PERSONALITY AND SITUATIONAL INFLUENCES ON CHANGES IN PREJUDICE

By

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The purpose of this study was to determine the influence of personality and situational factors on changes in prejudice. The environment studied was a state prison. The subjects were inmates admitted to the institution during a 1 month period. The situations were defined in terms of the norms as perceived by the residents of the different living areas. Subjects were pre-tested for cognitive complexity, self-esteem, and attitudes toward people in general. Interracial attitudes of these subjects were then measured at two time periods as the subjects entered the institution and three weeks later as they proceeded through the social environment.

The hypotheses were: 1) Individuals with low cognitive complexity are greatly influenced by norms and

authority and therefore would have a greater change in attitude reflecting the norms of the environment; 2) Individuals with low self-esteem are more easily influenced and also would show a greater change in attitudes, reflecting the norms; 3) Individuals with positive attitudes toward people in general are more likely to decrease in prejudice and those with negative attitudes toward people in general are more likely to increase in prejudice over time.

The data indicate that negative attitudes toward people in general is the most important predictor of level of prejudice and one of the best predictors of an increase in prejudice. The effect of attitudes toward people in general holds true regardless of the norms of the situation or the race of the individuals.

Although the present data indicates that low cognitive complexity was correlated with prejudice upon entering the institution, it was predictive of prejudice only in interaction with other variables. Low cognitive complexity is predictive of extreme judgments with norms determining the direction of the judgments. Cognitive complexity was the strongest and most consistent predictor of prejudice change, through its relationship to conformity. Low complexity subjects tended to change their level of prejudice in order to reflect the norms of their living area.

Although the hypothesis concerning self esteem was supported, the scale response was confounded by the subject's

level of complexity. Therefore the results must be accepted with extreme caution.

The relationship between cognitive complexity and prejudice is reversed for blacks entering the institution, reflecting the different norms for blacks in our culture. The more conforming, low dimensionality blacks, are the least prejudiced.

The dynamics of change are also different for blacks and whites. Blacks who increased in prejudice appeared to do so in reaction to interaction with a negatively evaluated white. A black having a bad experience with a particular white tends to generalize his evaluation to whites in general, demonstrating the rational development of prejudice in blacks.

INTRODUCTION

A controversy has persisted for the last decade among prominent researchers in the area of prejudice. The controversy has centered around the basis for intolerance. Two conflicting points of view have developed; one maintains that prejudice is a function of perceived differences in beliefs, the other contends that prejudice is a function of group membership. Rokeach, the main proponent of the former position presented his theory in The Open and Closed Mind (1960). In that book he reported two studies (Rokeach, Smith & Evans, 1960) which investigated the possibility that ethnic and racial discrimination did not differ from discrimination due to differences in perceived beliefs and that differences in perceived beliefs may be the major source of social discrimination. The subjects were requested to rate pairs of stimulus persons on a 9-point scale ranging from "I can't see myself being friends with such a person" to "I can very easily see myself being friends with such a person." The stimulus persons varied in race and beliefs in one study and in race and religion in the second study. Each characteristic was varied on two dimensions, being either the same as the subject or different from the subject.

The stimulus persons were presented in pairs, pitting belief characteristics against race characteristics.

The subjects showed a preference for friendship with a Negro who agreed with them over a white who disagreed on each of the eight issues presented. However, 2 to 20 percent of the subjects responded primarily to race or ethnic group on each of these issues. The conclusion of the authors was that subjects discriminate primarily on the basis of belief congruence, not on racial or ethnic group membership. An alternative explanation is that there were more belief discriminating people than race discriminating people in the study. Although subjects were pretested for prejudice, their responses to these items did not covary with prejudice ratings. In addition the forced-choice design of this study made it very transparent, tending to increase socially desirable responses.

Triandis (1961) takes Rokeach to task for generalizing his findings to the area of prejudice, maintaining that the results can accurately be applied only to friendship choices. He further contends that prejudice and discrimination are more accurately applied to areas of greater social distance. These areas he illustrates as acceptance into a neighborhood or into a university.

To demonstrate his position, Triandis examined Rokeach's hypothesis in terms of varying amounts of social

distance. He employed 16 stimulus persons who varied in race, religion, occupation, and belief system. Morris' (1956) "13 ways to live" were defined as the belief systems. The race, religion, and belief system were either the same as, or different from, the subject's. The occupation of the stimulus person was either bank manager or coal miner. Each subject rated each of the 16 stimulus persons on 15 items of the social distance questionnaire. Triandis' data indicate that race was a much more important determinant of social distance than any one of the other factors, although all of the factors accounted for significant amounts of variance.

Rokeach (1961) replied with an attack on Triandis' descriptions of philosophies, maintaining that they were vague and not salient to the subjects, thereby making the study irrelevant to the issue. Rokeach's original findings were supported by Byrne and Wong in 1962. However, the dependent variables (friendship and desire to work with) are simliar to that of Rokeach (friendship) and thus are subject to the same criticism.

Stein, Hardyck, and Smith (1965) entered the controversy in an attempt to resolve it. These authors attribute the different results to differences in methodology and attempt to reconcile the divergent findings with improved methods. Of primary concern to these authors was

the desire to have the stimulus persons appear more real to the subjects. The subjects, all ninth-graders, were pretested to determine their attitudes about teenagers in general. The stimulus persons were then varied in similarity to these attitudes, which the authors used as their belief congruence manipulation. The age and sex of the stimulus person was always the same as that of the subject. The stimulus persons were presented as having beliefs similar to, or different from, those of the subject. The race of the stimulus person was either black (different) or white (same). All subjects were white.

The stimulus persons were rated by the subjects on both a social distance scale and a five-point measure of friendly feelings. The data indicate that similarity of belief accounted "for the major portion of variance in prejudice." When the subjects were given no information about the beliefs, but were given information about race, race was the determinant of reactions. However, when extensive information on beliefs was given to the subjects, they reacted primarily to belief information. There were three items on the social distance scale in which the race effect is significant at the .001 level: "invite him home to dinner," "live in the same apartment house," "have him date my sister (brother)." The authors feel that these are "sensitive" areas involving "publicly visible relationships."

These behaviors are conditions for what Rokeach refers to as institutionalized prejudice.

Triandis' (1961) main objection to the work by Rokeach is that the scale used to measure the dependent variable employed only positive items. He feels that lack of friendly behavior is not the sole component of prejudice, negative behaviors are also involved. Triandis and Davis (1965) feel that Stein, Hardyck, and Smith also overlook this aspect of prejudice in their research by employing only positive items in their social distance scale.

In his research Triandis has employed a behavioral differential scale. Factor analyzing this scale, he obtained five clusters of behaviors in which subjects indicated they would participate with the stimulus persons (Triandis, 1964). These behaviors varied in the degree of intimacy from formal social acceptance through marital acceptance. Different patterns of variables accounted for the variance in each of the factors, with race the major determinant of variance in the social distance factor. These social distance items are very similar to those of Stein, Hardyck, and Smith (1965), which they labeled sensitive areas involving institutionalized prejudice. These latter authors also report race as being highly significant in determining the variance in these items.

In a later attempt to reconcile differences between the race and belief factions, Triandis and Davis (1965) defined 11 types of subjects, 2 of which were strongly prejudiced. These types were defined on the basis of patterns of responses to 8 stimulus persons, 35 issues and terms, 2 F scale measures, 10 tolerance for minorities, and 10 criticisms of social institutions items. Of the two types of subjects who were prejudiced, one group was race prejudiced (the authors refer to this as conventional prejudice) and one group was termed belief prejudiced. The Triandis prototype was characterized by prejudice in intimate situations (acceptance for marriage, dating, etc.) and the subjects responded primarily in the way Triandis described (race prejudice), while the Rokeach prototype occurred in non-intimate situations where belief prejudice prevailed. However, in behaviors of intermediate intimacy, subjects who were belief prejudiced could be differentiated from subjects who were race prejudiced. This seems to be a matter of individual differences. Thus Triandis and Davis conclude that certain personality variables are correlated with prejudice which is reflected in behavior intentions.

COGNITIVE STRUCTURE AND PREJUDICE

As Triandis (1961) points out, prejudice is a very complex phenomenon. Basic to an understanding of this phenomenon is an understanding of the individuals involved. The above mentioned studies have shed much light on how the target of prejudice and how the situation influences such attitudes. However, only the last study has focused attention on how individuals differ in their prejudice.

A more recent study by Brigham and Severy (1973) defines three prejudice types. These types were defined on the basis of their responses to the Multifactor Racial Attitude Inventory developed by Cook and his associates, and to the Crowne-Marlowe social desirability scale. Persons were differentiated in terms of their patterns of responses. The three types of prejudiced persons are described as <u>policy</u> prejudiced, <u>personal contact</u> prejudiced, and <u>status</u> prejudiced.

Rokeach (1960) differentiates between the content of beliefs and the structure of beliefs. However, his research and that of Triandis (1961, 1964), Stein, Hardyck, and Smith (1965), and Byrne and Wong (1962) center on the

content of beliefs. Individual differences in the structure of beliefs have been found to be correlated highly with prejudice. Thought processes which are characterized as extremely rigid, concrete, and simplex have been found to predominate among prejudiced subjects (Rokeach, 1960; Adorno et al., 1950). A series of theoretical and empirical studies have addressed the question of individual differences in belief structure as related to prejudice. A review of the work in this area follows.

Authoritarianism

During the 1940's four social scientists from the University of California at Berkeley engaged in extensive empirical and theoretical research in an attempt to establish the personality variables which accompany anti-Semitic attitudes (Adorno et al., 1950). These attitudes were examined closely and identifying dimensions isolated. On the basis of these dimensions an anti-Semitic (A-S) attitude scale was devised. Noting the heterogeneity of Jewish people and anti-Semitic reactions indicating that "all Jews are . . ." suggested the hypothesis that perceptions of Jews depend more on individual difference factors of the perceiver than on the characteristics of the perceived person.

A basic personality type, the authoritarian personality, with a constellation of organized beliefs was examined in an attempt to pinpoint the personality factors. The authoritarian personality was postulated to have nine components: conventionalism, authoritarian aggression, authoritarian submission, power and toughness, anti-intraception, superstition and stereotypy, destructiveness and cynicism, projectivity, and over-concern with sex. The personality of the individual was described as enduring, but the authors emphasized that personality is a predisposition to behave in certain ways rather than behavior itself.

Evidence accumulated which indicated that individuals who were hostile toward one minority group tended to be hostile toward other minority groups. Gradually the focus of this theoretical orientation expanded from the study of anti-Semitism to the study of ethnocentrism. Ethnocentrism is a "general cultural narrowness." The ethnocentric individual has a general tendency to accept those who are culturally like him and to reject those who are culturally unlike him. Prejudice was felt to be a negative feeling against a specific group. By referring to general out-groups, ethnocentrism shifted the emphasis from race to ethnic groups.

In 1950, the culmination of the researchers' work was published in book form. The Authoritarian Personality is comprehensive; it includes attitude scales with item analyses, clinical interviews, insights, and theoretical rationale. Authoritarianism is reported to be highly correlated with anti-Semitism, ethnocentrism, and politico-economic conservatism. Ethnocentrism is described as related to stereotypy, rigidity, and concreteness in thinking.

The cognitive personality organization of the authoritarian personality is described in terms of several dimensions. The dimensions are: rigidity-flexibility, intolerance-tolerance of ambiguity, pseudoscientific-scientific, anti-intraception-intraception, suggestible-autonomous, and autistic-realistic thinking in goal behavior. These dimensions are extremes of continuums; specifically they are not mutually exclusive categories. A high score on the first and a low score on the second denotes authoritarianism. Intolerance of ambiguity and rigidity are reported to be highly characteristic dimensions of the authoritarian.

Neither rigidity nor intolerance of ambiguity is specifically defined, but both are implied through descriptions of behavior associated with them. Rigidity is a manner of behavior engaged in by a person with a high

intolerance of ambiguity; high intolerance is inferred when a person avoids ambiguous and unstructured situations. The constructs are interesting, but the definitions are circular, and the authors' psychoanalytic orientation is apparent. The person who possesses the cognitive personality organization of the authoritarian tends toward "totalitarian-moralistic typologizing." He tends to conceptualize a variety of stimuli dichotomously (e.g., there are two kinds of people--clean and dirty). These stimuli vary from sex roles and moral values to social stimuli (stereotypes).

The authors devised a number of scales to measure the components of the authoritarian personality. These scales, in order of development, were: A-S scale (anti-Semitism), E scale (ethnocentrism), P-E-C scale (politico-economic conservatism) and F scale (fascism). With the exception of three items on the P-E-C scale, all the items are worded in the same direction. This construction has led critics to contend that these scales measure acquiescent responses rather than aspects of authoritarianism (Bass, 1955).

The construction of the measurement scales confounds the assumed results. Political conservatism is shown to correlate positively with authoritarianism. However, the items are closely similar and could easily be switched

(Hyman & Sheatsley, 1954). The authors also eliminated items from the F scale which did not correlate with the A-S scale. The correlation between the two scales was used, however, as evidence that fascism and anti-Semitism are related.

The theoretical orientation of the authors was highly psychoanalytical, and their theorizing reflected that influence. They attempted to integrate the advantages of the depth of clinical case study with the exactness of statistical analysis. Unfortunately both methodologies suffered in the union. The questionnaire data were validated by in-depth interviews with the extreme groups. The interviewers were directed to study the subjects' responses to the questionnaires prior to the interviews, and to use the questionnaires to direct the interview. The coding system of the projective tests was based on the scale scores of high and low scoring subjects. Both of these procedures so biased the results that the data cannot be accepted as a test of the theory.

A thorough critique of the methodology of The Authoritarian Personality can be found in a chapter by Hyman and Sheatsley in Studies in the Scope and Methods of the Authoritarian Personality (Christie & Jahoda, 1954). These authors summarize methodological flaws in sampling,

measurement, and analysis. Their conclusion is that "the mistakes and limitations--no one of them perhaps crucial--uniformly operate in favor of the authors' assumptions, and cumulatively they build up a confirmation of the theory which, upon examination, proves to be spurious" (p. 121). These authors do not argue with the theory, but they point out that the data presented cannot be a basis of proof for the theory because of the methodological inadequacies.

Although conclusions of The Authoritarian Personality (1950) are questionable due to methodology, there is an abundance of subsequent research relating authoritarianism to similar psychological constructs. For example, the F scale has been found to correlate highly with measures of prejudice (Martin & Westie, 1959) when the scale employed (xenophobia measure of prejudice, Campbell & McCandless, 1951) is controlled for acquiescence. There has also been evidence demonstrating a relationship between F scale scores and political views (Izzett, 1971; Milton, 1952; and Wrightsman, 1965). High F scale scorers have been shown to use fewer and broader categories in judgments (White et al., 1965) and to be more resistant to change (Harvey & Beverly, 1961) than low scorers on the F scale.

There are extensive reveiws of the studies demonstrating relationships between the F scale and other

variables (Christie & Cook, 1958; Kirscht & Dillehay, 1967). The F scale has been found to correlate with so many other measures that Pettigrew (1958b) was led to think it significant that category width did not correlate with it. Wrightsman (1972) states that the accumulation of significant relationships leads to "an increasing lack of conceptual clarity and meaningfulness. Most probably, the F scale is measuring a set of overlapping but distinctive variables, rather than one powerful variable. In other words, differences between individual F-scale scores probably reflect differences in education, sophistication, and acquiescence, as well as true differences in authoritarianism" (p. 380). It is important to note that most of the studies relating the F-scale to other constructs have employed questionnaires. The correlations obtained could be a function of the method of measurement and not denote any authentic relationship between the constructs.

The contribution of The Authoritarian Personality lies more in its theoretical and conceptual framework than in its empirical work and scale construction. This work has suggested, if not demonstrated, a relationship between cognitive and personality structure and prejudice. It has thereby opened the way for the integration of these variables and prompted vast amounts of research in the area.

Personal Construct Theory

George Kelly, a clinical psychologist, in attempting to teach techniques of therapy came to realize that a frame of reference, or a general orientation concerning how man interacted with his environment, was crucial to the adequate understanding of patients. His attempt at a general explanation developed over the course of time into a two-volume text entitled The Psychology of Personal Constructs (1955).

The philosophical basis of Personal Construct Theory is constructive alternativism. Kelly visualizes every man as a lay scientist. Men construe the universe in different ways. Any understanding of the universe is a matter of convenience. There are infinite interpretations of the world, all of which can claim validity. Man is always free to change his interpretation of the world. Man, the scientist, gains an understanding of the world through an infinite series of successive approximations. Man "builds construction systems through which to view the real world" (Kelly, 1955, p. 43). The world is real and these constructed systems are real. However, the representation of the world may be biased. Man invents and creates the world, he does not discover it. A man's way of organizing life is just one way of organizing it; since

he invented it himself, he can reinvent it as often as he wants.

Each person has a representation of reality. Human beings attempt to structure events to bring order out of chaos. The fundamental motive of humans is to understand the world and to control it. There are a variety of ways in which to structure the events in which a person is involved. People can choose among various alternative constructions of the universe. Kelly sees the world as in process. It is constantly changing, and therefore no interpretation can last forever. He feels that no personal understanding can last because people are always changing. Therefore man must change his construct theory to fit the world. If he does not change he will become hostile, wanting to shape others and not change himself.

Kelly's theory of personality is future oriented. He feels that man lives in and through anticipation. The basic postulate of his theory is: "A person's processes are psychologically channelized by the ways in which he anticipates events" (1955, p. 46). According to Kelly, people anticipate events by construing their replications. This is accomplished by locating similarities and differences. In order to know what a thing is, it is necessary to locate another thing similar. In order to discriminate, it is necessary to locate a third thing which is different.

Since the world is in a constant state of flux, all of these constructions are successive approximations.

The basic unit of analysis used by Kelly to study people is the construct. A construct is a dimensions for construing the way people are alike and different. The whole personality is organized of dichotomized construct dimensions. The nature of constructs is bipolar by definition. The bipolarity corresponds to Osgood's notion of directionality in the semantic differential. There is a definite number of constructs in each person's system. These are built around a core of supraordinate constructs which holds all others in place. The construct systems of people can differ in the number of constructs and in the nature of the constructs. The nature of constructs can vary in terms of permeability, pre-emptiveness, constellatoriness, etc.

Kelly developed the Repertory Test as a diagnostic instrument to analyze an individual's dimensional space. The individual is asked to judge a number of persons on a series of construct dimensions. The individual is asked to supply an identity for each of the roles provided by the tester. He then goes through the list of persons he has named indicating in what way two persons are similar and a third person is different. The subject's judgments are placed on a grid from which analysis of the judge's dimensional space are made.

Each person's system is composed of a pyramiding structure of superordinate and subordinate constructs. "Its organizational structure is based upon constructs of constructs, concretistically pyramided or abstractly cross-referenced in a system of ordinal relationships" (1955, p. 60). Kelly feels that the systematic arrangement of the constructs of a person are more characteristic of the personality than his individual constructs. While no two persons can have the same construction or the same psychological processes, the commonality corollary states: "To the extent that one person employs a construction of experience which is similar to that employed by another, his psychological processes are similar to those of the other person" (p. 90). Kelly feels that his theory is not a cognitive theory but a theory about how human processes flow. He does not differentiate between thinking, feeling, and action in this theoretical framework.

Kelly contends that an individual's perception of another tells more about the perceiver than about the person being perceived. An individual's personal framework determines what that individual will perceive. The organizational structure of the system or the channels of the system are themselves constructs and therefore vary in the same dimensions, i.e., pre-emptive, constellatory, propositional, permeability, etc. The permeability of a dimensions allows new constructs

to be added. Kelly feels that the permeable-unpermeable dimension is more accurate than the abstract-concrete dimension. However, the propositional-pre-emptive-constellatory continuum actually includes the features which usually distinguish the abstract-concrete dimension. Propositionality allows the individual to see all angles of a situation and the possibility of a great variety of actions, making quick decisions difficult. At the other extreme pre-emption implies "utter concretism" (p. 155). Pre-emption occurs when a person takes a ready-made stand without looking at all the aspects of a situation. He does not actually go through the process of making a decision. Pre-emption "commits one to handling a given situation at a given time in one way and one way only" (p. 520). In response to the REP Test, an individual might say that two people are alike because they are both women. While this statement has the appearance of excessive permeability (allowing the inclusion of new elements into a construct), it could be saying that all women are the same and unlike any man in any way. By saying they are women, the speaker has described them completely. Kelly describes this type of construct as rigid. Pre-emption can be used temporarily or may be a characteristic of a construct.

Constellatoriness, along with pre-emptiveness, is at the other end of the continuum from propositionality.

Kelly says that the constellatory construct implies dogmatic thinking. Stereotyping falls into this category, as illustrated by his example of constellatory thought: "Anything which is a ball must also be something which will bounce" (p. 155).

The propositional-pre-emptive-constellatory continuum is only one of a number of dimensions along which a construct can vary. However, Leventhal (1957) found that cognitively simple subjects differentiated less among people and perceived others as more similar to themselves than cognitively complex subjects. This would infer that subjects who were more cognitively simple tended to be more constellatory and have more identification. Adams-Webber (1970) compared the measures of these three dimensions and found them to be functionally similar, indicating that there is no discriminate validity to them.

Bieri (1966) applied Kelly's theory of personal constructs to the area of cognitive structure. He defines cognitive structure as "a hypothetical link between stimulus information and an ensuing judgment which refers to those cognitive processes which mediate the input-output sequence" (p. 184). An individual's experience of his social and physical world is organized by his cognitive structure which Bieri equates with schema, controls, or styles (1966). The individual's cognitive structure is relatively enduring.

This structure determines how an individual transforms information into a judgment. Knowledge of an individual's cognitive structure implies the possibility of predicting the way that individual copes with his environment.

Individuals vary in terms of the differentiation of their system of dimensions. Bieri is very emphatic that the variation is in terms of dimensions, not of categories, concepts, or regions. This variation of differentiation is from cognitive complexity to cognitive simplicity. Cognitive complexity is "an information processing variable which helps us predict how an individual transforms specified behavioral information into social or clinical judgments" (1966, p. 185). A cognitively complex individual has a highly differentiated construct system. The basis for this differentiation is the dimensional processes assumed to underlie one's perception of others. This person tends to construe social behavior in a multidimensional way.

Bieri feels that dimensionality is a central variable of cognitive structure. He developed the concept of cognitive complexity as a way of describing how conceptual systems vary in structure (Bieri, 1955). He defines cognitive complexity as the "degree of differentiation" in an individual's construct systems. Differentiation has two aspects: dimensionality and articulation (Bieri, 1966).

Dimensionality refers to "the relative number of different dimensions of judgments used by the individual (Tripodi & Bieri, 1964, p. 119)." The person who employs more dimensions in construing others is more complex than the person who uses fewer dimensions in construing others. Articulation refers to the number of distinctions among objects on a particular dimension. Bieri developed a method to measure cognitive complexity with a modification of Kelly's REP test (Bieri, 1955).

Kelly and Bieri are concerned solely with interpersonal judgments. Neither theorist attempts to make generalizations to other domains. Their conceptualizations can therefore be correctly applied only to the interpersonal domain.

Dogmatism

The authors of The Authoritarian Personality (Adorno et al., 1950) concentrate on the authoritarianism manifested by members of conservative political groups. Rokeach (1960) noted the same qualities in leftist groups of communists as in conservative groups and the same in religious non-believers as in Catholics. Believing that it was not as important what an individual believed as how he believed it, he distinguished between the content and the structure of an individual's belief system (Rokeach, 1954, 1960). Based on his observation that

authoritarianism and intolerance are not the sole property of conservatives, Rokeach employed "dogmatism" as a broader underlying concept to account for the occurrence of these qualities in persons with other ideological orientations. He suggests that despite variations in ideological content, a basic structure and function can be found which is associated with dogmatism.

Rokeach (1954) conceptualized dogmatism "as a hypothetical cognitive state which mediates objective reality within the person" (p. 194). He conceived of all cognitive systems as organized into two parts: a belief system and a disbelief system. These interdependent systems vary in structure and in content. The structure varies along a continuum from open to closed. The degree to which a system is closed is determined by three factors: the relative isolation of parts within and between the belief and disbelief systems, the interdependence of peripheral and central beliefs (peripheral beliefs being dependent on the source of the information), and a narrow organization of the time-perspective dimension (i.e., future-oriented). Dogmatism is defined as "(a) a relatively closed system of beliefs about reality, (b) organized around a central set of beliefs about absolute authority which, in turn, (c) provides a frame-work for patterns of intolerance and qualified tolerance towards others" (1954, p. 195).

The content of the belief-disbelief systems varies along a central-peripheral dimension. The central region contains basic or primitive beliefs concerning the self-concept, nature of man, and the nature of the world (Rokeach, 1960). The intermediate region contains beliefs about the nature of positive and negative authority which are the source of the individual's "map" of the world. These beliefs vary from rational, tentative reliance (open) to an absolute reliance (closed) on authority. The peripheral region contains all other non-primitive beliefs. Rokeach feels that although the specific content of beliefs and disbeliefs varies in different systems, there is a similarity among closed systems in the content of the central region of beliefs which "form the cognitive bases for authoritarianism and intolerance" (1954, p. 200).

Rokeach (1954, 1960) differentiates between rigidity and dogmatism. Although they are both forms of resistance to change, dogmatism is a broader, more abstract form of resistance to change. Dogmatism also refers to the "authoritarian and intolerant manner in which ideas and beliefs are communicated to others" (1954, p. 197). Rigidity is resistance to change of single habits or beliefs, whereas dogmatism is resistance to change of a total system of beliefs (Rokeach, 1960). Rigidity is manifested in relationships with things, while dogmatism is manifested in person-to-person relationships.

Rokeach (1954, 1960) conceived of dogmatism as a more general and inclusive concept than authoritarianism. Authoritarianism and intolerance as tapped in the F scale and E scale was specifically fascist authoritarianism and ethnic intolerance. Rokeach called this right authoritarianism and right intolerance. He devised two scales which he felt would measure general authoritarianism (the opinionation scale) and general intolerance (the dogmatism scale). Both scales employed the same instructions as the F scale, with responses on a scale from 1 to 7. Rokeach's research has centered around the assumption that intolerance is a function of perceived differences in beliefs, as already described. The general intolerance scale was therefore specifically designed to measure intolerance of belief, which he felt was a more general measure than fascism.

Concrete--Abstract Belief Systems

Harvey, Hunt, and Schroder (1961), like Rokeach, differentiate between the content of beliefs (referents) and the structure or organization of beliefs. They maintain that individuals differ in both these areas. However, there is a high correlation between the content of an individual's beliefs and the cognitive structure of

these beliefs. An individual's referents and cognitive structure "produce a selectivity and directionality of functioning which determines events persons are psychologically opened and closed toward" (Harvey, 1967, p. 202).

A belief system is conceptualized as mediating inputs and predisposing the individual to construe highly ego involving stimuli and events in consistent ways (Harvey, Hunt, & Schroder, 1961). Structure refers to the relationship among the various parts of a system. Conceptual systems vary along a concreteness-abstractness dimension. The properties of a system which characterizes this dimension are: (1) clarity--the definiteness of the concepts' differentiation, (2) compartmentalization-interrelatedness of the concepts, (3) centrality-peripherality--the degree of dependence of concepts on a given element.

The individual's position on the concrete-abstract continuum is determined by the differentiation and integration of his system. The more differentiated and integrated the cognitive structure, the more abstract it is considered. The abstract belief system differentiates the world into many facets and integrates them holistically but interdependently. The concrete belief system has fewer differentiations and leaves the elements in greater isolation.

While varying in the abstract-concrete dimension, cognitive functioning clusters in four primary cognitive patterns or systems (Harvey, Hunt, & Schroder, 1961). Research by Harvey (1967) and his associates has uncovered different syndromes of attitudes, behaviors, and beliefs accompanying or underlying each of the different cognitive systems. The different systems are described as follows:

> System 1 is characterized by such things as high concreteness of beliefs; high absolutism toward rules and roles; a strong tendency to view the world in an overly simplistic, either-or, black-white way; a strong belief in supernaturalism and inherent truth; a strong positive attitude toward tradition, authority, and persons of power as guidelines to thought and action; an inability to change set, role play, put oneself in another's boots, and to think and act creatively under conditions of high involvement and stress.
>
> System 2 [persons] are only slightly less dogmatic, evaluative, and inflexible than System 1 individuals. However, they tend to have strong negative attitudes toward institutions, traditions, and the social referents toward which System 1 persons are strongly positive. Also, representatives of System 2 are the lowest of the four groups in self-esteem and the highest in alienation and cynicism, wanting and needing keenly to trust and rely upon other persons, but fearing to do so because of potential loss of personal control and exploitation.
>
> A system 3 belief system is reflected in a strong outward emphasis upon friendship, interpersonal harmony, and mutual aid. This takes the more subtle form of efforts at manipulation through establishing dependency, of oneself on others and of others on oneself.

> System 4, the most abstract and open-minded of the four belief systems, manifests itself in information seeking, pragmatism, a problem-solving orientation, and a higher ability to change set, withstand stress, and behave creatively. Representatives of this system are neither pro-rule, like System 1 persons, nor anti-rule, like System 2 individuals.
>
> (Harvey, 1970, p. 1-2).

Individual systems vary in what is considered central to the individuals. The content of the central domain determines what aspects of the individual's environment are relevant and to what stimuli the individual is sensitive. Individual systems also differ in the amount of dependence on external (as opposed to internal) forces for perceptions, beliefs, and actions. This is very similar to Rokeach's (1960) description of the dogmatic person being unable to differentiate the validity of information from its source. Both these authors (Harvey, 1966; Rokeach, 1960) describe the individual at the concrete or dogmatic end of the continuum as accepting beliefs because of the authority of the source. At the other end of the continuum, individuals rely heavily on all available information.

Harvey and his associates have developed two instruments to measure conceptual systems. The "This I Believe Test" (TIB), a semi-projective sentence completion test, and the "Conceptual Systems Test" (CST), an objective scale. The object of the TIB is to dimensionalize the

individual's central concepts or beliefs. Subjects are asked to complete in two or three sentences the phrase "This I believe about . . . friendship, religion, myself, the American way of life, sex, marriage, etc." The responses are "scored in terms of positive and their negative orientations toward the referents and their absolutism, evaluativeness, multiplicity of alternatives, triteness, and normativeness" (Harvey, 1967, p. 210).

The CST is a 67-item scale which taps 7 factors: Divine Fate Control, Need for Simplicity-Consistency, Need for Structure-Order, Distrust of Social Authority, Friendship Absolutism, Moral Absolutism, General Pessimism. Answers are on a 6-point scale from strongly agree to strongly disagree. The four conceptual systems are differentiated in terms of their patterns of responses to the seven factors.

Scoring of the TIB is complicated, and to be accurate it must be scored by a trained judge. The interjudge reliability among trained judges has been reported as .90 or above (Harvey, 1965). However, the reliability of the scoring is contingent on the training of the judges. The CST overcomes the difficulty of scoring, but in doing so it lowers the validity of the results (personal communication, O. J. Harvey, 1972).

Complexity

William Scott (1966), in an attempt to clarify the fuzziness of the concept of rigidity, distinguishes between two uses of the word--rigidity as a description of behavior and rigidity as "an intrapersonality construct invented to help explain observed behavior" (1966, p. 302). Rigidity as a descriptive concept is defined by a set of behaviors. An invented construct may explain the connection between two concepts, but it is only an explanation of behavior and therefore cannot be measured directly. Since we are concerned with a mediational link between input and output, rigidity as an invented construct is appropriate to consider. This construct was originated by Lewin (1936), and he called it "topological rigidity." Further work on this construct, by Kounin (1941), described rigidity as a lack of interdependence, or a segregation of different concepts within a person. Scott feels that Kounin's rigidity construct bears a closer resemblance to integration than to the rigidity common in psychological research, and is therefore "evidently misnamed" (1966, p. 377).

Scott constructed a geometrical formulation of multidimensional space as a model of cognitive functioning. Cognitions are ideas people have about events and

objects. Cognitive structure refers to the manner in which an individual characteristically interrelates these ideas. Scott assumes that individuals differ in the manifestation of structural properties in a given domain. He conceptualizes the structure of cognitions with respect to a single domain of concepts (i.e., a particular class of objects--people, nations, acquaintainces, family, etc.) without prejudging the generality of this structure across different domains. "A cognitive domain consists of phenomenal objects which the person treats as functionally equivalent and the attributes by which he comprehends these objects" (p. 262, 1969).

Scott conceives an attribute to be represented geometrically as a dimension. The dimension denotes the amount of an abstract quality, or the lack of it, in an object, and is divided into segments representing categories of the attribute that the person recognizes. An image or concept of an object is conceptualized as the intersection of projections from the categories of attributes assigned to the object. The less attributes of objects covary, the more distinguishable the images are.

Differentiation is a structural property which refers to the distinctiveness among objects. Objects are differentiated in two ways: articulation and dimensionality. These two aspects of differentiation were first

introduced by Bieri (1966). Bieri refers to dimensionality as complexity. The number of reliable distinctions made by a person among objects on a particular attribute is called the articulation of the attribute. Dimensional complexity is defined as the number of "dimensions-worth of space utilized by the attributes with which a person comprehends the domain" (1967).

Scott defines and measures articulation independently of dimensionality. However, they both represent a precision of thinking about objects and thus are expected to covary.

The affective attribute is a basic cognitive attribute available to everyone. It dichotomizes categories into liked and disliked. In simple cognitive structures the affective attribute is the most important and is closely related to other bases for grouping (Scott, 1969). If all the attributes used by an individual are highly correlated, he does not perceive many distinctions among objects. The more independent attributes are from each other, the more the individual perceives finely articulated distinctions in objects. "The degree of subjective distinctiveness among cognitive objects thus depends directly on the dimensional complexity of the set of attributes used to describe them--i.e., their degree of mutual independence" (1963, p. 69). The attributes in simple

cognitive structures tend to be not well distinguished from the affective. A cluster of objects represents a particular combination of attributes. The clustering of objects in groups results from a correlation among attributes used by the individual. The cognitively simple person tends to cluster objects in groups without distinguishing among them, tending to stereotype objects. There are more dimensions in the complex structures that do not correlate with the affective, and therefore more distinctions are perceived among objects. An individual who conceives objects in evaluative terms has a high degree of affective salience. Scott has devised three instruments to measure the centrality of evaluative attributes: an open description and rating instrument, a check-list description instrument, and a rating instrument. Ambivalence exists, according to Scott, if there are both positive and negative characteristics in an image. A large number of ambivalent images cannot exist if there are high correlations among attributes.

Integration refers to the relationship among images in a cognitive domain. Cognitive integration is described by four structural properties: affective balance, affective evaluation consistency, centralization, and image comparability. The first two styles tend to be found in structures of low dimensionality and low ambivalence (Scott, 1969).

Scott (1969) feels that within a particular domain individuals vary in their manifestation of structural properties. However, evidence is accumulating which indicates the existence of stable individual differences in complexity across domains. Bieri and Blacker (1956) reported significant relationships between responses on the REP test and responses on the Rorscharch. Allard and Carlson (1963) found that the REP test employed by Bieri correlated .67 with a Famous Figures Test of complexity and .57 with a geometric Design Test of complexity. The Famous Figures Test and Geometric Design Test correlated .59 with each other. These authors feel the results lend strong support to the generality of complexity across domains. Seferi (1968) reports data which support the hypothesis that cognitive differentiation is a general characteristic of the subject, with the qualification that complexity is also a quality of discrimination depending on the objects considered (i.e., increasing with an increase in information about the object). Scott suggests that structural properties of cognition may be general traits reflected in a number of cognitive domains (1965), and reports empirical evidence of the correlation of structure properties across the domains of self, family, acquaintances, and nations (1969, 1973a, 1973b).

Feeling that Kelly's REP test was cumbersome, Scott constructed a task to measure dimensional complexity. This measure is specifically designed to measure this structural property of cognition. It is not dependent on the cognitive contents, but measures the relations of concepts. One form of the instrument requests the subject to list the objects (nations, acquaintances, celebrities, etc.) and specify the attributes he feels are salient. Based on the common replies to this form, another form has been constructed for each of these domains. The second form presents the same set of objects and attributes to every subject. Dimensionality is computed on the basis of intercorrelations among the attributes across objects.

Another measure of dimensionality is based on a listing and grouping task. This task requires the subject to list a number of objects that he feels belong to a specific domain. Then the subject groups them on the basis of common characteristics (1967, 1969). The number of different group combinations provides a simple measure of complexity.

Summary of Cognitive Structure

The origin of the basic organization of the cognitive structure can be traced to Lewin's field theory (1936).

The basic concept of this theory is the "life space," Lewin's conceptualization of the psychological field. The life space is defined as all the affective psychological factors for a particular person at a particular time. The life space is composed of a number of regions representing conditions in the person's life. Lewin stated that in a life space the degree of differentiation of a region is determined by the number of distinct elements in that region. This concept of multi-dimensional space is central to the work of Sarbin et al. (1960), Kelly (1955), Harvey, Hunt, and Schroder (1961), Bieri (1966), Rokeach (1960), and Scott (1962, 1963, 1966, 1969) and to their descriptions of the cognitive structure of individuals.

Sarbin describes the ecology as a system of dimensions, with the intersection of dimensions called a "module." A module is a cognitive representation of the ecology and a set of modules is the cognitive organization. This description is similar to Scott's (1962) description of a concept of an object.

Rapaport (1957) refers to cognitive structure as a means for organizing information from the environment. Mandler (1962) describes it as "rules of behavior, maps, or schemata laid down which connect various behavior and environmental inputs."

The basic assumption underlying the cognitive theories presented in this paper is that individuals differ in how they process stimuli. Each of these theories contends that an individual's perceptions of stimuli give more information about the individual than about the stimuli. The cognitive structure of the individual is conceived of as a link between input and output, a standardized way of processing environmental stimuli. There are more similarities than dissimilarities among the theorists. A differentiation between content and structure of beliefs is made in each of the theories. While the emphasis is placed on the structure of beliefs, the correlation between structure and content of beliefs is noted. The cognitive structure determines the stimuli which are relevant for a system and the objects to which the system is open.

The biggest differences among these theories seem to be in labeling rather than in conceptualization. Each theory describes a central aspect of cognitive structure as varying along a continuum from concrete (simple, rigid, dogmatic) to abstract (complex, flexible, non-dogmatic). The structures also vary along a number of other dimensions which are correlated with the major dimension. The dimensions common to most of the theories are openness-closedness (Harvey et al., 1961; Rokeach, 1960),

central-peripheral, rigidity-flexibility. Each theorist states that the list of dimensions is incomplete, leaving the way open for additional dimensions. These dimensions account for the variation in the concrete-abstract continuum (Harvey et al., 1961).

The point on the continuum at which the structure is located is a function of the amount of differentiation and integration of the concepts (constructs, schemata, etc.) of the system. The less differentiated and integrated the concepts, the more simple the structure. In turn, the differentiation and integration of the concepts determine the discrimination of stimuli. A highly differentiated structure discriminates more among stimuli than a relatively undifferentiated structure, which tends to categorize and stereotype stimuli. The organizational characteristics described apply to a single concept, to a domain, and to the total system. Harvey, Hunt, and Schroder (1961) and Scott (1969) specifically state that the variations on the concrete-abstract continuum could differ for different domains within the same person. But research (Allard & Carlson, 1963; Bieri & Blacker, 1956; Scott, 1973a; Scott, 1973b) indicates the existence of stable individual differences in structural properties across domains, and Scott suggests that individuals are predisposed to perceive events in a simple or in a complex manner.

The various measures of the concrete-abstract dimension have been shown to relate in a specific manner (Harvey, 1966). The F scale has been shown to correlate with the D scale. However, the D scale is more inclusive than the F scale and does not differentiate between System 1 and System 2 individuals in the Harvey, Hunt, and Schroder model. The F scale has been demonstrated to be a reliable measure of System 1 functioning, but it does not correlate with the TIB or CST because a low score includes System 2 and System 4 individuals. The systems are best distinguished by a combination of the F and D scales. System 1 persons tend to have high scores on both scales, System 2 persons tend to have low F scores and high D scores, System 3 persons tend to have middle scores on both scales, and System 4 persons have low scores on both.

Scott (1959) reports no correlation between dimensionality from his listing and grouping method and an adaptation of Kelly's REP test. He attributes this to the difficulty and tediousness of the REP test.

Using a modification of Kelly's REP test, Harvey's system breakdown has been shown to correlate with complexity, System 4 individuals being most complex and System 1 persons least complex. The correlation between Harvey's system breakdown and Kelly's REP test cannot be taken to

imply a correlation between all the structural properties enumerated by Scott. Kelly's REP test is actually only a measure of dimensional complexity, one aspect of differentiation according to Bieri (1966) and Scott (1969). Scott feels that articulation should vary with dimensionality, and he reports that in each of four domains studied affective balance and affective evaluative consistency tended to be found in structures of low dimensionality and low ambivalence of images (1969).

Vannoy (1965) reports a correlation of .20 between Bieri's measure of cognitive complexity and authoritarianism. Subjects scoring on the Gough-Sanford (1952) Scale of Rigidity were shown to decrease in rigidity as they progressed from concreteness to abstractness (Harvey, 1966). Resistance to change (rigidity) has also been demonstrated to correlate with the F scale (Meschel & Schopler, 1959) and with simple cognitive structure (Scott, 1962).

This research seems to indicate a correlation between dogmatism, concreteness, rigidity, and simplicity, operationally as well as conceptually.

STEREOTYPIC JUDGMENTS AND COGNITIVE STRUCTURE

Intolerance of Ambiguity

Using the autokinetic effect as an ambiguous situation, Sherif (1936) reported that subjects imposed structures on the stimuli, gradually stabilizing their judgments. Block and Block (1951) noted the individual differences in the number of trials in which subjects stabilized their judgments in Sherif's experiment, and they looked for underlying causes. They maintained that a "tendency toward closure or need to structure is used as a coping device by individuals with an intolerance of ambiguity." The Blocks therefore feel it would follow that subjects who establish their norms quickly will have more intolerance of ambiguity or more need for structure than subjects who take a longer time to establish their norms. The contention is that "the rapidity with which an ambiguous situation is structured represents an operational manifestation of intolerance of ambiguity" (p. 304).

Frenkel-Brunswik (1949) described the individual who was intolerant of ambiguity as using rigid categories, and arriving at "premature closure as to evaluative aspects,

often at the neglect of reality" (p. 115). The person had a tendency to dichotomize evaluations and hence was predisposed to black-white judgments. She further contended that intolerance of ambiguity might be apparent in perceptual-cognitive motor areas as well as in interpersonal or social areas. These individuals avoided ambiguous or unstructured situations. In addition, ambiguous or unstructured situations were perceived by these individuals in simplistic terms. Frenkel-Brunswik suggested that tolerance-intolerance of ambiguity was a personality variable associated with the authoritarian personality.

Block and Block (1951) tested Frenkel-Brunswik's hypothesis that intolerance of ambiguity was related to ethnocentrism. In a study patterned after Sherif's, the authors found that the data "support the hypothesis that intolerance of ambiguity as manifested by rapid establishment of a frame of reference is positively related to the degree of ethnocentrism as measured by the Berkeley Ethnocentrism Scale" (p. 309).

O'Connor (1952) found a correlation between ethnocentrism and intolerance of ambiguity in 57 Harvard undergraduates. Ethnocentrism was also found to be related to poor reasoning ability, even when grades were controlled. Intolerance of ambiguity was related to reasoning ability only if accompanied by ethnocentrism.

Steiner (1954) demonstrated that subjects with high scores on the E scale had a tendency to reject the possibility that the same person could possess highly desirable and highly undesirable traits. Steiner concluded that ethnocentric persons had a low tolerance of "trait inconsistency." A replication of this study (Steiner & Johnson, 1963) demonstrated the same tendency in persons with high F scores.

Foulkes and Foulkes (1965) compared high scores on the D scale to low scorers in their tolerance of trait inconsistency. These authors found that high scorers had a low tolerance of trait inconsistency, and tended to avoid compromise solutions. When presented with new information which was discrepant, the high scorers either changed greatly or adhered to their original impression. The study by Steiner and Johnson (1963) also gave contradictory information about stimulus persons to subjects. Twenty-four subjects were given initially favorable impressions of two stimulus persons in a laboratory situation. During a second interaction, the first stimulus person presented an undesirable impression and the second stimulus person gave a desirable impression similar to the first. Subjects scoring high on the F scale continued to rate the two stimulus persons about equally favorably. Low scorers lowered their ratings of the stimulus person

who made a less desirable second impression, and the final ratings of the second stimulus person were more unequal than those by the high scorers. Foulkes attributed the difference in responses to the fact that his study used a striking reversal of information, while Steiner and Johnson used a moderate reversal of information. His conclusion was that high dogmatic scorers resisted change or completely changed their initial impression if there was a striking reversal in information. They were resistant to change if there was a moderate reversal in information.

The scale used on the first experiment was the D scale, and in the second experiment it was the F scale. The CST discriminates between these tests with the F scale subjects being more concrete than the D scale subjects. The difference in response to the inconsistent information could be a result of the differences in subjects as well as in the amount of reversal. The information given in Steiner and Johnson's (1963) experiment was of two different types which could also account for the conflicting results. This possibility will be further explored in Section IV on cue utilization.

Mayo and Crockett (1964) found that cognitively complex and simple judges did not differ in their initial impressions. However, on the second impression the low

complexity judges showed a striking recency effect. The impressions of the high complexity judges were more ambivalent. The authors interpreted these results as an attempt on the part of low complexity judges to maintain a univalent impression.

In an attempt to study the effect of cognitive dissonance on extremes of cognitive structures, Harvey and Ware (1967) presented concrete and abstract subjects with positive and negative descriptions of stimulus persons' behavior. The descriptions of the stimulus person's present behavior ran counter to the description of his past behavior. Subjects were requested to write a two paragraph explanation of the perceived inconsistency. Concrete subjects perceived more inconcsistencies between the past and the present behavior, but gave fewer explanations of the inconsistencies. The authors described these subjects as attempting to neutralize the inconsistencies by attributing temporal change to the stimulus person. The subjects were also more likely to feel the possession of positive and negative characteristics as "mutually exclusive." The concrete subjects also gave "poorly integrated accounts" of the inconsistencies and used more stereotypic labels in their explanations.

Kleck and Wheaton (1967) demonstrated that high dogmatic scorers had less recall of inconsistent

information than low dogmatic scorers. They also preferred consistent information and tended to evaluate consistent information more positively.

The conceptualizations of cognitive structure already presented (Rokeach, 1960; Harvey et al., 1961; Kelly, 1955; Bieri, 1966; Scott, 1969) all described the simple cognitive structure as having concepts or constructs which were more interdependent than those of the complex cognitive structure. Kelly's REP test and its modification by Bieri (1966) operationally defined a simple cognitive structure as one which uses two or more concepts in an equivalent manner. Halverson (1970) maintains that this is a result of a high dependence on the evaluation dimension as a basis for judgments. Highly complex structures employ many dimensions of judgments besides the evaluative one (Scott, 1962, 1963) because they have more differentiated perceptions of others and more differentiated interpersonal concepts. Low complex persons are characterized by Harvey (1965) as having a "greater tendency toward more extreme and more polarized evaluations" (p. 206). These persons find the evaluative connotation of traits as more salient. Therefore, "good" or "desirable" traits are assumed to belong together. For example, a person who is intelligent is assumed to be creative because these dimensions are used in an equivalent manner. This makes it

difficult for these persons to imagine a person to be both intelligent and uncreative. They have a greater desire for trait consistency in others because they do not discriminate between traits as much as a complex person does.

Categorization

The major conceptualizations of cognitive structure relate cognitive complexity to greater differentiation (Kelly, 1955; Bieri, 1966; Rokeach, 1960; Harvey et al., 1961; Scott, 1962) a relation which has been supported by research (Scott, 1963; Halverson, 1970). Judges differing in complexity have been shown to differ in discriminations of others. Using a modification of the REP test Carr (1969) has shown that complex judges differentiate both positive and negative sources from others to a greater extent than low complexity judges. Low complexity judges differentiated negative sources from others to a greater extent than positive sources. Judges employed conceptual dimensions of their own choice in the judgments. Open-minded subjects were also found to be better able to distinguish between the source and the content of information than closed-minded subjects (Powell, 1962).

If cognitively complex persons differentiate more in their perceptions, Scodel (1953) reasoned that they

would be more accurate in their judgments. Working on this assumption, he compared authoritarians and nonauthoritarians in their social perceptions. Twenty-seven pairs of subjects, one of each pair authoritarian and one nonauthoritarian, interacted in a social situation. They were instructed to discuss neutral topics (radio, television, and movies). Each subject had previously responded to the F scale and MMPI. After the discussion, using the same questionnaire, each subject answered as he thought his partner would respond. Results indicated that authoritarian subjects did not perceive low authoritarian responses as significantly different from their own. Low authoritarians estimated the highs to be higher than their own responses, but lower than the highs' actual responses. In an elaboration of this study Scodel and Freedman (1956) had high authoritarians rate each other and low authoritarians also rate each other. This study found that the high authoritarians estimated their partner as high whether he was high or low. The low authoritarians were less uniform in their estimates, but placed their partners in the middle or high range whether he was high or low. The authors interpreted the results as indicating that high authoritarians' social perceptions tend to be "same stereotypic."

On the basis of clinical observations Gardner (1953) noted that individuals differ in the "span" or "realm" of

elements which they are willing to subsume under the same conceptual rubric. Indivicuals vary in the number of things they are willing to call the same. The similarity to Kelly's permeability dimension is obvious (1955). Also on the basis of clinical observation Gardner felt that this variance in what he called equivalence range was a "preferential mode" that was not determined by the individual's intelligence.

He hypothesized that subjects who employed smaller conceptual realms and therefore classified stimuli into smaller categories would be more accurate on discrimination tasks than those who employed larger categories. He felt that subjects who classified stimuli into small categories would be more aware of differences between stimuli. In order to test this hypothesis, he had 50 subjects perform a series of 5 judgment tasks. The subjects were first asked to put objects into as many categories as they felt were appropriate. They were then asked why the objects in a category belonged together. This is again reminiscent of the REP test. Subjects were then separated into two groups on the basis of this sorting task, with 25 subjects in the group which had large categories and 25 in the group with small categories. On the basis of this preliminary task, it was predicted that the small category subjects would be more accurate

than the large category subjects in the brightness and judgment tasks.

The hypothesis was confirmed. Subjects with smaller categories were more accurate in their judgments even though the population was homogeneous in intelligence. Some subjects were more consistent than others in their performance, but the groups' means were significantly different in each of the four judgment tasks. Gardner concluded that "persons are characterized by consistent differences in what they will accept as similar or identical in a variety of adaptive tasks" (p. 229).

Recently Bieri (1969) also demonstrated that subjects with low category width were more accurate in judgments of physical stimuli than those with broad category width. Broad category width subjects made more errors of inclusion than those with low category width.

White and Alter (1965) compared high scorers on the D and F scales to low scorers in the usage of conceptual categories in the classification of stimuli. The stimuli utilized were of two kinds: undesirable social acts and occupational names. The high scorers used fewer and broader categories in the judgments of high relevance because of their relevance to the dogmatic syndrome, i.e., intolerance of behavior different from the norm. The

groups were not shown to differ in the judgments of low relevant stimuli. The method used was card-sorting, similar to the one just described (Gardner, 1953).

The object sorting task employed by Gardner has many similarities to Kelly's REP test. Instead of finding two elements simliar and one different, subjects are asked to sort objects into as many categories as they feel are appropriate. Subjects are cautioned to be sure that "the objects in each group belong together for one particular reason" (p. 219). Subjects are subsequently asked why the objects belong together. Bieri (1955) developed cognitive complexity as a way of describing how conceptual systems vary in structure. He describes cognitive complexity as the degree of differentiation in an individual's construct system. In other words it is "the relative number of different dimensions of judgments used by the individual" (Tripodi & Bieri, 1964). As already described, the operational definition of the number of different dimensions described by Bieri is extremely similar to that described by Gardner (1953) and that employed by White, Alter and Rardin (1965). Scott suggests that the concepts of equivalence range and category width are the obverse of the articulation of attribution aspect of differentiation.

Bieri contends that cognitively complex persons perceive events in a multidimensional manner. Tripodi and Bieri (1964) hypothesized that these persons would therefore discriminate among multidimensional stimuli more than low complexity persons. In order to test this hypothesis, they asked subjects to make a judgment of maladjustment on the basis of social behavior. Three dimensions of social behavior (agressive, body anxiety, and social withdrawal) with eight items in each varying from slight to extreme in maladjustment were utilized. The results supported the hypothesis that highly complex judges discriminate ambiguous information to a greater degree than low complexity judges. The high complexity judges also transmitted more information from the stimuli of negatively correlating dimensions than the low complexity judges.

This series of experiments has indicated that in instances of judgmental tasks where ambiguous stimuli are presented, cognitively complex judges tend to be more accurate than cognitively simple judges. Simple cognitive structures due to their fewer differentiations have a greater tendency to include large numbers of elements in a category. Cognitively complex structures have a greater differentiation and are more apt to discriminate elements in their environment. This difference in processing of

stimuli predisposes the cognitively simple structures to large categorization and stereotypic behavior.

INFORMATION USE AND COGNITIVE STRUCTURE

Information Seeking

It has been demonstrated that cognitively concrete individuals have a low tolerance for ambiguity. These individuals form judgments more quickly and have a greater need for cognitive consistency (Ware & Harvey, 1967). However, it has been demonstrated that closed-minded subjects did not report fewer inconsistent arguments than open-minded subjects when exposed to the same stimulus material. Also, the difference in the number of consistent and inconsistent arguments reported by dogmatic subjects did not differ from those reported by the less dogmatic subjects (Feather, 1967). It would seem that subjects exposed to the same stimuli are aware of the same stimuli. Cognitive structure is conceptualized as a link between input and output. The individual's cognitive structure determines how the input is perceived and processed. The cognitively concrete individual receives the same input but his cognitive structure utilizes or channels this information into psychological significance differently than the cognitively abstract individual.

Harvey (1964) found that when subjects were requested to judge dots with an erroneously scaled ruler, subjects from both extremes of the continuum used the ruler less than those from the middle. However, the reasons given for not using the ruler were different. Highly abstract subjects were aware of the ruler but did not rely on it. Harvey describes this as "system maintenance through the admission of incongruous events and consideration of them without undue influence by them" (Harvey, 1966, p. 60). In contrast, highly concrete subjects tried to exclude the ruler from their vision. Harvey considers this belief maintenance through the exclusion of potentially conflicting inputs.

Cognitively concrete individuals have been demonstrated to have a greater desire for cognitive consistency than cognitively abstract individuals. Blocking out inconsistent information while making a decision is one way of eliminating cognitive dissonance. Another way of controlling cognitive dissonance is by selecting the type of information that an individual seeks. N. T. Feather (1967) tested subjects on their attitudes toward American intervention in Vietnam. He then gave them the choice of reading one of eight booklets on the topic. These booklets varied in the ratio of information approving to disapproving American intervention. Subjects generally tended to

choose information which supported their previously stated attitudes. The choice of information consistent with attitudes was more apparent for subjects with a low tolerance of ambiguity than for subjects with a high tolerance.

Intolerance of ambiguity has been demonstrated to be related to cognitive structure. Therefore, Feather (1969) in a later experiment pretested subjects in terms of dogmatism as well as tolerance of ambiguity. He found that subjects with a high intolerance of ambiguity and high dogmatism had greater preferences for consistent information and less preference for novel information. Feather tested subjects' attitudes after asking for their preference in order to insure that the statement of their attitudes did not influence their preference rather than the attitudes themselves. He also employed three issues so as to be able to generalize his results. He concluded that both novelty and consistency influence information selectivity and that "preference for supportive information and for novel information is a function of personality variables" (p. 249).

Driscoll and Lanzetta (1964) demonstrated that uncertainty increased information search. Subjects asked for more items of information when they were uncertain of their decisions in the three types of tasks:

complex decision problems, picture identification, and word guessing problems.

Ware and Harvey (1967) found cognitively concrete subjects to be more certain of their decisions than cognitively abstract subjects. Subjects were presented with behavioral information on a stimulus person. Then they were asked the probability of this stimulus person performing other specified behavior, and how certain they were of their decision. Cognitively concrete subjects decided more quickly and were more certain of their decisions on three levels of information.

Long and Ziller (1965) compared low and high dogmatic subjects in predecisional information search. Subjects were requested to make decisions on four different tasks: work completion, concept-information, perceptual tasks, and opinion tasks. Low dogmatic subjects were found to delay their judgments while searching for and utilizing additional information. They required more time to make psychophysical judgments and were more apt to reply that they did not know to opinion questions when the information was inadequate. In contrast, high dogmatic subjects limited their intake of information.

Cue Utilization

In the search to determine how individuals judge others there has been evidence accumulating that information

about others is organized by the individual's own theory of personality (Passini & Norman, 1966; Levy & Duncan, 1960). This is reminiscent of Kelly's contention that man is a scientist organizing the world through his personal constructs. Support for the possibility of a judge's theory of personality is demonstrated in experiments showing that the trait factor structure for ratings of complete strangers highly resembles the structure for ratings of friends (Pasini & Norman, 1966).

Levy and Duncan (1960) had subjects rate 225 photographs on 1 of 15 traits. Each photo was rated only once on a randomly assigned trait. A clear-cut factor structure was found to exist among the traits. The intercorrelations between the traits was assumed to be a result of aspects of the judge's perceptual processes rather than a result of the aspects of the photographs.

Rokeach (1951) asked subjects to define 5 religious and 5 political economic concepts. He classified the responses into abstract, concrete, reified, and miscellaneous groups. Abstract responses were those which had the general form: "a form of government in which . . .", "a religion in which . . ." Concrete responses were those in which the concepts were explained in terms of the people in the groups: "one who believes in . . .", "groups of persons who . . ." The results

demonstrated that the low prejudiced subjects utilized more abstract and less concrete definitions than the other groups. There was a general increase in concrete responses with an increase in prejudice. Differences in intelligence did not account for the variance. This study supports the hypothesis that people differ in their response to the same stimuli. The aspect of the stimuli to which they attend is different. Prejudiced persons attend to the cue "people" who are a part of a particular religion or government, while less prejudiced persons attend to the underlying or abstract concept, i.e., a form of government.

Evidence that individuals use different cues in making judgments was demonstrated by Slovic (1966). Subjects were requested to judge stimulus persons' intelligence on the basis of nine cues. The two relevant cues were high school grades and English effectiveness. Each subject was asked to judge fifteen stimulus persons with consistent cues and fifteen stimulus persons with inconsistent cues. When the cues were consistent a substantial number of subjects relied on both the high school grades and the English effectiveness cues. When the cues were inconsistent, only a few subjects used both cues. The subjects consistently relied on one of the two cues when given inconsistent information. The author feels that the judge discounted one cue due to his "implicit

feelings." It would seem to be due to his own lay theory of personality. The fact that some subjects employed two cues when they were inconsistent could be a function of their higher tolerance of ambiguity. It has been demonstrated that subjects with a higher tolerance of ambiguity and of trait inconsistency tend to be more cognitively abstract than subjects with a lower tolerance.

Hamilton and Gifford (1970) also contend that persons differ in the types of information they find salient. These researchers presented nineteen undergraduates at Yale with fifty-two profiles of stimulus persons. Each profile contained nine pieces of information: four biographical cues (race, religion, class, home region) and five personality cues. Subjects were asked to rate each profile on a five-point scale in terms of the degree of liberalness or conservativeness of each stimulus person. Each subject was rated in terms of the extent to which he used each of the nine pieces of information. Subjects differed in the kind of information they considered important. Subjects were grouped into types on the basis of the pattern of cues used. The types of judges based on cues weighted most were: (1) race, (2) no race, culture and home region, (3) biographical, (4) conscientiousness, (5) race, emotional stability, and culture, and (6) extroversion.

Wiggins, Hoffman, and Taber (1969) tested the hypothesis that the cue used to judge intelligence is related to characteristics of the judges. Subjects judged the intelligence of 199 stimulus persons on the bases of profiles composed of nine cues. An oblique factor analysis of the judgments revealed eight types of judges. The authors found that cues utilized in judgments of intelligence were related to the judges' general intelligence, authoritarianism, ethnocentrism, and religious conservatism, cognitive complexity, and educational level.

CONCEPTUALIZATION

What is Prejudice?

The preceeding review has presented information on the personality and behavioral variables associated with prejudice in an attempt to analyze the process of prejudice. However, the concept of prejudice itself has not been broached. Before a clear understanding of the process of prejudice can be attained, it is necessary to focus attention on the concept of prejudice. A definition of the phenomenon under observation is essential. The literature on prejudice supplies a wealth of definitions of the concept, none of which is universally accepted.

As Richard D. Ashmore (Collins, 1970) indicates, prejudice is generally accepted in scientific definitions to be an attitude. It is a feeling toward a person or a group of people. Ashmore points out that prejudice is generally measured as an attitude and therefore is operationally, as well as literally defined as such. The conceptualization of prejudice to be presented will thus view prejudice as an attitude.

Ashmore (Collins, 1970) differentiates between the common language definition and the scientific definition of prejudice. In common language usage an individual can be prejudiced for or against a person, an idea, a place, or an object. However, the area of prejudice which is focused upon in the behavioral sciences is prejudice directed toward a group of people or toward an individual because of his group membership. It seems appropriate in the context of this paper to limit prejudice to the study of prejudice involving intergroup interaction.

Ashmore (Collins, 1970) reviews a number of the major psychological and sociological definitions of prejudice. Each definition emphasizes particular aspects of the phenomenon. Finding concensus on some essential factors he enumerates the points of agreement as follows:

1. Prejudice is an intergroup phenomenon.
2. Prejudice is a negative orientation.
3. Prejudice is bad.
4. Prejudice is an attitude.

(p. 249)

Combining the common aspects of current definitions, Ashmore defines the concept of prejudice. "Prejudice is a negative attitude toward a socially defined group and toward any person perceived to be a member of that group" (p. 253). The present author does not feel

comfortable with Ashmore's inclusion of the term "negative." Prejudice is not universally accepted as a negative orientation. The common language usage of the word indicates a positive or a negative prejudice. And in fact a number of social scientists (Klineberg, 1954; Secord & Bachman, 1964; Williams, 1964) specify that there are both negative and positive prejudices, although, as Williams (1964) notes, negative prejudice is usually implied in studies dealing with intergroup behavior. As will be elaborated presently, research indicates that positive and negative prejudices are closely related. In view of these facts, it does not seem viable to eliminate positive prejudice from the conceptualization in a study of the process of prejudice.

The popular definition of prejudice focuses on making a judgment or forming an opinion before knowing all the facts. Ashmore omits this aspect of prejudice, although many social scientists (Cooper & McGaugh, 1963; Peterson, 1958; Klineberg, 1954; McDonagh & Richards, 1953; Newcome, Converse, & Turner, 1965; Secord & Bachman, 1964) emphasize this facet of prejudice. It would seem that the formation of a judgment is an important consideration when focusing on the process of prejudice.

Prejudice is conceptualized by this author as an attitude or a judgment about a group or a member of a

group. This attitude or judgment is formed before all relevant information is available, with the underlying assumption of specifically ignoring, or at least not looking for, contradictory information. Jones (1972) feels there are three criteria necessary to determine whether a judgment is prejudicial:

1. Is it a prior judgment? That is, was the judgment made before all the facts were known?
2. Are there facts which contradict it?
3. Are these facts known to the judge at the time of his judgment?

(p. 61)

The third criterion does not fit in with the conceptualization presented above. Contradictory facts might not be known to the judge because he made his judgment before they could be acquired. However, this judgment would clearly be prejudicial. A person who excludes blacks from his neighborhood does not know contradictory facts because he made his judgment before he could acquire them.

The word "prejudice" has evolved to the point of having the connotation of negative attitudes. However, prejudice as an act of pre-judging does not necessarily connote a negative judgment. The cognitively concrete individual, while predisposed to prejudgment, does not

necessarily make negative judgments. He is described as having extremely positive attitudes toward those individuals in authority (Rokeach, 1960; Adorno et al., 1954; Harvey et al., 1961). This individual can be said to be positively prejudiced toward authority figures. However, prejudice becomes a matter of social concern mainly when it is negative prejudice, and negativism is the area that is generally studied by social scientists.

Ashmore (Collins, 1970) specified that one of the aspects of prejudice that behavioral scientists agreed on was that it is "bad." This is generally implied if not specified in the definition. Both positive and negative prejudice are included in this conceptualization, but the inclusion is not meant to infer that positive prejudice is good. Judging an individual on the basis of his group membership necessarily implies a lack of individualization. Whether an individual is perceived positively or negatively, a loss of identity results when he is judged on the basis of group membership and not on his own value.

Race and Beliefs

Research has indicated that concrete cognitive structure is correlated with speed of closure (Harvey, 1965, Block & Block, 1951), with having less recall of inconsistent

information (Kleck & Wheaton, 1967), with having a greater tendency to categorize (Scodel & Mussen, 1953; Scodel & Freedman, 1956), and with having less desire for novel and inconsistent information (Feather, 1967). It has also been demonstrated that this type of cognitive structure has a tendency toward polarized evaluations (White & Harvey, 1965), a low tolerance for ambiguity (Block & Block, 1951; O'Connor, 1952) and a low tolerance for trait inconsistency (Steiner, 1954; Foulkes & Foulkes, 1965; Steiner & Johnson, 1963). Cumulatively, then, it would seem that all these factors would support the hypothesis that cognitively concrete individuals would be more likely to be prejudiced, a hypothesis which is supported by research (Martin & Westie, 1959). Evidence also indicates that persons vary in their utilization of cues for judgments of others. This variance is reported to be a function of the person's level of authoritarianism, ethnocentrism, and cognitive complexity (Wiggins et al., 1969). It would follow that to the extent that an individual's cognitive structure is concrete, to that extent he would employ concrete cues for judgments. If prejudice is correlated with the concrete abstract dimension, and assuming that race is a more concrete cue than beliefs, it would follow that cognitively concrete individuals would tend to be more highly race prejudiced than belief prejudiced. If this is so, then why would

Rokeach (1960) find that pretesting individuals in terms of prejudice did not distinguish those who were race prejudiced from those who were belief prejudiced? Is he therefore correct in his assumption that race prejudice is no different than belief prejudice?

Stein, Hardyck, and Smith (1965) also found that subjects were more belief prejudiced than race prejudiced. However, these same subjects assumed that blacks differed in terms of beliefs if this information was not previously given to them. Subjects judged the stimulus persons on the basis of the amount of information given to them.

Rokeach, Smith, and Evans (1960) employ their study as indication that race prejudice does not differ from belief prejudice, that beliefs are the basis of prejudice. Triandis (1961) contends that prejudice involves more than the lack of positive behavior, it also involves negative behavior, such as exclusion from the neighborhood. In addition to negative attitudes, this behavior specifies behavior before the beliefs of the individual are known.

Prejudice assumes a judgment before all relevant information is available, with the underlying assumption of specifically ignoring, or at least not looking for, contradictory information. In the experiments by Rokeach, Smith, and Evans (1960); Stein et al. (1965); and Byrne and Wong, (1965) the experimenters supplied all the relevant

information to the subjects before asking them for their impressions. Ambiguity was imposed on the subjects, regardless of their tolerance for it. The experimental design eliminated much possibility of the occurrence of prejudice (prejudging or impression formation before all the relevant information was available). The subjects were required to review all the information on the object person before being asked to make a judgment.

It could be said that the studies by Triandis (1961) and Rokeach, Smith and Evans (1960) removed any variance in ambiguity. The subjects were given a minimum of information and required to make their judgments on that. More abstract individuals were not given the opportunity to search for additional information on which to base their judgments.

The amount of information given about the stimulus person's beliefs was a confounding factor in the methodology of these experiments. These beliefs are apparent to an individual in a natural setting only after extensive interaction with another person. This factor affects the level of social distance, inferring contact between the subject and the stimulus person. The subject then is in a position of determining which individual, about whom he has already acquired a great deal of information, he would choose as a friend. There is an underlying assumption

concerning the amount of contact which has already taken place. If, as Triandis maintains, prejudice occurs in areas of greater social distance, discrimination would occur prior to any intimate interaction, and prejudiced individuals would not be in a position to obtain this amount of information.

The fact that so much information was supplied does not mean that the results of these studies were incorrect. Rather, it indicates that the situation studied more closely resembles a test of the contact hypothesis of prejudice reduction than the usual situation of discrimination. Individuals who are prejudiced and would not live in the same neighborhood with a black, nor invite a black home for dinner, would not learn about a black's beliefs. Prejudiced individuals by acts of discrimination close themselves to information about blacks. However, Supreme Court rulings on equal opportunity have made more common the situation in which whites are forced to interact with blacks on jobs and in schools. Such is the situation to which these studies address themselves. These studies are actually indications of reduction in prejudice motivated by increased information about blacks.

The amount of information available combined with the choices of behavioral intentions could indicate an unspoken approval of interracial interaction by the

researchers. Thus social pressure would be produced which could bias the results in favor of less prejudiced behavioral intentions. The fact that the studies are paper and pencil studies eliminates much actual commitment or threat on the part of the subject.

It is therefore necessary to test race, belief, and belief structure as determinants of behavioral intentions in a real life situation. Thereby the amount of interaction an individual will allow before making a judgment could be determined. An individual who excludes blacks from his neighborhood would not be able to acquire information on that black individual's beliefs and cognitive structure which contradict his stereotyped conception of blacks. It is necessary to determine situations in which contact can take place in order to approach attitude change through interaction.

Cue Utilization in Prejudice

It has been demonstrated that individuals vary in their use of cues for making judgments (Wiggins et al., 1969; Hamilton and Gifford, 1970). The cues utilized in making judgments about an individual's intelligence are related to the judge's cognitive complexity, authoritarianism, and ethnocentrism (Wiggins et al., 1969). These variables are indicators of the individual's cognitive

structure (Harvey et al., 1961; Rokeach, 1960; Bieri, 1956). It would therefore seem that the cues an individual utilizes in making judgments of others would correlate with his cognitive structure.

The research by Rokeach, Smith, and Evans (1960) indicates that people prefer as friends those who have similar beliefs. In other words, beliefs are the primary cues utilized in making friendship judgments. However, a small minority of subjects were found to be more race prejudiced than belief prejudiced. The subjects were pretested for racial prejudice, but no differences were found between the groups. Individual differences in cognitive structure were not controlled in this or in any of the above mentioned experiments on race and belief prejudice. It is highly probable that persons differ in how they make judgments which determine intentions, as they do in how they make judgments of intelligence. It is highly probable that the cue utilized in making judgments of others is related to the individual's cognitive structure.

There is an obvious correlation between the intimacy of a relationship and the amount of knowledge each individual has about the other individual. The information available to an individual in a relationship increases on a concrete to abstract dimension. The first information available is extremely concrete, i.e., physical characteristics, race, sex,

height, weight, attractiveness, etc. As the relationship develops in intimacy, the information accumulated increases in abstractness, the person acquires information about the object person's beliefs. As the relationship develops further, the person accumulates more information about the object person's beliefs and in the process acquires information about the object person's belief structure.

The content of an individual's beliefs also vary in abstractness. Byrne, Nelson, and Reeves (1966) suggest that the verifiability of the belief is a critical variable. It has been suggested that the effect of attitude similarity-dissimilarity on attraction is a special case of positive and negative reinforcement (Byrne & Nelson, 1965). The expression of similar attitudes gives positive reinforcement through "concensual validation" for opinions and beliefs. Concensual validation is the major source of reward for a drive to logical and correct interpretation of the stimulus world (Byrne, 1962). The arousal and reinforcement of this drive to be logical and predict the world is termed "effectance motivation" (Byrne, Nelson, & Reeves, 1966). The arousal of the effectance motivation is inversely related to the ease with which an issue can be verified.

Byrne, Nelson, and Reeves (1966) differentiate between physical relaity (Is it raining?) and social reality (Which political party has the best platform?). A

difference of opinion concerning a physical reality has little influence on effectance motivation because validation has little reward or punishment value. A social reality is difficult or impossible to test and therefore greatly arouses effectance motivation because concensual validation is rewarding. The importance of the issue was demonstrated to have no effect on attraction. The beliefs referred to by the paradigm in this paper are social beliefs or opinions which are difficult to verify.

At any point in time during a relationship, the person can form an impression of the object person. This impression can be tentative or certain. The quicker and more certainly the impression is formed, the less information on which that impression is based. The speed and certainty of decisions have been shown to vary as a function of the cognitive structure of the individual. Concrete subjects have been shown to make quicker decisions on a number of judgments and to seek less novel and inconsistent information than abstract subjects (Feather, 1969; Block & Block, 1951; Harvey & Ware, 1967). The impressions formed by concrete subjects has been shown to be more certain and less tentative than those of abstract subjects on three levels of information available (Ware & Harvey, 1967). These facts combine to predispose the concrete individual to be less open to new information than the abstract person.

They also determine the amount of information on which the individual will form his impression. If the amount of information increases in abstractness over time, the less time allowed for the formation of an impression, the more concrete the cues utilized for the impression will be. If the speed of decision-making and certainty are a function of the concreteness of the cognitive structure, it would seem that the more concrete the cognitive structure, the more concrete the information will be on which the judgment is based. See Figure 1.

For example, an individual with a very concrete cognitive structure would tend to attend to concrete cues such as race, sex, or age. As the amount of concreteness varied toward abstractness, the cue to which the individual would attend would also vary in the same direction. In this way the primary cue would vary from race to beliefs to cognitive structure, corresponding to the amount of abstractness or concreteness in the cognitive structure of the individual. This is not to say that the other cues are not attended to also, but that the other cues are most likely subordinate to the primary cue and are heavily attended to only in situations in which the primary cue is not available.

The more abstract an individual is the longer he will wait to form a certain impression. To the extent

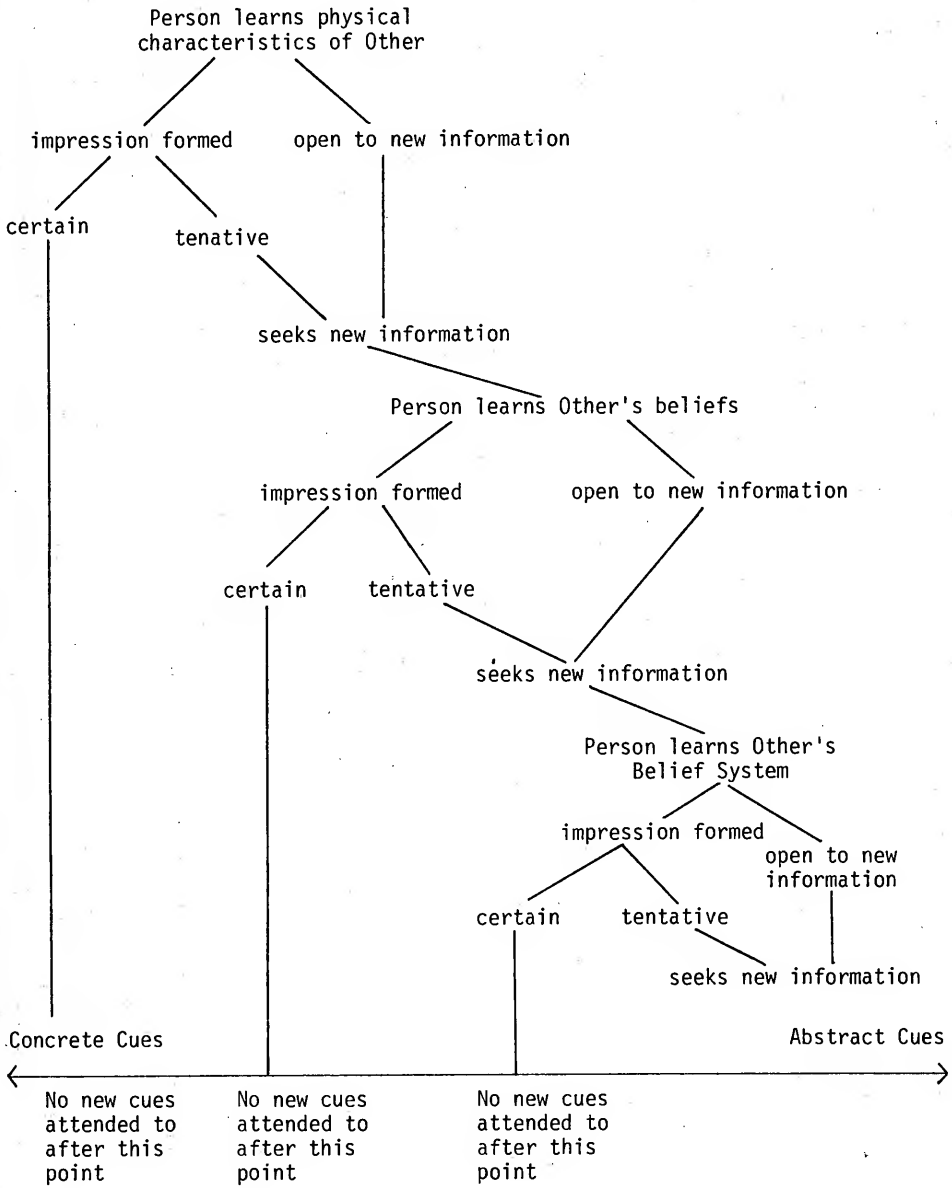

Figure 1. Paradigm for Cue Utilization in Impression Formation

that an individual remains open to more information, the information available becomes more abstract. The more abstract individual is more likely to remain open to new information and form tentative impressions. Therefore, as the abstractness of the individual's cognitive structure increases, so will the abstractness of the cues utilized for judgments.

It has been demonstrated that a cognitively concrete person makes decisions more quickly than an abstract person. The individual who makes a decision about another person when he knows only the physical characteristics of that person must use these physical characteristics as the criteria for his decision. If at the time he makes his decision the only information available is the other person's race, this information would be the basis for his decision. The individual who takes longer to make a decision gains additional information on which to base it. He acquires information on the other person's beliefs. He can therefore base his decision on this additional information also. The person who has even greater tolerance of ambiguity and waits even longer to make his decision has even more information. He has acquired information about the object person's system of beliefs. He therefore would use this cue also in making his decision. This is not to imply that physical characteristics, beliefs, and belief systems are the only cues on which individuals form

impressions of others. The cues utilized vary along a continuum from concrete to abstract. The individual's cognitive structure predisposes him to the level of abstractness for the cue utilized. But at each level of abstractness the cues utilized are probably determined by social learning.

The previous research in the area of race and belief prejudice did not allow the subjects to utilize their customary amount of information before making their decisions. All the subjects were given all the information available before making a decision. Subjects were not allowed to make decisions more quickly, or to make decisions based on less information.

Criterion

Everyone has preferences for people he would like to be friends with, marry, talk to, live in the neighborhood with, etc. Is an individual prejudiced who prefers to talk to one individual over another, or to be friends with one person rather than another? It would seem that the basis for his decision and the situation involved are the determining factors. It is not which person he prefers, but rather the criterion for his decision, which would determine whether the judgment is prejudiced.

Can it really be said that a person is prejudiced if he forms his friendship choice on the basis of the other person's beliefs? There are a number of cues varying along a continuum from concrete to abstract on which an individual could base his decision. If the concrete cognitive structure predisposes an individual to make his decision more quickly than does an abstract cognitive structure, it also predisposes him to utilize the most obvious cues--concrete ones such as race, sex, etc. If the identifying factor of prejudice is conceived to be pre-judgment; it would seem that prejudice occurs when an individual makes a decision about another individual before he has sufficient information for the decision.

An individual who screened out (pre-judged) individuals on the basis of a very concrete characteristic before acquiring additional information could be pre-judging. However, if that concrete aspect were relevant, it would not be pre-judging. For example, if a man were to rule out all men in his choice of marriage partners, it could not be said that he did so because he was prejudiced against men. It is obvious that sex is a relevant criterion for the choice of marriage partners.

The criterion for a behavioral intention is determined largely by the situation. The criterion used for the decision whether or not to live with an individual is

not the same as that used for the decision whether or not to speak to an individual on the street. The criterion differs for each behavior. If the criterion for being friends with someone is having similar beliefs, it becomes prejudice when information about the person's beliefs is not sought before the judgment is made. The behavioral situation should determine the criterion on which the judgment is made. This criterion would vary from very concrete in some situations to very abstract in other situations. The cue utilized for the judgment should vary with the criterion. However, the relationship between the cues employed by concrete relative to abstract individuals should remain the same across situations with the concrete individual tending to utilize relatively more concrete cues in each situation.

THE ENVIRONMENT AND PREJUDICE

Norms and Prejudice

Concrete cognitive structure has been demonstrated to be predictive of making quick decisions (Harvey, 1965; Block & Block, 1951), seeking less conflicting and less novel information (Feather, 1967), having low tolerance for ambiguity (Block & Block, 1951; O'Connor, 1952) and trait inconsistency (Steiner, 1954; Foulkes & Foulkes, 1965; Steiner & Johnson, 1963), and having low recall of inconsistent information (Kleck & Wheaton, 1967). Individuals with concrete or simple cognitive structures have also been shown to have a tendency toward polarized evaluations (White & Harvey, 1965) and to use larger categories and to discriminate less among stimuli than cognitively abstract individuals (Scodel, 1953; Scodel & Freedman, 1956). Cumulatively these tendencies would seem to predispose the cognitively concrete individual to judge another person before all the relevant information about that person has been processed. This manner of judgment can be conceived of as an operational definition of prejudice.

Prejudice as an act of pre-judging does not necessarily connote a negative judgment. Similarly, concrete cognitive structure, while predisposing the individual to prejudgment, does not necessarily predict a negative judgment. The cognitively concrete individual is described as having extremely positive attitudes toward those individuals in authority (Rokeach, 1960; Adorno et al., 1950; Harvey et al., 1961)--this individual can be said to be positively prejudiced toward authority figures. Prejudice becomes a matter of social concern mainly when it is a negative prejudice. The question then is what determines whether the individual will be positively or negatively prejudiced toward an out group.

A series of studies of intergroup relations and the reduction of conflict by Sherif and his associates (1962) has indicated that contact produces a change in attitudes. However, this change can be either positive or negative, with manipulation of the situation determining the direction of the change in attitudes. These studies were of artificailly produced groups, rather than of already existing racial groups. However, the situational influences on biracial contact are demonstrated also in interracial studies. Interracial contact occurring in a department store (Harding and Hogrefe, 1952) and in a packing house (Palmore, 1955) led to increased

racial acceptance in the work situation. However, there was little generalization to other social settings. Similarly, boys and girls in a summer camp established interracial friendships among cabin mates but remained segregated in areas outside the cabin setting (Yarrow, 1958).

Pettigrew (1959) found vast differences in the amount of anti-black prejudice in different regions--northern United States, southern United States, and the Union of South Africa. However, there were no significant differences in F-scores among the three areas. This review (Pettigrew, 1959) demonstrated that southern whites had more anti-black attitudes than northern whites. While authoritarianism was correlated with these anti-black attitudes, there was no significant difference in the amount of authoritarianism in the two sections of the country. The author concluded that sociocultural factors in the South accounted for the greater anti-black attitudes.

The effect of the milieu on interracial behavior was poignantly demonstrated by Minard (1952). He found that coal miners in West Virginia were integrated below ground and segregated above ground. However, the situation was not the only determinant of the behavior. While approximately 60 percent of the white miners completely reversed their behavior in the two situations, 20 percent would accept blacks in both situations and 20 percent

would never accept blacks in either situation. It is obvious that personality variables were also at work.

A study of a biracial camp for boys (Mussen, 1950) demonstrated that, as the result of the same interaction, prejudice had increased in some of the boys and decreased in others. Statistically significant personality and social differences were found to exist between the quarter of the boys who decreased in prejudice and the approximatley equal number of boys who increased in prejudice. The boys who had increased in prejudice were described as having more aggressive and dominance needs, more hostility toward parents, feeling that their homes were hostile and threatening, desiring to defy authority but fearing punishment, and as more dissatisfied with the camp and the other campers.

Pettigrew (1958_b) points out the two general positions from which prejudice has historically been studied: prejudice as determined by personality variables and prejudice as a reflection of cultural norms. Each of these frames of reference has tended to neglect the other. However, he states that "it becomes increasingly apparent that the psychological and sociological correlates of prejudice are elaborately intertwined and that both are essential to provide an adequate theoretical framework for this complex phenomenon" (p. 29).

Allport (1954) states that the outcome of interracial contact depends on the nature of the contact, the type of association involved, and the characteristics of the persons involved. He contends that it is not always possible to overcome the personal prejudice of an individual. After a review of interracial contact studies, he summarized the conditions of a contact situation which he felt necessary in order to reduce prejudice in "ordinary" people. "Prejudice (unless deeply rooted in the character structure of the individual) may be reduced by equal status contact between majority and minority groups in the pursuit of common goals. The effect is greatly enhanced if this contact is sanctioned by institutional supports (i.e., by law, custom, or local atmosphere), and provided it is of a sort that leads to the perception of common interests and common humanity between members of the two groups" (p. 110).

Interracial Contact in the Community

A review of a number of documented situations in which interracial contact has been successful follows. The criteria for success were minimal, namely, a lack of overt hostility and some indication of acceptance on the part of each group for the other. The focus of this section

is on community integration, to determine common patterns or elements in successful interaction among different racial groups.

The well-known study of public housing by Deutsch and Collins (1951) is an appropriate beginning. These authors compared the attitudes and behaviors of white housewives living in two integrated projects to those of white housewives living in two biracial projects which were segregated by building. The only major difference was in occupancy patterns; the projects were similar in terms of location, size, and price.

Interviews with the housewives indicated that changes had occurred in racial attitudes and behavior in the integrated developments. These changes did not take place in the biracial projects that were segregated by location. Housewives in the integrated projects demonstrated more unprejudiced behavior and attitudes than those in the segregated projects. These effects were more strongly accounted for by the different occupancy patterns than by differences in education, religion, or political attitudes.

Deutsch and Collins attributed the differences between the integrated and segregated projects to characteristics of the situation similar to those enumerated by Allport. There was a greater opportunity for intimate

contact in the integrated housing development, this contact was of equal status for blacks and whites, and it was implicitly sanctioned by the housing authority by the mere fact of the development being interracial. Different social norms were developed by the two types of housing, with housewives from integrated projects reporting social pressure to be friendly, while housewives from segregated projects expected social disapproval for interracial contact. White women from the integrated housing reported greater feelings of friendliness toward whites as well as toward blacks. In addition, white housewives in the integrated projects reported having more white friends as well as more black friends than those in segregated housing. The authors attribute this to norms divergent from those of the broader community, creating cross pressures and therefore a greater social cohesiveness in the integrated projects. White women in the segregated projects avoided situations in which blacks might participate and therefore had also less opportunity of interaction with white housewives.

The authors attributed the generally friendlier feelings of the housewives living in the integrated projects to the occupancy pattern. The measures of prejudice previous to residence in the integrated projects were based on recall by the housewives. The inaccuracies

accompanying this method are innumerable: it is a usual artifact that the contrast effect magnifies the change, and social desirability influences recall. But, in addition, attitude is far from being an infallible predicter of behavior. Sherif (1962) reports there is no correlation between individual racial attitudes and the amount of resistance in a community to racial change. There could be some other influence accounting for the difference in behavior between the two types of housing units.

As mentioned above, the contact situations studied by Deutsch and Collins (1951) had the characteristics enumerated by Allport as conducive to lessening prejudice. A very important characteristic was also present, that is, the contact was voluntary. Therefore a preselection factor could have contributed to the success of integration in these instances. It is highly probable that those individuals who have generally positive attitudes toward interracial contact would be more likely to move into an integrated housing project than those with less positive attitudes. If we examine Mussen's study (1951), we find that one of the characteristics of the individuals who decreased in prejudice was a more general satisfaction with their fellow campers and more positive attitudes toward their parents. One influence on the success of integration could have been a general personality trait of those in the project

consisting of a positive orientation toward other people in general.

Success of integrated housing is not limited to public housing. Grier and Grier (1960) conducted a broad study of privately developed, interracial housing. Thirty-seven different housing developments, varying in price, size, location, and ratio of minority group to majority group, were studied. Each development was studied from two to four weeks, with data consisting of interviews, observations, and files and records. There was no attempt by the authors to study only successful projects. A variety of minority groups was studied with emphasis on Negroes, Puerto Ricans, Mexican-Americans, and Orientals.

Interviews with residents of the different housing developments revealed much about the social relationships among the residents. The amount of interaction and the tone of the interaction varied along a continuum from intimate interactions and cohesive feelings reflected in community activities to distant, formal, but casual neighborly interaction. The variance in interaction was not accounted for by any physical variation in structure. There were no indications of hostility or division based on racial groups in any of the housing developments. Most of the projects had large numbers of children and much interaction and contact was apparent among them, even if parental interaction was characterized as limited, formal, or distant.

The authors (Grier and Grier, 1960) attributed the success of the more cohesive neighborhoods to the same type of factors defined by Deutsch and Collins (1951). There were a number of community activities, cooperative organizations, newspapers, credit unions, etc. increasing the possibility of cooperative interaction and the existence of superordinate goals. It is apparent that more opportunity for intimate interracial interaction exists in an integrated development. People moving into a new area, in which norms or interracial contact have not been established, are generally equalized in terms of status. The authors attribute cohesiveness to the existence of common problems related to moving into a new home.

As Allport (1954) points out, the sanctioning by "institutional supports" of interracial contact would facilitate the lessening of prejudice. By defining the housing as interracial from the onset, the management implicitly sanctioned interracial interaction. This factor is given more weight in the case of private housing, since it was voluntary on the part of the management. Some management were more explicit, supporting only interracial activities. These latter developments were characterized as extremely cohesive.

A factor in all of these communities which could account for the ease of integration was the fact that all of the above mentioned housing developments were built as interracial projects. There were no original residents who had established an all-white interaction norm. There were no pre-established, cohesive groups of either race. Closely related to this factor is the fact that all the residents moved into the community voluntarily, knowing before they did that the area would be interracial. Again the preselection factor is important because an acceptance of integration was indicated by the fact that these individuals voluntarily moved into an integrated area. Those persons of both races strongly opposed to interracial contact would avoid these developments. Therefore, integration was facilitated because only people with a positive attitude toward integration would make the commitment to live in an integrated area.

Deutsch and Collins (1951) admit the possibility that individuals in the interracial public housing had a strong need for public housing. However, at that time there was also public housing segregated by area. It is highly probable that those individuals who were extremely anti-black would move into the segregated housing units, while those with more tolerant attitudes would be more likely to move into the integrated units. While housewives

in the integrated housing indicated that their attitudes toward minority members had improved due to the occupancy pattern, the only indication of their previous attitudes is their descriptions after the fact.

In a study of a case in which this preselection factor does not appear to exist, Mayer (1960) describes a peaceful neighborhood change from all white to predominantly black. The area studied was a subdivision of Detroit, Russel Woods, described as "an island of middle-to upper-middle-class housing, surrounded by housing of considerably lower economic character" (p. 301). The only major factor differentiating this neighborhood change from what is considered normal was the rapidity of turnover and the fact that most of the sellers were white and the buyers were black. Information on the houses sold indicated that the prices were comparable to those of the previous five years.

The author attributed the peaceful change without panic or flight to four major factors. The first one is that the houses were under-evaluated. The area was also in a very convenient location, while the newer areas were poorly serviced by the public transit. These factors are common to many changing neighborhoods and don't account for the rather unexpected manner in which the change took place. However, there were unique features of the neighborhood which could influence the manner of change. The most

unusual feature of the area was the type of people who lived there. For one thing, the religious affiliation of the residents was decidedly atypical; 80 percent of the residents were Jewish and half of these were strictly Orthodox. The author describes the Orthodox Jews as an extremely close group with little interest in their other neighbors. All non-Orthodox are the out-group and therefore little differentiation is made on the basis of race. The Orthodox affiliation had another influence on the willingness of the residents to stay. Orthodox Jews must be able to walk to their synagogues, and therefore the location of their homes is a much more salient factor than transportation. Since the synagogues were near-by, forces worked to keep the Orthodox Jews in the area.

Another important segment of the population which tended to keep the community stable during the transition was a small group of intellectuals. These individuals, of a generally liberal persuasion, were proponents of racial equality. This group helped to reduce violent resistance to blacks moving into the neighborhood, and also to reduce panic and flight.

The author contends that the liberal element in the neighborhood would have moved only as a result of powerful forces. These forces were provided by the assumed decline of the neighborhood schools. The intellectual group

moved only for the benefit of their children's education. But many of the community institutions and facilities were declining, and even the stores were beginning to move. This was not the result of blacks moving into Russel Woods, but rather the result of the decline of the surrounding areas. There was a factor effecting an ethnic pull at work at the same time. There were two new suburbs providing the same facilities available in Russel Woods to the Jewish inhabitants with the added benefits accompanying modern and new homes.

Although this neighborhood eventually became predominately black, it seemed to be a consequence of the changing surrounding area rather than race prejudice on the part of the original inhabitants. The important point in this case is that the usual stereotype panic and flight or resistance did not occur. There was no evidence of hostility or conflict during the transition period.

Grier and Grier (1960) report a case in which new homes were built in a scattered pattern in an already developed white neighborhood. When these homes were sold to blacks, there was some panic-selling but it was short-lived. There were various amounts of acceptance on the part of the whites, but the neighborhood became a stable interracial neighborhood. The big difference between these cases of changing neighborhoods and those of the

public and private housing developments is the fact that the whites did not voluntarily move into an integrated area. Both the cases of changing neighborhoods report some immediate selling, in the latter case described as panic selling. It seems that the pre-selection factor could work in these cases also. The people who sold their houses and moved immediately possibly said that they were afraid that property values might decline. However, it is quite possible that this was a rationalization for a less acceptable reason, namely, prejudice.

Molotch (1969a) documented a more recent case in which a strong community organization was established with the intention of achieving "stable racial integration." South Shore, a changing community on the South Side of Chicago, was the setting for what is often referred to as an example of successful community integration. The above mentioned organization, the South Shore Commission, was established for this sole purpose. Alhtough the demographic information was accurate and indicated integration was taking place, there was a great discrepancy between the amount of physical and social integration. In areas in which behavior was characterized as informal, spontaneous, or intense the races remained almost entirely segregated. Even meetings of the South Shore Commission,, although integrated, were formal and devoid of any intimacy.

Whereas membership in the commission was voluntary, other essential characteristics were missing. The commission was well-established prior to the advent of any black membership. The blacks in the organization and in the neighborhood were of decidedly lower socio-economic status than the whites. Activity in the commission was not on an equal basis; all the wealth, power, and expertise were in the hands of the whites. The roles were not mutually dependent. Whereas the whites contributed unique contacts, status, and resources, the blacks were members by virtue of their color and could be replaced by any other black persons. The whites determined the policies with little input from the blacks. Contact was not of the intimate nature Allport prescribed, and it is little wonder that the whites reported more negative evaluations of blacks as a result of membership.

There were three or four "marginal organizations" in the community which were characterized by informal, intimate biracial interaction. These organizations varied in purpose, nature, socio-economic class of the members, and in orientation. However, they were similar in that race and status were not correlated and the organizations were based on a shared, deviant ideology. Equality within the organization was a function of equal usefulness to the organization. Most of the members of the organizations were either new to the South Shore area or because of their youth were new to

the South Shore organizational life. Therefore, there were no previously existing local ties to organizations. This factor is one that is common to those housing areas which were defined as integrated from the time of construction (Deutsch and Collins, 1951; Grier and Grier, 1960). In those cases also, all the residents were new to the area so that there were no pre-existing ties. Again, the factors enumerated by Allport seemed to be present, accounting for the success of integration. The pre-selection factor could also have influenced the effect, as could the lack of previous ties in the community.

Interracial Contact in the Laboratory

An interracial situation in which contact is not voluntary and participants cannot leave at the realization that minority group members are involved (as is the case in a changing neighborhood), but in which all the other factors are present, would indicate the significance of the pre-selection factor. If this factor is essential, it would indicate that individual differences between those people who voluntarily engage in interracial contact and those who avoid it account for some of the success in the cases of integration reported above.

S. W. Cook (1972$_b$) developed a set of characteristics of contact situations which, if optimum, could facilitate

reduction of prejudice. These characteristics are very similar to those of Allport and are as follows:

> The first of these was that the setting or situation in which the contact occurred defined as equal the status of the participants from the two racial groups.
>
> The second was that the contact situation called for or encouraged a mutually interdependent relationship-cooperation in the usual sense.
>
> The third was that the contact took place in a social climate in which the social norms of the immediate situation favored interracial association and equalitarian attitudes.
>
> The fourth was that the attributes of the Negroes with whom the contact occurred contradicted the prevailing stereotyped beliefs about them.
>
> Fifth, the setting was such as to promote personal or intimate association, that is, association of a sort which revealed enough detail about the Negro participant to encourage seeing him as an individual rather than only as a Negro.
>
> (p. 254-255)

In a ten-year research project Cook and his associates (1972) manipulated those characteristics so that all were optimum for the reduction of prejudice. Anti-black white coeds were placed in a situation where it was necessary to interact with a black. A commitment was made on the part of the coed to continue the interaction for one month. This contact was not voluntary on the part of the white subject in the sense that her commitment was made before she was aware that one of the other participants was black.

Anecdotal and behavioral results indicated that changes in behavior toward the black person had occurred in many of the white subjects. There was an increase in the number of comments directed toward the black confederate and in the extent of physical contact during the month's interaction. However, a test of attitudes toward blacks in general indicated that the subjects who had changed one standard deviation or more in the desired direction numbered between 35 and 40 percent, while about 40 percent retained essentially the same attitudes, and approximately 20 percent had become even more prejudiced.

Cook incorporated in his experiments the factor isolated by Molotch (1969a), namely, the individuals were all new to the area and had no previous ties. However, since the experiments were unsuccessful in some cases, it must be assumed that while this factor might be a necessary condition, it is not sufficient for successful integration.

In an attempt to explain his results Cook compared personality inventories of those subjects who had decreased in prejudice with those who had not changed. He found that the subjects who had changed were characterized by more negative self-concepts and more positive attitudes toward people in general.

Comparing boys who had decreased in prejudice after interracial contact, Mussen (1950) discovered that they had

more positive attitudes toward their peers and their parents than those boys who had increased in prejudice. Rokeach (1960) reported a correlation between positive attitudes toward people in general and a lack of prejudice. It will be also remembered that Deutsch and Collins (1951) reported housewives living in integrated housing projects as having more positive attitudes toward whites as well as toward blacks than those living in segregated housing projects. All these findings lend support to the existence of individual differences between people who decrease in prejudice as a result of ideal interracial contact and those who increase in prejudice or remain the same. Finding the same characteristics in people who voluntarily choose to live in an integrated area and those who decrease in prejudice with contact seems a strong argument for the existence of a preselection factor in the choice of an integrated living area.

THE EXPERIMENT

Introduction

The research reported above has demonstrated the type of environment which is most conducive to interracial harmony. By incorporating all the factors which have been shown to influence integration in a positive manner, it is possible to enumerate characteristics of contact situations which facilitate cohesiveness and the reduction of racial prejudice. It is of utmost importance that individuals are of equal status while in the situation; and it would be helpful if race and socio-economic status were not correlated. For greatest ease, all participants should initially enter the interaction situation at approximately the same time, so that status roles and social norms are not predetermined. It is obvious that this cannot always be the case, and in institutional settings it is impossible. However, working together toward a common goal based on similar beliefs and without competition would greatly enhance the cohesiveness of the group. If social norms sanctioning interracial friendship were pre-established and the existing authority supported this norm, the effect would be further facilitated. If these individuals were then in

close proximity over extended periods of time, making possible intimate contact and the perception of similarities, friendship and peaceful interaction are likely outcomes.

Supreme court rulings on equal opportunities have increased the likelihood of imposed interracial contact. Pre-selection or voluntary interaction cannot always occur. There are times when individuals must interact with members of other races without any choice. The question then becomes, what are the characteristics of the individual and of the situation in which hostility is avoided and acceptance can be the expected outcome?

A situation having the characteristics described by Allport (1954) and Cook (1972a), without the preselection factor, should find people changing their attitudes and behavior. What would be the direction of change? Cook reported changes in both directions and was then able to isolate personality factors which accounted for the direction of change. Personality factors due to the preselection factor could account for the differing success in Cook's study and those of interracial housing (Deutsch and Collins, 1951; Grier, 1960; Molotch, 1969). However, the existence of a preselection factor involved in the choice of an integrated housing unit does not mean that it accounts for all the differences in success of the contact situation produced

in the laboratory by Cook (1972) and in the natural settings. There is another major difference between the two settings and that difference is the amount of time spent in each of them. Cook's subjects spent two hours a day in the interaction and then returned to the conflicting norms of a southern city. In contrast, the housewives in Deutsch's and Collins' (1951) study lived in the interracial environment. Campbell (1958) reports that the attitudes of white students toward blacks were significantly affected by integration, the direction of change correlating with the student's perception of the attitudes of their peer group and family. The subjects in Cook's study were under the influence of the probably conflicting attitudes of their families and friends a major portion of each day. While individuals moving into an interracial environment usually have a simultaneous decrease in contact with their previous acquaintances, and with their families, they will spend most of their time under the same interracial influences. Both these factors support the positive influence of the interracial interaction and decrease the conflict with opposing norms.

Cook (1972) states that rigidity was not a factor in determining those subjects who decreased in prejudice. However, he eliminated subjects on the basis of the California F-scale which has been demonstrated to correlate

with rigidity (Harvey, 1965) as well as with cognitive complexity (Harvey, 1966). Extremely rigid and concrete individuals would thus have been eliminated from the study. Cognitively simple subjects have been described (Rokeach, 1960; Harvey et al., 1961) as being highly dependent on authority and norms. These individuals have also been shown either to resist change or to make a complete change in attitude (White & Harvey, 1965). They are described as having less integration of their beliefs than have abstract individuals (Kelly, 1960; Harvey et al., 1961; Rokeach, 1960), and therefore would be able to behave toward a minority group member one way in one situation and in another manner in a separate situation. This is consistent with the research indicating that changes in racial attitude at work (Harding and Hogrefe, 1952; Palmore, 1955) and in summer camp (Yarrow, 1958) are not always carried over into other social situations. The cognitively abstract person, in contrast, has highly integrated beliefs (Harvey et al., 1961; Rokeach, 1960; Kelly, 1955) and therefore any change in attitude would be more likely to be generalized to more social situations than the specific one in which it occurred.

It would seem that individuals would be more likely to change their attitudes and behavior in order to adjust to the norms in an environment, such as that described by

Deutsch and Collins, where all the pressure is in the same direction. In a limited interaction, such as in Cook's study, individuals would be more likely to adhere to the norms of the larger society, and to resist change. This would be particularly true of cognitively concrete individuals who tend to have less integration of their beliefs.

The ideal situation for studying changes in prejudice would be one in which the individuals live in the environment, but do not do so voluntarily. The preselection factor is not present if the individual does not enter of his own volition. Individuals who are confined to a closed institution live in an equal status interracial environment. Allport (1954) contends that the effect of equal status contact is "greatly enhanced" if the contact is sanctioned by institutional supports. Examples of these supports are such things as law, custom, or local atmosphere. Sanction of interracial contact by the administration is implicit if the residents are not segregated according to race. However, while the administration determines the "law," it does not determine the local atmosphere and custom. These latter variables are determined by those individuals directly involved in the situation, i.e., the residents. Different geographic locations within an institution tend to develop different

norms based on the attitudes of the individuals in the area. The differences in interracial attitudes of individuals newly admitted to the situation can be assumed to be a function of the environment (norms) as well as of the individuals themselves.

The purpose of this study is to compare the effect of the different situations and intrapersonal differences on the attitudes of individuals as they are admitted and proceed through the institution. It is hypothesized that an individual entering an equal status total community in which there is a positive attitude toward minority group members will tend to decrease in prejudice over time. If the norms are negative toward interracial interaction in the same situation, an individual being initiated into the institution will tend to increase in prejudice during the process.

The cognitively concrete person is more influenced by authority and conforms more to norms, as well as tending to seek less information before making a decision and to seek less novel information (Feather, 1969), leading the author to hypothesize that the decrease or increase in prejudice will be more rapid for the cognitively concrete individual than for the cognitively abstract individual.

The individuals with low self-esteem are most influenced by norms and therefore will tend to change most toward the norms of their living areas. Individuals with positive attitudes toward people in general will be most likely to decrease in prejudice after interracial interaction. The individual most likely to decrease in prejudice will be the cognitively concrete individual with low self-esteem and positive attitudes toward people in general. The person most resistant to change would be the cognitively concrete individual with high self-esteem and negative attitudes toward persons in general. The more abstract individuals would tend to be less prejudiced to begin with and the amount of their decrease in prejudice will fall between the other two extremes.

The Research Setting

There were several factors which entered into the selection of the research setting. It was felt that a closed community would have a maximum effect upon its new members. It would also be beneficial if new members of the community were admitted in relatively large numbers. This would allow the data to be compiled soon after an assessment of the norms. Thus the norms could be assumed to be constant during data collection. The setting would

have to be an interracial one in which contact is not voluntary and participants could not leave at the realization that minority group members are involved. Union Correctional Institution in north central Florida satisfied these criteria. Admittedly the inmates are preselected, but not on the basis of their interracial attitudes.

Union Correctional Institution is a maximum security state institution for males. It is a facility housing approximately 1,850 inmates who have committed crimes in the state of Florida. Upon admission, each new inmate is randomly assigned to a living area. The majority of new inmates are assigned to eight-men cells in the Main Housing Unit, but they can be assigned to two-men cells or dorms. Within three weeks of admission the inmates are distributed among the three housing areas.

The Main Housing Unit is built in the shape of an "E" with three floors of cell blocks on each leg and three floors of rooms on the back. The bottom floor of each cell block is made up of eight-men cells and the top two floors are made up of two-men cells. The bottom floor of the back wing is composed of offices. The top two floors are rooms for the trustees. There is no connection within the unit between the trustee floors and the cell blocks. Access to the trustee floors is from the outside. Access to the cell blocks is through the "West Gate," which requires a pass.

There are six floors of two-men cells and three floors of eight-men cells. The floors of the two-men cells are integrated by cell block but not within the cells, so that each cell has two men of the same race in it. One floor of eight-men cells is integrated within the cells, with four blacks and four whites assigned to each cell. The two remaining floors of eight-men cells are in the process of changing from integration within the cell block to integration within the cells. These two types of biracial living situations are somewhat analagous to the biracial housing units studied by Deutsch and Collins (1951) which were integrated within the unit and building or segregated by building while integrated by unit.

There are eight dorms at Union Correctional Institution. During the present study, men were assigned to six of these. These six dorms ranged in size from 18 men to 77 men. The ratio of the races was approximately 7 to 3 in each dorm, with whites the majority in half the dorms (3) and blacks the majority in the other half. See Table 1.

Inmates are confined to their living areas from 9:00 p.m. until 7:00 a.m. Between 7:00 and 8:00 a.m. they eat breakfast. At 8:00 a.m. the inmates report for work detail. They return at 12:00 noon and have

until 1:30 p.m. to eat and for free time. At 1:30 p.m. they again report for work detail. They return at 5:00 p.m. for dinner and free time until 9:00 p.m. lock-up. All their meals are received in the Main Housing Unit. The amount of time spent in confinement would seem to maximize the influence of the norms of the living area on a new inmate. The new inmates are very apprehensive and realistically so. This institution has a well-deserved reputation of being rough. Social psychological research has indicated that new members of a group (E. E. Jones, 1965; W. A. Scott, 1965) and individuals with low self-esteem or induced anxiety tend to conform more readily to group norms (Janis & Field, 1959; Lesser & Abelson, 1959; Darley, 1966). A low status group member may also use conformity as a means of ingratiating himself with the leader of the group (E. E. Jones, 1965). All of these factors would tend to magnify the effect of the social situation on the individual.

The formal attitude of the institution's administration is a positive one toward integration. However, the inmates report that the line staff, who are almost entirely white, encourage antagonism between the races and black inmates report feeling discriminated against. The overall atmosphere of the institution appears quite negative toward integration. However, this attitude varies according to

living area, race, and length of time spent in the institution. It is thus necessary to quantify the norms of the different situations in order to establish the direction of influence.

Sampling

Every new person admitted to Union Correctional Institution, Raiford, Florida between April 26, 1974 and May 27, 1974 was sent a pass requesting an interview. One hundred sixty men were admitted during that period. Of that number, 13 were in adminsitrative confinement and 1 was in the hospital and thus were unable to participate in the study. One hundred twenty eight men reported for the interview, with 16 declining to answer the questionnaire, leaving a total of 112 subjects.

Every inmate who completed the first set of questionnaires was sent a pass requesting an interview three weeks later. One hundred ten men were notified. Eight of these men had already been transferred to another institution and 19 others did not report for the second session of the study. A total of 83 inmates did participate in the second session.

Norms. Approximately one-third of the inmates in the total population were called out for the Black Equality

Scale. Every inmate from one trustee floor, one floor with 2-men cells, one floor with 8-men cells, and three dorms were requested to take the questionnaire. The total sample of completed questionnaires was 339.

Instruments

Rating of Acquaintances. This scale is a composite of Scott's Rating of Acquaintances (1966), a measure of cognitive dimensionality, and Wrightsman's Occupational Ratings Form (1962), a measure of self-esteem and prejudice. The scale measures each of these variables. It consists of twenty stimulus people to be rated on each of ten bi-polar adjectives. The objects to be rated are composed of six racial-role ratings, two self-ratings, and twelve ratings of specifically defined individuals. The Occupational Ratings Form (Wrightsman, 1962) randomly presents the stimulus persons with one adjective at a time. The format in the present scale was changed to conform to that of Scott's (1966) Rating of Acquaintances Scale. Each of the twenty stimulus persons is presented on a separate page with ten personality attributes dimensionalized on a seven-point rating scale. See Appendix A.

Measure of Dimensionality. The Rating of Acquaintances Scale adapted from Scott's (1966) measure was employed

as a measure of dimensionality. Each subject was asked to rate twenty stimulus persons on ten attributes, defined by a seven-point scale. The dimensionality of the subject's attribute system was defined as:

$$" D = \frac{k^2}{k + 2 \quad r^2} ,$$

where k equals the number of attributes with non-zero variance, . . . and r^2 is the sum of k(k-1)/2 squared correlations between all pairs of pretest attributes. The value of D will lie between 1.00 and k" (Monk, D. and Scott, W. A., 1971, pp. 1-2).

An object which is not rated on one of a pair of attributes is ignored in calculating the correlation between the attributes. In the case of a pair of attributes with fewer than three objects rated on both the correlation is given as -0.00.

Measure of Self-Esteem. The discrepancy between the ratings of the "self" and the "ideal self" on the Ratings of Acquaintances was employed as a measure of self-esteem. This measure was adapted from the Occupational Ratings Form (Wrightsman, 1962). The difference between the ratings of the self, as you are and yourself, as you would like to be were employed as the self-esteem score. The higher the score the lower the self-esteem of the individual.

Measure of Prejudice. The measure of prejudice was determined by the discrepancy between the ratings of the three black roles and corresponding three white roles on the ten traits in the Rating of Acquaintances Scale. The racial-role stimuli presented were: black inmate, white inmate, black correctional officer, white correctional officer, black trustee, and white trustee. These racial role stimuli were interspersed with the twelve described individuals and two self-ratings. The bi-polar adjectives employed were the same or similar to those from Wrightsman's scale (1962). Six of these were selected for Wrightsman's scale from Katz and Braly's (1933) list of characteristics stereotypically associated with blacks. Some synonyms were employed where the vocabulary was too difficult for the population. For example, industrious was replaced by hard-working. See Table 2. The difficulty of the adjectives was determined by a pilot study of the instruments prior to the reported study.

The score for prejudice was obtained by dividing the sum of the absolute differences of the ratings of blacks and whites by the number of completed pairs of ratings for the subject.

Rating of Types. This scale is an adaptation of the Ratings of Acquaintances previously described. This scale consists of twelve types of inmates to be rated on

five bi-polar adjectives. Three inmate types followed by five attributes are presented on each page of the scale.

Measure of Prejudice. The measure of prejudice was determined by the discrepancy between the ratings of black inmates and white inmates on the five traits. These racial stimuli were interspersed with the other ten types of inmates. The five adjectives employed were the most suitable of those in the Occupational Ratings Form (Wrightsman, 1962) with the addition of good work partner and likeable which are employed by Byrne and Nelson (1965) as a measure of attractiveness.

The score for prejudice was obtained by dividing the sum of the absolute differences of the ratings of black and white inmates by the number of completed pairs of ratings for the subject. See Appendix B.

Kiddie Mach. The Kiddie Mach (Christie et al., 1969) was employed as a measure of attitudes toward people in general. This is an adaptation of the Mach IV (Christie et al., 1969) developed for use with children or adults with limited reading ability. The Mach IV was used by Cook and Wrightsman (1971) in the Railroad Game study. It accounted for 94 percent of the variance for attitudes toward people in general in that study. The scale consists of twenty items given in a four-category Likert

format (agree very much being scored 5, agree a little being scored 4, disagree a little 2, and disagree very much 1, and missing items scored 3). The Machiavellianism score was obtained by summing the responses to all the items. See Appendix C.

Interview Schedule. The interview schedule was utilized as a method for confirming the race, living area, and length of stay for the inmate and establishing whether he had previously been in the institution or any other similar institution. Following the specific questions the inmate was asked open-ended questions concerning the institution and his living area. See Appendix D.

The Black Equality Scale. The Black Equality Scale was employed to measure the expectations of the inmates concerning the appropriate interracial behavior in specific situations in the institution. It was a way of quantifying the norms of interracial interaction. The scale consists of fourteen statements pertaining to appropriate interracial behavior in the institution. The subject is requested to indicate what he thinks someone in that situation should do. The response varies on a five-point scale from Absolutely should through May or may not to absolutely should not.

This scale was modeled after, and incorporated into, a measure of group norms developed by R. M. Swanson

(1973) for use with prison populations. The latter scale was a modification of one employed by Jessor, Graves, Hanson, and Jessor (1968) in their study of a Tri-Ethnic community, and follows their procedure. The scale was administered as the first questionnaire in a packet of eleven questionnaires in a larger research project.

The best orientation for positive change is considered to be strong attitudes supporting interracial equality. It was expected that those groups who are most likely to influence a new member in the direction of a decrease in prejudice are those with the highest equality scores and the greatest concensus on these norms. Concensus on the norms is defined as having little variance around the ideal norms. See Appendix C.

Procedure

The first phase of the experiment consisted of assessing the norms of different areas of the institution. The Black Equality Scale was administered to approximately one-third of the entire inmate population over a period of two and one-half weeks. There were two sessions a day, four days a week with approximately 20 inmates per session. The first session began at 8:30 a.m.

and the second session began at 1:30 p.m. The subjects were called out of the work detail by the prison staff in order to attend the testing session. The prison staff scheduled the inmates according to living area at the institution.

Present at each test session was a male or female experimenter and two assistants. There were always two males and one female researchers in attendance. The test sessions were introduced with a general orientation by the experimenter geared to establish rapport with the inmates. Then the experimenter read the instructions and the first three items aloud. The inmates were instructed to continue at their own pace until the questionnaire was completed. The research staff was available for questions at all times. In several instances the questionnaire had to be individually administered to illiterate or semi-literate inmates.

The second phase of the experiment focused on inmates newly admitted to the institution. It consisted of assessing the cognitive dimensionality, self-esteem, and attitudes toward people, as well as changes in prejudice of these inmates over time. This phase began simultaneously with the first phase but extended for four and one-half weeks longer. Over a period of one month every new inmate admitted to the institution was

requested to take the Rating of Acquaintances, Kiddie Mach, and Rating of Types within one week of confinement. The inmates' names were taken from a list of the unassigned inmates which was compiled weekly.

The instruments were administered to 112 subjects in ten sessions of approximately 25 to 30 inmates per session. There were two sessions a day, one day a week for five weeks. The first session began at 10:30 a.m. and the second session began at 2:30. There were three experimenters present at each session, one male and two females. The senior experimenter was a female. The test sessions were introduced with an orientation intended to establish rapport with the inmates. The inmates were given the instructions in groups of 5 to 10 by one of the three experimenters. In several instances the questionnaires had to be administered individually to illiterate or semi-literate inmates. On one occasion the instrument had to be translated to a Cuban-American inmate who had language difficulties. The group session required 1 to 1-1/2 hours.

Three weeks after his first session each of the 110 inmates who completed the first set of questionnaires was sent a pass requesting an interview. The second Rating of Types scale was administered to 83 inmates in groups of 10 to 14 inmates. There were four sessions a

day, one day a week, over a five-week period. The sessions began at 9:30 a.m., 10:30 a.m., 1:30 p.m., and 2:30 p.m. The only exception to this was the initial testing day which had an additional session at 3:30 p.m. This last session was eliminated because of the poor response of the inmates. There were three experimenters present at each session, two males and one female. The senior experimenter was female.

The inmates were quite reluctant to take the same questionnaire a second time. However, the inmates were in a situation in which there was no one to whom they could talk in confidence. Therefore, an orientation requesting the inmate to have a private interview with one of the experimenters upon completion of the instrument was enough incentive to overcome any hesitancy.

The instrument required 15 to 25 minutes to complete. A few inmates required individual administration due to their literacy level. When the inmate completed the questionnaire he notified one of the experimenters who would then interview him. The experimenter asked each inmate a series of specific questions, confirming his length of stay at the institution, his living area, etc. These questions were followed by open-ended questions asking the inmate to tell the experimenter about his living area and the institution in general. Each

interviewer followed the same interview schedule, but allowed the inmate to elaborate and digress within reason. Each session required from one to one and one-half hours. The entire data collection period required seven weeks.

RESULTS

Prejudice upon Entering the Institution

In order to determine the influence of the personality variables upon prejudice a four-way analysis of variance was performed. See Table 3--Mean prejudice scores upon entering institution. The independent variables were: dimensionality (high and low), Machiavellianism (high and low), race (black and white), and self-esteem (high and low). Prejudice as measured by Rating of Acquaintances was the dependent measure. Inmates with high Machiavellianism scores had significantly higher mean prejudice scores than inmates with low Machiavellianism scores ($p<.0035$), and white inmates had significantly higher mean prejudice scores ($p<.0583$) than black inmates. See Table 4--Analysis of variance for prejudice upon entering the institution. There was no main effect for dimensionality or self-esteem. However, these variables were significant in interaction with other variables. Dimensionality was highly significant in a two-way interaction with Machiavellianism ($p< .0325$) and a two-way interaction with race ($p<.0480$). Inmates with

low dimensionality scores were highly prejudiced if they had high Machiavellianism scores, but were the lowest prejudice group if they had low Machiavellianism scores. There was no difference in prejudice scores between the races in the high dimensionality group($\bar{X}$ (blacks) = 13.5, $\bar{X}$ (whites) = 13.6); however, in the low dimensionality groups the blacks had very low prejudice scores (mean = 7.55) and the whites had very high prejudice scores (mean = 21.80).

Self-esteem in interaction with race was significant ($p<.056$). The low self-esteem blacks (mean = 13.71) were more prejudiced than the high self-esteem blacks (mean = 8.69), while the high self-esteem whites (mean = 22.26) were more prejudiced than the low self-esteem whites (mean = 15.24).

Results of the same analysis with prejudice as measured by Rating of Types as the dependent measure indicated results similar to those report for Rating of Acquaintances. Inmates with high Machiavellianism scores had significantly higher mean prejudice scores ($p<.0031$), and whites had significantly higher mean prejudice scores ($p<.06$) than blacks. See Table 5--Mean prejudice scores (ROT) upon entering the institution.

Living Areas

Racial Equality Norms

The situation studied in this experiment was not a static one, but rather a study of individuals progressing through an institution. The purpose was to evaluate the effect of the environment and the characteristics of the individuals going through the process on the racial attitudes of blacks and whites. The hypotheses were primarily predictions of changes which would occur in the subjects over a period of time. It was hypothesized that areas with different interracial behavior norms would effect the inmates in different ways. It thus was necessary to first establish the differences between the specific living areas in order to document the existence of different interracial behavioral norms for each living areas.

The Racial Equality Scale was administered to approximately one-third of the inmates at Union Correctional Institution. The inmates who completed the questionnaire (339) were divided into three groups based on their living areas: two-men cells, eight-men cells, and dorms. A one-way analysis of variance was employed to determine if there were differences in racial equality norms between the living areas. The group with the lowest

norm scale mean (48.70, s.d.=11.11) was composed of inmates from living areas with eight men in the cells. This mean score was lower ($t=1.80$, $p<.10$) than the mean for those living in the dorms (mean=51.89, s.d.-9.31). The norm score mean for those living in the two-men cells was between these extremes (mean=49.11, s.d.=11.42), but not significantly different from either of them.

Race. The subjects were divided into two groups based on their race and a t-test was employed to determine if there were any significant differences in norms between blacks and whites. Blacks had a significantly ($t=5.77$, $p<.001$) higher mean racial equality scale score than whites ($\bar{X}$ (blacks) = 53.79, $\bar{X}$ (whites) = 47.14).

The subjects were then divided into six groups based on their race and living area. A t-test was performed to determine if there were any significant differences in norms between the groups. Blacks had a significantly higher mean racial equality score than whites in each area: two-men cells ($t=3.35$, $p<.10$), eight-men cells ($t=4.05$, $p<.001$), and dorms ($t=1.90$, $p<.10$). Whites in each area had significantly lower mean racial equality scores than blacks in every other area. Whites in the dorms had the highest mean racial equality scores of whites (mean=48.87) which was higher than whites in the two-men cells ($t=1.37$, $p<.20$) and whites in the eight-men cells ($t=1.72$, $p<.10$). There was

no significant difference between whites in the two-men (mean=45.43) and eight-men cells (mean=44.64) and there was no significant difference between blacks in any of the areas: two-men cells (mean=54.48), eight-men cells (mean=53.44), or dorms (mean=53.79).

Sampling

The major hypothesis concerning the differential effect of living areas is based on the assumption that the inmates are randomly assigned to the living units. Once the difference in living area based on the racial equality norms was documented, it was necessary to establish that the sampling for each area was in actuality a random one. In order to document this assumption, it was necessary to test for any significant differences in the predictor variables between the new inmates assigned to the different living areas. The total population of newly admitted inmates were divided into three groups based on their living areas: subjects who lived in two-men cells (N=18), subjects who lived in eight-men cells (N=72), and subjects who lived in dorms (N=19). A series of t-tests showed that there were no significant differences between any of the living-area groups on the predictor variables upon entering the institution. See Table 16--Living area differences in predictor variables and prejudice upon

entering the institution. T-tests further documented that there were no significant differences between any of the groups on prejudice as measured by Rating of Types or Rating of Acquaintances upon entering the institution.

Prejudice Change Scores

All the subjects who responded to both the first and second Rating of Types Scale were included in the sample. A total of 67 subjects responded to enough questions to enable a calculation of a change in prejudice score. These subjects were then divided into three groups based on their change in prejudice scores: subjects who increased in prejudice (N=21), subjects who remained the same (N=18), and subjects who decreased in prejudice (N=28). A t-test was employed to determine whether these groups were significantly different on the predictor variables: dimensionality as measured by Rating of Acquaintances, dimensionality as measured by Rating of Types, Machiavellianism, and self-esteem. A t-test was also used to determine if these groups were significantly different on the dependent variables: prejudice as measured by Rating of Acquaintances, prejudice as measured by Rating of Types--time period 1, prejudice as measured by Rating of Types--time period 2, and change in prejudice score. The t-tests indicated that

there was no significant difference between the subjects who increased in prejudice, those who remained the same, and those who decreased in prejudice on the predictor variables.

There were also no significant differences between any of the groups in prejudice as measured by the Rating of Acquaintances. However, there was a significant difference between all the groups on prejudice as measured by Rating of Types on time period 1 and time period 2. Prejudice (ROT) time period 1 indicated that the subjects who remained the same in prejudice had the lowest prejudice scores (mean=2.24), those who increased in prejudice had the middle level scores (mean=8.16), and those who decreased in prejudice had the highest scores (mean=20.83). The prejudice scores (ROT) for time period 2 were distributed so that the subjects who remained the same in prejudice had the lowest prejudice scores (mean=2.11), those who decreased in prejudice had the middle level scores (mean=9.43), and those who increased in prejudice had the highest prejudice scores (mean=19.00). There was a significant difference between each of the groups on the change in prejudice scores at the alpha level of significance of .001. See Table 7--T-Tests of total sample for differences in groups based on change scores.

Blacks and Whites

The total subject sample (N=112) was included in a series of t-test analyses to determine if there were significant differences between blacks (N=63) and whites (N=49) on the predictor or dependent variables. There was no significant difference between blacks and whites on dimensionality as measured by the Rating of Acquaintances Scale, but there was a significant difference on dimensionality as measured by the Rating of Types Scale. Blacks had significantly higher dimensionality scores. Whites had significantly higher scores on the Machiavellianism scale and the self-esteem scale. There was no significant difference in prejudice as measured by the Rating of Types between blacks and whites by the second time period, although the mean was still higher for whites (mean=13.5) than for blacks (mean=8.7). There was a significant difference between blacks and whites ($p<.10$) on change in prejudice, with the mean change for blacks 1.2 and for whites -4.7. See Table 8--T-Tests between blacks and whites on predictor and dependent variables.

There was a significant difference between blacks and whites on the predictor variables, as well as three of the dependent variables. In addition, there were siginificant interactions ($p<.048$) between race and dimensionality

and race and Machiavellianism ($p<.03$). It was, therefore, necessary to analyze these groups separately.

Whites

All the white subjects who responded to both the first and second Rating of Types questionnaire (N=28) were included in the sample. These subjects were divided into three groups based on their change in prejudice scores: subjects who decreased in prejudice (N=14), subjects who remained the same (N=8), and subjects who increased in prejudice (N=6). A series of t-tests was employed to determine if the groups differed on the predictor or dependent variables.

There was no significant difference in dimensionality as measured by the Rating of Acquaintances or Rating of Types between white subjects who increased in prejudice, those who remained the same, and those who decreased in prejudice. There was a significant difference in Machiavellianism scores between whites who decreased in prejudice ($p<.05$, mean=62.50) and those who remained the same (mean=53.13). The mean Machiavellianism scores of the subjects who increased in prejudice was between these two extremes (mean=60.67), but was not significantly different from either of them. White subjects who did not change in prejudice had significantly lower self-esteem scores ($p<.10$,

mean=17.88--high scores indicate low self-esteem) than those who decreased in prejudice (mean=11.14). Those who increased in prejudice had higher self-esteem scores (mean=11.40) than those who remained the same, but the difference was not significant.

There was no significant difference in prejudice as measured by Rating of Acquaintances between white subjects who decreased in prejudice, remained the same, or decreased in prejudice. Prejudice as measured by Rating of Types for time period 1 did indicate a difference between the groups. Subjects who decreased in prejudice had significantly higher mean prejudice scores (mean=2.97) than those who increased in prejudice (mean=1.20) or those who remained the same (mean=.45). There was a significant difference in mean prejudice scores as measured by Rating of Types in time period 2 between those white subjects who remained the same (mean=.45), those who decreased in prejudice (mean=1.59), and those who increased in prejudice (mean=2.17). There was no significant difference between subjects who increased in prejudice and those who decreased in prejudice at time period 2. See Table 9--T-tests for differences in groups of white subjects based on prejudice change scores.

Blacks

All the black subjects who responded to both the first and the second Rating of Types questionnaire (N=38) were included in the analysis. These subjects were divided into three groups based on their prejudice change scores: subjects who decreased in prejudice (N=13), subjects who remained the same (N=9), and subjects who increased in prejudice (N=16). The same procedure for analyses was employed as described above for the total sample. There were no significant differences between any of the groups on any of the predictor variables. Black inmates who increased in prejudice had significantly higher mean prejudice scores on the Rating of Acquaintances scale than those who decreased in prejudice ($p<.10$). Subjects who remained the same on prejudice scores were significantly lower on prejudice as measured by Rating of Types at time period 1 (increased, p .05, decreased, $p<.001$) and time period 2 (increased, $p<.001$, decreased, $p<.05$). Subjects who increased in prejudice received significantly higher mean prejudice scores as measured by Rating of Types for time period 2 than those who decreased in prejudice ($p<.01$). See Table 10--T-Tests for differences in groups of black subjects based on prejudice change scores.

Correlational Analysis

The correlational analysis indicates that dimensionality as measured by Rating of Acquaintances is related to dimensionality as measured by Rating of Types (r=.40). It is also correlated (r=.37) with self-esteem as measured by the same instrument. Machiavellianism is correlated (r=.32) with prejudice as measured by Rating of Types at time period 1 but not with the same instrument at time period 2. Self-esteem is correlated with race (r=.34). Race is also related to prejudice as measured by both instruments (Rating of Acquaintances, r=.27, Rating of Types, r=.36). These two measures are correlated .42. Prejudice change is correlated with prejudice as measured by Rating of Types at time period 1 (r=.31) and time period 2 (r=.40). See Table 11--Correlational analysis.

Step Wise Regression Analysis

A step wise regression analysis for the entire subject sample indicated that race accounted for the largest percentage of the variance for the prejudice change scores. See Table 12--Step wise regression analysis for entire sample. Therefore, this analysis was performed separately for blacks and whites.

Five variables entered the regression equation for white inmates. They combined to account for 23 percent of the variance of the prejudice change scores. The five variables most highly associated with prejudice and their correlations are shown in Table 13--Step wise regression analysis of predictor variables for white inmates on prejudice change scores.

Six variables entered the regression equation for black inmates. They combined to account for 17 percent of the variance of the prejudice change scores. The six variables most highly associated with prejudice change are shown in Table 14--Step wise regression analysis of predictor variables for black inmates on prejudice change scores.

Analysis of Covariance

Three analyses of covariance were performed to determine the effect of self-esteem on the dependent variables while partialing out the effect of dimensionality. These analyses indicated that self-esteem did not produce a significant effect on any of the dependent variables: prejudice as measured by Rating of Acquaintances ($p<.68$), prejudice as measured by Rating of Types at time period 1 ($p<.42$), prejudice as measured by Rating of Types at time period 2 ($p<.34$).

Four analyses of covariance were performed to determine the effect of the predictor variables on prejudice as measured by Rating of Types at time period 2 while partialing out the effect of the same measure at time period 1. There was no significant effect on prejudice at the second time period by any of the predictor variables: dimensionality ($p<.38$), Machiavellianism ($p<.67$), living area ($p<.81$), or self-esteem ($p<.89$).

Residual Gain Scores

Every subject who responded to both the first and second Rating of Types Scale (N=70) was included in the sample. A residual gain score, calculated by the formula "gain=posttest score minus the pre-post regression coefficient times the pretest score," was computed for each subject. These subjects were then divided into three groups based on their residual change scores: subjects who had increased in prejudice (N=21), subjects who remained the same (N=35), and subjects who decreased in prejudice (N=14). The criterion for inclusion in the change groups was a residual change score of one-half a standard deviation or .50 in the appropriate direction. Any subjects who did not have a change score equal to or exceeding this amount was placed in the no change group for the purposes of analysis. A series of t-tests were performed to determine if the

three groups differed on any of the predictor variables: dimensionality as measured by Rating of Acquaintances, Machiavellianism, or self-esteem. A t-test was also used to determine if these groups were significantly different on the dependent variables: prejudice as measured by Rating of Acquaintances, prejudice as measured by Rating of Types, time period one or two.

The mean dimensionality score was ($p<.10$) higher for subjects who decreased in prejudice than for the other two groups. There was no significant difference between any of the groups on Machiavellianism. The groups who increased in prejudice tended to have lower self-esteem scores, but the differences between the means were not significant. Subjects who remained static in their prejudice score had a significantly lower mean prejudice score than those who decreased in prejudice as measured by Rating of Acquaintances ($p<.10$) and as measured by Rating of Types at time period 1 ($p<.01$). These subjects also had significantly lower mean scores than those who increased in prejudice as measured by Rating of Types at time period 1 ($p<.01$) and time period 2 (p .001). The subjects who increased in prejudice had a significantly higher ($p<.001$) mean score than those who decreased in prejudice as measured by Rating of Types at time period 2. See Table 15--T-Tests of total sample for differences between groups based on residual change scores.

As indicated previously there was a significant difference between blacks and whites on the predictor variables, as well as three of the dependent variables. See Table 8--T-Tests between blacks and whites on predictor and dependent variables. Because of these differences it would be logical to analyze these groups separately.

All the white subjects who responded to both the first and second Rating of Types questionnaire (N=30) were included in the sample. These subjects were divided into three groups based on their residual change scores: subjects who increased in prejudice (N=11), subjects who remained the same (N=12), and subjects who decreased in prejudice (N=7). A series of t-tests were employed to determine if the groups differed on any of the predictor or dependent variables.

There was no significant difference between any of the groups on dimensionality, although the tendency was for subjects who decreased in prejudice to have higher scores. There was also no significant difference in Machiavellianism, self-esteem, or prejudice as measured by Rating of Acquaintances between white subjects who increased in prejudice, those who remained the same, and those who decreased in prejudice. White subjects who remained the same in prejudice had significantly lower ($p<.05$) scores on prejudice as measured by Rating

of Types at time period 1 than the other two groups, and significantly ($p<.001$) lower scores than those who increased in prejudice as measured by Rating of Types at time period 2. The subjects who decreased in prejudice also had mean prejudice scores significantly lower ($p<.001$) than those who increased in prejudice as measured by Rating of Types at time period 2. See Table 16--T-Tests of white sample for differences in groups based on residual change scores.

All the black subjects who responded to both the first and second Rating of Types questionnaire (N=40) were included in the analyses. These subjects were divided into three groups based on their residual change scores: subjects who increased in prejudice (N=10), subjects who remained the same (N=23), and subjects who decreased in prejudice (N=7). The same procedures for analyses were employed as described above for the total sample. There were no significant differences between any of the predictor variables or prejudice as measured by Rating of Acquaintances, although the tendency was for blacks who increased in prejudice to have higher scores on the latter instrument. Black inmates who remained the same in prejudice had significantly lower mean prejudice scores as measured by Rating of Types at time period 1 ($p<.001$) and time period 2 ($p<.10$) than

those who decreased in prejudice, and lower than those who increased in prejudice as measured by Rating of Types at time period 2 ($p<.01$). Black subjects who increased in prejudice had significantly lower ($p<.001$) mean prejudice scores as measured by Rating of Types at time period 1 than those who decreased in prejudice. There was no significant difference between subjects who remained the same and those who increased at time period 1 and subjects who increased and decreased at time period 2. See Table 17--T-Tests of black subjects for differences in groups based on residual change scores.

Analysis of Covariance. An analysis of covariance was performed to determine the effect of self-esteem on the dependent variable, residual gain scores, while partialing out the effect of dimensionality. This analysis indicated that self-esteem did not produce a significant effect on the residual gain scores ($p<.31$).

Step Wise Regression

A step wise regression analysis with residual change scores as the dependent measure performed on the entire subject sample indicated that no main effects entered into the equation. However, a three-way interaction between living area, race, and self-esteem accounted for 33 percent of the variance. Therefore, the sample was

split into three groups based on living area. See Table 18--Mean residual change scores.

A step wise regression analysis performed on the subjects in the two-men cells indicated that five variables entered into the equation accounting for 76.5 percent of the variance ($p<.06$). The five variables most highly associated with prejudice change are shown in Table 19--Step wise regression analysis on residual change scores for inmates in two-men cells.

A step wise regression analysis performed on the subjects in the eight-men cells indicated that three variables entered into the equation accounting for 11.7 percent of the variance. However the f value was so low ($p<.26$) that the results are of questionable value. The three variables are shown in Table 20--Step wise regression analysis on residual change scores for inmates in eight-men cells.

A step wise regression analysis performed on the subjects in the dorms indicated that three variables entered the equation accounting for 78.9 percent of the variance ($p<.0004$). The variables most highly associated with prejudice change are shown in Table 21--Step wise regression analysis on residual change scores for inmates in dorms.

DISCUSSION

Prejudice Upon Entering the Institution

The primary focus of this paper is on prejudice. The concern is with attitudes of blacks and whites toward each other when they are in a closed community. It is not surprising that the prejudice scores of the inmates upon entering the institution indicate that white inmates are much more prejudiced than black inmates. As the men enter the institution, they are reflecting the norms and values of the outside culture. Our society encourages whites in negative attitudes toward blacks and subtly teaches that blacks are inferior. Even with the advent of the "black is beautiful" movement, the effects of centuries of playing the role of subordinate are not erased. Discrimination today is still rampant and almost totally directed toward blacks by the white majority.

This first prejudice score is a result of personality variables and cultural variables present is society in general. Since the previous environment is unknown, the first area with which this paper will deal is the predictive value of the personality variables for the inmates'

degree of prejudice. The hypothesis that individuals with negative attitudes toward people in general (high Machiavellianism scores) were more prejudiced than those with positive attitudes toward people in general was supported. The Deutsch and Collins (1962) study stated that white housewives in the integrated housing unit reported having more black friends and a greater decrease in prejudice than women living in the biracial housing units which were segregated by area. These same women, however, reported having more white friends as well. The data reported here strongly support the hypothesis that a preselection factor was present in the choice of living area. People with more positive attitudes toward people in general were more likely to move into an integrated unit. The presence of this attribute, which is correlated with low prejudice, would magnify the positive effect of the contact situation.

Although dimensionality was correlated with prejudice scores (r=.278), it did not produce a significant main effect in an analysis of variance. The conceptualization of prejudice presented in this paper suggests that dimensionality, while predictive of evaluative judgments, categorization, and speed of closure, is not necessarily predictive of a negative judgment. The present data suggest that attitudes toward people in general is an intervening variable accounting for the direction of judgments. Inmates

with simple cognitive structure (low dimensionality scores) were highly prejudiced if they had negative attitudes toward people in general (high Machiavellianism scores) but had the lowest level of prejudice if they had positive attitudes toward people in general. As expected, the individuals with more complex cognitive structure had medium scores with fewer extreme evaluations. In other words, the dimensionality variable accounts for the extreme evaluations, while attitudes toward people in general is a moderating variable accounting for the direction of evaluation.

The fact that dimensionality did not produce a main effect is most likely a result of including blacks in the analysis. Previous research on prejudice (Martin and Westie, 1959; Pettigrew, 1959; Collins, 1970; Jones, 1972; Allport, 1954; Adorno et al., 1954) has dealt exclusively with white subjects, and the relationship between cognitive structure and prejudice has not been documented for blacks. The present study indicates that the relationship between dimensionality and prejudice is reversed for blacks. The cognitively simple blacks have the lowest prejudice scores, while the cognitively simple whites have the highest scores, and again the cognitively complex individuals of both races had the medium scores. There was no significant difference in prejudice scores

between the complex whites and blacks. A simple cognitive structure predicts an extreme evaluative judgment, but knowledge of the individual's race is necessary in order to predict the direction of the judgment. The relationship between cognitive structure and conformity has also been documented (Pettigrew, 1959; Harvey, 1966). Individuals with simple cognitive structure tend to conform more to norms than those with complex cognitive structures. The difference in prejudice scores for blacks and whites with low dimensionality is probably a reflection of the norms for their cultures. The norm tends to be for whites to be prejudiced against blacks and for blacks to feel there is no difference between the races.

Not only are whites much more prejudiced than blacks, but it is also apparent that the dynamics of prejudice are different for blacks and whites in our society. Negative attitudes toward people in general is the only predictive variable which functions in the same manner for both races. The other personality variables associated with prejudice do not have a similar effect for blacks and whites.

Low self-esteem in blacks is predictive of high prejudice, while in whites it is predictive of lower prejudice. However, this particular result must be accepted with caution as it could be an artifact of the instrument

used for measurement. The self-esteem scores were obtained from the Rating of Acquaintances Scale, which is also used as a measure of dimensionality. The self-esteem scores are obtained by subtracting the rating of self from the ideal self. High self-esteem is an indication of small differences between the ratings. Dimensionality is also based on the variance of attributes, so that the value of D lies between 1.00 and k, where k equals the number of attributes with non-zero variance. Therefore, the more ratings that are exactly the same, the higher the self-esteem score and the lower the dimensionality score. These variables correlate .37. Therefore, it would be difficult to attribute this result entirely to self-esteem. It is most likely a result of the extreme judgments of cognitively simple individuals as previously explained.

Changes in Prejudice

The objective of this study is to differentiate the characteristics of the individual and situations which influence interracial attitudes. The focus of attention is the individual as he enters into, and adapts to, an interracial environment. As the inmates arrived at Union Correctional Institution, they were randomly assigned to a living area. There were basically three

possibilities; 2-men cells, 8-men cells, or dorms. The living area was determined primarily on the basis of availability. The three areas differed on many dimensions, as previously described. In order to quantify the differences in the areas, a norm scale was administered to the inmates in the institution prior to the incarceration of the subjects studied. The norms for the diverse living areas were defined in terms of what the inmates felt was appropriate interracial behavior. The data indicate that the norms for the dorms were most positive toward racial equality in interraction. The mean residual gain score for this area was also the lowest (X=-.006) indicating no increase in prejudice over the time studied. The 2-men cells had less positive interracial norms than the dorms, but not significantly so. The mean residual gain scores for this area was .02, slightly higher than that for the dorms. The men in this area (2-men cells) were segregated by cell although they were integrated by cell block. In contrast, the dorms were completely integrated. Therefore, the interraction patterns for the two areas would be quite different. The two situations would be somewhat analogous to the biracial housing study of Deutsch and Collins (19), without the preselection factor.

The 8-men cells had the lowest mean racial equality norm and the highest mean residual gain score (.26). The

men in this area reported much interracial conflict. Step wise regression analyses for each area were able to illustrate the interaction between living areas and the personality variables.

The variables which were utilized in this study were largely suggested by Cook's (1972) Railroad Game study, and that environment was very positive toward interracial interaction. It appears that in a situation where the norms are more negative toward racial equality, other factors are the primary influence on prejudice change.

The various living areas affected the inmates assigned to them differently. The variables which entered into the regression equations differed for each type of environment. The predictor variables included in this study accounted for a large amount of variance in the 2-men cells (76.5 percent) and the dorms (79 percent). However, these variables accounted for only 11.7 percent of the variance in the 8-men cells and the significance level was too low ($p < .257$) for confidence in the results.

The concern in the present study is whether, and in what direction, the person changes in his interracial attitudes due to the contact situation. Cook and his associates (1972) divided their subjects into groups based on their changes in prejudice. Their approach was to look

at how subjects who increased in prejudice, those who decreased in prejudice, and those who had stable prejudice scores differed. In order to compare the results of that study with the present one, the subjects were also divided into three groups. A comparison of the three groups indicated there were no significant differences between them on the predictor variables, dimensionality, Machiavellianism, or self-esteem, when the total sample was included in the analysis.

There are any number of ways in which to look at the relationship between the predictor variables and the prejudice scores, with adequate support in the literature for each type of statistical analysis. Perhaps the most enlightening method would be a combination of the generally acceptable statistical analyses.

The appropriate analysis for change scores or difference scores is a critical issue among statisticians and researchers. No statistical method or procedure is universally accepted; there are limitations and controversy associated with every approach (Cronbach & Furby, 1970). Every social scientist who is interested in behavioral change has faced the quandary of appropriate analyses and has resolved it in one of several ways, each with a different level of satisfaction and confidence. There are some researchers who employ the raw difference scores, as Cook

and his associates (1972) did in the Railroad Game study, and as this author did in the first analyses to be reported. Another procedure which has attained wide acceptance is the use of residual gain scores or "basefree measures of change" (Tucker, Damarin, & Messick, 1966; Harris, 1963). This is a statistical procedure which takes the original score into account when calculating the change scores. "A gain is residualized by expressing the posttest score as a deviation from the posttest-on-pretest regression line" (Cronbach and Furby, 1970, p. 68). Although the controversy concerning the appropriate change scores has not been resolved, generally the basefree measure of change is more acceptable. A desire for a complete understanding of the cause of prejudice change necessitates the use of any method which might throw light on the situation.

Therefore, on the basis of their residual change scores subjects were again divided into three groups: subjects who increased in prejudice, those who remained the same, and those who decreased in prejudice over time. Again the object was to determine how these individuals differed. A comparison of the results with those obtained by using the raw difference scores indicate many similarities, but also some differences.

None of the personality variables predicted the differences in change in prejudice over time with the raw

score as the dependent measure. Two diverse groups of subjects with very different reactions to the same stimuli could negate each other's scores if combined. It is possible that by including the entire subject population, differences between sub-groups were obscured. Analysis of the prejudice scores upon entering the institution indicated that the dynamics are very different for the black and white inmates. Cook's study dealt exclusively with white subjects and the present data indicates there were significant differences between the blacks and whites on all the predictor variables. Therefore, these groups will be looked at separately.

Machiavellianism

Cook (1972) found two personality variables which accounted for the direction of prejudice change: self-esteem and attitudes toward people in general. Unlike Cook's study (1972), and contrary to this author's hypothesis, those who decreased in prejudice were high Machiavellianism scorers, while those who remained the same tended to have low scores when employing the raw scores. The Machiavellianism Scale attempts to measure an individual's "general strategy for dealing with people, especially the degree to which he feels other people are manipulable in interpersonal situations" (Robinson, J., 1973, p. 590).

It is important to keep in mind the population which was studied in the present case, a prison population. This population is very different from a college sample in many aspects, but particularly in terms of manipulation. Manipulation is a much more natural response in a prison setting than in a college environment, and is not only much more acceptable but actually admired. Therefore, the differences in Machiavellianism scores in the two studies could reflect the differences in the populations examined. It would not be advisable to generalize the results of the prison study to the general population on a variable such as Machiavellianism which is so much more salient in that situation than in the world at large. On the other hand, it is not necessarily more accurate to generalize findings obtained from a college population to the general public. The differences in these results would have to be reconciled in a study involving a less unique subsample of the total population.

There is another factor which would greatly influence the difference in these two studies. As indicatd by the prejudice scores upon entering the institution, Machiavellianism is highly correlated with prejudice. Cook's (1972) subjects were selected on the basis of their high prejudice scores, and therefore, were probably at the upper end of the continuum in negative attitudes toward

people in general (high Machiavellianism). The individuals in that group who decreased in prejudice were the ones with the most positive attitudes toward people in general. Yet compared to a normal group their attitudes toward people in general would be on the negative end of the continuum. In a cross-section of people with the entire range of attitudes toward people in general, the ones with the positive attitudes would have low prejudice scores and thus would not tend to decrease in prejudice. The individuals who decreased in prejudice would of necessity have to have initially higher Machiavellianism scores. The most plausible explanation for the disparity in results would be that Cook was sampling individuals with scores in the upper range of Machiavellianism, while this study involved individuals across the whole spectrum of scores. The present study indicates that individuals with high Machiavellianism scores (negative attitudes toward people in general) are those most likely to decrease in prejudice contingent on interracial contact. This is a function of the individuals having the most negative attitudes toward people being the ones who are most likely to be prejudiced. Cook's (1972) data suggest that individuals with positive attitudes toward people in general are most likely to decrease in prejudice due to ideal interracial interactions. It is probably most accurate in light of the present findings

to state that those individuals least likely to decrease in prejudice are the ones with the extremely high Machiavellianism scores. The low scorers are least likely to be prejudiced in the first place, but the lower the score the greater the likelihood for prejudice to be ameliorated.

It is interesting to note that Machiavellianism did not enter into the regression equation for prejudice change with raw scores as the dependent measure. It is the most predictive variable for prejudice but is barely correlated with prejudice change (r=.05) for whites. Six variables entered into the regression equation for black inmates accounting for 17 percent of the variance. Machiavellianism is the second variable which entered into the regression equation, indicating that the more negative attitudes the subjects have toward people in general, the more they tend to increase in prejudice over time. This result is consistant with the data presented by Cook and his associates (1972) in the Railroad Game. The subjects in Cook's study were all white, but they also tended to decrease in prejudice when they had positive attitudes toward people in general. It should be kept in mind that Cook (1972) was dealing with only one level of norms. The only logical direction for change was a positive one. In the present study the environment was not controlled. Therefore, there most likely was an interaction between certain personality variables and the environment. These

interactions would wash out any main effects in this particular analysis.

The area which would most closely resemble the situation in the Railroad Game (Cook, 1972) would be the dorms. The variables which entered the regression equation with residual gain scores as dependent measure for the dorms were those which Cook isolated as most conducive to a change in prejudice, namely self-esteem and Machiavellianism. As in the analyses upon entering the institution, Machiavellianism operated as an intervening variable with dimensionality in the dorms. In this case, however, the high dimensionality subjects had the greatest amount of change. The high dimensionality subjects with positive attitudes toward people in general tended to decrease, and those with negative attitudes toward people in general increased in prejudice. This is the same effect reported by Cook (1972). That researcher, it will be remembered, incorporated all the situational variables which were hypothesized to maximize the positive effects of interracial interaction into a laboratory situation. The dorms in the present research were the areas where the norms for interracial interaction were the most positive. These data thus support Cook's conclusion that individuals with positive attitudes toward people in general will tend to decrease in prejudice after equal status interaction with

a member of another race in a situation with positive norms toward interracial interaction. In the same situation, individuals with negative attitudes toward people in general will tend to remain the same or to increase in prejudice. The present study found this effect to be stronger for individuals with higher cognitive complexity. It is important to note that this reaction was the same for blacks, since there was no significant differences indicated by a race by Machiavellianism interaction in this living area.

Machiavellianism was a strong influence on prejudice change in the two-men cells also, both as a main effect and in interaction with race and with dimensionality. The main effect was similar to the one in the dorms, with high Machiavellian subjects increasing and low Machiavellian subjects decreasing in prejudice. However, the changes were greater in the two-men cells. Blacks in the two-men cells decreased in prejudice with the high Machiavellian subjects decreasing less than the low Machiavellian subjects. Whites with high Machiavellianism had the greatest increase in prejudice and those with low Machiavellianism had the lowest amount of decrease in prejudice.

Self-Esteem

Contrary to the hypothesis, white subjects who did not change in prejudice had much higher self-esteem scores (indicating low self-esteem) than those who decreased in prejudice when the raw scores were used as the dependent measures. Individuals with high self-esteem are usually not as easily influenced as those with low self-esteem, and therefore it was predicted that the low self-esteem subjects would change the most. Five variables entered into the equation for white inmates on prejudice change, accounting for 23.3 percent of the variance. Self-esteem accounted for the highest proportion of the variance (9 percent) in prejudice change. Low self-esteem scores (low scores indicated high self-esteem) apparently led to an increase in prejudice for white inmates. An individual with low self-esteem is more susceptible to change than someone who is content with himself as he is. Thus, low self-esteem facilitates a change, the direction being contingent on the norms of the situation. As previously indicated, self-esteem was measured by the same instrument as dimensionality and is correlated (r=.37) with it. It is this author's opinion that the self-esteem scores are an artifact of the instrument used to measure them. This opinion is supported by the analyses of covariance which

partialed out the effect of dimensionality. These analyses indicated that there was no significant effect due to self-esteem without dimensionality. Therefore, any effect due to self-esteem must be treated with caution, and it is highly probable that dimensionality, confounded with self-esteem, is the variable producing the effect. Low self-esteem scores would be associated with low dimensionality, and the interpretation with which this author is most comfortable holds that subjects with low cognitive complexity tended to increase in prejudice while in the institution. Low cognitive complexity is particularly plausible as an explanation, since it has so often been shown to correlate with prejudice, as well as with conformity. The step wise analyses of the residual gain scores for the dorm, which is the situation most comparable to the one studied by Cook (1972), indicated that self-esteem influenced the change scores both in interaction with dimensionality and separate from it. In contrast to Cook's (1972) study, the low self-esteem subjects increased in prejudice. In Cook's study all the influence was for a decrease in prejudice, and his conclusions were that low self-esteem individuals are more easily influenced. The present situation was much more ambiguous for the participants than the Railroad Game. In view of the difficulty in comparing the two situations, and the questionable validity of the self-esteem measure,

any conclusions about self-esteem are at best questionable. This variable did not enter into the equation for the 2-men cells.

Dimensionality

Cognitive complexity did not appear to influence the changes in prejudice in Cook's study. As discussed previously, Cook's subjects were chosen on the basis of their prejudice level, but high scorers on the E scale were eliminated. Since both prejudice and E scores correlate with cognitive complexity, Cook was dealing with an extremely limited range of complexity in his subjects. The likelihood of this limited range correlating with any other variable was thus greatly eliminated.

Dimensionality has often been demonstrated to be related to prejudice. The conceptualization presented in this paper is that dimensionality is related to prejudice only indirectly. The evaluative and extreme judgments associated with low dimensionality are predictive of the type of judgments made. However, other factors serve as intervening variables determining the direction of the judgments. In addition, due to the relationship between conforming and low dimensionality, subjects with low dimensionality should be those most receptive to change.

Contrary to predictions, the dimensionality of white subjects who did not change in prejudice was not significantly higher than those who increased or decreased in prejudice when the raw difference scores were employed as the dependent measure. However, the use of the residual gain scores indicated that subjects who decreased in prejudice had significantly higher dimensionality scores than those who increased in prejudice or those who remained the same. There was no indication of this difference when the raw difference scores were employed. It would be logical for a variable which is highly related to a lack of prejudice to be also related to a decrease in prejudice. It had been hypothesized that the subjects with low dimenionality would be the ones with the greatest change in prejudice, the change being contingent on the norms of the situation. This particular analysis does not address the specific question in a comparison of those who increased and decreased in prejudice. However, a comparison of those who remained the same and the other two groups indicates that, contrary to the hypothesis, the subjects who are the highest on dimensionality are not those who remained the same in prejudice. This could be due to the somewhat negative norms in the institution. The cognitively simple subjects are those most influenced by the norms. If these are not different from their usual interaction pattern a

change could not be expected. Dimensionality is highly related to conformity (Pettigrew, 1959), which is, in turn, influenced by the norms of the situation. It was hypothesized by this author that dimensionality would effect changes in prejudice through its relation to conforming behavior. Since the norms were demonstrated to vary according to living area, the predicted direction of change would not be the same for every living area. One living area would be conducive to a decrease in prejudice for persons with low dimensionality scores, and another area would tend to increase prejudice in persons with the same level of dimensionality. Therefore, an analysis which does not take the living area into account would not accurately reflect the effects of dimensionality.

Step wise regression analyses for each area were able to illustrate the interaction between living area and the personality variables.

In the two-men cells dimensionality entered the regression equation as a main effect and in interaction with Machiavellianism. Low dimensionality tended to produce an increase in prejudice, while high dimensionality tended to produce a decrease in prejudice. The opposite reaction occurred in the dorms, reflecting the tendency of the low dimensionality individuals to conform to the norms of the area.

Referring back to the prejudice scores upon entering the institution, those data indicate that prejudice was related to an interaction between dimensionality (cognitive complexity) and Machiavellianism (attitudes toward people in general). The cognitively simple subjects had extreme prejudice scores with Machiavellianism seeming to operate as an intervening variable, determining the direction of the scores. High Machiavellianism, or negative attitudes toward people in general, predicted high prejudice scores. Thus the low dimensionality, high Machiavellian subjects had the greatest prejudice and the low dimensionality, low Machiavellian subjects had the least. In the present analysis the low dimensionality, high Machiavellian subjects were the only ones who increased in prejudice in the two-men cells. The interaction between dimensionality and Machiavellianism in the dorms has already been discussed. There, also, attitudes toward people in general appeared to operate as an intervening variable with dimensionality.

Dimensionality also interacted with self-esteem in the dorms. Individuals with low dimensionality tended to decrease in prejudice, reflecting the norms of the situation. Those inmates with high dimensionality and low self-esteem increased over time. Low self-esteem subjects who are also low in cognitive complexity are those who were most influenced by the positive norms in

the area. The high complexity subjects with low self-esteem had the greatest absolute change, which was an increase in prejudice. It appears that low self-esteem persons are most influenced by the situation. Their level of complexity determines the direction of change. Low dimensionality subjects conform to the norms, while high complexity subjects incorporate other factors in determining their level of prejudice.

Prejudice Scores

There was no significant difference between those who increased in prejudice, remained the same, or decreased in prejudice on prejudice scores when raw difference scores were used as the dependent measure, Rating of Acquaintances. However, a significant difference between all these groups was demonstrated in prejudice as measured by the Rating of Types at both time periods. The subjects who declined in prejudice scores over time were those who demonstrated the highest level of prejudice when they entered the institution. A case could be made that this was a result of the tendency for scores on repeated measures to regress toward the mean. This logic is refuted by the fact that the lower scores did not indicate an increase in prejudice scores. It is interesting to note that the individuals who maintained

stable prejudice scores were those having the lowest prejudice scores at both time periods. A regression toward the mean would have found these individuals increasing in prejudice with a repeated measure, yet these subjects did not increase in prejudice. The subjects who were least prejudiced initially were also the least influenced by the situation. The subjects who increased in prejudice over time were at the middle level of the prejudice score range when they entered the institution, but indicated the greatest amount at the last testing period.

A number of results have been presented which indicate that the dynamics of prejudice are different for blacks and whites. Indications are that the same is true for changes in prejudice. A step wise regression analysis performed with the total population accounted for only 9 percent of the variance after six variables were entered into the equation. An analysis of both blacks and of whites alone accounted for a greater variance, indicating that the variables interacted differently for the two groups. Supporting this conclusion is the fact that the single most predictive variable for prejudice change scores was the race of the individual. See Table 12--Step Wise Regression Analysis of Predictor Variables for Total Population.

The predictor variables employed in this study were utilized because of their effectiveness of prediction as demonstrated in previous experiments. Social psychological literature on prejudice has dealt primarily with white prejudice toward blacks. The present data strongly suggest that the dynamics of prejudice differ for the two races. The personality variables associated with black prejudice toward whites appears to be entirely different than for white prejudice toward blacks.

Separate analyses of black and white subjects indicated that white inmates who decreased in prejudice had significantly higher mean prejudice scores than either of the other two groups of white subjects at the initial testing period. But by the second testing period there was no significant difference in prejudice between the group that increased in prejudice and the group that decreased in prejudice. Again, the inmates who maintained the same prejudice scores at both time periods significantly lower in prejudice than those who decreased in prejudice on the first testing period and both groups at the second time period. Interracial interaction had the least effect on those inmates who were least prejudiced when entering the institution. From a statistical point of view, these are the very people who are most likely to indicate an increase in prejudice (regress toward the

mean), however their positive attitudes toward people in general make them unlikely candidates for an increase in prejudice and seem to account for their lack of change.

As has already been reported, the white subjects were significantly higher in prejudice than the black subjects at the initial testing period. By the second time period there was no significant difference in the means for the prejudice scores. This was accounted for by the white inmates' mean prejudice score decreasing while the black inmates' mean prejudice score remained stable.

The black individuals who increased in prejudice had significantly higher scores on prejudice as measured by Rating of Acquaintances. This scale asks subjects to rate specific black and white individuals. The racial stimulus persons employed in the scale were ones connected with the prison environment. The black subjects were thus rating specific white individuals (inmates, correctional officers, or trustees) more negatively than specific black individuals in the same roles. Apparently those subjects who increased in prejudice were interacting with specific white persons whom they rated on the negative end of the continuum on a variety of attributes. At that point in time there was no significant difference in mean prejudice scores as measured by the Rating of Types between subjects who decreased in prejudice and those who increased in

prejudice. However, by the second time period the black inmates who increased in prejudice were significantly higher than the other two groups on prejudice. A plausible explanation for these results is that interaction with white individuals with undesireable qualities led to a generalization of negative ratings of whites in general.

It is interesting to note that the black inmates who remained the same had significantly lower mean prejudice scores than the other two groups at both time periods. It appears that black subjects with the least amount of prejudice are also the least likely to be influenced by the environment.

Use of the residual gain scores did not change the results concerning the prejudice scores. The subjects who remained the same in prejudice were consistently the lowest scorers on both the prejudice measures at both time periods. More confidence can now be placed in the fact that individuals with low levels of prejudice are those who are least influenced by the contact situation. Again the subjects who declined in prejudice over time were those who demonstrated the highest level of prejudice when they entered the institution. This difference was not significantly higher on the Rating of Acquaintances Scale when using the raw difference score, but was significantly higher than those who remained the same when the residual gain scores were employed. It can no longer be argued that this

was a result of a regression toward the mean since this was controlled by the use of residual gain scores.

The subjects who increased in prejudice were again at the middle level of the prejudice score range when they entered the institution, but demonstrated the greatest amount at the last testing period. The same analysis performed separately on black and white subjects indicated results almost identical in pattern and level of significance as the total sample. Therefore, these analyses will not be considered separately.

There were two general social groupings influencing the interracial interaction norms developed within the institution: one was the living area and the other was the racial group. The data indicate that the white inmates in different living areas had different racial equality norms. Those in the dorms had the greatest desire for racial equality, while those in the eight-men cells had the least. The black inmates had generally homogeneous norms across living areas, with these norms consistently more equalitarian than those of the whites in all areas. It is only logical that the group which is discriminated against would have norms for greater equality than the group doing the discriminating.

The norms for blacks in the institution were more positive than for whites toward interracial interaction.

The blacks were in constant close proximity to whites who tended to be more prejudiced and to desire less contact than the blacks. Blacks who were unprejudiced tended to increase in prejudice in reaction to the situation, while those who were prejudiced remained the same. This would be a natural reaction to the situation.

Race entered the step wise regression analysis for residual change scores in the two-men cells as a main effect and in interaction with Machiavellianism. Blacks tended to decrease in prejudice in that living area, while whites increased in prejudice. Blacks decreased regardless of their attitudes toward people in general. White inmates had greater changes in prejudice, with high Machiavellian whites increasing ($\bar{X}$=.85) and low Machiavellian whites decreasing ($\bar{X}$=-.65) in prejudice over time. This interaction effect accounted for 35.8 percent of the variance in the change scores. Race was not a salient variable in the dorms, where the norms were more positive toward interracial interaction.

SUMMARY

There are two aspects of prejudice with which this paper is concerned: one is prejudice as it is found in a sample of the population entering a penal institution, and the other is how prejudice changes while in that particular environment. A look at the data as the inmates entered the institution provided information about prejudice resulting from personality variables and cultural variables in our society. The two variables which were most predictive of level of prejudice at that point in time were attitudes toward people in general and race. Whites were much more prejudiced than blacks as they entered the institution. Individuals with negative attitudes toward people were significantly more prejudiced than those with positive attitudes toward people in general.

Machiavellianism was also an important predictor of prejudice change. Individuals with negative attitudes toward people in general tended to become more prejudiced with interracial contact and those with positive attitudes tended to decrease in prejudice in the same situation. This was similar to the finding reported by Cook (1972) in the Railroad Game. In that study, however, all the subjects were white and the situation was a positive one for

interracial interaction. The present study indicates that the effect of Machiavellianism holds true regardless of the norms of the situation or the race of the individuals involved. The data suggest that this variable is the most important predictor of level of prejudice and also influences prejudice change.

Much previous research has attempted to isolate the personality variables predictive of prejudice. Simple cognitive structure, referred to under one of many rubrics (authoritarianism, dogmatism, or concrete cognitive structure) is most often cited. However, although the present data indicate that low cognitive complexity is correlated with prejudice as the subjects entered the institution, it was predictive of it only in interaction with other variables. Dimensionality is a personality variable predictive of extreme evaluative judgments, categorizations, speed of closure, and conformity, but this type of judgment does not necessarily preclude a negative judgment. It is the opinion of this author that the direction of judgment is determined by other factors in the environment. Negative attitudes toward people in general, in conjunction with low dimensionality, predict a highly prejudiced individual, while positive attitudes toward people in general, along with low dimensionality, predict very low prejudice. High dimensionality subjects had less extreme scores reflecting their less extreme evaluations.

The fact that other variables determine the direction of judgment is further demonstrated by low complexity blacks having low prejudice scores and low complexity whites having high prejudice scores. Again, high complexity subjects of both races had medium scores, reflecting their less extreme evaluations. It would appear that cognitively simple subjects demonstrate their values in extreme judgments, reflecting the norms of their primary area of influence.

Dimensionality was the strongest predictor of prejudice change, through its relationship to conformity. Low dimensionality subjects tended to change their level of prejudice in order to reflect the norms of their living area. Dimensionality in conjunction with the norms of the area was the most consistent predictor of direction of change.

Social psychological research has tended to focus primarily on white attitudes toward blacks. The present data indicate that the dynamics of prejudice are different for blacks in certain areas. The relationship between dimensionality and prejudice is reversed for blacks entering the institution, reflecting the different norms for blacks in our culture. The more conforming, low dimensionality blacks are the least prejudiced. As blacks become more complex in their thinking, usually associated with an increase in education, they are more likely to react to the discrimination directed at them with prejudice toward whites.

In contrast, the more abstract whites are less likely to conform to the norms of prejudice toward blacks. Both the high complexity groups, as they move away from conformity, approach the same level of prejudice, a middle level. The cognitively simple individuals are at the extremes.

A major emphasis of this paper has been the dynamics of prejudice change. The data show that the dynamics of change are also different for blacks and whites. Blacks who increased in prejudice appeared to do so in reaction to interaction with a negatively evaluated white. A black having a bad experience with a particular white tends to generalize his evaluation to whites in general, demonstrating the rational development of prejudice in blacks. This reaction to a specific incident appears to be missing in whites; they tend to go into the situation prejudiced. The white inmates were more prejudiced than the black inmates as they entered the institution. However, the t-tests between blacks and whites indicated that the mean prejudice scores as measured by Rating of Types for whites was not significantly higher than for blacks by the second time period. The mean change for blacks was 1.2 and for whites was -4.7 when employing the raw difference scores. So that by the second time period there was no significant difference in amount of prejudice for the two races. The original difference in amount of prejudice was probably due to cultural norms in a society where interracial interaction

is primarily on a formal level and limited basis. Intimate contact probably eliminated a lot of preconceptions creating a tendency for whites to decrease and blacks to increase in prejudice.

An understanding of the dynamics of black-white interaction requires the examination of the situation in which it occurs as well as the characteristics of the participants. Union Correctional Institution is a unique environment, differing from the community at large in many ways. It is a closed community with semi-permeable boundaries. The residents of the institution may not leave at their own discretion and are not voluntarily in the institution. For our culture it is an unusual situation in which blacks and whites live together in close proximity and under intimiate circumstances for extended periods of time.

This situation is often a complete reversal of the life style of the inmate prior to incarceration. Many of the men have never had any contact, let alone close relationship, with a member of the other race. Not only are they in close proximity with someone of another race, but with large numbers of them. This puts them in the position of simultaneously interacting with all types of people of another race. The large number of contacts has two effects which make it very different from contact with one individual of another race. The wide range of personalities and behaviors encountered makes it difficult to classify

all people of that race in the same category. It also eliminates the possibility of rationalizing that one person is an exception but all others are the same.

The inmates who did not change in prejudice were those with the least amount of prejudice upon entering the institution. Since they were the least influenced by the situation, but did not differ from the others in any of the personality variables, it might be speculated that the situation was not as great a change for them as for the others. It might well be that these individuals were accustomed to interracial interaction, accounting for both their low prejudice and their lack of change after contact. The inmates who decreased most in prejudice were those with the highest amount of prejudice when they entered the institution. Since they were very much influenced by the situation, it could be speculated that it was novel to them and different from their expectations. These subjects also had higher dimensionality than those who remained the same or those who increased in prejudice. This is a trait which is associated with a lack of prejudice. Cognitively complex individuals tend to discriminate between other persons on more characteristics and are less likely to employ gross categorizations. They are, therefore, most open to experiences which eliminate stereotypes.

The data supported Cook's conclusion that negative attitudes toward people in general was predictive of an

increase in prejudice after interracial contact. This was true in the present study for white and black subjects in every living area, and particularly true in high dimensionality subjects in areas with positive norms for interracial interaction. Cook's (1972) research was conducted so that the environment was optimal for a reduction in prejudice. Also, his subjects were college students. People tend to increase in complexity with an increase in education, thus his subjects were probably similar to those in the present study who were high in dimensionality.

The present study employed the measure of self-esteem used by Cook (1972) in the Railroad Game. This instrument uses the same type of response as the dimensionality instrument developed by Scott. This type of response is confounded by the subject's level of complexity. The more complex the subject's cognitive structure, the more likely he is to distinguish more distinctions between levels of a trait. The scoring of the self-esteem scale would tend to produce a high negative correlation between self-esteem and dimensionality. The results obtained by Cook for self-esteem are very similar to those for dimensionality in the present study. Low self-esteem or high dimensionality are predictive of a decrease in prejudice. Although the results were obtained for self-esteem in the present study, they must be accepted with extreme caution. Dimensionality is a plausible explanation for the change

and analyses of covariance partialing out dimensionality indicated no effect due to self-esteem. This author feels that it is cognitive structure which predicts a decrease in prejudice after interracial interaction, rather than self-esteem.

A strong environmental influence on change in prejudice was demonstrated. In the eight-men cells where the norms for whites were the least equalitarian, all types of inmates increased in prejudice. Even the personality least likely to be prejudiced and most likely to decrease in prejudice (low dimensionality, low Machiavellianism) remained the same when incarcerated in the eight-men cell. In contrast, inmates in the dorms, where the norms were most positive, tended to decrease in prejudice. The two-men cells, which had intermediate norms, also had an intermediate level of prejudice change.

During the present study 160 men were admitted to Union Correctional Institution. Of these men a total of 114 reported for the questionnaire sessions. The men who did not report for the first testing session were in administrative confinement (N=13) or the hospital (N=1). In addition 16 inmates reported for the questionnaire session but declined to answer the questionnaire. The majority were in confinement. There probably is a difference between inmates who are administratively confined within their first week in the institution and those who

are not confined. Inmates who declined to answer the questionnaire are also probably different from the normal inmate population. Access to these subsamples of the population was not available to researchers and thus documentation of any differences between the samples was not possible. Speculation would lead this author to assume that inmates in administrative confinement and those who declined to answer the questionnaire would be more aggressive and hostile than the total population. They probably would score quite high on the negative end of the continuum of attitudes toward people in general.

Further erosion of the sample occurred between the first and second testing periods. For a variety of reasons only 83 inmates completed the second testing session. The majority (N=8) of the inmates who did not report were transferred out of the institution. Without knowing the basis for the transfer it is difficult to even speculate on the implications for selectivity involved in the reduction of the sample. There was also a small number who were in confinement or whose work schedule conflicted with the testing time. The remainder of the reduction in the sample was due to questionaires being discarded. Questionnaires were discarded if inmates responded in a manner which could not be interpreted and scored. This would be attributed to the low reading ability of the inmates.

Prejudice is a complex phenomenon and concern with

with change increases the complexity. Interracial contact is a naive solution to racial problems. It is apparent that different personalities are affected differently by a contact situation. Even the same personality is affected differently, dependent on the situation. Situations vary greatly in their influence on interracial attitudes. Often a change can be predicted, but the direction of change is dependent both on the personality and on the norms of the environment. But these are different for blacks and whites. Optimal situations can be beneficial, but a negative experience increases antagonism. Any attempt at integration must be approached only after sufficient planning and after ground work is completed. Equal status interracial interaction is a necessary, but not sufficient, condition for the elimination of prejudice.' Attention must also be paid to the norms developed in the situation and to the personality characteristics of the individuals involved.

TABLES

Table 1. Percentage of Black and White Inmates in Each Dormitory

Dorm	Blacks	Whites	Total Number
1	64	36	77
3	69	31	72
4	78	23	40
5	28	72	61
6	27	73	26
7	39	62	18

Table 2. Adjectives Employed in Rating of Acquaintances Scale and their Source

Occupational Ratings Form	Rating of Acquaintances (Scott)	Rating Scale
*lazy-vs.-industrious		lazy vs. industrious
*unreliable-vs.-serious		**serious-vs.-happy-go-lucky
*unintelligent-vs.-intelligent		not smart-vs.-smart
*physically dirty-vs. physically clean		physically dirty-vs.-physically clean
*unreliable-vs.-reliable		unreliable-vs.-reliable
*rude-vs.-well-mannered		rude-vs.-well-mannered
materialistic-vs.-idealistic		
submissive-vs.-aggressive		
tolerant-vs.-fault-finding		tolerant-vs.-fault-finding
selfish-vs.-unselfish	selfish-vs.-altruistic	selfish-vs.-unselfish
hard-boiled-vs.-emotionally expressive		
thick-skinned-vs.-oversensitive		
friendly-vs.-unfriendly		
deliberate-vs.-impulsive		
likeable-vs.-unpleasant	likeable-vs.-unlikeable	likeable-vs.-unlikeable
	strong-vs.-weak	strong-vs.-weak

*adjectives taken from list of stereotyped characteristics attributed to Negroes in Katz and Braly's study (1933).

**bi-polar adjectives used in Occupational Ratings Form (Wrightsman, 1973, personal communication).

Table 3. Mean Prejudice Scores Upon Entering the Institution

Variable		Main Effect	Dimensionality		Machiavellianism		Race	
			Low	High	Low	High	Black	White
Dimensionality	Low	14.79(43)						
	High	13.60(45)						
Machiavellianism	Low	10.61(44)	8.23(19)	12.42(25)				
	High	17.16(44)	18.89(24)	15.09(20)				
Race	Black	10.61(47)	7.55(23)	13.55(24)	9.15(26)	12.41(21)		
	White	17.64(41)	21.81(20)	13.67(21)	12.71(18)	21.49(23)		
Self Esteem	Low	14.63(45)	14.74(16)	14.57(29)	11.41(21)	17.44(24)	13.71(18)	15.24(27)
	High	13.11(43)	13.85(27)	11.86(16)	9.88(23)	16.82(20)	8.69(29)	22.26(14)

Table 4. Analysis of Variance for Prejudice Upon Entering Institution

Source	DF	Sequential SS	F Value	Prob F
D	1	731.68	0.05495	0.8153
M	1	93716.59	7.03871	0.0098
R	1	87394.84	6.56391	0.0125
S	1	1080.09	0.08112	0.7766
DxM	1	40623.67	3.05110	0.0849
DxR	1	101103.66	7.59353	0.0074
DxS	1	30035.49	2.25586	0.1375
MxR	1	14000.15	1.05150	0.3086
MxS	1	2576.76	0.19353	0.6613
RxS	1	50397.87	3.78520	0.0556
DxMxR	1	18370.90	1.37977	0.2440
DxRxS	1	29258.71	2.19752	0.1426
DxMxS	1	21107.70	1.58532	0.2121
MxRxS	1	1330.55	0.09992	0.7528
DxMxRxS	1	14244.74	1.06987	0.3044

Table 5. Mean Prejudice Scores (ROT) Upon Entering the Institution*

Variable	Main Effect	Dimensionality		Machiavellianism		Race	
		low	high	low	high	Black	White
Dimensionality							
low	16.35 (42)						
high	12.02 (43)						
Machiavellianism							
low	8.12 (43)	10.17 (19)	6.50 (24)				
high	20.34 (42)	21.45 (23)	19.00 (19)				
Race							
Black	9.15 (45)	10.12 (22)	8.22 (23)	6.20 (26)	13.17 (19)		
White	19.80 (40)	23.20 (20)	16.40 (20)	11.06 (17)	26.26 (23)		
Self-Esteem							
low	13.37 (41)	17.66 (16)	13.32 (28)	5.97 (21)	23.06 (23)	7.74 (17)	19.41 (27)
high	14.90 (44)	15.54 (26)	9.60 (15)	10.18 (22)	17.05 (19)	10.00 (28)	29.61 (13)

*Parenthesis indicates number in cell.

Table 6. Living Area Differences in Predictor Variables and Prejudice Upon Entering the Institution

		Means and Standard Deviations 2-men (N=18)	8-men (N=72)	dorm (N=19)	2-men vs 8-men	2-men vs dorm	8-men vs dorm
Dimensionality (ROA)	$\bar{x}$	2.43	2.65	2.66	t=.877	t=.777	t=.036
	s.d.	.76	1.23	.89			
Dimensionality (ROT)	$\bar{x}$	1.89	2.00	2.05	t=.551	t=.689	t=.231
	s.d.	.66	.91	.64			
Machiavellianism	$\bar{x}$	58.78	59.68	56.06	t=.275	t=.649	t=1.138
	s.d.	12.81	10.95	12.35			
Self Esteem	$\bar{x}$	9.93	9.51	8.63	t=.151	t=.388	t=.390
	s.d.	10.30	7.63	8.91			
Prejudice (ROA)	$\bar{x}$	1.60	1.42	1.15	t=.386	t=.889	t=.820
	s.d.	1.69	1.46	1.23			
Prejudice (ROT)	$\bar{x}$	1.71	1.20	1.66	t=1.033	t=.093	t=1.019
	s.d.	1.84	1.51	1.72			

Note: All t-tests were two-tailed.

Table 7. T-tests of Total Sample for Differences in Groups Based on Change Scores

Variable		Means and Standard Deviations			T-statistics		
		Increased (N=21)	Same (N=18)	Decreased (N=28)	Increase vs Same	Increase vs Decrease	Decrease vs Same
Dimensionality (ROA)	$\bar{x}$	2.46	2.50	2.51	.113	.173	.011
	s.d.	.93	1.47	1.01	N.S.	N.S.	N.S.
Dimensionality (ROT)	$\bar{x}$	1.93	.77	2.09	.347	.686	.883
	s.d.	1.83	1.04	.75	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	56.24	55.67	59.64	.184	1.129	1.170
	s.d.	8.69	10.44	12.40	N.S.	N.S.	N.S.
Self Esteem	$\bar{x}$	7.20	11.56	9.19	1.626	.938	.938
	s.d.	7.26	9.04	7.06	N.S.	N.S.	N.S.
Prejudice (ROA)	$\bar{x}$	1.06	1.03	1.48	.061	1.236	.869
	s.d.	.86	1.78	1.48	N.S.	N.S.	N.S.
Prejudice (ROT-1)	$\bar{x}$	8.16	2.24	20.83	1.857	3.441	5.295
	s.d.	10.94	8.71	14.84	(p<.10)	(p<.01)	(p<.001)
Prejudice (ROT-2)	$\bar{x}$	19.00	2.11	9.43	4.167	2.160	2.187
	s.d.	16.16	8.47	14.20	(p<.001)	(p<.05)	(p<.05)
Prejudice Change	$\bar{x}$	10.84	0.00	-11.40			
	s.d.	13.45	0.00	9.13			

Table 8. T-Tests between Blacks and Whites on Predictor and Dependent Variables

Variable		Means and Standard Deviations		T-Statistics
		Blacks (N=63)	Whites (N=49)	
Dimensionality (ROA)	$\bar{x}$	2.75	2.58	.705
	s.d.	1.09	1.19	N.S.
Dimensionality (ROT)	$\bar{x}$	2.11	1.84	1.696
	s.d.	.88	.72	(p<.10)
Machiavellianism	$\bar{x}$	57.39	61.13	1.678
	s.d.	10.79	12.05	(p<.10)
Self Esteem	$\bar{x}$	7.07*	12.42*	3.362
	s.d.	6.99	8.69	(p<.01)
Prejudice (ROA)	$\bar{x}$	10.60	18.69	2.729
	s.d.	11.32	16.84	(p<.01)
Prejudice (ROT-1)	$\bar{x}$	8.71	19.58	3.307
	s.d.	10.98	18.99	(p<.01)
Prejudice (ROT-2)	$\bar{x}$	8.64	13.50	1.355
	s.d.	12.74	17.40	N.S.
Prejudice Change	$\bar{x}$	1.17	-4.69	1.797
	s.d.	13.05	18.34	(p<.10)

*A high score indicates low self esteem

Note: All t-tests were two-tailed

Table 9. T-Tests for Differences in Groups of White Subjects based on Prejudice Change Scores

Variable		Means and Standard Deviations			T-Statistics		
		Increased (N=6)	Same (N=8)	Decreased (N=14)	Increased vs Same	Increased vs Decreased	Decreased vs Same
Dimensionality (ROA)	$\bar{x}$	2.17	2.49	2.33	.402	.330	.232
	s.d.	1.04	1.88	.68	N.S.	N.S.	N.S.
Dimensionality (ROT)	$\bar{x}$	1.74	1.69	1.84	.097	.277	.434
	s.d.	.81	.89	.42	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	60.67	53.13	62.50	1.360	.293	2.452
	s.d.	12.88	4.97	12.71	N.S.	N.S.	p<.05
Self Esteem	$\bar{x}$	11.40*	17.88*	11.14*	1.163	.048	1.856
	s.d.	10.74	7.97	8.54	N.S.	N.S.	p<.10
Prejudice (ROA)	$\bar{x}$	14.56	14.25	22.41	.029	1.061	.817
	s.d.	13.22	25.31	16.67	N.S.	N.S.	N.S.
Prejudice (ROT-1)	$\bar{x}$	12.00	4.50	29.71	1.159	2.915	4.227
	s.d.	11.38	12.73	14.65	N.S.	p<.01	p<.001
Prejudice (ROT-2)	$\bar{x}$	21.67	4.50	15.86	1.813	.607	1.745
	s.d.	20.41	12.73	17.58	p<.10	N.S.	p<.10
Prejudice Change	$\bar{x}$	9.67	0.00	-13.86			
	s.d.	13.94	0.00	10.39			

*High Score indicates low self esteem

Note: All t-tests were two-tailed

Table 10. T-Tests for Differences in Groups of Black Subjects based on Prejudice Change Scores

Variable		Means and Standard Deviations			T-Statistics		
		Increased (N=16)	Same (N=9)	Decreased (N=13)	Increased vs Same	Increased vs Decreased	Decreased vs Same
Dimensionality (ROA)	$\bar{x}$	2.52	2.70	2.78	.4244	.564	.144
	s.d.	.89	1.02	1.31	N.S.	N.S.	N.S.
Dimensionality (ROT)	$\bar{x}$	2.01	1.93	2.34	.185	1.004	.856
	s.d.	.75	1.18	.96	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	54.13	55.56	57.39	.332	.885	.348
	s.d.	6.02	12.11	12.11	N.S.	N.S.	N.S.
Self Esteem	$\bar{x}$	5.75*	6.89*	7.25*	.439	.801	.139
	s.d.	5.31	6.68	4.58	N.S.	N.S.	N.S.
Prejudice (ROA)	$\bar{x}$	10.18	6.80	5.87	1.163	1.829	.342
	s.d.	7.27	6.81	5.42	N.S.	p<.10	N.S.
Prejudice (ROT-1)	$\bar{x}$	6.83	.22	12.1	2.53	1.470	4.810
	s.d.	10.43	.67	8.87	p<.05	N.S.	p<.001
Prejudice (ROT-2)	$\bar{x}$	16.81	.22	3.23	2.211	3.421	2.295
	s.d.	15.02	.67	4.66	p<.001	p<.01	p<.05
Prejudice Change	$\bar{x}$	9.98	0.00	-8.87			
	s.d.	14.29	0.00	7.51			

*A high score indicates low self esteem

Note: All t-tests were two-tailed

Table 11. Correlation Matrix

	Variable	1	2	3	4	5	6	7	8	9	10
1.	Dimensionality (ROA)	1.00	.40	-.06	-.05	.06	.37	.28	-.03	-.13	-.08
2.	Dimensionality (ROT)	.40	1.00	.04	-.12	-.17	.07	-.05	.04	.06	-.04
3.	Time in living area	-.06	.04	1.00	.04	.10	.001	.02	-.02	.11	-.10
4.	Machiavellianism	-.05	-.12	.04	1.00	.21	.14	.06	.32	.11	-.09
5.	Race	.05	-.17	.10	.21	1.00	.34	.27	.36	.10	-.17
6.	Self Esteem	.37	.07	.001	.14	.34	1.00	.18	.20	.06	-.02
7.	Prejudice (ROA)	.28	-.05	.02	.06	.27	.18	1.00	.42	.08	-.16
8.	Prejudice (ROT-1)	-.03	.04	-.02	.32	.36	.20	.42	1.00	.30	-.31
9.	Prejudice (ROT-2)	-.13	.06	.11	.11	.10	.06	.09	.30	1.00	.40
10.	Prejudice change	-.08	-.03	-.10	-.09	-.17	-.03	-.17	-.31	.40	1.00

Table 12. Step Wise Regression Analysis for Entire Sample

Variables	Correlation	Multiple R-Squared
Race	-.218	.048
Percent Race in Area	-.086	.066
Machiavellianism	-.167	.082
Dimensionality (ROA)	.086	.088

Table 13. Step Wise Regression Analysis of Predictor Variables for White Inmates on Prejudice Change

Variable	Simple Correlation	Multiple Correlation
Self Esteem	.284*	.284
Percent Own Race	-.223	.348
Living Area	-.095	.423
Dimensionality (ROT)	-.106	.478
Dimensionality (ROA)	.015	.483

*A high score indicates low self esteem

Table 14. Stepwise Regression Analysis of Predictor Variables for Black Inmates on Prejudice Changes

Variable	Simple Correlation	Multiple Correlation
Living Area	.208	.208
Machiavellianism	.200	.273
Self Esteem	-.192*	.321
Dimensionality (ROA)	.116	.368
Dimensionality (ROT)	-.038	.385
Percent Own Race	-.070	.409

*A high score indicates low self esteem

Table 15. T-tests of Total Sample for Differences between Groups based on Residual Change Scores

Variable		Means and Standard Deviations			T-Statistics		
		Increased (N=21)	Same (N=35)	Decreased (N=14)	Increased vs Same	Increased vs Decreased	Decreased vs Same
Dimensionality (ROA)	$\bar{x}$	2.54	2.67	4.41	.157	1.91	1.91
	s.d.	.91	1.36	5.45	N.S.	p<.10	p<.10
Dimensionality (ROT)	$\bar{x}$	1.98	1.90	2.17	.307	.611	.93
	s.d.	.57	1.04	.80	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	58.67	56.71	58.15	.675	.139	.423
	s.d.	9.98	10.46	11.33	N.S.	N.S.	N.S.
Self Esteem	$\bar{x}$	11.05	8.89	8.58	.975	.853	.114
	s.d.	8.95	7.89	5.84	N.S.	N.S.	N.S.
Prejudice (ROA)	$\bar{x}$	1.38	.92	1.76	1.206	.758	1.872
	s.d.	1.41	1.37	1.35	N.S.	N.S.	p<.10
Prejudice (ROT-1)	$\bar{x}$	1.75	.50	2.11	3.54	.800	3.877
	s.d.	1.88	.78	1.15	p<.01	N.S.	p<.01
Prejudice (ROT-2)	$\bar{x}$	2.82	.34	.21	9.234	7.576	.384
	s.d.	1.64	.47	.35	p<.001	p<.001	N.S.

Table 16. T-Tests of White Sample for Differences in Groups based on Residual Change Scores

Variable		Means and Standard Deviations			T-Statistics		
		Increased (N=11)	Same (N=12)	Decreased (N=7)	Increased vs Same	Increased vs Decreased	Decreased vs Same
Dimensionality (ROA)	$\bar{x}$	2.37	2.38	3.68	.016	1.381	1.394
	s.d.	.87	1.60	3.18	N.S.	N.S.	N.S.
Dimensionality (ROT)	$\bar{x}$	1.67	1.89	1.94	.783	.834	.143
	s.d.	.55	.78	.61	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	63.27	56.92	58.29	1.329	.901	.251
	s.d.	10.84	9.64	14.98	N.S.	N.S.	N.S.
Self Esteem	$\bar{x}$	15.60	14.33	9.00	.337	1.524	1.276
	s.d.	9.18	9.01	7.70	N.S.	N.S.	N.S.
Prejudice (ROA)	$\bar{x}$	1.75	1.37	2.64	.482	.977	1.446
	s.d.	1.81	2.16	1.15	N.S.	N.S.	N.S.
Prejudice (ROT-1)	$\bar{x}$	2.49	.82	2.54	2.588	.069	2.342
	s.d.	2.11	1.07	1.14	$p<.05$	N.S.	$p<.05$
Prejudice (ROT-2)	$\bar{x}$	3.29	.38	.26	6.600	5.909	.250
	s.d.	1.63	.51	.44	$p<.001$	$p<.001$	N.S.

Table 17. T-Tests of Black Subjects for Differences in Groups based on Residual Change Scores

Variable		Means and Standard Deviations			T-Statistics		
		Increased (N=10)	Same (N=23)	Decreased (N=7)	Decreased vs Same	Increased vs Decreased	Increased vs Same
Dimensionality (ROA)	$\bar{x}$	2.73	2.86	4.99	.088	1.368	1.454
	s.d.	.96	1.19	6.96	N.S.	N.S.	N.S.
Dimensionality (ROT)	$\bar{x}$	2.29	1.90	2.38	1.027	.186	1.113
	s.d.	.40	1.17	.89	N.S.	N.S.	N.S.
Machiavellianism	$\bar{x}$	53.60	56.61	55.43	.817	.382	.281
	s.d.	6.04	11.07	8.89	N.S.	N.S.	N.S.
Self Esteem	$\bar{x}$	6.50	6.04	7.33	.222	.297	.518
	s.d.	6.22	5.57	2.42	N.S.	N.S.	N.S.
Prejudice (ROA)	$\bar{x}$	1.01	.68	.78	1.318	.722	.332
	s.d.	.81	.63	.59	N.S.	N.S.	N.S.
Prejudice (ROT-1)	$\bar{x}$	.93	.33	1.54	1.905	1.496	3.379
	s.d.	1.24	.53	.94	$p<.10$	N.S.	$p<.01$
Prejudice (ROT-2)	$\bar{x}$	2.31	.31	.14	6.138	5.120	.459
	s.d.	1.58	.46	.22	$p<.001$	$p<.001$	N.S.

Table 18. Mean Residual Change Scores

Variable		Main Effect	Two-Men Cell		Eight-Men Cell		Dorms	
			low dimen.	high dimen.	low dimen.	high dimen.	low dimen.	high dimen.
Machiavellianism	Low	.095	-.27(3)	-.43(2)	-.02(10)	.42(9)	-.18(4)	-.40(4)
	High	.225	.43(5)	-.04(2)	.47(12)	-.09(5)	-.03(6)	1.21(2)
Self Esteem	Low	.245	.16(4)	.14(4)	.18(7)	.26(11)	-.47(2)	-.23(6)
	High	.053	-.66(1)	-.09(3)	.34(14)	.12(3)	.68(4)	-.13(4)
Race	Blacks	.043	-.27(5)	-.09(3)	.24(11)	.07(9)	-.17(4)	.15(4)
	Whites	.265	.85(3)	-.66(1)	.12(8)	.57(8)	-.40(4)	.41(4)
Dimensionality	Low	.071						
	High	.223						
Living Area	2-Man	.022						
	8-Man	.244						
	Dorm	-.006						

Table 19. Stepwise Regression Analysis on Residual Change Scores for Inmates in 2-Men Cells*

Scource	DF	Sequential SS	F Values	Prob F	Cumulative R Square
R x M	1	2.46	9.17	0.023	.358
D x M	1	0.49	1.83	0.224	.359
D	1	1.01	3.78	0.098	.638
R	1	0.66	2.45	0.167	.667
M	1	0.63	2.37	0.173	.765

*p .06

Table 20. Stepwise Regression Analysis on Residual Change Scores for Inmates in 8-Men Cells*

Scource	DF	Sequential SS	F Values	Prob F	Cumulative R Square
D x R x S	1	1.156	1.31	0.2594	.036
D x S	1	1.555	1.77	0.1905	.085
D x R x M	1	1.013	1.15	0.2916	.117

*p .257

Table 21. Stepwise Regression Analysis on Residual Change Scores for Inmates in Dorms*

Scource	DF	Sequential SS	F Values	Prob F	Cumulative R Square
D x S	1	3.847	33.81	0.0002	.594
S	1	0.558	4.90	0.045	.680
D x M	1	0.704	6.2	0.027	.789

*p .0004

APPENDIX A

ROA1

RATING OF ACQUAINTANCES

Each of the following pages talks about someone you know. Think of a certain person who is like the one described. Put his or her initials into the space at the top of the page. Below the initials are ten things on which the person can be judged. Each thing has the opposite meaning on either end of the line. Please put one check mark on each line to show where you think the person stands on the thing you are judging.

For example, if you think that your father is very likable, put a check on the first line, under the word "very". If you think he is quite unlikable, put a check mark on the first line, second box from the right, under the word "quite". If you think he is of moderate or average likableness, put a check in the middle of the first line, under the words, "equally or neither", meaning in this case he is neither likable nor unlikable.

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1.Likable								1.Unlikable

Then continue to rate your father on the other nine things, marking one check on each line.

Then do the same for the other people described at the tops of the other pages. There are 20 pages in all. If you do not know how to rate a certain person on one of the things, please make the best guess you can, then put a question mark (?) by the check.

Your father (or the man who raised you) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA3

A clergyman (priest, minister, or rabbi) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA4

Yourself, as your are:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 5	Very 6	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA5

A black inmate here (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

A good friend of the same sex (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA7

Someone you don't trust (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA8

A white trustee here (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA9

Your mother (or the woman who raised you) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA10

A cellmate or someone who lives in your dorm (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

A white correctional officer here (initials:_____) is: ROA11

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA12

Your brother or sister (or close childhood friend) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA13

An old person (like your grandmother or grandfather) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Phsyically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA14

A person you admire (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA15

A black trustee here (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA16

A foreman or someone who has supervised your work (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA17

A person you dislike (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

A white inmate here (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA19

Your wife or husband (or good friend of the opposite sex) (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA20

Yourself, as you would like to be:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Well-mannered
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

ROA21

A black correctional officer here (initials:_____) is:

	Very 1	Quite 2	Slightly 3	Equally or Neither 4	Slightly 5	Quite 6	Very 7	
1. Likable								1. Unlikable
2. Not smart								2. Smart
3. Tolerant								3. Fault-finding
4. Selfish								4. Unselfish
5. Serious								5. Happy-go-lucky
6. Rude								6. Rude
7. Physically dirty								7. Physically clean
8. Unreliable								8. Reliable
9. Lazy								9. Works hard
10. Strong								10. Weak

LIKING OF ACQUAINTANCES

Please write a number from the following scale beside each person listed below to indicate how much you like him (or her).

SCALE

7 Like very much
6 Like considerably
5 Like for the most part, with some degree of dislike
4 Neither like nor dislike
3 Dislike for the most part, with some degree of liking
2 Dislike considerably
1 Dislike very much

_____ 1. Your father (or the man who raised you)
_____ 2. A clergyman (priest, minister, or rabbi)
_____ 3. Yourself, as you are
_____ 4. A black inmate here
_____ 5. A good friend of the same sex
_____ 6. Someone you don't trust
_____ 7. A white trustee here
_____ 8. Your mother (or the woman who raised you)
_____ 9. A cell mate or someone who lives in your dorm
_____10. A white correctional officer here
_____11. Your brother or sister (or close childhood friend)
_____12. An old person (like your grandfather or grandmother)
_____13. A person you admire
_____14. A black trustee here
_____15. A foreman or someone who has supervised you
_____16. A person you dislike
_____17. A white inmate here
_____18. Your husband or wife or good friend of the opposite sex
_____19. Yourself, as you would like to be
_____20. A black Correctional Officer here

APPENDIX B

RATING OF TYPES

The following pages talk about types of people. Think of people who are like the type described. Below the type of person are five things on which the person can be rated. Each thing has the opposite meaning on either end of the line. Please put one check mark on each line to show where you think the type of person stands on the things you are judging.

For instance, if you think that inmates in prison for the first time are very likable, put a check on the first line, under the word "very". If you think they are quite unlikable, put a check mark on the first line, second box from the right, under the word "quite". If you think they are of moderate or average likeness, put a check in the middle of the first line, under the words, "equally or neither", meaning in this case they are neither likable nor unlikable.

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable

Then continue to rate inmates in prison for the first time on the other four things, marking one check on each line.

Then do the same for the other type of people described. If you do not know how to rate a certain type of person on one of the things, please make the best guess you can, then put a question mark (?) by the check.

Inmates in prison for the first time are:

	Very	Quite	Slightly	Neither or Equally	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

Trustees or honor residents are:

	Very	Quite	Slightly	Neither or Equally	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

Younger inmates are:

	Very	Quite	Slightly	Neither or Equally	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

Inmates with life sentences are:

	Very	Quite	Slightly	Neither or Equally	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

White inmates are:	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

Inmates with short sentences are:	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

Inmates in on drug charges are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

Inmates who are trouble-makers are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

Inmates who have been in prison before are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

Inmates with long sentences are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

Older inmates are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Work hard

Black inmates are:

	Very	Quite	Slightly	Equally or Neither	Slightly	Quite	Very	
1. Likable								1. Unlikable
2. Good work partner								2. Bad work partner
3. Smart								3. Not smart
4. Physically dirty								4. Physically clean
5. Lazy								5. Works hard

APPENDIX C

MAC1

On the next four pages are some sentences. Each sentence says something about the world or about people. There are no right or wrong answers. You will probably agree with some of the sentences and disagree with others. We want to know how much you agree or disagree. You can show how much you agree or disagree with each sentence by circling one of the answers next to each sentence.

Read each sentence, decide whether you agree or disagree and how much. Then you will put a circle around the answer that best tells how you feel about the sentence.

1. Never tell anyone why you did something unless it will help you.

   Agree very much Agree a little Disagree a little

   Disagree very much

2. Most people are good and kind.

   Agree very much Agree a little Disagree a little

   Disagree very much

3. The best way to get along with people is to tell them things that make them happy.

   Agree very much Agree a little Disagree a little

   Disagree very much

4. You should do something only when you are sure it is right.

   Agree very much Agree a little Disagree a little

   Disagree very much

MAC2

5. It is smartest to believe that all people will be mean if they have a chance.

Agree very much Agree a little Disagree a little

Disagree very much

6. You should always be honest, no matter what.

Agree very much Agree a little Disagree a little

Disagree very much

7. Sometimes you have to hurt other people to get what you want.

Agree very much Agree a little Disagree a little

Disagree very much

8. Most people won't work hard unless you make them do it.

Agree very much Agree a little Disagree a little

Disagree very much

9. It is better to tell someone why you want him to help you than to make up a good story to get him to do it.

Agree very much Agree a little Disagree a little

Disagree very much

10. It is better to be ordinary and honest than famous and dishonest.

Agree very much Agree a little Disagree a little

Disagree very much

11. Successful people are mostly honest and good.

Agree very much Agree a little Disagree a little

Disagree very much

MAC3

12. Anyone who completely trusts anyone else is asking for trouble.

Agree very much Agree a little Disagree a little

Disagree very much

13. A criminal is just like other people except that he got caught.

Agree very much Agree a little Disagree a little

Disagree very much

14. Most people are brave.

Agree very much Agree a little Disagree a little

Disagree very much

15. It is smart to be nice to important people even if you don't really like them.

Agree very much Agree a little Disagree a little

Disagree very much

16. It is possible to be good in every way.

Agree very much Agree a little Disagree a little

Disagree very much

17. Most people cannot be easily fooled.

Agree very much Agree a little Disagree a little

Disagree very much

18. Sometimes you have to cheat a little to get what you want.

Agree very much Agree a little Disagree a little

Disagree very much

MAC4

19. It is never right to tell a lie.

Agree very much Agree a little Disagree a little

Disagree very much

20. It hurts more to lose money than to lose a friend.

Agree very much Agree a little Disagree a little

Disagree very much

APPENDIX D

INTERVIEW SCHEDULE

1. How long have you been in UCI (Lowell)?
2. Have you been here before?
3. How long ago?
4. How long were you here?

5. Where do you live?
6. How many in your cell (dorm)?
7. How long have you been there?

8. Tell me about where you live.
9. Tell me about UCI (Lowell).

NOR

APPENDIX E

GROUP QUESTIONNAIRE

We are going to give you a number of examples of how people act in certain situations in an institution like this one. Different people feel very differently about these examples. We would like to know how you feel about someone doing these things: whether you feel he

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

do them. Please circle, under each statement, the answer which best shows how you feel about what people should not do in an institution like this.

Here is one example just for practice:

a) An inmate watches TV as much as he can.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

We would like you to circle the answer which shows how you feel things should be, not how they are. If you feel an inmate absolutely should not watch TV as much as he can, then circle ABSOLUTELY SHOULD NOT. If you feel somewhere in between, then circle SHOULD or MAY OR MAY NOT or SHOULD NOT, depending on which answer shows best just how you feel. There are no right or wrong answers to any of these examples and remember to answer the questions the

NOR

way you think things should be, not the way they are. We are interested in your opinion, in just how you feel things should or should not be.

Turn the page and read each example carefully; then circle the answer which best shows how you feel about each one.

NOR1

1. An inmate causes as much trouble as he can.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

2. Staff members help an inmate if he gets in trouble.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

3. A guy in here thinks only of doing his own time.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

4. Staff members only concern themselves with keeping the inmate from causing them trouble.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

5. Staff members treat an inmate as if he is here to pay off his debt to society

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

6. A guy tries to learn as much as he can from his schoolwork.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

7. Staff members treat black and white inmates the same.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

8. A black guy keeps away from whites as much as possible in here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

9. An old inmate gives the new guys wrong information so they will get into trouble.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

10. Staff members try to help an inmate take a new look at his life.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

11. A guy tries to get along by keeping his mouth shut around the staff.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

12. Staff members act like their main job is to keep things running smoothly.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

13. Staff members push an inmate till he breaks.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

14. A guy really tries to learn something in work release that will be of use to him later.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

15. Staff members treat black inmates better than white inmates.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR3

16. A white guy tries to get along with black guys while he is in here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

17. A guy lies to an officer if he can get away with it.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

18. Staff members try to understand an inmates' problems.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

19. A guy does only what he is told.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

20. Staff members act as if their main job is preventing escapes.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

21. Staff members are rough with inmates to show them who's boss.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

22. A guy who's been around for a while tries to make a new inmate feel more comfortable here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

23. Black inmates treat black and white inmates the same.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR4

24. A white inmate only teams up with another white guy.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

25. A guy goofs off while he's in school.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

26. Staff members take a personal interest in the inmates here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

27. A guy tries to steer clear of the staff.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

28. Staff members see an inmate as someone to be controlled.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

29. Staff members see to it that a guy has a hard time here to make up for what he did on the outside.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

30. A guy does the best work he can when he's on a work detail.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

31. A white guy keeps away from blacks as much as possible.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR5

32. A black guy tries to get along with a white guy in his cell or dorn room.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

33. A guy tries to team up with a guy who will help him fight the program.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

34. Staff members help an inmate to plan his future on the outside.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

35. An inmate tries to find the easiest job he can.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

36. Staff members think about the inmates as little as necessary.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

37. Staff members remind an inmate that he is in here to pay for his crime.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

38. A guy tries to figure out how to get along with other guys while he is in here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR6

39. White inmates treat black and white inmates the same.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

40. A white guy tries to get along with a black guy in his cell or dorm room.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

41. A guy works it out so he can con the staff.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

42. Staff members try to teach an inmate skills that will help on the streets.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

43. A guy keeps to himself as much as possible.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

44. Staff members send an inmate to segregation even for little things.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

45. Staff members supervise inmates to make sure no one gets out of line.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

46. A guy does his best to cooperate when he's assigned to work with another guy.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR7

47. A white guy does his best to cooperate when he's assigned to work with a black guy.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

48. Staff members treat white inmates better than black inmates.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

49. An inmate tries to get around as many of the rules as possible.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

50. Staff members try to help an inmate understand why he is here.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

51. A guy acts like his stay here is just a matter of waiting out time.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

52. The staff leaves an inmate alone unless the inmate causes trouble.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

53. Staff members jump on a guy the minute he gets out of line.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

NOR8

54. A guy spends a lot of time thinking while he's in here about how to get along on the outside.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

55. A black guy only teams up with another black guy.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

56. A black guy does his best to cooeprate when he's assigned to work with a white guy.

ABSOLUTELY SHOULD	SHOULD	MAY OR MAY NOT	SHOULD NOT	ABSOLUTELY SHOULD NOT

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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