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The Relationship of Adaptability to the Alteration of prejudice toward American Indians

Donald H. DeKrey

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THE RELATIONSHIP OF ADAPTABILITY
TO THE ALTERATION OF PREJUDICE
TOWARD AMERICAN INDIANS

by

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This dissertation submitted by Donald H. DeKrey in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in the University of North Dakota, is hereby approved by the Committee under whom the work has been done.

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CHAPTER I

INTRODUCTION AND STATEMENT

OF THE PROBLEM

The factor of adaptability in human personality has long been a subject of experimentation and speculation in psychology. Adaptability and rigidity as opposite forces in personality are assumed by many clinical psychologists to be established personality characteristics which must be considered in the evaluation of personality dynamics. Much of the work done in psychology on the nature and status of adaptability as opposed to rigidity in human behavior is of a highly theoretical but intuitive nature.

Psychological concepts of rigidity have become increasingly common in every-day usage. It is not uncommon to hear persons spoken of as being "too rigid to change," or that they are "too set in their ways." Conversely, we hear other persons described as "highly adaptable," which usually means they are open to new ideas and easily fit into new situations. Rigidity is popularly a "bad" aspect of personality and adaptability a "good" thing. Rigidity is usually associated with the highly opinionated and the aged, while adaptability is reserved for the more pliable individual and with youth. That these popular definitions of the terms "adaptability" and "rigidity" are very similar to the meanings assigned to these terms by psychologists is pointed out by Rokeach (1960).

Most of the current research on adaptability and rigidity has been geared to the purpose of defining the terms, validating the particular measuring instrument being used, and then applying this measuring instrument to various populations. With the exception of a few investigators, little has been done with the concepts in the way of relating these ideas to their assumed function in personality: that of making it more or less possible for an individual to alter his attitudes, his prejudices, or his approach to a particular life situation.

The purpose of the present investigation was to explore the possibility of a relationship between adaptability and rigidity and the alteration of attitudes of prejudice.

I. THE PROBLEM AND ITS SIGNIFICANCE

This research was designed to investigate the effect that an "attitude altering" motion picture film would have on individuals who were adjudged to be "adaptable" or "rigid." Measures of adaptability were obtained through the use of three well-known measures. A scale was prepared to assess the particular attitude of prejudice being investigated: prejudice toward American Indians. The investigation also included measures of the subjects' social contact with American Indians in an attempt to discover any relationship between contact and alteration of prejudicial attitudes. A further measure was obtained of the subjects' degree of acceptance of the attitude altering film as a body of facts contrary to his prejudicial attitudes.

There are numerous reasons why problems in the area of attitude change and rigidity need to be explored. In the thinking of Bonner (1961), adaptive behavior is a basic function of human adjustment.

He writes:

Adaptive behavior is to a surprising degree a product of socialization--of instruction, learning and enculturation. Although beneath most instrumental or adjustive behavior is found a bedrock of needs, drives and purposes, the direction which the behavior determined by it takes is largely conditioned ...by cultural and situational conditions. Furthermore, adjustive behavior is the act or process securing his survival or the achievement of his ends (pp. 348-349).

A great deal of research has indicated that an individual's prevailing attitudes are highly resistant to change. However, again we rely largely on speculation as to the reason for this observation. It appears that we must explore the human personality in an attempt to discover why attitudes are so resistive to change, and when they are changed, why these changes are so relatively short-lived.

Formation and alteration of attitudes are generally conceived of as important aspects of the educative process. Any research planned to illuminate the fundamental processes behind resistance or adaptation to new attitudes would be of great benefit to educators.

Psychotherapy is seen by many psychologists as a process in which personality changes take place that include the replacement of "unhealthy" with "healthy" attitudes. Consequently, research that will clarify basic personality configurations or traits which will aid the therapist in selecting "good risks" from "poor risks" in regard to attitude change in therapy would be of great assistance to the

therapist in selecting patients from whom he can expect optimum therapeutic gain.

A great mass of popular and scientific information referring to "defectors" and persons partially "brain-washed" during the Korean War reflects a need to predict the type of individual who can have his attitudes radically reordered.

II. HYPOTHESIS TO BE TESTED

The research thus far performed in the areas of adaptability and attitude change, as will be discussed in Chapter II, has tended to establish three main conclusions:

- 1) Attitudes of any kind are highly resistant to change, particularly attitudes of prejudice.
- 2) A high percentage of individuals have been delineated as "adaptable" or "rigid" on the basis of numerous testing devices ranging from perceptual tests to inventories.
- 3) The relationship, if any, between (1) and (2) above has not been reliably demonstrated.

The present research was designed primarily to involve the third conclusion cited above. An attempt was made to effect an attitude change in the area of prejudice and, following this, to establish whether a relationship could be hypothesized between this change and the presence of adaptability. Consequently, the primary hypothesis of this study was:

College students who prove to be adaptable as measured by the Authoritarian F-scale and two measures of an Einstellung type will show the greatest tendency toward reduction of attitudes of prejudice toward American Indians when presented with a film conducive to this attitude change.

Other subsidiary questions were also considered in this study.

These can be stated in the following manner:

- 1) Can alteration of prejudicial attitudes be shown to be related to degree of social contact with American Indians?
- 2) Can persistence of prejudicial attitudes be attributed in any way to an individual's refusal to accept information that is contrary to his usual mode of thinking?

III. THEORETICAL FOUNDATION OF THE STUDY

In Freud's writings (1953) are found comments to the effect that the neurotic has great difficulty in altering his adjustment due to his "rigidity" (vol. 2, p. 116). Freud's position was that rigidity was part of a neurotic adjustment and that adaptability was a necessary adjunct to a healthy personality. Fenichel (1945) stated, "in therapy it is particularly urgent that the personality first be released from" its rigidity (p. 472). In the same area of thinking, Newcomb (1959) assumed that progress in psychotherapeutic treatment was associated with changed attitudes toward other people. Combining the theoretical points of view of these three authors, we find an assumption that adaptability in the human personality is of utmost importance if attitudes are to be altered. A reasonable conclusion that can be drawn from the foregoing authors' positions is that adaptability facilitates attitude change and rigidity inhibits attitude change.

More recently, Brand (1954) stated:

In general, severe repression of certain tendencies such as aggression toward authority, fear, weakness, or elements of the opposite sex in oneself, find their parallel in an externalized image of these tendencies as projected onto others and in a narrowness and rigidity of consciousness. There is more

than an empirical affinity between...rigid stereotyping on the one hand, and the intolerance of ambiguity on the other; there is a similar affinity between the orientation toward love and the acceptance of drive-impulses, on the one hand, and a general flexibility, on the other. The struggle between these two orientations is basic to our civilization; its individual members display these two patterns in varying proportions and changing configurations (pp. 536-537).

To state further his theoretical position in specific regard to the alteration of attitudes of prejudice, Brand (1954) wrote that he had been led:

to expect prejudice to be associated with perceptual rigidity, inability to change set, and tendencies to primitive and rigid structuring of ambiguous perceptual fields. Well-tested experimental approaches are available for these variables. It only remains to use them in connection with susceptibility to prejudice (p. 521).

The present study adopted the combined positions of Freud, Fenichel and Newcomb and the specific theoretical position of Brand. This theoretical position, that adaptability is related to prejudice and that adaptability is necessary before prejudicial attitudes can be altered, constitutes the theoretical framework for this study.

IV. SUMMARY

The primary purpose of the present research as elaborated in this chapter is to investigate the theorized relationship between attitudes of prejudice and psychological measures of adaptability and rigidity. The significance of this study was related to education, psychotherapy and propaganda methods. The specific hypothesis to be tested was outlined along with subsidiary questions. The theoretical positions of several authors were related to the hypothesis of this investigation.

CHAPTER II

REVIEW OF THE LITERATURE

A great deal of research has been produced in the areas of personality "adaptability" as opposed to "rigidity" as well as in attitude formation and change. However, only a few studies are reported which consider either social distance as related to attitudes or the effect known as "dissonance" which occurs when an individual receives information that is contrary to his attitudes or usual modes of thinking. A review of the literature reveals no specific studies dealing solely with prejudicial attitudes as reflected toward the American Indian.

In the following review, only those studies were considered which had pertinent bearing on either the methods used or the theoretical foundation of this research study. Each area of application to this study will be considered separately.

I. ADAPTABILITY AND RIGIDITY

Attempts to isolate and measure the factor of "adaptability" as opposed to "rigidity" in human personality has taken many and varied approaches both from the standpoint of theory as well as experimental investigation.

That adaptability and rigidity have long been considered to be important personality factors is reflected in the writings of many of the early psychoanalytic theorists. Although few psychoanalysts have used the terms "rigidity" or "adaptability," they have been greatly

concerned with maladaptive, repetitive behavior which is currently described as "rigid."

In the early writings of Freud (1933), the "pleasure principle" was basic to his personality formulations. He felt that human behavior was largely governed by a need to seek pleasure, especially sexual gratifications, and to avoid pain or displeasure. However, Freud gradually became convinced that the tendency to repeat was even stronger than the pleasure principle. This tendency to repeat was called the "repetition compulsion" by Freud (1953, vol. 4) and he wrote that it was a "principle powerful enough to overrule the pleasure principle" (p. 391). Freud found it expressed in recurrent dreams, the compulsive handwashing of some neurotics, the retelling of certain experiences, and the rigid adherence to behavior patterns.

Another type of rigidity is described by Freud (1953, vol. 2) in his concept of the fixation. A "fixation" is termed by Freud as "a peculiar psychic inertia hostile to change or progress" (p. 160). According to Freud, these occur when there is a strong attachment of the "libido" to an object or to a stage of development so that some or all of the libido remains permanently bound to the object or developmental stage. A neurotic is said to be tied to his past and consequently alienated from his present or future, or as Freud said, he is "wrecked by his rigidity" (1953, vol. 2, p. 116).

Adler (1930) showed a concern for repetition of behavior in his formulation of "life style." He felt that rigidity of life style was more typical of the neurotic, or as he called them, "nervous characters." These neurotics, Adler believed, live constantly under anxiety inducing

conditions and adhere so rigidly to their maladaptive concepts that these become accentuated and create a rigid, non-adaptable life style. In their discussion of Adler's Individual Psychology, Murphy and Jensen (1932) summarized the distinction between the character of the nervous individual and the healthy individual in the following way:

...the character of the relatively healthy is as rich in variation as life itself, elastic, adjustable, friendly to society. The nervous character, on the contrary, is always narrow, limited, rigid, self-conscious and anxious, schematic...inelastic, unbending, enmeshed by his fictions which blind him to reality (pp. 218-219).

More recently, we find that Werner (1940) accepted rigidity as a central construct in his comparative-developmental approach. He theorized that increasing development was marked by increasing differentiation of parts, progressive hierarchization of parts, and increasing differentiation between the organism and the outer world. This held for ontogenetic development (development of the individual) and phylogenetic development (development of a race, type or species). He defined rigidity as lack of variability in response or as lack of adaptability in behavior. "Rigidity," Werner said, "decreases with ontogenetic as well as with phylogenetic development" (1946, p. 43). This implies that more rigid behavior should be seen in the young child as well as in the primitive society, and should be more apparent in species that are lower on the evolutionary scale.

Not all writers have taken the stand that rigidity of behavior is always a "bad" thing. Alexander (1951) stated that "individual development proceeds on the principle of economy of energy by which it is as far as possible conserved and the necessities of life secured with the

minimum of expenditure of energy" (p. 175). He defined learning as experimentation and repetition leading to habituated behavior. The advantage of habituation was speed of reaction and conservation. But, he said, "Its disadvantage is its rigidity" (p. 124).

In the general area of psychotherapy, many theorists and investigators have been concerned with the concept of rigidity. Both Freud (1953) and Fenichel (1945) took the stand that personality rigidity was a factor that had to be overcome before significant change in an individual's adjustment could take place.

Sullivan (1953) wrote, "The self system, unlike any of the other dynamisms...is extraordinarily resistant to change by experience" (p. 190). In other words, Sullivan felt that an individual may adhere rigidly to the particular security operations he has developed in spite of their inability to relieve him from anxiety. In Sullivan's extensive work with schizophrenics, he felt that the rigid adherence to their psychotic defenses made them very difficult to treat psychotherapeutically.

Newcomb (1959) discussed resistance to change in psychotherapy as "defensiveness." He felt that the rigid adherence to "unhealthy" attitudes must be broken down before psychotherapy could be effective.

Turning from the theoretical approach to rigidity and adaptability to a more objective, investigative approach, we find that many research papers are centered about these concepts, in particular the work of Luchins (1959), Adorno et. al. (1950) and Rokeach (1960).

Luchins (1959) and his staff approached the problem of adaptability from the standpoint of "problem-solving rigidity." Luchins found

that about 50 to 70 per cent of the populations they studied (most of whom were high-school and college students and student nurses) would exhibit the phenomenon of "rigidity" when given a series of problems of a prescribed type. In these experiments the subjects were presented with a series of arithmetic "water-jar" problems which were solvable in exactly the same manner. At the end of this series of problems a "set" had been produced in many of the subjects making it impossible for them to solve a similar problem in a slightly different manner which was considered an "easier" or "short-cut" method. Subjects in whom this set was produced were defined by Luchins to be "rigid" or non-adaptable." Luchins also worked with "hidden-word" anagram Einstellung tests which were designed in the same manner as the water-jar test. He reported no difference in the results of these two types of test with the exception that stutterers showed a higher degree of set when presented with the hidden-word Einstellung as a verbal task. However, it is apparent from his report on his investigations, that he confined nearly all of his work to the "basic problem," the water-jar Einstellung.

Luchin's studies suggested a slight increase in rigidity with age, which he described as probably being a curvilinear relationship. He also found a slight negative relationship between I.Q. and rigidity, and a slightly higher incidence of rigidity in women than in men. Although none of Luchin's critics have questioned his findings of more rigidity in women than in men, it might easily be conjectured that this could be related to the "mathematical" nature of the basic problem. Educators (Lane and Beauchamp, 1959) and psychologists (Ruch, 1958) are

quite familiar with the "natural aversion" women express for mathematical problems as well as their superiority in verbal areas.

Rokeach (1943) compared the water-jar Einstellung with ethnocentrism and found that high scorers (indicating high prejudice) on the "E" (ethnocentrism) scale showed a significant tendency to fail the problem which could not be solved by the "set" method (problem 9) when compared with low scorers on the E-scale. He concluded that this type of rigidity was related to prejudicial attitudes.

Ainsworth (1959) used the water-jar Einstellung test on Uganda students and reported less "flexibility" when the students were under stress, such as preparing for an examination. He also found that persons with less acculturation tended to be more rigid in problem solving than those persons with more acculturation. This might well be interpreted (although it was not by Ainsworth) as providing evidence to support the position of Werner that rigidity decreases with phylogenetic development. Another interpretation might be that acculturation, or learning western ways, means learning arithmetic.

In a personal communication with Rokeach (1960), Witkin reported a study relating his work to the problem-solving Einstellung:

Beverly Goodman of our laboratory gave the embedded-figures to a group of college students who also went through the water-jug Einstellung situation. Two measures of performance for the Einstellung situation were used, one reflecting susceptibility to set, the other relating to capacity to overcome set. Whereas the first type of measure was not related to perceptual scores, there was a significant correlation of .653 between measures of the second kind and perceptual scores. In other words, subjects with a more field dependent (less analytical) mode of perceiving found it more difficult to overcome set (Rokeach, 1960, p. 269).

Much of the research related to the water-jar Einstellung has been inconclusive regarding the test's alleged purpose: that of measuring "rigidity." Cowan and Thompson (1951) considered rigidity to be a general factor in personality organization and functioning which could not be delineated through individual tests. They related measures of rigidity to adjustment as measured by the Bell Adjustment Inventory and found that of several measures of rigidity used in their study, only Rorschach indicators of rigidity had a fairly high relationship in differentiating groups that had been pre-defined by the water-jar Einstellung as being "rigid" or "adaptable."

Levitt and Zuckerman (1959) reviewed 30 recent studies bearing on the validity of the water-jar Einstellung as a measure of personality rigidity and compared their findings with an earlier one involving 31 studies. Their more recent findings substantiated those of the earlier review; again concluding that the water-jar Einstellung is "invalid as a measure of rigidity, and it has serious psychometric shortcomings no matter what it may be measuring" (p. 379). By psychometric shortcomings the authors were referring to the many different ways in which "rigidity" is defined on the basis of the same test. Some investigators assume rigidity to be present if the crucial or "breaker" problem is not solved by the subject. Others have used a combination of rigid and non-rigid solutions to the last five problems to categorize their subjects as rigid or non-rigid. Some studies have attempted to delineate degrees of rigidity on the basis of the number of problems that have been solved by the "short method" including or excluding the "breaker" problem. Consequently, the manner of categorizing a subject

as "rigid" or "non-rigid" is often quite subjective and considered by the authors to be methodologically inaccurate in many cases. Their general feeling was that few of the studies that used the water-jar Einstellung were psychometrically equivalent and many may have been testing different things.

The investigations of Adorno, Frenkel-Brunswik, Levinson and Sanford (1950) approached the concept of adaptability in a different manner. Their work on the "authoritarian" or "rigid" personality was an outgrowth of their studies designed to measure the degree of anti-semitism and "fascism" present in certain American groups. They found that they could isolate authoritarian attitudes with high reliability using an inventory of "authoritarian" statements to which the subject would register his degree of agreement or disagreement. These workers describe the "authoritarian personality" as a rigid, unyielding individual who will not readily alter his attitudes. The authoritarian personality is further described as one who makes frequent use of stereotypes in his political perceptions and judgements; he is sympathetic with the use of violence against his enemies and he sharply distinguishes between his "ingroup" and the "outgroup" which he sees as being a menace to his security. At the other extreme is described the "democrat" who is sympathetic with the outcasts, the underprivileged and the discriminated-against ethnic minorities. He thinks that wealth is not a great good and that science is the source of all progress. In other words, he believes the opposite as the authoritarian personality type. He is said to be more thoughtful, more flexible and more realistic.

The general concept of "authoritarianism" as outlined by Adorno et. al., has been critically reviewed by Christie and Jahoda (1954). In this critical review, edited by Christie and Jahoda, Shils pointed out that both the "high" and the "low" scorers on the authoritarian F-scale may well represent highly similar personality types. Shils said:

...we have contended that...the investigators have failed to observe that at the Left pole of their continuum, there is to be found an authoritarianism impressively like the authoritarianism of the Right (p. 38).

The Rightist authoritarians are correctly asserted to be "intolerant of ambiguity"...Their beliefs must be unqualified; there must be no doubt and there must be no restrictions to the validity of their beliefs...it is certainly justifiable to regard this characteristic as a very important one in Leftist authoritarianism (p. 41).

The above position of Shils, that either a "high" or a "low" scorer on the F-scale could represent authoritarian rigidity, is supported by an entirely different theoretical approach offered by Brand (1954). Brand maintained that "compensation of rigidity--by often exaggerated--flexibility is probably as much present as is positive correlation between different aspects of rigidity" (p. 529). This position of Brand would explain the "low" F-scale scorer as actually representing an authoritarian person who was overcompensating.

Further evidence that the authoritarian personality is not really different from the non-authoritarian personality is offered by Weiner and McGinnies (1961). They selected 20 "authoritarian" and 20 "non-authoritarian" subjects from a total of 300 persons given the F-scale. Using ambiguous stimuli, these investigators attempted to measure whether the authoritarian subjects were more conforming when placed with two "experimental confederate subjects" than were the non-

authoritarian subjects. Weiner and McGinnies concluded that there was no significant difference between the two groups of individuals and that both authoritarian and non-authoritarian subjects tended to conform.

Rokeach (1960) has presented extensive work both in the criticism of the concept of authoritarianism and the presentation of his own system of delineating the rigid from the non-rigid individual. He offers new terms which he labels "closed-minded" and "open-minded" as being more descriptive of the personality syndromes usually classified as authoritarian or non-authoritarian. Rokeach has correlated his "Dogmatism" scale with the F-scale and found that on seven groups of subjects from the United States and England, his correlations ranged from .54 to .77. Consequently, it is concluded that there is considerable overlapping of what is being tested by the two measures. However, Rokeach (1960) takes the same stand as Shils (page 15), that the extremes measured by the F-scale may not be different. He substantiated his belief by investigating two groups whom he considered clearly Right-oriented and clearly Left-oriented. These groups were made up of Michigan and New York Catholics (Right-oriented) and New York non-believers and English Communists (Left-oriented). These two groups were clearly differentiated for Rokeach as "right" and "left" on the F-scale. However, he writes:

The findings on dogmatism and opinionation clearly contradict (this). Even though the rightist and leftist groups score at opposite poles on F and ethnocentrism, they both generally score high on dogmatism and opinionation. And although the English Conservatives and Communists are also at opposite poles on F and ethnocentrism, no relationship is apparent between radicalism on the one hand and dogmatism and opinionation on the other (p. 117).

As a result of his findings, Rokeach concludes that the F-scale is measuring something more like "ideological content" than it is dogmatism or rigidity. He feels that a low "F" score might reflect a dogmatic individual as well as a high "F" score.

Other work in the clinical area which attempts to delineate the rigid individual from the more adaptable, includes the work of Goldstein (1943). His primary investigations consider the degree to which an individual can change established patterns in terms of form and color or objects. Goldstein assumed rigidity to be a variable that could be isolated in persons with neurological damage, schizophrenics and the feeble minded. He said that "rigidity is a phenomenon which we meet again and again in pathology, but which also plays a great role in normal behavior" (p. 209). According to Goldstein, defect in the higher mental processes resulted in impairment of the "abstract attitude." Such defect caused individuals to act in a concrete, rigid manner.

McGaughran and Moran (1956) have criticized the work of Goldstein in regard to his assumption that schizophrenics have a loss of the "abstract attitude." Their subjects were 37 pairs of chronic paranoid schizophrenics and non-psychiatric patients who were matched for age, educational level and estimated test intelligence. The task used was the Rapaport modification of the Goldstein-Gelb-Weigl Object-sorting-test. The test was scored by two different methods, the first to measure losses in social communication, the second to measure losses in abstractive ability. When compared with the non-psychiatric group, the schizophrenic group demonstrated a loss of social communication.

However, there was no evidence of impairment in abstractive ability. The authors further noted that differences in abstractive ability were clearly more closely associated with estimated test intelligence and education than with the presence or absence of schizophrenia. Consequently, it can be seen that there is some question of the definitive ability and perhaps even the clear-cut existence of Goldstein's concept of the "abstract attitude."

Witkin, Lewis, Hartzman, Machover, Meissner and Wapner (1954) have approached the problem of rigidity from a perceptual standpoint using a battery of perceptual tests including such measures as embedded figures, rod and frame tests and chair-window tests. The results of these studies led to a body of findings which were related to a personality continuum ranging from "field-dependent" to "field-independent." According to Witkin et. al.:

Field-dependent persons tend to be characterized by passivity in dealing with the environment; by unfamiliarity with and fear of their own impulses, together with poor control over them; by lack of self-esteem; and by the perception of a relatively primitive, undifferentiated body image. Independent or analytical perceptual performers, in contrast, tend to be characterized by activity and independence in relation to the environment; by closer communication with, and better control of, their own impulses; and by relatively high self-esteem and a more differentiated, mature body image (p. 469).

As previously indicated in this chapter, a relationship has been demonstrated (Rokeach, 1960) between the tendency toward rigidity on the water-jug Einstellung and Witkin's measures of "field dependency."

II. ATTITUDE CHANGE

A great deal of theory and research has been accumulated in the area of attitude. Attitude studies cover formation, change, permanence of change, and measurement of attitudes toward nearly every conceivable aspect of human personality, groups of persons, ideas and objects (Newcomb, 1959; Sherif, 1935; Klineberg, 1958, and Lindzey, 1954). A great many of these studies have been confined to anti-semitism, racial groups and social subdivisions.

Psychoanalytic theory offers an explanation of the attitude of prejudice which is probably based on the instinctivist psychologist's notion of native aggressiveness. Freud spoke of a "death instinct" as referring to a universal need to express hostility against someone, and Menninger (1938) has used it as an explanation of many cases of suicide, in which the aggression, although apparently directed against oneself, is really a means of revenge against some other person.

Alexander (1937) believed that the early frustrations of childhood create such emotional tensions that most individuals in later life tend to develop greater resentments and aggressions than are warranted by their actual life situations. A frequent result, according to Alexander, is a projection of this hostility onto others who become an outlet or "scapegoat" for this repressed hostility and resentment. The same point of view is expressed by Dollard (1937) in his study of Negro-white relations in the South. He accepts the idea that all persons have frustrations due to the very fact of growing up in a culture and are all seeking an outlet for this frustration. Consequently,

prejudicial attitudes are easily developed.

Newcomb (1959) and Klineberg (1958) consider prejudicial attitudes to be present in nearly all social groups, but state that it is not inherent in human nature. Their position is that prejudice is a learned social reaction and can, therefore, be lessened or eliminated. They feel that the prejudicial attitude will be learned in any social situation in which the feeling of prejudice is advantageous to the learner for either satisfaction of personality or economic needs.

Probably the most ambitious attempt at measuring attitudes is that of Adorno et. al. (1950) in their studies of prejudicial feelings. Their studies involved the creation of the well-known Ethnocentrism or "E" scale for the purpose of measuring the degree of general prejudice in various groups. They adopted the Likert scaling system in which an individual is asked to register his degree of approval or disapproval of a statement. They reported the reliability of the E-scale to be about .85 on the average. They further reported a correlation of about .53 on the average with their F-scale, concluding that attitudes of prejudice were related to overall authoritarianism.

Rokeach (1960) presented an interesting study on prejudice in which he concluded that perhaps above 80 per cent of measured prejudice is actually a reflection of agreeing or disagreeing with the belief system of the persons toward whom prejudice is shown. In other words, he found in general that a white person will be "unprejudiced" toward a Negro if the Negro's belief system is the same as that of the white's. Rokeach found in his study that only 2 to 20 per cent of the persons tested responded solely to race or ethnic group. Rokeach's

position is a radical departure from the usual thinking of social scientists.

The literature reveals little in the way of convincing evidence of attitude change. Rokeach (1960) reports that religious belief systems showed little if any alterations, even in cases where individuals married outside of their faith and were "converted." He found, for example, that a Methodist who had been converted to Catholicism by his spouse would, even after several years, have a belief system more similar to Methodists in general than he would have to Catholics as a group. Of course, it must be observed that these findings support his stand that prejudice is based on belief systems rather than hostility toward a particular group.

Some research has reported fairly lasting changes in attitude brought about either by experimental method or alteration of environment. Such a study is that of Newcomb (1959) in his long-term "liberalism-conservativism" study done at a small women's college. He found that exposure to the college environment tended to make the young women he studied more "liberal" upon graduation than they were at the time of their matriculation. He found too, in follow-up studies, that in time these women more or less reverted to their earlier attitudes of "conservativism." However, it could be conjectured that this particular college was quite liberal in its general outlook, and only those women who had a predisposition toward liberalism tended to remain in the college.

The general feeling of social scientists toward attitude alteration was well summarized by Rokeach (1960) when he wrote:

An attitude or value is seen to be a stubborn thing, rooted in irrational motives and extremely difficult to change. Many social ills are attributed to this fact, and researchers in this field probably agree that changes in attitudes and values are extremely rare (p. 336).

III. DISSONANCE THEORY

An interesting sidelight to attitude study is presented by Festinger (1957), who theorizes that an individual will attempt to maintain his attitudes or opinions, occasionally to the extent of distorting his perceptions. Festinger refers to this as a need in the individual to maintain "cognitive consonance" or to avoid "cognitive dissonance." This rather recent psychological theory is gaining a great deal of popularity since it will often explain lack of change in attitude in the face of convincing evidence to the contrary. According to Festinger, an individual will often tend to reject ideas or information that come to his attention that will result in dissonance to his belief system. In these instances the individual may refuse to see any contradiction to his attitudes in new material, regardless of how convincing it may be. According to Festinger, when an individual uses this mode of maintaining consonance, the result may be blatant perceptual distortion in an effort to maintain preconceived ideas or attitudes intact.

Brand (1954) advanced an idea very similar to Festinger's when he wrote:

In order to reduce conflict and anxiety and to maintain stereotyped patterns, certain aspects of experience have to be kept out of awareness. Assumptions once made, no matter how faulty or out of keeping with reality because of neglect of relevant aspects, are repeated over

and over again and not corrected in the face of new evidence (pp. 518-519).

Another aspect of dissonance theory was pointed out by Festinger and Carlsmith (1959) in that if a person were induced to do or say something that was inconsistent with his private beliefs, he would tend to change these beliefs. It was also found that the greater the pressure used to induce the overt behavior, the weaker the tendency would be to show the alteration of private opinion. In other words, if a person was induced to commit himself to some idea with a minimum of reward, he would tend to alter his private (and inconsistent) opinion in order to maintain cognitive consonance.

Yet another approach to substantially the same idea as Festinger's Cognitive Dissonance theory is termed "belief inconsistency" and is reported by McGuire in Rosenberg, Hovland, McGuire, Abelson and Brehm (1960). McGuire theorized that a "person tends to minimize logical discrepancies between belief and belief on related issues, and between belief and wish on the same issue" (p. 95). McGuire felt that "wishful thinking" would allow an individual to distort his experiences in such a way that he could have inconsistent beliefs or information without their changing his belief on a particular issue. In other words, it would be possible according to McGuire's reasoning, to present evidence to an individual that was highly conducive to a particular attitude change and have that information accepted by the individual without its changing his general attitude.

IV. SUMMARY

The preceding chapter reviewed the literature regarding the theories and the psychological research that was pertinent to this study. Both favorable and critical research involving the theories and techniques utilized in this investigation were considered.

The areas discussed included: Adaptability and Rigidity; Attitude change; and Dissonance Theory.

CHAPTER III

PROCEDURE AND DESIGN OF THE EXPERIMENT

This study was designed to measure the effect of personality rigidity (as subsequently defined) in the alteration of attitudes of prejudice toward American Indians when subjects were presented with filmed material conducive to such alteration of attitudes.

The basic design employed the comparison of responses of randomly determined groups, one exposed to the experimental situation, the other a control.

The results of the hypothesis tested in this research were interpreted with a level of significance for rejection set at a probability level of .05. For the purposes of statistical analysis, the five per cent level was selected as adequate to screen the hypothesis for further evaluation if significant differences were demonstrated at this level.

I. THE POPULATION

The participants in this study were all college students enrolled at Bemidji State College during the summer and fall school terms of 1961. The students were not volunteers. Of the 285 subjects used in the study, 85 were students in psychology and education courses during the second summer session. The remaining 200 subjects were matriculating freshmen who were randomly selected from the entire freshmen class (about 700) who entered Bemidji State College

for the fall term of 1961.

The male-female ratio of subjects used in the study very closely approximated the ratio found at Bemidji State College, i.e., twice as many men as women. Approximately 90 per cent of the subjects ranged in age from 17 to 23, with a mean age of 20.6.

II. MEASURING INSTRUMENTS

A) Adaptability: Three measures of adaptability were used in this investigation. Two of these measures were of the Einstellung type: one, the water-jar series of problems as used by Luchins (1959); the other, a similar type of task, using anagrams rather than arithmetic problems. Both series consisted of 11 tasks to be solved by the subject. The first problem was a demonstrational problem for the purpose of acquainting the subjects with the task. The second through the sixth of each series could be solved in only one manner for the purpose of producing a predisposition or set toward solution. The seventh and eighth problems could be solved in two ways: one, the usual "set" method; the other, a "short-cut" method. The ninth task was a problem that could not be solved in the same manner as problems two through six and was considered the "set-breaker." The tenth and eleventh problems were similar to the seventh and eighth in that two solutions were possible. (The entire Einstellung tests appear in Appendix A and B.)

The third measure of adaptability consisted of a slightly revised form of the Authoritarian F-scale. The revision followed that of Vogel (1961) who omitted one item from Forms 45 and 40 as probably

being ambiguous to present day subjects. The omitted item read: "It is best to use some pre-war authorities in Germany to keep order and prevent chaos." (See Appendix C for the complete F-scale used.)

B) Social Distance: A social distance scale was administered to all subjects which was somewhat similar to that of Bogardus (1925). His scale measured the degree of social contact that an individual would tolerate in a particular racial or social group. Bogardus developed his social distance scale in an attempt to measure an individual's prejudice indirectly by asking him how closely he would associate with a person of a particular group. The measure was designed for this study merely to ascertain the amount of social contact a subject reported as having had with American Indians and was not designed to measure prejudice in any way. This measure consisted of a seven-statement check-list which indicated the subject's degree of contact with American Indians. (The scale appears in Appendix D.)

C) Prejudice: The measure of prejudice involved a revision of items from the Ethnocentrism (E) scale and the Anti-Semitism (A-S) scale as designed by Adorno et. al. (1950). In most cases it was merely necessary to substitute the word "Indian" for the words "Jew" or "Negro," however, some items had to be revised considerably. For example, item (2) of the A-S scale was altered from "The Jews must be considered a bad influence on Christian culture and civilization," to "The Indians must be considered a bad influence on general American culture and civilization." The revision constituted a total of 18 items that made up the Indian (I) scale of prejudice. This scale was subjected to a test-retest measure of reliability using 25 General

Psychology students from Bemidji State College. The test-retest was done at a two-week interval with Easter vacation falling between the testings. The coefficient of reliability was a Pearson r of .922. The I-scale was further correlated with the E-scale, using 35 General Psychology students. This correlation yielded a Spearman rho of .372. A correlation of this magnitude would indicate that there was a moderate positive relationship between the "general prejudice" thought to be measured by the E-scale and the specific prejudice toward Indians measured by the I-scale. However, the correlation is not high enough to warrant the use of the E-scale and suggests that the I-scale is tapping a particular kind of prejudice that the E-scale cannot measure adequately. (The I-scale of prejudice appears in Appendix E.)

D) Treatment: The treatment group was presented with a 32-minute film entitled "A Day in the Night of Johnathan Mole" (National Film Board of Canada, Toronto, 1959). This film is an emotional appeal to prejudice reduction in general, and is specifically directed toward reduction of prejudice toward Indians, Jews and Immigrants. (A resume of the film appears in Appendix F.)

E) Control: The control group was presented with a 32-minute film entitled "Wee Willie Waterdrop," (Available through the Minnesota Department of Conservation), which is a film depicting the dangers inherent in improper water conservation.

F) Understanding: The subjects who fell into the treatment group and saw the film, "A Day in the Night of Johnathan Mole," were given a two-item questionnaire asking them to tell the message of the film and the evidence presented by the film to make its point. This was

given for the purpose of ascertaining whether or not the subjects had understood the film. (See Appendix G.)

III. CRITERION AND DEFINITION OF TERMS

A) Criterion: The criterion measure used in this study was the degree of change on the I-scale following the film, "A Day in the Night of Johnathan Mole." Each of the items of the I-scale could be scored on a six-point scale by the subject. A subject could mark an item -3 if he disagreed completely with the statement, -2 if he disagreed moderately, and -1 if he disagreed slightly. Three degrees of agreement were also available. If the subject left the item blank a mark of 0 was assumed. Since all the items of the I-scale were written in a negative manner toward Indians (as are the E and A-S scale items negatively written), high agreement would indicate high prejudice and strong disagreement would indicate low prejudice.

For ease of scoring on both the F-scale and the I-scale, all of the subjects' scores were transformed to positive numbers as suggested by Adorno et. al. (1950). This resulted in a 7-point scale, thus transforming the range of possible subject scores on each item from +1 to +7. The total possible range of scores on the I-scale was 18 (-3 on all items) to 126 (+3 on all items).

The criterion measure used in this study was the amount the subjects changed on their I-scale opinions. Consequently, this was a difference score between the pre- and post- testings of the experimental group on the I-scale, with the treatment film falling between testings.

B) Definition of terms: Since two measures of "adaptability" were used in connection with this study, adaptability must necessarily be defined in two ways. (1) An individual was considered to be adaptable for the purposes of this study if he scored in the lower one-third of the group as measured by the F-scale. Individuals who scored in the upper one-third of the F-scale were considered "non-adaptable" in terms of this measure. (2) An individual was considered "adaptable" in terms of the Einstellung measures if he correctly solved items 5,6,7,8 and 9. The subjects' performance on items 1 through 4 were not considered in the scoring, but were administered for the purpose of allowing the "set" to become established. The subjects' performance on items 10 and 11 was not considered in this study. The subjects' ability to solve item 9 correctly was interpreted as indicative that the individuals had been able to overcome any predisposition to solve the items in a particular manner. "Non-adaptability" on the Einstellung measures was defined as correctly solving problems 5,6,7 and 8, but inability to solve problem 9. The subjects' performance on the remaining items was considered in exactly the same manner as the "adaptable" definition above. The inability to solve problem 9 after correctly solving 5,6,7 and 8 was interpreted as indicating that the subject had formed a set to solve the items in a particular way and was unable to break the pattern upon reaching problem 9.

Individuals who showed scattered correct responses to problems 5,6,7,8 and 9 were not categorized as either adaptable or non-adaptable in terms of the Einstellung measure.

A high or low degree of prejudice toward American Indians was

defined respectively as a high or low score on the I-scale.

High social contact was defined as checking items 5,6, or 7 (or all three) on the Social Contact scale. Low social contact was defined as checking any or all items on the Social Contact scale exclusive of items 5,6 and 7.

IV. PROCEDURE

All of the subjects were assigned numbers which were used on all of the measures in place of their names. The subjects were assigned randomly to control and experimental groups and were seen in groups ranging from 25 to 100 in number. The entire experimental procedure required two hours of time per group, with the hours spaced one day apart.

During the first hour of testing for each group, all subjects received the F-scale, the I-scale, the Social Contact scale and one of the Einstellung measures which was selected randomly. The subjects were told that they were taking part in a psychological experiment and that all of their testing material would remain anonymous. This was reinforced by having them draw their own numbers from a box and then being told that it was their responsibility to remember their number and enter it on all measures given to them during the two hours of experimentation. No further explanation of the experiment was given. Before each individual test the directions for that test were read to them as they appear in the various appendices.

Immediately upon arriving for the second hour of testing, each group was divided into the control and experimental groups. These

groups were simultaneously shown the control and treatment films. Immediately upon seeing the film "A Day in the Night of Johnathan Mole," the experimental group was given the measure of understanding. (See Appendix G for the measure of understanding.)

The two groups were then reassembled in a single room, were retested on the I-scale and were given the Einstellung measure that had not been administered the previous day. Time limitations and college scheduling problems made it necessary to administer the second Einstellung measure following the treatment film.

The subjects were then dismissed, cautioned not to talk about the films or discuss the tests for 24-hours and told that an explanation of what they had experienced would appear in the school paper after the Christmas holidays.

V. SUMMARY

The preceding chapter has outlined the procedure and design of the experiment. The population used in the study was described; the measuring instruments were enumerated and described; the criterion measure and definition of terms was presented; and the general procedure used in the study was discussed.

CHAPTER IV

RESULTS OF THE EXPERIMENT

Since the purpose of this investigation was to examine the effect of social contact and several variables of rigidity on alteration of attitudes of prejudice, the analysis of variance technique was selected as the statistical method of analysis of the data.

However, during the process of scoring the Einstellung tests it became apparent that there was little consistency in the delineations of rigidity and adaptability by these measures. It appeared that many subjects would measure "adaptable" on the one scale and "non-adaptable" on the other, or would have a non-scorable measure on one of the tests. As a result of these observations, it appeared wise to use a chi-square analysis of the two measures of Einstellung adaptability to determine the independence of these measures. Of the 285 subjects, only 169 could be clearly differentiated as adaptable or non-adaptable on the basis of the verbal Einstellung, while 225 of the subjects could be differentiated as adaptable or non-adaptable on the basis of the water-jar Einstellung.

Chi-square analysis of the Einstellung measures: The Einstellung measures were separated on the basis of the criterion of adaptable or non-adaptable and were placed in a chi-square table (Table I) to determine the independence of the two measures. A coefficient of contingency was calculated for the chi-square table as well as a maximum coefficient of contingency for a two-by-two chi-square table.

TABLE I

CHI-SQUARE ANALYSIS OF THE INDEPENDENCE OF
THE VERBAL AND WATER-JAR MEASURES OF
ADAPTABILITY

		<u>Verbal Einstellung</u>		<u>Total</u>
		<u>Non-rigid</u>	<u>Rigid</u>	
<u>Water-jar</u> <u>Einstellung</u>		Obs: 36	44	80
	<u>Rigid:</u>			
		Exp: (36.6)	(43.3)	
		<hr/>		
	Obs: 30	34	64	
	<u>Non-</u> <u>Rigid:</u>			
		Exp: (29.3)	(34.6)	
		<hr/>		
	Total:	66	78	144

Chi-square = .048 df = 1
p = between .80 and .90

Maximum Contingency Coefficient = .707
Obtained Contingency Coefficient = .00033
(McNemar, 1955, pp. 203-205)

The Coefficient of Contingency obtained (.00033) indicated that the two Einstellung measures were, in fact, two independent measures and could not be assumed to be measuring the same variable.

As a result of the chi-square analysis, it was necessary to consider each of the Einstellung tests as a separate measure in the analysis of variance procedure and analyze each Einstellung independently of the other. Consequently, the data was re-evaluated considering the Einstellung measures separately. Tables II and III show the means and standard deviations for each of the cells of the analysis after separation of the data on the basis of the Einstellung measures.

Analysis of Variance of the two Einstellung measures: The analysis of the data by the technique of analysis of variance presented two major difficulties. (1) There were many negative scores in terms of the criterion measure (indicating increased prejudice toward Indians), and (2) there were unequal numbers of criterion scores in the analysis of variance cells. The first problem was met by adding a constant of 20 points to all criterion measures, thus making them all positive scores and appreciably simplifying the analysis. The second issue was overcome by arbitrarily selecting the number 10 as the number of scores that would be allowed in each of the cells of the water-jar Einstellung analysis, and 7 as the number of scores for each cell in the verbal Einstellung analysis.

Any cell which contained more than the designated number of measures was reduced to that size by random elimination of scores. Any cell which had less than the designated number of scores was

increased by the "best estimate" (Cochran and Cox, 1957, p. 82) of the missing scores. In the case of this analysis of variance procedure, the mean of the scores present in each cell represented the best estimate of the missing scores in that cell. Using this technique, it was possible to fill in missing data without negating the analysis of variance procedure.

The formulas used for calculating the main effects of the variables and the first order interactions were taken from Lindquist (1953) p. 226. The formula for the second order interactions was taken from Edwards (1960) p. 209. The third-order interaction was obtained by subtraction as described by Lindquist (1953) p. 226. Tables IV and V present the analysis of variance summaries for the two measures of the Einstellung type.

Results of the analysis of the water-jar Einstellung: The analysis of variance summary table for the problem-solving (water-jar) Einstellung shows a significant difference between the treatment and control groups at the .001 level, i.e., the treatment group significantly altered their attitudes of prejudice following the treatment film.

None of the other main effects or any of the interaction effects of the water-jar Einstellung approached significance.

Results of the analysis of the verbal Einstellung: The analysis of variance summary table for the verbal Einstellung shows a significant difference between the treatment and control groups at the .001 level, again indicating that the treatment group significantly altered their attitudes of prejudice following the treatment film.

TABLE IVANALYSIS OF VARIANCE SUMMARY TABLE FOR
THE WATER-JAR EINSTELLUNG MEASURES

Source	df	ss	ms	F	P
Treatment and Control films	1	5810.48	5810.48	65.36	.001
Three levels of F-scale	2	8.16	4.08	.046	NS
Adaptability and rigidity	1	142.60	142.60	1.60	NS
High and low social contact	1	116.12	116.12	1.30	NS
Interaction of film viewed by F-scale level	2	6.48	3.24	.036	NS
Interaction of film viewed by adaptability	1	175.00	175.00	1.968	.20
Interaction of film viewed by social contact level	1	18.48	18.48	.207	NS
Interaction of F-scale level by adaptability	2	29.89	14.98	.184	NS
Interaction of F-scale level by social contact	2	149.72	74.86	.842	NS
Interaction of adaptability by social contact	1	22.73	22.73	.255	NS
Interaction of film viewed by F-scale level by adaptability	2	66.33	33.16	.373	NS
Interaction of film viewed by F-scale by social contact	2	196.30	98.15	1.104	NS
Interaction of film viewed by adaptability by social contact	1	41.68	41.68	.468	NS
Interaction of F-scale by adaptability by soc. contact	2	133.89	66.94	.752	NS
Interaction of film viewed by F-scale by adaptability by social contact	2	180.61	54.30	.61	NS
within cells	161	14,313.70	88.90		
TOTAL	184				

TABLE V

ANALYSIS OF VARIANCE SUMMARY TABLE FOR
THE VERBAL EINSTELLUNG MEASURES

Source	df	ss	ms	F	P
Treatment and Control Films	1	5303.25	5303.25	65.56	.001
Three levels of F-scale	2	560.23	280.11	3.46	.05
Adaptable and non-adaptable	1	171.00	171.00	2.11	.20
High and low social contact	1	8.55	8.55	.105	NS
Interaction of film viewed by F-scale level	2	206.83	103.41	1.27	NS
Interaction of film viewed by adaptability	1	64.73	64.73	.80	NS
Interaction of film viewed by social contact level	1	37.25	37.25	.46	NS
Interaction of F-scale level by adaptability	2	112.64	56.32	.696	NS
Interaction of F-scale level by social contact level	2	19.40	9.70	.119	NS
Interaction of adaptability by social contact level	1	1.09	1.09	.013	NS
Interaction of film viewed by F-scale level by adaptability	2	120.09	60.04	.742	NS
Interaction of film viewed by F-scale by social contact	2	325.76	162.88	2.013	.20
Interaction of film viewed by adaptability by social contact	1	113.18	113.18	1.397	NS
Interaction of F-scale by adaptability by soc. contact	2	31.76	15.88	.195	NS
Interaction of film viewed by F-scale level by adaptability by social contact	2	48.83	24.41	.301	NS
within cells	123	9,950.49	80.89		
TOTAL	146				

The verbal Einstellung analysis also showed a significant difference at the .05 level on the Authoritarian F-scale. This significant finding on the F-scale measure of adaptability made it necessary to test the mean criterion scores of the three levels of the F-scale for further clarification of this significant finding. It had to be determined at which level, or levels of the F-scale this difference could be accounted for. This necessitated the compilation of Table VI and the calculation of mean comparisons by Duncan's Multiple Range test (Duncan, 1955). The formula used for the calculation of Duncan's Multiple Range test was that of Kramer (1955, pp. 309-310).

The three means represented in Table VI are composite means including the experimental and control groups for the three levels of the F-scale, taken from Table II. Before Duncan's Multiple Range test was applied, each mean was reduced by 20-points (the constant previously added for ease of calculation) to reduce them to their true measures.

It is apparent from inspection of Table VI that the difference between the middle one-third and the lower one-third of the subjects is not significant. However, it is also apparent that the top one-third of the subjects is significantly different (at the .05 level) from either of the other groups. The difference between this mean and the other two accounted for the significant finding in the analysis of variance F test.

None of the other main effects or interaction effects of the verbal Einstellung analysis proved to be significant.

TABLE VIDUNCAN MULTIPLE RANGE ANALYSIS OF THE MEANS
OF THE THREE LEVELS OF THE F-SCALE

F-scale Means

<u>Upper one-third</u>	<u>Lower one-third</u>	<u>Middle one-third</u>
5.56	<u>12.81</u>	<u>12.67</u>

(Any means underscored by the same line are not significantly different at the .05 level.)

SUMMARY

The foregoing chapter has presented the results of the experiment. Problems encountered in the analysis of the data were discussed and the methods of meeting these problems presented.

A chi-square analysis of the two Einstellung measures was presented. Tables of means and standard deviations of the criterion difference scores were included for the two Einstellung measures as well as the analysis of variance summary tables for the two Einstellung tests. The Duncan Multiple Range analysis of the differences of the means for the levels of the F-scale from the verbal Einstellung analysis was presented.

The significant findings were indicated.

CHAPTER V

DISCUSSION OF RESULTS

Since there was a highly significant reduction in the experimental over the control group's prejudicial attitudes (P .001 level of significance) revealed on both of the variance analyses, it appears reasonable that the treatment film significantly altered the attitudes of the experimental group in the direction of thinking more positively toward the American Indian. However, since the measure of change was obtained minutes after the subjects had viewed the treatment film, this cannot be considered a permanent change of attitude. The investigations of many social scientists (Rokeach, 1960; Newcomb, 1959; Sherif, 1935; and Klineberg, 1958) would suggest that the subjects' attitudes would return to their previous level after a period of time. Consequently, one must assume that the change observed was a temporary change since no follow-up measure of permanence of change can be made due to the subjects' anonymity.

In terms of the observed change in prejudicial attitude, the primary hypothesis of this investigation was only partially supported. The primary hypothesis was:

College students who prove to be adaptable as measured by the Authoritarian F-scale and two measures of an Einstellung type will show the greatest tendency toward reduction of attitudes of prejudice toward American Indians when presented with a film conducive to this attitude change.

This hypothesis was supported only by the F-scale measure when analyzed in terms of the verbal Einstellung test. The F-scale measure

did not approach significance when analyzed in terms of the water-jar measure. Consequently, it cannot be stated unequivocally that the F-scale will differentiate between persons who will or who will not alter their prejudicial attitudes. However, it is apparent that there is some kind of relationship between persons who can be differentiated regarding adaptability on the basis of a verbal Einstellung and the adaptability these subjects will show on the F-scale. It could be hypothesized that a third variable is operating that was not measured in this investigation which would account for the indirect relationship. A possible identification of this variable might lie in the verbal nature of the two tests.

In terms of this study, it should be noted that the results do not bear out the position of Rokeach (1960) and Shils (Christie et. al., 1954). These investigators felt that the high and low scorers on the F-scale are probably quite similar. In the present study, it can be seen from Table VI that the "high" group is quite dissimilar to the "low" group which is nearly identical with the "middle" group. However, this interpretation of the results must be made rather cautiously, since this study reveals different results depending upon the type of Einstellung used in separating the groups of subjects. It should also be observed that the position of Rokeach and Shils was in terms of a general evaluation of "high" and "low" scorers. This study, on the contrary, evaluated a specific variable, that of alteration of prejudicial attitudes. Consequently, the studies may not be contradictory, in that "high" and "low" F-scale scorers may be generally alike, but not alike in terms of the specific

variable measured in this investigation.

The primary hypothesis was not supported by either of the two measures of an Einstellung type. Neither measure differentiated the subjects in the same manner, and neither indicated a relationship to alteration of attitudes of prejudice.

It can be concluded from the chi-square table (Table I) that the two Einstellung measures do not measure the same thing. It is not indicated in this study just what the dimensions are that the two Einstellung tests may be measuring. The results of this study would suggest that these measures do not represent a measure of personality rigidity, at least not as defined herein. The findings of Levitt and Zuckerman (1959) are supported by this study in that the Einstellung measures did present a problem of validity as well as serious shortcomings in terms of scoring for methodological application. The particular definition of "adaptability" used in this investigation was unlike that used in many studies involving the Einstellung type of test, making comparative interpretations with many other studies impossible. This investigation suggests that extreme caution must be exercised in the interpretation of the meaning of "set" on any Einstellung test until further validation of these instruments is available.

Although "adaptability" on the Einstellung did not predict attitude change in this study, this fact would not necessarily imply that the Einstellung type of test does not measure rigidity. It may be that attitude change is not a function of rigidity; and that the Einstellung may, in fact, measure other aspects of personality rigidity.

Upon first consideration it appears difficult to reconcile the findings of this study with those of Rokeach (1943) in which he found a relationship between persons high in ethnocentrism (general prejudice) and those who could successfully solve problem 9 on the water-jar Einstellung. Rokeach's use of the problem-9 criterion was practically the identical definition of rigidity used in this study. However, it must be pointed out that the two studies are not analogous since the measure of prejudice used in this study only correlated .37 with the E-scale and quite probably revealed something other than generalized prejudice.

Discussion of subsidiary questions: Two subsidiary questions were posed as adjuncts to the primary hypothesis:

- 1) Can alteration of prejudicial attitudes be shown to be related to degree of social contact with American Indians?
- 2) Can persistence of prejudicial attitudes be attributed in any way to an individual's refusal to accept information that is contrary to his usual mode of thinking?

The results of this study do not reveal a clear-cut answer to either of the questions posed. The analysis of variance did not reveal a significant interaction between degree of social contact and alteration of prejudicial attitudes. This, of course, does not mean that such a relationship does not exist, but only that it was not shown in this study. For the purposes of this study it was necessary to accept the individual's own evaluation of his contact with American Indians. Consequently, there is no way of knowing how truthful or biased this evaluation may be.

However, as pointed out by Newcomb (1959) and Klineberg (1958),

prejudice is a learned reaction and is not necessarily dependent upon social contact. Both of the above authors have indicated that social contact may influence prejudicial attitudes, depending upon the circumstances and length of contact. However, neither of the above authors have taken a position regarding the general alteration of prejudicial attitudes as related to social contact level.

In regard to the second question posed, only 10 persons of the population of 134 subjects in the experimental group were judged by the experimenter to have misinterpreted the message of the treatment film. It is apparent, then, that most subjects did not refuse to accept information that was contrary, at least to some extent, to their usual mode of thinking. However, it is interesting to note that seven of these 10 subjects fell into the upper one-third of the F-scale, and all of them fell into the upper two-thirds of the F-scale. Since such a small percentage of subjects misinterpreted the film (or did not understand it), it is difficult to make any interpretations. It is possible that all 10 of these individuals were entering freshmen of questionable intellectual level. However, it would be interesting to speculate whether there would have been a greater tendency toward misinterpretation taking place had the film used been more subtle in its attack on prejudice.

It should be pointed out that the methodological problem mentioned on page 32 (administration of the second Einstellung measure following the treatment film) apparently did not have a material effect on the Einstellung measures. Chi-square analyses indicated that there was not a significant difference between Einstellung measures administered

after the treatment film as compared to the measure administered prior to the film.

Suggestions for further research: In view of the partial confirmation of the primary hypothesis and the highly significant attitude change that was effected, it appears that further research along these same lines might prove highly revealing.

Other tests of adaptability could be tried using the same variable, change of attitudes of prejudice, as a criterion. The film used in this study would certainly provide an excellent method of attitude alteration. However, in subsequent studies of this type, it would be well to make some allowance for identification of subjects in order that a follow-up study could be done to measure persistence of change.

Since a high degree of variability in attitude change was noted among the subjects, a reverse approach could be tried. In other words, the subjects who showed great and who showed little alteration of prejudicial attitudes could be delineated quite easily. In this way, an experimenter could reduce his total N to a small number of individuals who showed extreme difference in the amount of change effected in their attitudes and then subject them to intensive batteries of tests. Using this approach in a pilot study, the personality variables which are highly related to attitude change might become apparent, thus making a full-scale investigation more fruitful.

SUMMARY

The preceding chapter has presented a discussion of the results found in the statistical analysis of Chapter IV. The implications

of the significant findings were discussed. Non-significant findings which were not in keeping with theoretical expectations were discussed and possible explanations for these negative findings were offered. The subsidiary questions posed in the study were discussed and suggestions for further research were pointed out.

CHAPTER VI

SUMMARY OF THE RESEARCH

Problem: The primary purpose of this investigation was to determine whether various psychological tests purported to measure the factor of adaptability could be related to alteration of attitudes of prejudice.

The primary hypothesis of this investigation was:

College students who prove to be adaptable as measured by the Authoritarian F-scale and two measures of an Einstellung type will show the greatest tendency toward reduction of attitudes of prejudice toward American Indians when presented with a film conducive to this attitude change.

Two subsidiary questions were also considered in this study.

These were:

- 1) Can alteration of prejudicial attitudes be shown to be related to degree of social contact with American Indians?
- 2) Can persistence of prejudicial attitudes be attributed in any way to an individual's refusal to accept information that is contrary to his usual mode of thinking?

Theoretical foundations for this study are found in psychoanalytical writings as well as contemporary approaches to psychotherapy and personality theory.

Overview of the literature: Many approaches to the study and measurement of rigidity and adaptability can be found in contemporary psychology. From a theoretical point of view, adaptability is looked upon as a mature and accepted mode of reaction to the environment. Rigidity is generally viewed as neurotic, immature and related to defective emotional or thinking processes.

The experimental study of adaptability has taken varied forms. Problem-solving techniques have received much attention. These have ranged from the well-known Einstellung tests (Luchins, 1959) to perceptual and motor tests and tests of individual ability to alter form and pattern of set (Goldstein, 1943). Other measures in this area have taken the form of personality inventories, purporting to assess basic attitudes of rigid authoritarianism (Adorno et. al., 1950) and dogmatism (Rokeach, 1960).

The study of attitudes and attitude change has extended historically from early psychoanalytic theory to contemporary research in social psychology. Attitudes of prejudice are seen as scapegoat mechanisms (Alexander, 1937), generalized hostility (Menninger, 1938), and learned phenomenon (Newcomb, 1959).

Writers in the field generally agree that attitudes are extremely tenacious and resistant to change (Rokeach, 1960). When changes are reported they are generally thought to be short-lived with a gradual return to the earlier attitude (Newcomb, 1959). Personality variables related to attitude change, particularly attitudes of prejudice, remain largely uninvestigated.

A growing body of research is based on the theory that the individual will tend to distort perceptions and misinterpret information in an effort to maintain his ideas, attitudes and prejudices intact (Festinger, 1957). This approach is often cited as helpful in explaining the absence of attitude change.

Procedure and design of the experiment:

Subjects: The subjects utilized in the experiment were 285

students at Bemidji State College. They were not volunteers. They consisted of a cross-section of students in all fields of study offered at the college. The male-female ratio was approximately the same as that of the entire student body. They were randomly assigned to experimental and control groups.

Instruments of appraisal: The Authoritarian F-scale was used as an inventory measure of rigidity of personality. Two measures of an Einstellung type were also used as measures of adaptability. The one Einstellung was of the conventional water-jar type, the other was a verbal anagram measure.

A social distance scale was constructed on which each subject listed the degree of social contact he had experienced with Indians.

An adaptation of the Anti-semitism and Ethnocentrism scales was prepared, rewriting the items to apply to prejudicial attitudes toward American Indians.

A two-item questionnaire was devised for the purpose of assessing the degree of understanding the experimental group had of the treatment film.

Two films were used in the study. The treatment group saw the film, "A Day in the Night of Johnathan Mole," and the control group saw a film entitled, "Wee Willie Waterdrop."

The criterion measure for change in attitude of prejudice was alteration of score on the adapted measure of prejudice toward Indians.

The criterion for adaptability on the F-scale was defined as scoring in the lower one-third of the group. The criterion for adaptability on the Einstellung measures was the correct solution of

problems 5,6,7,8 and 9. The criterion for rigidity on the F-scale was defined as scoring in the upper one-third of the group. The criterion for rigidity on the Einstellung measures was inability to solve problem or word 9 after successfully completing items 5,6,7 and 8.

Procedure: The subjects were tested in groups in two one-hour periods at a one-day interval. During the first testing period each group completed the F-scale, the prejudice scale, the social distance scale and one of the Einstellung measures, randomly selected. During the second hour, the groups were divided into experimental and control groups. The experimental group saw the treatment film, and the control group saw the "neutral" film. Immediately following their film, the experimental group was given the measure of understanding of the message of the film. The experimental and control groups were then reassembled into a single room where they were retested on the prejudice scale and administered the Einstellung measure that had not been used the prior day. No explanation was offered the subjects regarding the purpose of their activities.

Results and discussion: The experimental analysis of the data utilized the methods of chi-square, analysis of variance and comparison of means. A coefficient of contingency indicated that the two measures of an Einstellung type were independent measures. Consequently, two analyses of variance were performed analyzing the results of the two Einstellung tests separately.

The test of significance indicated that the treatment movie had reduced the attitudes of prejudice of the experimental group at far exceeding the .05 level of confidence. The test of significance also

revealed a significant reduction of prejudice for the subjects who scored in the upper third of the F-scale. The latter was true only of the subjects who were divided into rigid and adaptable on the basis of the verbal Einstellung.

The primary hypothesis was only partially supported. The relationship between the verbal Einstellung and the F-scale is not clear. It is possible that a third variable, such as the verbal nature of both tasks is responsible for the relationship.

The study demonstrated quite conclusively that attitudes of prejudice could be altered, at least temporarily.

The investigation indicated that the two measures of an Einstellung type were independent measures. A note of caution was extended toward the interpretation of the Einstellung tests or the F-scale as measures of personality rigidity or adaptability.

The test of significance did not reveal a relationship between social contact and alteration of attitudes of prejudice.

It was found that 124 of the 134 subjects in the experimental group understood the message of the film.

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APPENDIX A

WATER-JAR EINSTELLUNG

Pages 60 and 61 show the problems used in the water-jar Einstellung. When administered to the subjects, these problems were placed in booklet form. They were cut on the dotted lines and stapled at the left.

PROCEDURE FOR ADMINISTRATION

The subjects were first instructed to place their number on the booklet. They were then told to turn to Problem 1 and instructed that it could be solved by removing nine quarts of water from the 29-quart jar by three fillings of the 3-quart jar from the filled 29-quart jar. It was suggested that the answer could be written as follows:

$$29 - 3 - 3 - 3 = 20$$

The subjects were then told that they would work each succeeding problem on signal from the experimenter. They were informed that if they completed a problem before time was called they must wait for the signal before going on. They were told they could not work ahead or go back to an unfinished problem. They were given 90 seconds per problem.

PROBLEM-SOLVING EINSTELLUNG

(Do not open until you are told to do so)

NUMBER: _____

Problem 1

GIVEN: An empty 29-quart jar, an empty 3-quart jar: Measure 20
quarts of water.ANSWER:

Problem 2

GIVEN: An empty 21-quart jar; an empty 127-quart jar; and empty
3-quart jar: Measure 100 quarts of water:ANSWER:

Problem 3

GIVEN: An empty 14-quart jar; an empty 163-quart jar; an empty
25-quart jar: Measure 99 quarts of water:ANSWER:

Problem 4

GIVEN: An empty 18-quart jar; an empty 43-quart jar; an empty
10-quart jar: Measure 5 quarts of water:ANSWER:

Problem 5

GIVEN: An empty 9-quart jar; an empty 42-quart jar; an empty
6-quart jar: Measure 21 quarts of water:ANSWER:

Problem 6

GIVEN: An empty 20-quart jar; an empty 59-quart jar; an empty
4-quart jar: Measure 31 quarts of water:

ANSWER:

Problem 7

GIVEN: An empty 23-quart jar; an empty 40-quart jar; an empty
3-quart jar: Measure 20 quarts of water:

ANSWER:

Problem 8

GIVEN: An empty 15-quart jar; an empty 39-quart jar; an empty
3-quart jar: Measure 18 quarts of water:

ANSWER:

Problem 9

GIVEN: An empty 28-quart jar; an empty 76-quart jar; an empty
3-quart jar: Measure 25 quarts of water:

ANSWER:

Problem 10

GIVEN: An empty 18-quart jar; an empty 48-quart jar; an empty
4-quart jar: Measure 22 quarts of water:

ANSWER:

Problem 11

GIVEN: An empty 14-quart jar; an empty 36-quart jar; an empty
8-quart jar: Measure 6 quarts of water:

ANSWER:

APPENDIX B

VERBAL EINSTELLUNG

Pages 63 and 64 show the anagrams used in the verbal Einstellung test. When administered to the subjects, these anagrams were placed in booklet form. They were cut on the dotted lines and stapled at the left.

PROCEDURE FOR ADMINISTRATION

The subjects were first instructed to place their numbers on the booklet. They were then told to turn to page 1 and were instructed that if the scrambled letters were re-arranged they could be made to spell UNCLE. They were told to write "UNCLE" in the space allowed.

The subjects were then told that they would work each succeeding anagram on signal from the experimenter. They were informed that if they completed a word before time was called they must wait for the signal before going on. They were told they could not work ahead and could not go back to an unfinished word. They were given 90 seconds per anagram.

VERBAL EINSTELLUNG

(Do not open booklet until told to do so) NUMBER: _____

Problem 1

1. N C L E U _____

Problem 2

2. K L C H A _____

Problem 3

3. E N S C E _____

Problem 4

4. T S G H E _____

Problem 55. T C E X A _____

Problem 6

6. Y E H O N _____

Problem 7

7. N O L E M _____

Problem 8

8. H T N O R _____

Problem 9

9. M A L C E _____

Problem 10

10. E R S H O _____

Problem 11

11. R E A N G _____

APPENDIX C

REVISED AUTHORITARIAN F-SCALE

PROCEDURE FOR ADMINISTRATION

The subjects were reminded to place their numbers in the space allotted. They were then told to follow the instructions exactly as they appear at the top of the form. No time limit was placed on the test.

NUMBER: _____

The following are statements with which some people agree and some disagree. Mark each one in the left margin, according to the amount of your agreement or disagreement, by using the following scale:

+1: slight support, agreement	-1: slight opposition, disagree
+2: moderate support, agreement	-2: moderate opposition, disagree
+3: strong support, agreement	-3: strong opposition, disagree

- _____ 1. Obedience and respect for authority are the most important virtues children should learn.
- _____ 2. No weakness or difficulty can hold us back if we have enough will power.
- _____ 3. Science has its place, but there are more important things that can never be understood by the human mind.
- _____ 4. Human nature being what it is, there will always be war and conflict.
- _____ 5. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
- _____ 6. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
- _____ 7. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
- _____ 8. What the youth needs most is strict discipline, rugged determination and a will to work and fight for family and country.
- _____ 9. Some people are born with an urge to jump from high places.
- _____ 10. Nowadays when so many different kinds of people move around and mix together so much, one has to protect himself especially carefully against catching an infection or disease from them.
- _____ 11. An insult to our honor should be punished.
- _____ 12. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
- _____ 13. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.

- ___ 14. Sex crimes such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped or worse.
- ___ 15. People can be divided into two distinct classes: the weak and the strong.
- ___ 16. There is hardly anything lower than a person who does not feel great love, gratitude and respect for his parents.
- ___ 17. Some day it will probably be shown that astrology can explain a lot of things.
- ___ 18. Nowadays more and more people are prying into matters that should remain personal and private.
- ___ 19. Wars and social troubles may someday be ended by earthquake or a flood that will destroy the whole world.
- ___ 20. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feebleminded people.
- ___ 21. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least suspect it.
- ___ 22. If people would talk less and work more, everybody would be better off.
- ___ 23. Most people don't realize how much our lives are controlled by plots hatched in secret places.
- ___ 24. Homosexuals are hardly better than criminals and ought to be severely punished.
- ___ 25. The businessman and the manufacturer are much more important to society than the artist and the professor.
- ___ 26. No sane, normal, decent person could ever think of hurting a close friend or relative.
- ___ 27. Familiarity breeds contempt.
- ___ 28. Nobody ever learned anything really important except through suffering.

APPENDIX D

SOCIAL CONTACT SCALE

PROCEDURE FOR ADMINISTRATION

No instructions other than those appearing on the Social Contact scale were given. No time limit was imposed.

SOCIAL CONTACT SCALE

Number: _____

This scale is designed to measure the degree of social contact you have had with American Indians. Check all of the statements which apply to you

- ___ 1. I have never seen an American Indian.
- ___ 2. I have seen Indians when traveling away from home.
- ___ 3. I have seen Indians in the near vicinity of my home.
- ___ 4. I have had occasion to talk with Indians.
- ___ 5. I have had occasion to work with or have business dealings with Indians.
- ___ 6. I have close personal friends who are Indians.
- ___ 7. I have relatives who are Indians.

APPENDIX E

INDIAN (I) SCALE OF PREJUDICE

PROCEDURE FOR ADMINISTRATION

No instructions other than those appearing on the scale were given. No time limit was imposed.

Number: _____

Student Opinion Questionnaire

This is an investigation of student opinion regarding Indian people. The following are statements with which some people agree and others disagree. Please mark each one in the left margin, according to the amount of your agreement or disagreement, by using this scale:

+1: slight support, agree	-1: slight opposition, disagree
+2: moderate support, agree	-2: moderate opposition, disagree
+3: strong support, agree	-3: strong opposition, disagree

- _____ 1. The Indians must be considered a bad influence on general American culture and civilization.
- _____ 2. In order to maintain a nice residential neighborhood it is best to prevent Indians from living in it.
- _____ 3. A major fault of the Indians is their conceit, overbearing pride and their idea that they are a chosen group.
- _____ 4. No matter how Americanized an Indian may seem to be, there is always something basically Indian underneath, a loyalty to the tribe and a manner that is never totally changed.
- _____ 5. A step toward solving the Indian problem would be to prevent Indians from getting into superior, responsible positions in society, for a while at least.
- _____ 6. Districts containing many Indians always seem to be smelly, dirty, shabby and unattractive.
- _____ 7. The Indian problem is so general and deep that one often doubts that democratic methods can ever solve it.
- _____ 8. There are a few exceptions, but in general Indians are pretty much alike.
- _____ 9. Indians tend to lower the general standard of living by their willingness to do the most menial work and to live under standards that are far below average.
- _____ 10. It is wrong for Indians and whites to intermarry.
- _____ 11. Indians should not pry into white activities and organizations nor seek to get recognition and prestige from whites.

- _____ 12. The Indians should give up their pagan religions with all their strang customs and participate actively and sincerely in our usual religions.
- _____ 13. It is sometimes alright to ban Indians from certain apartment houses.
- _____ 14. Indians tend to remain a foreign element in white society, to preserve their old social standards and to resist the white's way of life.
- _____ 15. War shows up the fact that Indians are not patriotic or willing to make sacrifices for their country.
- _____ 16. An Indian's first loyalty is to his tribe rather than the country.
- _____ 17. There is little hope of correcting the racial defects of the Indians, since these defects are simply in their blood.
- _____ 18. The Indians keep too much to themselves, instead of taking the proper interest in community problems and good government.

APPENDIX F

"A DAY IN THE NIGHT OF JOHNATHAN MOLE"

"A DAY IN THE NIGHT OF JOHNATHAN MOLE"

(National Film Board of Canada, Toronto, 1959)

The film is a 32-minute fantasy concerning a dream sequence of the fictitious Johnathan Mole. Mr. Mole is pictured as an extremely hostile, subservient man holding a rather menial position. In his dream he finds himself in a "New" country called Adanac (Canada spelled backward) where he is placed on the supreme court bench. In his position as judge he is called upon to hear the cases of a Jew, an immigrant and an Indian. These persons are accused of violating the Adanac constitution which is based on the premise of "a place for every man, and every man in his place." During the course of the film the prosecuting attorney and his witnesses present the case of bigotry, prejudice and folklore surrounding these classes. The defense attorney and his witnesses present scientific and psychological facts pointing to the equality of all men. Judge Mole listens to the witnesses and the attorney's pleas and quickly makes the decision that the defendants have, in fact, broken the Adanac law and informs them that they must seek out their place in society within the limits of their capabilities. Mr. Mole awakens from his dream and remains completely unchanged in his attitudes toward minority groups but with a "superior" feeling that he has "done something about it."

APPENDIX G

MEASURE OF UNDERSTANDING

PROCEDURE FOR ADMINISTRATION

The subjects were instructed to fill out the form as briefly as possible. They were allowed about three minutes for completion of the form.

Number: _____

You have just seen the film "A Day in the Night of Johnathan Mole." Please answer, as briefly as possible, the two following questions:

1. What is the message of the film?
2. What evidence was presented to prove the point of the film?