object. Simultaneously, the importance of each value to the individual should be subjected to measurement. When the measures on the importance of the values are weighed with rating expressing the
importance that the subject attaches to the attitude object for the attainment of these values, an index for the attitude object is obtained. This index will measure the cognitive component and the general nature of the attitude object (Carlson, 1957).

The most difficult problem in this type of measurement is the sampling of goals or values. The solution was found by including a large number of stimuli, presumably relevant to the attitude object examined and, at the same time, of heterogeneous character. This ascertained that an heterogeneous group of subjects could find some of the stimuli in the measuring device relevant from their point of view.

The device was divided into several units. The first consisted of forty statements, each one representing a value which was relevant to the attitude area. The subjects indicated how important they personally considered each statement and how far they attempted to attain them in their lives and in society. A numerical value of five was assigned to the values selected as being Extremely Important and a value of one to those considered Not at All Important. The value three was assigned to the values which appeared neutral (Undecided). The instructions directed the subject to consider carefully the importance of each value.

In the other units of the device, the instrumentality of the attitude object was determined. This was done by deciding on the basis of how much it was considered to help or to prevent the attainment of values and, also, by the importance of the values with the attainment of which the attitude was connected.
In this study, twenty of the initial forty values were selected as to the degree of their importance. The subjects were asked to indicate to what extent they considered each attitude object (national defense, religion, political activities) helpful or harmful to the attainment of these values. The obtained scores were added to the importance indices of the values, and, finally, the weighed scores thus obtained were summed within each attitude area. That gave the "index of cognitive structure."

Measurement of the Action Component

The action component of an attitude and overt action should definitely be kept separate. La Piere (1934) tried to develop a method by which an O-variable and R-variable were obtained. The O-variable corresponded to the action component and the R-variable, to the overt action. However, to obtain the O-variable one would have to measure the R-variables. Therefore, attempts were made to assess the action component by direct observations of overt behavior. This is very laborious, and verbal scales are generally used instead, as in the measurement of the other components. The subject is asked how he would react in a certain hypothetical situation which should be described in detail. It is difficult to describe a situation in such a detailed way that all of the respondents would understand it in a similar way and in the way the investigator had intended.

In this study, the subjects were asked what they had done in real situations, how often, when last, and so forth. This is a suitable
method if the subjects have had an opportunity to act in accordance with their preferences, that is, to direct their behavior quite freely toward the attitude object. If the attitude object being studied compels the subject to behave in a certain way towards it, the technique will not be adequate.

The instrument prepared by the investigator consisted of twenty-five statements or questions which were answered or completed by statements identified by letters A to E or Yes or No, to which numerical values of five to one and two or one were assigned, respectively. The subject was asked how often in the course of a certain period of time he had performed certain activities pertaining to the attitude object area.

The measurement was based on actual behavior. Therefore, all other factors influencing reactions in given situations are sources of error. The instrument did not give information about action tendency as such, but rather about action tendency in particular situations. It was difficult to eliminate error, as the desire was to measure specifically certain actions belonging to attitude areas. By asking about actions within a long period of time (one year) it was hoped that the effect of chance factors would be slight.

Measurement of Arousal

As it was mentioned before, aroused attitudes influence responses. Thus, for attitudes to be measured they should be aroused. In many cases it may be difficult to produce this state of arousal in any marked degree. However it can be assumed that if the subject group is appropriately selected, the attitudes of at least some
members will be aroused. The investigator should, in fact, direct his special attention to those subjects whose attitudes have been aroused, in case he attempts to investigate general qualities of attitudes. To be able to distinguish aroused subjects from the others he must have ways to measure arousal.

Attitudes are aroused when the need states connected with them are activated. For example, someone who is ill may spend much time contemplating religious issues.

The arousal of attitudes, therefore, can be measured by investigating to what extent the subjects deliberate by themselves or with their friends on issues connected with the attitude area. This type of arousal measurement yields information of arousal only under certain conditions. Distorted results can be obtained by factors, the most important of which is the crystallization of the attitude. If the intensity and activation of the positive state are kept constant, the subjects who do not have crystallized attitudes will deliberate more on the notions associated with the attitude than subjects with established response habits. This limitation of the measuring technique must be taken into account when conclusions are drawn on the basis of the results.

The device consisted of thirty statements. The subjects were instructed to consider how much they had thought about them with friends or by themselves. Each attitude was covered by six statements, the remainder being added in accordance with the principles underlying the construction of all the measuring devices; that is, to prevent the formation of response sets. Numerical values of one to five were
assigned to the letters A to E, respectively. The letters represented the following responses:

A = Very often
B = Often
C = Sometimes
D = Seldom
E = Never

A pilot study was carried out to determine the potential of the measuring devices. The sample for the pilot study included eight students from each educational level classification. Table 2 gives the communalities for each item for the instrument. As the reliability of the item is $h^2 + SpV$—communality plus specific variance—the figures give a measure of the reliability of the instrument (Child, 1973, p. 36).

The reliability of the unit of the instrument which measured arousal was examined by item-analysis as this procedure appeared appropriate for the type of response sought by the investigator. The reliability Coefficients Alpha are as follows:

<table>
<thead>
<tr>
<th>Religion</th>
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<tbody>
<tr>
<td>National Defense</td>
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</tr>
<tr>
<td>Politics</td>
<td>.6406</td>
</tr>
</tbody>
</table>

The content validity of the instruments was examined by a panel of ten graduate students who were acquainted with attitude surveys, and eight graduate-level professors from different institutions in two different countries. Statements which did not appear relevant to 60 percent of those examining the instrument were rejected.
TABLE 2

COMMUNALITIES FOR EACH ITEM OF THE MEASURING INSTRUMENT, OBTAINED BY FACTOR
ANALYSIS USING THE PRINCIPAL COMPONENTS METHOD AND ROTATING
BY THE VARIMAX METHOD

<table>
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<td>.9317</td>
<td>.8741</td>
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<td>.7304</td>
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<tr>
<td>.8941</td>
<td></td>
<td></td>
<td>.8641</td>
<td></td>
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<td>.8621</td>
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<td></td>
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<tr>
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<td>.8223</td>
<td></td>
<td></td>
<td>.9768</td>
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</tr>
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<td>.7598</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>.6195</td>
<td></td>
<td></td>
<td>.8777</td>
<td></td>
<td></td>
<td>.8980</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Procedures

The data were collected by the investigator with the assistance of two college students. Permission to collect data was requested and granted from the institution and from the residence-hall deans. The two assistants went from room to room to distribute and later to collect the questionnaires. The investigator himself contacted the graduate students of the university and community students who belonged to any of the categories under research. As the percentage of returned questionnaires was 92 percent, the amount needed for the study was easily reached after one week of collecting data. Scoring was done manually, but the analysis was done by the computing center of Andrews University, Michigan.
This chapter consists of the analysis of the data collected from the 180 selected subjects. As the study of the students' attitudes is to be done on the basis of the framework developed previously, it is reasonable to first analyze the empirical results concerning attitude theory and then those results related to the students themselves.

Part I

Attitude Theory

As it was stated before, this investigation does not attempt to demonstrate the theoretical framework in an exhaustive manner. The following aspects of the framework were chosen to be studied: (1) the organization of attitudes, (2) the general structure of attitudes, (3) the hierarchy of attitude components, and (4) the problem of attitude arousal. An attempt was also made to examine the change of attitudes by means of the cross-section technique.

Organization of attitudes

Hypothesis 1 stated that "attitudes toward religion are better organized than attitudes toward national defense or politics." It was assumed that the more stable attitudes are, the more consistent or permanent they remain. In this connection permanency must be under-
stood to mean organization. The latter term is used to refer to the extent to which the loadings of the attitude components have identical signs. This organization can be studied by examining the location of attitude objects in the attitude space.

Figures 4-9 show the organization of attitudes in different student groups. To form these figures the following steps were taken:

1. The means and standard deviations of the total subject group were obtained. That is, the scores of the attitude components of college 1, college 3, and graduate students in each attitude area were used as a frame of reference.

2. By use of the mean and standard deviations of the total subject group, the raw scores of each individual were transformed into standardized scores.

3. The means of the standardized scores for each individual group was obtained. These means served as the loadings of the attitude components. They were used in locating the attitude object in the attitude space.

By using this method, a zero-point of the attitude space can be defined. It is the mean of the subject group, and the location of attitude objects is determined by the standard-score means of the components. It must be noted that for each figure drawn another "zero-point" was placed at standard score 1.00. The component dimensions were drawn from this zero-point. This was done to prevent an erroneous idea of the structure of attitudes; when attitudes are examined from this zero-point, the attitudes of all groups are "positive," and the differences between the groups are differences in
Fig. 4. Organization of Attitudes toward National Defense, Females.
Fig 5. Organization of Attitudes toward National Defense, Males.
Fig. 6. Organization of Attitudes toward Politics, Females.
Fig. 7. Organization of Attitudes toward Politics, Males.
Fig. 8. Organization of Attitudes toward Religion, Females.
Fig. 9. Organization of Attitudes toward Religion, Males.
the degree of "positivity". As the components are drawn orthogonally, a description of this kind could cause wrong ideas because the measurement of the attitudes was not bipolar in the sense it should be.

The three tables in appendix A show the standard score means that were used to locate the attitude objects in the attitude space. For the sake of clarity, the three dimensional space for each attitude was drawn in two consecutive figures. The first of the two figures is defined by the affective and cognitive components, and the second, by the affective and action components.

Tables 3-5 show, in summary form, the signs that each attitude component had in the attitude space. An examination of the figures and the tables reveals that college 1 males and graduate females have well-organized attitudes toward national defense. In the area of politics college 1 males and college 3 females have well-organized attitudes. In the attitudes toward religion graduate students as a whole display well-organized attitudes.

In all the other cases, the signs of the attitude components are not consistent. This applies to all attitude areas.

As attitudes toward religion do not present themselves as being better organized in all subject groups, hypothesis 1 cannot be accepted.

The use of the standard score means as loadings of the attitude components was bound to mask the attitude organization of the individual subject. An examination of tables 14-19 in appendix B, where the organization of each individual subject's attitudes is shown, confirms
### Table 3
**Organization of Attitudes Toward National Defense, Total Subject Group**

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>F</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

M Males  
F Females  
* Well-organized Attitudes

### Table 4
**Organization of Attitudes Toward Politics, Total Subject Group**

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

M Males  
F Females  
* Well-organized Attitudes

### Table 5
**Organization of Attitudes Toward Religion, Total Subject Group**

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

M Males  
F Females  
* Well-organized Attitudes
the masking. However, the pattern of attitude organization is reflected in the total subject group. These same tables will be referred to when the attitudes of the different subject groups are compared in part II of the study.

Hierarchy of Components

Hypothesis 2 states that "the affective component has the highest average correlation with the other components; the cognitive component, the next highest; and the action component, the lowest average correlation."

This hypothesis can be tested by examining the intercorrelations of the components. If the affective component plays a predominant role in attitudes, it should have the highest correlations with the other two components, the cognitive component would have the second highest correlations, and the action component should show the lowest correlations.

In table 6 one can observe how often each of the correlation scores between the different components occupied first, second, and third places. These scores were obtained from the table of intercorrelations as they are presented in appendix C. In each case, the correlation coefficients between the affective and cognitive components, between the affective and action components, and between the cognitive and action components were obtained for each attitude area and for each student group. Table 6 shows that the correlation of the affective component with the other two components is generally highest. The correlation of the cognitive component with the other two comes second, and the action component occupies the
last place. The score of each component was obtained by multiplying the number of times it occupied first place, second place, and third place by the respective weighting and by summing the products.

**TABLE 6**

**HIERARCHY OF COMPONENTS—OBTAINED FROM CORRELATIONS IN ORDER OF SIZE**

<table>
<thead>
<tr>
<th>Weighting</th>
<th>Greatest</th>
<th>Medium</th>
<th>Smallest</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>14</td>
<td>14</td>
<td>8</td>
<td>78</td>
<td>1</td>
</tr>
<tr>
<td>Cognitive</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>73</td>
<td>2</td>
</tr>
<tr>
<td>Action</td>
<td>5</td>
<td>15</td>
<td>16</td>
<td>61</td>
<td>3</td>
</tr>
</tbody>
</table>

The influence of the affective component is seen not only by the place it occupies, but also by the fact that the action component occupied the second place fifteen times, reflecting the weaker influence of the cognitive component.

The results support hypothesis 2.

**General Structures of Attitudes**

Closely related to the organization of attitudes is the attitude structure; and as the acceptance or rejection of some hypotheses depends on the observation of the structures, it is appropriate to examine the attitude structures at this point. However, the implications of the observations will be dealt with when the changes in direction of intensity of attitudes are analyzed.

Figures 10-27 show the actual structure of attitudes as a system composed of the affective and the cognitive components. The
loadings of attitude components are described here as vector lengths, and the angle between the dimensions show how the components are related to each other.

In order to examine the functions of attitudes, which was operationally defined according to the relations between components, it is necessary to try to obtain information about the mutual relations between the components. This was done by taking the entire sample as a frame of reference. For each subject a standard score in each attitude component was computed. These standard scores were transformed into T-scores, and the means of the T-scores for each component was calculated. T-scores were obtained by multiplying the z-scores by 10, and by adding 50 to the product. The T-score means were used as vector lengths. The drawings are scaled down, and this must be taken into consideration when interpretations are made. The angle that separates the vector lengths was obtained by using the formula stated on page 55, $r_{ij} = h_i h_j \cos \theta_{ij}$.

The relationship between the action component and the other two components was not illustrated because the correlations between them were very small. In almost every case the angle would be 90°, and the vectors would be orthogonal.

As it was said before, the implications of the examination of figures 10-27 will be dealt with when the changes in attitude structures are studied.
Fig. 10. The Structure of the Attitude toward National Defense, College 1 Females.

Fig. 11. The Structure of the Attitude toward National Defense, College 3 Females.

Fig. 12. The Structure of the Attitude toward National Defense, Graduate Females.
Fig. 13. The Structure of the Attitude toward National Defense, College 1 Males.

Fig. 14. The Structure of the Attitude toward National Defense, College 3 Males.

Fig. 15. The Structure of the Attitude toward National Defense, Graduate Males.
Fig. 16. The Structure of the Attitude toward Politics, College 1 Females.

Fig. 17. The Structure of the Attitude toward Politics, College 3 Females.

Fig. 18. The Structure of the Attitude toward Politics, Graduate Females.
Fig. 19. The Structure of the Attitude toward Politics, College 1 Males.

Fig. 20. The Structure of the Attitude toward Politics, College 3 Males.

Fig. 21. The Structure of the Attitude toward Politics, Graduate Males.
Fig. 22. The Structure of the Attitude toward Religion, College 1 Females.

Fig. 23. The Structure of the Attitude toward Religion, College 3 Females.

Fig. 24. The Structure of the Attitude toward Religion, Graduate Females.
Fig. 25. The Structure of the Attitude toward Religion, College 1 Males.

Fig. 26. The Structure of the Attitude toward Religion, College 3 Males.

Fig. 27. The Structure of the Attitude toward Religion, Graduate Males.
**Attitude Changes**

The term attitude change in this study connotes the changes in the mutual relations between the components: that is, the structural changes of attitudes and changes in direction and intensity.

Again, the figures 10-27 which expressed the attitude structures in the systems composed of the principal components can be used. Changes in the direction and intensity of attitudes can also be studied separately for each component so that changes in various groups can be seen simultaneously.

Therefore, it is also important to examine figures 28-36 before discussing the attitude changes toward the specific attitude objects. These figures and the illustrations of the attitude structures will serve as the basis for the conclusions. Figures 28-36 show the changes in direction and intensity of the attitudes of the subject groups. In each figure the zero-point is equivalent to the standard-score mean of the total sample for each attitude component. The intensity of the change was measured by comparing the distances between the zero-point and the intersections between the line segments, F and M, and the line defining the level of training. The direction of the change was examined by observing lines, F and M, which represent females and male subjects, respectively. Points of intersection to the right of the zero-point were considered to be in the positive side, and those to the left of the zero-point were considered to be in the negative side. The distances between the zero-point and the points of intersection were determined by the standard-score means of individual groups.
Fig. 28. Changes in the Affective Component of Attitudes toward National Defense.
Fig. 29. Changes in the Cognitive Component of Attitudes toward National Defense
Fig. 31. Changes in the Affective Component of Attitudes toward Politics
Fig. 32. Changes in the Cognitive Component of Attitudes toward Politics
FIG. 24. Changes in the Affective Component of Attitudes toward Religion
Fig. 36. Changes in the Action Component of Attitudes toward Religion
Figures 10-36 show that in female student groups the share of the affective component decreases between college 1 and college 3, the only exception being in attitudes toward politics. This trend toward a smaller share of the affective component continues until graduate school, with the single exception of attitudes toward national defense where the affective component varies slightly toward the positive end of the scale.

As the affective component decreases, the cognitive component increases its share. This is a general trend between college 1 and college 3; but it slows down between college 3 and graduate students. However, as the affective component diminishes between college 3 and graduate subjects, the cognitive component, which remains much the same, dominates the structures. It can be said that the attitude undergoes a change in the instrumental direction.

In female groups, the action component does not change in any one specific manner.

For male student groups the attitudes follow a similar course as that of the female groups: the affective component diminishes—the only exception being in attitudes toward religion in graduate students—and cognitive component remains much the same, thereby gaining dominance.

As attitudes toward national defense are examined, there is not a marked difference between graduate and college students. In the coordinates formed by the affective, cognitive, and action components, graduate students and college students are located in the same area. The location within the action component presents the only exception.
Fig. 36. Changes in the Action Component of Attitudes toward Religion
Figures 10-36 show that in female student groups the share of the affective component decreases between college 1 and college 3, the only exception being in attitudes toward politics. This trend toward a smaller share of the affective component continues until graduate school, with the single exception of attitudes toward national defense where the affective component varies slightly toward the positive end of the scale.

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As attitudes toward national defense are examined, there is not a marked difference between graduate and college students. In the coordinates formed by the affective, cognitive, and action components, graduate students and college students are located in the same area. The location within the action component presents the only exception.
Changes in attitudes toward national defense appear to depend on sex. With one exception in each case, the attitude of female students toward national defense change in a positive direction during training, while the attitudes of male students change in the reverse direction. This takes place in all components.

In the area of politics it is difficult to talk about well-organized attitudes. The component loadings are very inconsistent, and the existence of well-organized attitudes is doubtful. For the sake of completeness, the measurement results concerning politics were presented. The affective component reveals a change toward the positive between college 1 and 3 in both males and females, and a change toward the negative between college 3 and graduate students. As far as the cognitive component is concerned, changes in all groups take place inconsistently. It does not appear that students have definite ideas about the importance of politics in the attainment of their goals.

In the attitude area of religion the cognitive and action components change toward the positive side between college 1 and college 3, but is reversed between college 3 and graduate students. The affective component changes quite drastically toward the expressive side between college 3 and graduate students. Participation in religious activities increase in college 3 students, but religion becomes more expressive and less active and cognitive as the years advance.

One observation that must be noted is that for college students attitude changes are not dependent on sex. At most, one can advance the idea that attitude changes are a function of years of training.
Arousal of Attitudes

The concept of arousal forms an integral part of the theoretical framework. Two hypotheses were formulated with the purpose of studying the theoretical aspects of arousal. They are:

Hypothesis 3: The attitudes of the subject groups with aroused attitudes are better organized than those in the groups with non-aroused attitudes.

Hypothesis 4: The arousal scores in the attitude areas of national defense and politics correlate with each other, whereas the religious attitude is independent of the others.

To accept or reject these hypotheses, each subject group was divided into two, according to the respective arousal score. Students were considered as having aroused attitudes if their scores were 18 or higher. It was felt that since the ratings ranged from 1 to 5 and since there were six statements, students who fell below 18 had consistently chosen ratings below 3. This presented a problem in the area of religion where every subject fell into the category of aroused attitudes. On the other hand, and with some minor exceptions, the subjects who were considered to have aroused attitudes in national defense and politics were considerably fewer than those with non-aroused attitudes. However, it was considered that this part of the study could still be examined since the approach to its understanding and the actual results are worthy of attention.

Within each group, the means, standard deviations, z-scores, and intercorrelations were computed. These operations did not include the area of religion.
An examination of the standard deviations of scores can reveal the variation of the attitude-component scores. It was assumed that attitude-component scores vary more within aroused attitudes than within non-aroused attitudes. The degree of arousal was examined separately in male and female groups, as in figures 37-44.

If the attitude structures are drawn and examined, the effect of arousal should be manifested as higher intercorrelations of the main attitude components. Attitudes toward religion are left out for the reason given above.

As it can be observed, the correlation between the affective and cognitive components are higher for the aroused attitudes; that is, they are more consistent.

![Diagram](image)

Fig. 37. The Structure of Aroused Attitudes toward National Defense, Females.
Fig. 38. The Structure of Aroused Attitudes toward Politics, Females.

Fig. 39. The Structure of Non-aroused Attitudes toward National Defense, Females.

Fig. 40. The Structure of Non-aroused Attitudes toward Politics, Females.
Fig. 41. The Structure of Aroused Attitudes toward National Defense, Males.

Fig. 42. The Structure of Aroused Attitudes toward Politics, Males.

Fig. 43. The Structure of Non-aroused Attitudes toward National Defense, Males.
In hypothesis 4 it was expressed that attitude areas belonging to similar content areas would all be aroused if one of them was aroused. In this study, the areas of politics and national defense were considered to be similar in content area. It must be expected that their arousal scores correlate strongly with each other, whereas the arousal scores in the area of religion will prove to be independent of the others. Table 8 shows the intercorrelation of arousal measures.

As can be seen in the results shown in table 8, the arousal scores in the areas of national defense and politics correlate with each other. The results for both males and females are very similar. Consequently, hypothesis 4 is upheld.
### TABLE 7
THE STANDARD OF DEVIATIONS OF AROUSED AND NON-ARoused ATTITUDE SCORES (z-SCORES)

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aroused</td>
<td>Non-</td>
<td>Aroused</td>
<td>Non-</td>
</tr>
<tr>
<td>National Defense</td>
<td>N= 11</td>
<td>N= 89</td>
<td>N= 19</td>
<td>N= 71</td>
</tr>
<tr>
<td>Affective Component</td>
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<td>.887</td>
<td>.912</td>
<td>.931</td>
</tr>
<tr>
<td>Cognitive Component</td>
<td>.963</td>
<td>.967</td>
<td>.989</td>
<td>.946</td>
</tr>
<tr>
<td>Action Component</td>
<td>.858</td>
<td>.798</td>
<td>.997</td>
<td>.994</td>
</tr>
<tr>
<td>Politics</td>
<td>N= 26</td>
<td>N= 64</td>
<td>N= 23</td>
<td>N= 67</td>
</tr>
<tr>
<td>Affective Component</td>
<td>.856</td>
<td>.927</td>
<td>1.023</td>
<td>.999</td>
</tr>
<tr>
<td>Cognitive Component</td>
<td>.958</td>
<td>.901</td>
<td>.988</td>
<td>1.003</td>
</tr>
<tr>
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<td>.946</td>
<td>.764</td>
<td>1.034</td>
<td>.742</td>
</tr>
</tbody>
</table>

### TABLE 8
INTERCORRELATIONS OF AROUSAL MEASURES

<table>
<thead>
<tr>
<th>Females</th>
<th>N=</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Males</th>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>2. Politics</td>
<td>.553</td>
<td>2. Politics</td>
<td>.487</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Attitudes in Subject Groups

The remaining hypotheses deal with attitudes in the different subject groups. As it was seen, the hypotheses pertaining to the attitude theory obtained support from the empirical material. It can be said that the framework used as reference appears to work satisfactorily and that it can be used to study the nature and change of attitudes.

Hypothesis 5 states: "The values profiles of students in different years of studies are very similar."

Figures 45 and 46 present the value structure of the student groups. The profiles of female students and male students were drawn separately. Similarity of profiles was deduced visually.

To arrive at the scores used to draw the profiles the means of the value scores for each student group was obtained. These means served as structure points.

It is clearly seen that the value profiles of all subjects are very similar, irrespective of the sex or educational level. The only noticeable difference is in the average scores of male graduate students. The latter do not appear to consider any of the listed values as unimportant.

Hypothesis 5 is supported by the examination of the value profiles.

Hypothesis 6 states that "the attitude of female students are more expressive than those of male students." To determine the acceptance or rejection of this hypothesis one must study the organization
Fig. 45. Profiles of Female Subjects

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Fig. 46. Profiles of Male Subjects

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of structures as displayed in figures 4-27 and in tables 14-19 in appendix B. When the attitude structures are examined it appears that in female students the affective component dominates. The difference between the affective and cognitive components is not large, but the cognitive component tends to vary more; whereas the affective component increases in importance or remains static. It can be stated that the affective component gets stronger, and the attitude becomes more expressive. This is particularly the case of attitudes toward religion.

The same cannot be said when the organization of individual subjects' attitudes is examined. Here, the affective component does not dominate the others. Although hypothesis 6 gains some measure of support, it is not sufficient to uphold it. It must be rejected.

Hypothesis 7 says that "the attitudes of male students are more instrumental than those of female students."

For this hypothesis to be accepted the cognitive component would have to dominate in the attitude structures of male students. A careful observation of the structures reveals that this is the case in the attitudes toward religion and national defense. In attitudes toward politics the affective component dominates.

The same picture is not reflected when the organization of individual subjects' attitudes is examined. In college 1 and college 3 males the cognitive component is dominant in each attitude area. Graduate males' attitudes are observed as being inconsistent. Only in attitudes toward religion does the affective component stand out.

In the light of this observation it can be stated that in
males' attitudes the cognitive component is dominant. Therefore, hypothesis 7 is upheld.

Hypothesis 8 states that "graduate students have more positive attitudes toward religion than college students." This hypothesis is upheld. Indeed, college 1 and college 3 students' attitudes do not appear to be consistent. Some components have signs which are not consistent with the signs of the other components. Only graduate students show consistency in the positiveness of their attitudes toward religion. Therefore, hypothesis 8 is accepted.

Hypothesis 9, which states that "male students' attitudes toward national defense and politics are more positive than female students", must be rejected. An examination of the structures and of the organization of individual subjects' attitudes reveals that only college 1 male students have more positive attitudes toward national defense and politics than the other groups. Consequently, this hypothesis cannot be accepted.

The same thing applies to hypothesis 10 which stated that "female students' attitudes toward religion are more positive than male students." The examination of figures 4-27 and of tables 14-19 in appendix B shows that the attitudes of male and female subjects toward religion are not different. Therefore, hypothesis 10 cannot be accepted.

Hypothesis 11 states that "the various attitude areas have a higher correlation of the groups of college students than in the groups of graduate students."

The relevant intercorrelations from appendix C are displayed in tables 9-10.
TABLE 9
INTERCORRELATIONS BETWEEN ATTITUDE AREAS,
FEMALE SUBJECTS

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rel. Af.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pol. Af.</td>
<td>.112</td>
<td>.135</td>
<td>-.224</td>
</tr>
<tr>
<td>3. Nat. Af.</td>
<td>-.467</td>
<td>.154</td>
<td>-.028</td>
</tr>
</tbody>
</table>

++ Significant at .05 level
+ Significant at .01 level

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rel. Cg.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pol. Cg.</td>
<td>-.076</td>
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<td>.391</td>
</tr>
<tr>
<td>3. Nat. Cg.</td>
<td>-.137</td>
<td>.025</td>
<td>.043</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>College 1</th>
<th>College 3</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rel. Ac.</td>
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<tr>
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<td>-.304</td>
<td>-.092</td>
<td>.042</td>
</tr>
<tr>
<td>3. Nat. Ac.</td>
<td>-.050</td>
<td>-.109</td>
<td>-.199</td>
</tr>
</tbody>
</table>

Degrees of Freedom = 28

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As can be observed, the hypothesis is upheld, particularly when it applies to the affective and cognitive components. It is not always supported when the action component is considered in the female groups.
CHAPTER VI

SUMMARY, DISCUSSION, AND IMPLICATIONS

It is appropriate to conclude this study with a discussion of findings and with an examination that the implications bear on related matters. Firstly, however, the main areas of the study must be summarized.

Summary

The purpose of the study was to survey the attitude structures of selected undergraduate and graduate students in an attempt to demonstrate the rationality of the theoretical framework which was developed before the actual survey had begun. Moreover, it was expected that the findings of the study would throw light upon the concept of "attitude" and that they could provide solutions to the problems of education.

The review of literature which included computer searches of related material covered areas such as the history of the "attitude" concept and attitude research, the underlying processes in the understanding of attitude and attitude theory. The works and suggestions of men such as Katz, Rosenberg, and Heider were studied with the purpose of finding ideas which would help in the development of the framework which was to serve as the central part of the study. Models of attitude change were considered as well; and particular attention was paid to those models which deal with attitude consistency and attitude
change.

Based on the review of literature, a number of propositions were made. These propositions form a central part of the theoretical framework. They deal with questions such as the existence of attitudes, the hierarchy of components, location of the attitude components in the attitude space, the role of attitude function in attitude formation and attitude change, the role of arousal in the manifestation of attitudes, conditions for attitude changes, and, finally, with states of balance or unbalance which prevent or precede a change in attitudes.

The theoretical framework was used as the central part of the study and from it a number of hypotheses were formulated. Four of these hypotheses dealt with the usefulness of the framework; the rest dealt with students' attitudes. It must be repeated that a demonstration of the whole framework was not attempted in this study. Only the assumptions which dealt with the existence of attitudes, with the hierarchy of components and with the arousal of attitudes, were considered.

Once the rationality of the framework was established, the attitudes of selected male and female students in college 1, college 3, and graduate school toward national defense, politics, and religion were examined.

The subjects responded to a questionnaire which measured their attitudes toward the three specified areas in terms of the components which make up an attitude; namely, the affective, cognitive, and action components. The same instrument also measured the degree of arousal
and the degree of importance of selected values which were related to the attitude areas under investigation.

The analysis of the subjects' responses was carried out using each hypothesis as both the source of direction and the ultimate goal. In this manner, any analysis which did not appear relevant for the purpose of accepting or rejecting the hypotheses was not considered. Computations for the intercorrelations were done by the computer at Andrews University, Berrien Springs, Michigan. All other computations such as raw-scores and z-score means, standard deviations, T-scores, some intercorrelations, and all of the illustrations were done manually by the investigator.

The findings were as follows:

1. The first hypothesis which dealt with the organization of attitudes was not upheld. It was observed that the loadings of attitude objects were not more consistent toward religion than toward the other areas. However, the framework proved useful in the study of attitude existence and consistency.

2. The three attitude components proved to be hierarchical, although only a small difference was noted between the affective and cognitive components. The affective component ranked first, the cognitive component came second, and the action component, third.

3. The attitudes in subject groups who have aroused attitudes are more consistent than those in the groups with non-aroused attitudes; that is, their main components have higher intercorrelations. It also means that their attitudes are better organized.

4. The arousal scores in related attitude areas correlate
with each other. The arousal scores for the areas of national defense and politics, both social questions, correlated with each other. Arousal scores for the area of religion were independent of the other two.

5. The value profiles of the subjects were found to be very similar.

Using the attitude structures and tables of attitude organization the following findings were obtained:

6. Females are not more expressive than males. That means that the affective component does not dominate the attitude structure. The difference between the affective and cognitive components was very small.

7. The attitudes of male students were found to be more instrumental than those of female students: the cognitive component dominated their attitude structures.

8. Graduate students have more positive attitudes toward religion than college students.

9. There is no difference between the degree of positiveness in males and females in attitudes toward national defense and politics.

10. There is no difference between male and female subjects in their attitudes toward religion.

11. The various attitude areas have higher correlations in the groups of college students than in the groups of graduate students.

Implications—Attitude Theory and Attitude Concept

A theoretical framework must be judged in terms of its use—
fulness. To assess the usefulness of a framework one can examine it on the following grounds:

1. Logical clarity
2. Economy
3. Possibility of predictions
4. Possibility for empirical testing
5. Accordance with empirical facts

A new theoretical framework should prove more useful and expedient than earlier ones. In other words, one should be able to obtain information that could not be obtained by using earlier frames of reference. In traditional attitude research emphasis has been placed on the affective component. This component has been measured, and the whole attitude has been evaluated on its terms. The framework, which used three components, added the cognitive and measured the action component independently without recourse to overt action. Attitude is examined, consequently, as a larger and more structured entity.

When the information obtained in this study is considered, one becomes aware of its potential. Firstly, if only the affective component had been measured, it only could have been said that graduate students have more positive attitudes toward religion than college students and that they do not change very much between the groups. It would have been impossible to observe consistent differences between groups in attitudes toward politics, nor could a unidimensional approach have told much about the organization of attitudes in this area. As far as attitudes toward national defense are concerned one could have noted that females' attitudes are more favorable than males' attitudes.
and that these attitudes change with the students’ years of training.

The framework which was used in this study allowed the acquisition of the following:

1. Information about the structures of attitudes
2. Information about structural changes which were independent of the attitude area
3. Information about the differences in attitude structures between the groups, even if the difference was not apparent
4. Information about how the subjective importance of attitude objects changes in different groups during years of training
5. Information about the relationships between the different attitude components

Information about attitude structures and their changes is of great importance. The fact that one can observe that attitude changes occur in different ways in the different components and that influencing different components gives different results allows methods for shaping attitudes more effectively to be developed. Indeed, it can be claimed that the information gathered is relevant for behavioral research and education. Therefore the first criterion for the usefulness of a framework is fulfilled.

A theoretical framework is evaluated by testing empirically the hypotheses derived from it. Four hypotheses related to the frame of reference were tested. First, the degree of the organization of attitudes was tested. The results indicate that the assumptions formulated about the degree of organization appear to be supported. Both the attitude structures as they are displayed in the drawings
and the organization of individual subjects' attitudes point in the same direction: that attitudes toward the three areas are not very well organized. It can be stated that the criterion of attitude organization functioned well enough. A closer examination brings up the several instances where attitude objects should have received consistent loadings, but which was not the case. This was due, most probably, to the fact that the sample used did not meet the requirements in this respect.

The hierarchy of components was supported. The affective component, assumed to be the strongest component, was most strongly related to the other components; the cognitive component comes next and the action component, last.

The fact that the components differ in value should be seen when the changes of attitude components are examined. It can be noted that when all the investigated groups are studied across the different attitude areas the greatest changes occur in the cognitive component. Obvious differences between the affective and action component cannot be easily observed. This is due primarily to the instrument which measured the affective and action components in a similar manner, but which measured the cognitive component in a more complex manner. If this is taken into consideration, the results are in accordance with the assumption of hierarchy; namely, that the affective component has a greater resistance to change.

The degree of arousal was examined by determining how much time the subjects devoted to thinking by themselves or in company on matters related to the different attitude areas. This method of
measurement has limitations but measures arousal independent of what
the subjects' attitudes are. Both an atheist and a sincere Christian
can devote an equal part of their time to problems related to the
area of religion. Also, a political candidate looking for votes and an
individual who doubts if he will ever vote can think equally about
questions related to politics. In the groups that were investigated
attitudes and arousal correlated with each other. Unfortunately,
the arousal scores obtained in the area of religion did not permit
a verification of this phenomenon in that area. However, since the
correlations were low, it is difficult to say that there is much
variance between the components in groups with aroused and non-
aroused attitudes.

The validity of the instrument measuring arousal was studied
by observing whether the different interests correlated with each
other. It was assumed that the religious area was independent of
the others. When the correlation coefficients in the whole subject
group were examined it was observed that the results were in accordance
with the hypothesis. It can be said that the instrument measuring
arousal functioned satisfactorily.

In summary, the testing of the theoretical framework revealed
that it can work, that it is useful to study attitudes. The concept
of attitude is enriched by it. Attitudes can be described by using
it.

The assumptions regarding attitude changes remain totally un-
tested. To verify those assumptions requires an experimental design.
This, too, gives credit to the framework because it provides areas to
be researched.
Attitudes in Subject Groups

The cognitive component was defined in this study as the perceived instrumentality of an attitude object. In order to obtain information about the subjective degree of instrumentality, the goals in the attainment of which attitude objects serve as means were selected. An attempt was made to include instrumental and expressive values; the function of attitudes also guided in the selection of attitude objects.

The profiles are very similar for all subject groups. The results may appear trivial if the selected values are defined as universalities in today's society. But they become relevant if they lead to the conclusion that the value profiles become similar irrespective of the students' educational background, sex, and so forth. This alternative is more feasible, although the question deserves further treatment with different control groups.

Clear-cut differences and changes in the value profiles were not observed. At most, it could be said that materialistic values gain in importance as one grows older, particularly in male groups.

When attitude structures were studied it was discovered that women's attitudes tend to change in the expressive direction. The weakening of the cognitive component in the total attitude can take place in two ways. First, it may be that the values change. The importance attached to a value decreases, and the perceived instrumentality will decrease as well. Second, the loading of the component can diminish so that the importance of the value remains unchanged, but the instrumentality--its importance as a means of value attainment--
is perceived to be less. If this latter alternative is true a change has occurred in the cognitive component in the sense defined in the present study. If the values change, as in the first alternative, one is not examining the changes in instrumentality but a change in values. By studying the value profiles one can observe that the relative importance of values has not changed significantly. The changes must have occurred specifically in the beliefs of the subjects concerning how the attitude objects serve the attainment of values. The data show that older students perceive the attitude objects as less effective instruments in the value attainment than younger students. The development goes in a more realistic direction.

When the organization of attitude areas was examined, it could be noticed that graduate students did not differ clearly from college students. The structures were not very clear.

It is possible to speculate concerning the reason for this. The lack of great differences cannot be imputed to the fact that the students have the same interests. If one area is thought to be important by one group, all groups tend to consider it important also. A more feasible explanation is that all subject groups come from a strong religious background and that their religiousness colors all of their attitudes. The fact that graduate students have more positive attitudes toward religion could be caused by crystallization of the components, whereas the college students' components are more flexible. In most cases, however, the religiousness of the students was conducive to the direction of the responses given to the attitude questions. The fact that most subjects consider the religious atti-
tude area very important has made them consider the others in terms of this area.

The differences in attitudes toward religion that could be observed can be explained. Graduate students' attitudes toward religion are not considered problematic. In college 1 subjects the question of religion is still problematic, and the direction of the loadings of the attitude components is not defined. Also, the fact that attitudes toward religion appear negative could be caused by a desire to establish independence from parental guidance in such matters.

A disturbing observation is that religious activity diminishes in the graduate students. This could be due to the fact that in the institution where they study opportunities to act in accordance with their beliefs are lacking. Or it could mean that graduate students are satisfied with their status and religious state and do not feel the importance of actions in their religious life.

College 3 students appear more patriotic that any other group. Graduate students have other interests; and college 1 students are too busy asserting themselves to be bothered with patriotic questions. College 3 students may invest time in patriotic activities in an effort to expand their interests or in the fulfillment of some curricular assignment. Differences in attitudes toward politics and national defense require further study.

The empirical results do not yield a consistent picture of heterogenization of attitudes. Generally, however, a negative trend is observed, exception being granted to the religious area in graduate students. In other words, the subjective importance of attitudes as
means in the attainment of values diminishes.

**Implications Concerning Education**

In this study, an attempt was made to obtain information about the differences between the attitudes of students at different educational levels. Background variables were not considered. Attention was focussed on what kind of attitudes are possessed by those who go into the type of institution that was used in this study.

It was observed that the value profiles were very similar in all student groups. This has been discussed already.

The fact that females' attitudes toward the objects tended to become expressive and attitudes of male subjects become instrumental may influence the terms of educational objectives of the institution.

Although not much can be derived from the information gathered about the differences between the subject groups, a great amount can be deduced from the potential of the theoretical framework. First, if aroused attitudes are more easily manifested, teachers or institutions should provide facilities, materials, and activities which are conducive to the arousal of specific attitudes. Second, as the affective and cognitive components are dominant in the attitude structures, a state of unbalance with an intent to create attitude changes can begin to be created by concentrating on the action component. Efforts to change the sign of the cognitive component would follow next. With two of the components having signs contrary to the affective component, it would be reasonable to expect a change toward the desired direction. Third, the material that is taught and the activities that are carried out must be examined to orient the attitudes
of the students.

Scholars have postulated that reasoning is developed by the presentation of conflicting material. This is not challenged here; but if conflicting material is presented to the students it is not reasonable to expect that the attitudes will be formed in a consistent and well-organized manner. It would be a more reasonable to expect fluidity in the organization of attitudes.

Conclusions

The study has accomplished what it set out to do: the theoretical framework proved to be useful in the study of attitudes; the concept of attitude has been clarified and enriched; and the attitudes of students were surveyed and examined in terms of the framework.

It is true that the study of the usefulness of the framework to examine students' attitudes was limited by the population used in the study. It can also be stated that the frame of reference makes considerable demands on attitude measurement. Both poles of the dimensions must be measureable, and this was not satisfactorily done in this study. These limitations only serve as a challenge for future research.

This study is not the beginning and the end in itself. It serves as the first step in a series of studies which must succeed or fail to demonstrate the theoretical framework in its totality. The problems of bipolar measurements and of the zero-point will require primary attention. This must be followed by the development of scales to measure the action component more adequately. Further study is also needed in the role of arousal. Finally, the study of the propo-
sitions which were not examined in this study needs to be considered.
When all these preliminary steps are solved the framework could prove
its usefulness in areas related to behavioral and educational research:
abnormal psychology, clinical psychology, curriculum development,
formulation of objectives, and teaching and learning theories, to name
a few.

Despite the limitations of this study, useful information was
gathered, and the potential of the framework was demonstrated.
And best of all, the study has opened the way for further research in
the area of attitudes with the theoretical framework as the background.
APPENDIX A

MEANS AND STANDARD DEVIATIONS (z-SCORES)
<table>
<thead>
<tr>
<th>Attitude Components</th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
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<td>$\bar{X}$</td>
<td>$s$</td>
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<tr>
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TABLE 12
MEANS AND STANDARD DEVIATIONS (z-SCORES), COLLEGE 3 STUDENTS

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<th>Attitude Components</th>
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<td>.85</td>
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### TABLE 13
MEANS AND STANDARD DEVIATIONS (z-SCORES), GRADUATE STUDENTS

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<td>( \bar{X} )</td>
<td>S</td>
<td>( \bar{X} )</td>
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<td>National Defense - Action</td>
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<td>Politics - Action</td>
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<td>Religion - Action</td>
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<td>National Defense - Affective</td>
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<td>Politics - Cognitive</td>
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<tr>
<td>Religion - Cognitive</td>
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APPENDIX B

ORGANIZATION OF INDIVIDUAL SUBJECTS' ATTITUDES
TABLE 14
ORGANIZATION OF INDIVIDUAL FEMALE SUBJECTS' ATTITUDES TOWARD NATIONAL DEFENSE

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* Subjects who have well-organized attitudes.
TABLE 15
ORGANIZATION OF INDIVIDUAL MALE SUBJECTS’ ATTITUDES TOWARD NATIONAL DEFENSE

<table>
<thead>
<tr>
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<th>College 3</th>
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<td>+ + + *</td>
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* Subjects who have well-organized attitudes.
### TABLE 16

**ORGANIZATION OF INDIVIDUAL FEMALE SUBJECTS' ATTITUDES TOWARD POLITICS**

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* Subjects who have well-organized attitudes.
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* Subjects who have well-organized attitudes.
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* Subjects who have well-organized attitudes.
APPENDIX C

INTERCORRELATION MATRICES FOR THE ATTITUDE COMPONENTS
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**TABLE 21**

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APPENDIX D

T-SCORE MEANS FOR SUBJECT GROUPS

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## TABLE 26

**T-SCORE MEANS FOR SUBJECT GROUPS**

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APPENDIX E

MEANS AND STANDARD DEVIATIONS OF RAW SCORES
TABLE 27
MEANS AND STANDARD DEVIATIONS OF RAW SCORES, COLLEGE 1 STUDENTS

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TABLE 29

MEANS AND STANDARD DEVIATIONS OF RAW SCORES, GRADUATE STUDENTS

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APPENDIX F

MEASURING INSTRUMENT
Affective Component

Instructions In the following are a number of statements some of which represent extreme opinions. People have different opinions about such statements. Estimate to what extent you agree or disagree with each statement and indicate your opinion on the answer sheet as follows:

A - strongly agree
B - agree
C - uncertain
D - disagree
E - strongly disagree

1. Sometimes I feel that it is immaterial how one lives one's life.
2. The church overemphasizes the importance of awareness of one's sinfulness.
3. Want and misery are mainly due to people's own inactivity.
4. It is important for students to think about social and political matters.
5. Compulsory military service is the best method to maintain the strength of the armed forces at an optimum level.
6. Sometimes I feel that there are no values in the world in which to believe.
7. Reflecting on religious questions is harmful to youth.
8. Too much of the national income is spent on Social Security.
9. Participation in the activities of political organizations is important for students.
10. Patriotism is the prime virtue of a citizen.
11. Sometimes I feel I do not know what is right and what is wrong.
12. Strengthening the position of the church would have harmful consequences.


14. Only social climbers seek national and local positions of trust.

15. The abuse of patriotism can be distasteful opportunism.

16. It is more difficult at present than before to find a view of life which would give a solid footing.

17. Christianity is not any better than any of the other great religions.

18. Increasing social security is the most important task of society.

19. Politicians do not indulge in cheating and chicanery.

20. Only one’s national culture is vital for the individual.

21. It is a truth that no person can be trusted completely.

22. Conscience is the best guide of life.

23. The main result of social aid is an increase in laziness and inactivity.

24. A membership card of a political party is the best guarantee of promotion in one’s career.

25. Not enough attention is paid to the honorable past of our nation in our schools.

26. Nowadays, if one wants to keep hope, it is better not to think of the future.

27. It is not an important thing in life to prepare oneself for eternal life.

28. The duty of the state is to give everyone medical aid.

29. The active functioning of political parties is the best safeguard of democracy.

30. Fanatic patriots can do more harm than good.

31. The position of the individual in today’s society is getting continually worse.

32. The church never had very much to give man.
33. Tramps and bums do not deserve either sympathy or help from society.
34. Those who soon forget their former speeches and promises get along best in politics.
35. Neglect of the armed forces is a national crime.
36. Those in leading positions are not interested in the problems of the common man.
37. The church has too much power in our educational system.
38. Society has no duties toward the old; taking care of them is the duty of their children.
39. Persons who are successful in political affairs are also capable in other fields of life.
40. Patriotism is something of the past.
41. Most people do not care a bit for others.
42. The majority of clergymen do not believe what they preach.
43. Social security benefits is one of the best accomplishments of our legislation.
44. Congress functions much more effectively than one could conclude from the way newspapers write and people talk about it.
45. The American soldier belongs to the world's best.
46. The principles in which I believe are considerably different from other people's principles.
47. The Bible is Jewish folklore rather than divine communication.
48. The system of property taxes and health insurance are excessive burdens to the members of our society.
49. The political life of our country is not nearly so dissonant and unsound as it is often maintained.
50. The U.S. is the most powerful country in the world.
Cognitive Component

Instructions  The following list contains a number of things which people consider important to some degree. Estimate how important each of these is to you.

A - Extremely important
B - Quite important
C - Undecided
D - Not very important
E - Not at all important

1. Adaption to the interaction between people.
2. Freedom of thought, opinion, and behavior.
3. Encouragement of developments and reforms.
4. Maintaining high morals.
5. To be master of one's own time.
6. Interaction of individuals regardless of their social status.
7. Valuation of knowledge and truth.
8. Respect for the personality of individuals.
9. Personal relation to God.
10. To each individual the kind of education he wants.
11. Respect for traditions.
12. Self-discipline (control of one's desires and feelings).
13. Freedom to express different religious ideas.
15. Prosperity of all citizens.

17. Complete independence in making one's decisions.

18. Forming a clear picture of the world.

19. Valuation of the uniqueness of one's own culture.

20. Owning property.

21. Independence of other people's attitudes and opinions.

22. Freedom to criticize the authorities.

23. To be held in esteem by other people.


25. Each individual to be educated according to his abilities.

26. Valuation of ethical and moral principles.

27. Manifestation of a consistent view of life.

28. Protecting oneself against the outer world and other people.

29. Valuation of social status.

30. Complete independence of one's native country.

31. Equality of all races and nations.

32. Respect for the authority of teachers and leaders.

33. Material well-being of individuals.

34. Acceptance of any other individuals.

35. Spreading Christianity all over.

36. Inviolability of one's private matters and personal opinions.

37. Freedom to express affection and hostility.

38. Friendship among people.

39. Valuation of international cooperation and commitments.

40. Success and promotion in one's career.
II Part

A. Estimate how in your opinion supporting national defense influences the attainment of the goals presented below.

A - Prevents the attainment of the goal
B - Has no effect or helps very little
C - Helps to some extent
D - Quite helpful
E - Very helpful

1. Freedom of thought, opinion, and behavior.
2. Encouragement of developments and reforms.
3. Maintaining high morals.
4. Interaction of individuals regardless of their social status.
5. Respect for the personality of individuals.
6. Personal relation to God.
7. Respect for traditions.
8. Freedom to express different religious ideas.
10. Prosperity of all citizens.
11. Complete independence in making one's decisions.
12. Valuation of the uniqueness of one's own culture.
13. Freedom to criticize the authority.
14. To be held in esteem by other people.
15. Complete independence of one's native country.
16. Equality of all races and nations.
17. Material well-being of individuals.

18. Freedom to express affection and hostility.

19. Friendship among people.

20. Valuation of international cooperation and commitments.

B. Estimate what effect in your opinion participation in political activities has on the attainment of the following goals.

A - Prevents the attainment of the goal
B - Has no effect or helps very little
C - Helps to some extent
D - Quite helpful
E - Very helpful

1. Adaption to the interaction between people.

2. Freedom of thought, opinion, and behavior.

3. Encouragement of developments and reforms.

4. Maintaining high morals.

5. Interaction of individuals regardless of their social status.

6. Respect for traditions.

7. Freedom to express different religious ideas.

8. Prosperity of all citizens.

9. Complete independence in making one's decisions.

10. Valuation of the uniqueness of one's own culture.

11. Owning property.

12. Freedom to criticize the authorities.

13. To be held in esteem by other people.

14. Valuation of ethical and moral principles.
15. Valuation of social status.
16. Freedom to express affection and hostility.
17. Friendship among people.
18. Success and promotion in one's career.
19. Valuation of devotion and reverence.
20. Valuation of international cooperation and commitments.

C. Estimate what effect, in your opinion, attending services and religious meetings has on the attainment of the following goals.

   A - Prevents the attainment
   B - Has no effect
   C - Helps to some extent
   D - Quite helpful
   E - Very helpful

1. Adaptation to the interaction between people.
2. Freedom of thought, opinion, and behavior.
3. Maintaining high morals.
4. Interaction of individuals regardless of their social status.
5. Valuation of knowledge and truth.
6. Freedom to express different religious ideas.
7. Valuation of devotion and reverence.
8. Valuation of aesthetic beauty.
9. Forming a clear picture of the world.
10. To be held in esteem by other people.
11. Manifestation of a consistent view of life.
12. Valuation of social status.
13. Complete independence of one's native country.


15. Spreading Christianity all over.

16. Success and promotion in one's career.

17. Respect for traditions.

18. Prosperity of all citizens.

19. Equality of all races and nations.

20. Freedom to express affection and hostility.

**Conative Component**

*Instructions* Please read each statement carefully. Circle the letter whose correspondent statement best completes or best answers it.

1. I attend a church service
   A - almost every week
   B - at least once a month
   C - several times each year
   D - once or twice each year
   E - hardly ever.

2. Have you acted as a collector in any charity collections during the year?
   A - yes
   B - no

3. How many times have you attended political discussions during the past year?
4. How many times have you attended patriotic festivals, national or local?
   
   A - not once
   B - once
   C - 2-3 times
   D - 4-5 times
   E - more than 5 times

5. Do you act as an instructor in some voluntary organization (scouting, Bible School, etc)?
   
   A - yes
   B - no

6. I partake of the Lord's Supper (Communion)
   
   A - more than once each year
   B - about once each year
   C - about once in two years
   D - less than once in two years
   E - not at all

7. Have you acted, during the past year as the organizer or performer on some occasion meant for the old, invalids, or sick?
A - more than 5 times
B - 4-5 times
C - 2-3 times
D - once
E - not at all

8. Are you, at present, a member of some political organization?
   A - yes
   B - no

9. How many times during the past year have you acted as a volunteer on organizing patriotic festivals?
   A - more than 5 times
   B - 4-5 times
   C - 2-3 times
   D - once
   E - not at all

10. How many times have you borrowed and read a political magazine in the past year?
    A - more than 5 times
    B - 4-5 times
    C - 2-3 times
    D - once
    E - not at all.
11. I attend religious meetings (other than the main service).
   A - almost every week
   B - at least once each month
   C - several times each year
   D - once or twice each year
   E - hardly ever

12. Are you a present a member of an organization that helps support the poor?
   A - yes
   B - no

13. Are you a member of a club or association that deals with patriotic questions?
   A - yes
   B - no

14. How many times, during the past year, have you bought or borrowed newspapers, books or magazines, to read articles on politics?
   A - whenever I have had the opportunity
   B - more than 10 times, but not regularly
   C - 6-10 times
   D - 2-5 times
   E - once or not at all

15. How many times, during the past year, have you listened to speeches or attended lectures on total national defense or on the protection of the civil population?
   A - more than 5 times
   B - 4-5 times
   C - 2-3 times
   D - once
   E - not at all
16. I listen to a taped or broadcast religious talk
   A. almost every week
   B. at least once each month
   C. several times each year
   D. once or twice each year
   E. hardly ever

17. Did you give a parcel to a family in need in the past year?
   A. yes
   B. no

18. Are you a member of a social club, or are you committed to one?
   A. yes
   B. no

19. How many times during the past year have you tried to "convert" a friend of yours to become a supporter of your own political ideas?
   A. more than 5 times
   B. 4-5 times
   C. 2-3 times
   D. once
   E. not at all

20. How often have you, during the past year, attended speeches, or lectures on national defense, national culture, etc.
   A. more than 5 times
   B. 4-5 times
   C. 2-3 times
   D. once
   E. not at all
21. Have you during the past year joined any common enterprise to help people in need?
   A - yes
   B - no

22. In what way do you take part in the activities of the religious group with whom you associate most often?
   A - I take a active part in them.
   B - I participate in them, sometimes
   C - I often attend them
   D - I attend them every now and then
   E - not at all

23. Have you taken an active part in the organization of a political campaign (in the form of stickers, meetings, etc.)?
   A - yes
   B - no

24. Do you usually try to see military parades, if you have a chance?
   A - yes
   B - no

25. Have you written or read out a paper on questions of national defense or culture during the past year?
   A - yes
   B - no
Measurement of Arousal

Instructions Please consider how much you have thought about the following questions with your friends or by yourself.

A - very often
B - often
C - sometimes
D - seldom
E - never

1. The idea of sin.
2. The socialization of production machinery.
3. The position of the old.
4. The arms expenditure for national defense.
5. The behavior of students outside of schools.
6. Young people and religious matters.
7. The development of society.
8. The care of the poor.
10. Teaching and education.
11. The position of the church in society.
12. Capitalism and communism.
13. The doctrines of Christianity.
14. The raising of a national spirit.
15. Discipline at school.
16. The doctrines of Christianity.
17. The activities of Congress.
18. Questions about child abuse.
22. National and local elections.
23. The problems of the rural parts of the country.
24. Protection of the civil population.
25. Advantages and disadvantages of the teaching profession.
26. Life after death.
27. Taxation.
28. Unemployment.
29. Compulsory military service.
30. Parents and home-education.

If you have any comments you would like to make, please use the space provided below.

Thank you very much!
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AUTOBIOGRAPHICAL STATEMENT

Name: Alberto Mario Belo dos Santos

Date and Place of Birth: August 12, 1943; Luso, Angola

Undergraduate and Graduate Schools Attended:

1961 - 1964 Helderberg College, Somerset West, South Africa
1961 - 1964 University of South Africa, Pretoria, South Africa
1971 - 1972 Andrews University, Berrien Springs, Michigan
1975 - 1976 Andrews University, Berrien Springs, Michigan

Diplomas and Degrees Awarded:

B.A. in Theology: Helderberg College, 1964
M.A. in Education, Andrews University, Berrien Springs, 1972
Ed.D. Andrews University, Berrien Springs, 1977

Professional Experience:

1965 - 1971 Teacher and Principal, Songa Secondary School, Zaire
1972 - 1975 Teacher and Principal, Kivu Adventist College, Zaire
1975 - 1976 Executive Secretary, Institute for Family and Community Studies