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ASPECTS OF PERSON PERCEPTION AS RELATED TO CONCEPTUAL SYSTEMS FUNCTIONING

BY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Aspects of Person Perception as Related to Conceptual Systems Functioning" submitted by David Donald Sawatzky in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

The primary intent of this study was to construe aspects of person perception within the theories of cognitive complexity (Bieri, 1955; Bieri, Atkins, Briar, Leaman, Miller and Tripodi, 1966) and conceptual systems functioning (Harvey, Hunt and Schroder, 1961; Schroder, Driver and Streufert, 1967). Central to the study was the production of videotaped interviews with selected high school students. These interviews were presented to the subjects of this study, 303 high school students, whose written responses to the interviewees were subjected to content analyses. The derived scores of differentiation and integration, as well as the scores of accuracy of perception of verbal and visual cues, were then related to level of conceptual functioning as determined by performance on the Interpersonal Topical Inventory (Tuckman, 1966). The study was based on a replicative design and the results were interpreted from two perspectives; as providing evidence of construct validity for the notion of conceptual complexity and as providing insight into the process of person perception.

Several positive findings were evident in this study. One was the clear relationship between integration of impressions and abstract conceptual functioning. A positive relationship was also found between differentiation

and integration, even though differentiation was shown to be unrelated to conceptual systems membership. These findings were interpreted as lending support to the view held by Schroder et al (1967) that differentiation is not an integral part of conceptual systems functioning, although the number of dimensions is related to the potential for complex organization. Another finding was the positive relationship between concrete functioning and the tendency to dichotomize judgments. Subjects who were classified as functioning at the concrete conceptual level were more inclined to view themselves, as well as the communications of the stimulus persons, in a more polarized fashion than were those functioning at more abstract levels. Finally, differences were found between the sexes and between urban and rural subjects on the measure of differentiation of impressions. The superior performance of girls and of rural students on this measure was interpreted as supporting the "frequency of interaction" hypothesis advanced by Crockett (1965).

The implications of the aforementioned results are discussed in relation to the counseling process and to counselor training programs.

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CHAPTER I

INTRODUCTION

The process of perceiving, judging and appraising others can be viewed as underlying all human interactions. That increasing recognition is being accorded to this fact is apparent in the expanded interest of psychologists in matters previously regarded as the preserve of sociologists, political scientists and historians. Attempts are being made to apply an ideographic perspective to such wide ranging social problems as labor-management relations (Haire, 1968), student unrest (Anderson, 1969), racial prejudice (Allport, 1968) and international relations (Brody, 1966).

The factors influencing the process of perceiving others have been organized into three sets of variables (Tagiuri, 1958): the attributes of the stimulus person, the nature of the interaction situation, and the characteristics of the perceiver. The focus of the present study will be on the third set of variables, conceptualized as personality variables -- or more specifically, cognitive variables -- in the perceiver which influence how he perceives others. In recent years, cognitive variables have been viewed by some writers in terms of complexity (Bieri, 1955; Bieri, Atkins, Briar, Leaman, Miller and Tripodi,1966; Harvey, Hunt and Schroder, 1961; Schroder, Driver and Streufert, 1967). Measures of cognitive or

conceptual complexity have been predictive of performance in a diversity of settings, as illustrated by the following examples. Stager (1967) found a relationship between the level of conceptual functioning of members of a group and the degree of role flexibility within that group; Harvey, White, Prather, Alter and Hoffmeister (1966) and Hunt and Joyce (1967) found complexity to be related to specific teaching styles; and Crouse, Karlins and Schroder (1968) found a relationship between marital happiness and complexity.

It is the view of the present author that much of the research in person perception could be coordinated within the framework of the theory of conceptual complexity. A basic concern is to determine whether a measure of generalized conceptual complexity is predictive of cognitive functioning with respect to a specific stimulus domain. Consequently, adolescent subjects, classified according to conceptual systems membership (Harvey, Hunt and Schroder, 1961), will be exposed to adolescent stimulus persons presented to them by means of videotaped interviews constructed for the purposes of this study. The written responses of the subjects to these stimulus persons will be subjected to content analyses in order to derive estimates of aspects of cognitive functioning. An effort will also be made to evaluate the content of dimensions typically used by persons functioning at various levels of

complexity. Also, predictions will be made of differences among levels of conceptual functioning with respect to the accuracy with which certain kinds of cues are perceived. Finally, sex and urban-rural comparisons will be made with regard to most of the aforementioned variables.

Since an acquaintance with the theoretical framework of the present study is essential to an understanding of the hypothesized relationships, this will be presented in the following chapter.

CHAPTER II

THEORETICAL FRAMEWORK

Cognitive Structure Characterized

The concept of cognitive structure has been posited by a number of theorists and investigators with a diversity of theoretical orientations. Cognitive theorists such as Kelly (1955) as well as neobehaviorists such as Osgood (1957) subscribe to the idea of structural processes intervening and mediating the input-output sequence. These structures, which are variously referred to as personal constructs, cognitive maps or schemata are viewed as influencing what is perceived and how it is perceived. Peak (1958) aptly defines the concept in the following way:

> It is a hypothetical construct to be inferred from events observed under specified conditions and, like all such constructs, once inferred, it becomes the basis for predicting behavior on subsequent occasions when there are reasons to believe that the system of relations has not changed (p. 325-326).

Cognitive structures have been viewed on different levels as concepts and conceptual systems, with the latter subsuming the former. Since a major focus of the present study will be on these two levels of cognitive structure, they will be discussed at some length.

The Concept

A concept can be viewed as a relationship involving at least two elements which could be in the immediate present or in remote memory (Driver, 1962). A concept can be viewed as functioning in perception when it assesses the similarity or differences between a stored element and some incoming stimulus, or between several incoming stimuli. When concepts simply yield similarities or differences among elements stored in memory, the concept functions in what may be termed nonperceptual or cognitive identification.

While a concept could be viewed in various ways, one attribute which has been singled out by many theorists for emphasis is its degree of complexity. The complexity of a concept has been viewed (Werner, 1957; Harvey, Hunt and Schroder, 1961; Tuckman, 1966; Harvey, 1967; Schroder, Driver and Streufert, 1967) with reference to two components: the number of distinct dimensions for interpreting output and the schemata or rules which generate the structures among these dimensions. In accordance with the terminology used by Schroder et al (1967) the first mentioned component will be referred to in this study as differentiation while the latter will be called integration. The aforementioned theorists maintain that although differentiation is not necessarily related to integration, the greater the number of dimensions, the more likely is the development of integratively complex connections or rules.

To make the degree of differentiation and integration central to the definition of complexity is to ground it rather firmly in the developmental psychology of Werner (1957) who views development as being expressed in "an increasing differentiation of parts and an increasing subordination or hierarchization (p. 10)".

Because of the importance that will be accorded to these aspects of complexity, each will be more fully discussed with the views of representative theorists.

Differentiation. As indicated, this term refers to the number of distinct parts or dimensions in a conceptual structure. It can be viewed as the number of frames of reference within which objects may be cognized. Scott (1963) presents the following illustrative example:

> The casual user of the postal services will typically distinguish only size, shape, and color differences among postage stamps, while the philatelist will discriminate a much greater variety of attributes, such as year of mint, centering, and watermarks. The latter's cognitive structuring of this area is more complex.

The manner in which other human beings are perceived can also be viewed in these terms. One personality theorist who emphasizes the dimensional aspects of complexity is Kelly (1955). He believes that each individual develops personal constructs along which he construes the world. He sees these constructs as being bipolar continuums with semantic antagonists at

either pole. For example, good versus bad could be one construct in perceiving people. Constructs can be viewed as varying in their "range of convenience" (that is, what the construct may be applied to) and their "focus of convenience" (the area in which it is most useful).

A related view of the dimensional basis of judgment is contained in the work of Osgood, Suci and Tannenbaum (1957), although they start from a more behavioristic and less perceptual basis than does Kelly. In their attempts to measure connotative 'meaning', Osgood and his collaborators have developed and used bipolar adjective dimensions in scales which they call semantic differentials. That this approach is more empirical than theoretical is illustrated by the suggestion of the authors that a unidirectional scale might have advantages over a bipolar scale since it would circumvent the assumption with bipolar scales that the opposite adjectives defining the ends of the scales are equidistant from the midpoint (p. 326).

Driver (1962) takes issue with the notion of constructs as strictly dichotomous categories, preferring the view that a dimension or category does not have to consist of polar opposites. Although opposites may be found at either pole of a dimension, it could also be possible to categorize elements as similar or dissimilar without imputing that dissimilar means opposite. It is this latter more compromising view of differentiation

which has been adhered to in the present study.

Integration. Schroder et al (1967) refer to integration as the most relevant aspect of abstractness and define it as "the extent to which dimensional units of information can be interrelated in different ways in order to generate new and discrepant perspectives about stimuli (p. 25)". This definition appears to be consistent with the view of Harvey et al (1961) who see integration as the process of relating or hooking parts to each other and to previous conceptual standards. Zajonc (1960), in accordance with the theorizing of Werner (1957), is more inclined to emphasize the dependency or hierarchic aspects of these connections. Thus, what is important is the degree to which a cognitive domain is dominated by a small number of elements to which others are subsidiary. Since the existence of these super-ordinate elements would appear to result in greater ability to generate relationships, this view would not be inconsistent with that of Schroder and his associates. The definition of integration in the present study is based upon the view proposed by Schroder et al (1967).

Conceptual Systems

In the previous section the focus was on complexity within one concept. A number of theorists (particularly Harvey et al, 1961; Harvey, 1966; Harvey, 1967) emphasize

the interdependence of concepts within an individual -- contributing to the notion of the unified nature of cognitive structure. Although these investigators do not consider all concepts of a person to be of uniform complexity, they emphasize that the majority of important, central concepts in a given life space can share a relatively similar level of complexity. These can then be viewed as being integrated into larger units which are variously referred to as superordinate constructs (Harvey et al, 1961), belief systems (Rokeach, 1960) or schemata (Piaget, 1960). Generalized complexity would imply that complex people have more superordinate concepts than simple people. Greater generalized complexity also means that superordinate concepts have more component concepts which are highly integrated and constitute a life style. Harvey et al (1961); Driver (1962); Harvey (1967); Schroder et al (1967) refer to this as the generalized abstractness - concreteness dimension in personality functioning. Variations along this dimension are seen as resulting in differences in "stimulus boundness", the extent to which the responding individual is restricted to or can go beyond the physical characteristics of the immediately impinging stimuli in organizing his evaluation and experience of a situation. Ability and an inclination to go beyond immediate stimuli, or abstractness, is associated with high differentiation and integration across a wide

range of domains. The more concrete end of the dimension represents the state of minimal differentiation within the concepts and little or no integration among them.

Although Harvey et al (1961) see the structure and content of systems as being theoretically independent, they have generated a set of developmental assumptions which have led to the postulation of a high relationship between an individual's level of abstractness and the content of his more central concepts. Four basic levels of concreteness-abstractness, along with inbetween stages were defined. Each of these levels is treated as a system of construing or dimensionalizing relevant aspects of their possessor's world. Thus they differ not only in terms of differentiation and integration, but in the aspects of the environing world that are relevant to them and consequently to what stimuli they are differentially sensitized and open. Also, they differ in the extent to which some extra-personal force is endowed with ultimate validity or one's own impressions and experiences are relied upon as guidelines. The four levels of concreteness-abstractness are described in the following section.

Descriptions of Four Systems of Integrative Complexity

(Based on Tuckman, 1966; Harvey, Hunt and Schroder, 1961; Schroder, Driver and Streufert, 1967)

System 1. Individuals classified as System 1 are most concrete. This is typified by categorical thinking, rigidity, over generalization, intolerance of ambiguity, and consequent reliance on externally imposed structures, namely, authorities, norms, rules for ambiguity reduction and self-definition. Associations with other persons are maintained primarily as a basis for guaranteeing clear definitions of the situation and as an absolute source of guidance. In many respects System 1 functioning is highly related to the syndrome of authoritarianism and dogmatism, with System 1 individuals scoring the highest of the four systems on the F-Scale as well as on the Dogmatism Scale (Harvey, 1966).

System 2. Individuals classified as System 2 are moderately concrete. Their behavior is characterized by an orientation away from and against external sources of control. The System 2 person is opposite to the System 1 person in that he distinguishes strongly between self and other and acts to avoid any control by other on the self, while the System 1 person fails to make this distinction and seeks external control. Harvey et al

(1961) have termed this a negatively independent orientation.

System 3. Individuals classified as System 3 are moderately abstract. Their behavior is characterized by an orientation toward people as a source of pleasure and guidance. This guidance concerns the extent to which behavior is in accord with role expectations. The System 3 person obtains his guidance through his ability to "take the role of another" as conceptualized by Mead (Tuckman, 1966). The System 3 person resembles the other directed person of Riesman. Although he is oriented toward establishing dependencies on others to avert the helplessness that would result from being placed on his own, the System 3 individual develops more autonomous internal standards, especially in the social sphere than does the System 1 individual and more positive ties to the prevailing social norm than does the System 2 person.

System 4. Individuals classified in this system are at the abstract end of the continuum. They have highly differentiated and integrated cognitive structures and consequently are most flexible, most creative, and most relative in thought and action. More than persons of the other systems, the System 4 individual has a set of internal standards that are more independent of external

criteria. Since people represent simply a part of their environment, they relate to others in an informational manner. System 4 individuals have been found to be lowest on dogmatism and authoritarianism (Harvey, 1966).

Theoretical Considerations in Person Perception

Although the process of person perception, or forming an impression, may be viewed as an immediate, unitary phenomenon, the delineation of phases is useful in order to investigate the different contributions made by cognitive variables in the different phases. Thus the process might be conceptualized as consisting of two phases: the selection of cues and the drawing of inferences about personality characteristics based on these cues. This distinction is similar to that made by Schroder *et al* (1967) who maintain that:

> ... an adaptive orientation acts, first, like a set of filters -- selecting certain kinds of information from the environment -- and second, like a program or set of rules which combines these items of information in specific ways. The first aspect is the component or content variable, and the second aspect is the structural or information processing variable (p. 4).

Selection of Cues. Because of the complexity of a person as a stimulus, and the limited processing capacities of the perceiver (Bieri, Atkins, Briar, Leaman, Miller, Tripodi, 1966) not all of the presented cues can be attended

to. Therefore, an important source of individual variability in the judgment process could well be differences in the cues attended to. It would seem likely, for example, that consistent personality differences could exist both in the number of cues sampled and in the degree to which particular classes of cues such as tone of voice, movement of the hands, content of verbalizations or particular physiognomic features were attended to.

The Inference Process can be viewed as an interpretation of what has been seen or heard. A basic form of inference occurs when some cue such as a gesture, an eye movement or a verbal statement is interpreted as signifying some psychological feature of the person described.

In this inference process, Secord and Backman (1964) suggest, perceivers exhibit certain "economizing processes" that make the perceptual task more manageable. These economizing processes, in turn, can introduce biases.

One economizing process is that of responding to certain dispositions or traits as though they were invariant. As Heider (1958) suggests, this is necessary in order to make the social world more predictable. However, to generalize broadly on the basis of limited information, to assume that action in a particular situation is characteristic of the individual's typical behavior in many situations, could introduce a bias.

Another form of bias is the tendency to see persons as origins of action when some situational factors may be involved. This question is emphasized by Heider (1958) and discussed by Jones and Davis (1965), who emphasize the importance of considering situational factors prior to assigning a characteristic or disposition. An individual could, for example, behave in a certain way because of certain dispositions or personal qualities or because certain situational factors demanded or facilitate the behavior. Thus, for example, seeing the successful businessman as having made a fortune by virtue of some personal characteristic, and overlooking the contribution of the economic system, is an example of this kind of bias.

The "economizing process" also takes place when perceptions are organized around certain evaluative factors. Seeing all properties belonging to the same individual as all positive or all negative is an example of this kind of bias.

Finally, a great economy in perceiving others is achieved by the process of categorization. This is done when a person, on the basis of certain characteristics (which may be physical) is simply placed in a category along with many others. Thus it is no longer necessary to observe distinctiveness of behavior or uniqueness of disposition. This categorization involves (Secord and Backman, 1964): (1) learning what characteristics are associated with a given

class of persons and (2) learning the attributes associated with that class. Thus, an Alberta child may learn that North American Indians have brownish skins and straight black hair and that they are lazy, dirty and when drunk they are dangerous. Now all this child needs to do is to take note of the physical characteristics in order to arrive at conclusions concerning the attributes.

On the basis of the theoretical model which has been outlined we might expect individuals who are classified in the four conceptual systems to react differently in their first impressions of others. For example, the person concept of highly abstract people (Systems 3 and 4) should be more differentiated and show more evidence of integration than that of concretely functioning individuals (Systems 1 and 2). Also, it could be expected that more abstract persons who are by definition open and non defensive, will be more inclined to perceive others objectively with a view to understanding them, then will concretely functioning persons. As a result they will be less inclined to utilize economizing processes such as categorizing an individual on the basis of few cues than would persons who are less complex. Abstract persons would also be expected to attend carefully and accurately to those cues which might be of relevance in understanding a stimulus person. At the opposite extreme, concrete individuals would be stimulus bound, more inclined to perceive others in dichotomous categories, more concerned

about the maintenance of their own systems than about understanding others, and would tend to perceive others defensively.

In the following chapter, research will be presented which is related to the theory which has been discussed.

CHAPTER III

RELATED RESEARCH

Since several distinct research areas are being tapped and integrated in the present study, the related literature will be presented in sections. Part I will deal specifically with studies and research procedures pertaining to the subject of person perception. In Part II the same approach will be used with respect to conceptual complexity. Finally, in Part III an attempt will be made to integrate these two research areas and to derive general statements of hypotheses.

PART I - PERSON PERCEPTION RESEARCH

A review of the research on person perception reveals a cleavage between research which emphasizes accuracy and that which focuses on the process of judging. Since both of these groups of studies have relevance for the proposed research plan, representative studies from each will be cited.

Accuracy Studies

Possibly the earliest experimental investigations of how people differ in their attribution of personal characteristics to others were concerned with accuracy. The typical procedure, which was modeled after a study

done by Dymond (1948), was to ask a judge to predict the response of another on a questionnaire. The predicted and actual scores were then compared and the difference between them constituted an "accuracy score". Although the measurement technique was basically the same in subsequent studies, various techniques were used for presenting the person to be judged. Bronfenbrenner, Harding, and Gallwey (1958) used an interaction approach, which involved the subject in making predictions about people with whom he had interacted for a brief period of time. Chance and Meaders (1960) used a taped interview to present a subject to be judged. A third method used was the filmed interview. A set of testing instruments using this approach was developed by Cline (1955, 1965) and Cline and Richards (1960, 1961a, 1961b). Judges are shown filmed interview sessions in which interviewees are questioned about subjects such as religious beliefs, political beliefs, strengths and weaknesses, and interests and hobbies. At the conclusion of each film, judges are required to fill out a questionnaire. The questionnaires are designed to measure aspects of person perception such as ability to make predictions about the behavior of the person viewed, ability to agree with individuals who know the interviewee well on descriptive adjectives, ability to perceive accurately and remember verbal cues, and ability to perceive accurately and remember visual cues. The "correct" answers are based

on intensive studies of each of the interviewees.

Filmed interviews have some obvious advantages over the other methods of presenting individuals to be judged. In addition to presenting the same individual in the same manner to different judges, or the same judge at different times, individuals are presented in realistic fashion.

The entire concept of using the prediction approach to measurement of accuracy of interpersonal perception has, however, been subjected to serious questioning. Cronbach (1955) wrote a paper that seriously challenged much of the work in judging accuracy. Using logic, mathematics, and analyses of studies, he demonstrated that most judging experiments in the literature had flaws which rendered them largely uninterpretable. As a remedy, he suggested the possibility of breaking down global judging scores into components. Two factors, he suggested, which accounted for much of what was general in this global measure were "Stereotype Accuracy" and "Differential Accuracy". "Stereotype Accuracy" involves an awareness of the social norms -- the ability to identify characteristics which people have in common and not necessarily the ability to discriminate individual departures from the norm. "Differential Accuracy" refers to the tendency to make fine distinctions among people and thus to perceive them as different from one another. Thus Cronbach's findings

suggested that it was possible for one to be an accurate judge because he had an accurate stereotype, or because he was able to predict specific differences among individuals, or because he had both abilities. The results of efforts by Cline and Richards (1960) to separate the two components are inconclusive. The emphasis placed by Cronbach and others, however, on the importance of differentiation, has contributed to a recent theoretical and research emphasis on the extent to which one forms a differentiated conceptualization of his environment. This emphasis is particularly evident in the research on cognitive complexity based on the theoretical position of George Kelly (Bieri, 1955; Bieri, Atkins, Briar, Leaman, Miller and Tripodi, 1966). This research, in turn, forms part of the basis for the present study.

Process Research

This group of studies appears to have its basis in the research of Asch (1946). Asch read to each of two groups of students a list of characteristics, all describing the same person. One list included the following characteristics: intelligent, skillful, industrious, warm, determined, practical, and cautious. The other list was identical except that the word "warm" was replaced by the word "cold". The students were asked to write sketches of the individual described. Asch found that the cue traits

warm and cold dominated the impression formed and that the two groups formed very different impressions. He also found that in spite of the sparcity of information, the lists of traits were organized into relatively integrated, consistent pictures of the described persons. His findings were consistent with the Gestalt views of perception, which stress the organized nature of impressions and the fact that the entire configuration plays a part in determining how the various parts are perceived.

Subsequent studies based on the Asch technique raised the question of individual differences in the extent to which discretely perceived characteristics of another person were organized into a coherent impression. Gollin (1954), for example, prepared a short motion picture in which a young woman was portrayed in several different scenes. Two of the scenes showed kind and considerate behavior on the part of the young woman, two others suggested that she was sexually promiscuous, the fifth was a neutral scene. When students were later asked to write brief personality descriptions of the young woman, about half of the students mentioned only one or the other of the two major kinds of behavior shown in the movie, but did not attempt to integrate both into one coherent impression. Only a quarter of the students were able to develop an integrated reconciliation of the two partially contradictory exposures to the young woman in the movie.

A subsequent expansion of the research just discussed involved an attempt to account for the factors which result in the selection of particular attributes for emphasis when forming an overall impression of another person. Luchins (1957a) found that the order in which a perceiver is exposed to particular characteristics of another person will determine his overall impression of that person. He found that the initial impression appeared to be dominant and described this phenomenon as the primacy effect. In a later extension of this study (Luchins, 1957b), he found that when contradictory descriptions of the person were separated by unrelated activities, a recency effect (a dominance of the last, or more recent, information about the perceived person) occurred.

A logical extension of this kind of research is to investigate individual differences in phenomena such as those mentioned. One personality variable which has recently been selected for emphasis is that of conceptual complexity. One of the purposes of the present study is to investigate the role, in the perception of other persons, of this personality variable.

PART II - CONCEPTUAL COMPLEXITY RESEARCH

Measures of the Construct

Major research studies in the area of complexity appear to gravitate towards one of two definitions of the term. One group, taking its lead from the research of Bieri (1955) and based on the personal construct theory of Kelly (1955), holds a dimensional view of complex behavior. Thus complexity is viewed as a function of the number of dimensions used, plus the degree of articulation within each of these dimensions. Researchers with this orientation (Miller and Bieri, 1963; Tripodi and Bieri, 1964; Leventhal and Singer, 1964; Mayo and Crockett, 1964) have typically used the Role Construct Repertory Test to measure their conception of the construct. The Role Construct Repertory Test (Rep Test) was devised by Kelly (1955) and is based on his theory of personality. It was used by Bieri (1955) in what was perhaps the first experiment on the effects of cognitive complexity upon impression formation. In this instrument the subject is required to list a set of people who are known to him personally and each of whom fits a role description that is provided by the instructions. Groups of three of the persons named are then selected and the subject is asked to tell in what way two of them are alike but different from the third. After a set of interpersonal constructs has been generated

in this manner, the subject is asked to take each of these constructs in turn and to indicate whether each one of the persons he is required to name on the Rep Test may also be described by that construct. The administrators of the test are then in a position to determine the extent to which the different interpersonal constructs a subject used are applied differentially to other persons; a subject who applied nearly every construct to refer to the same groups of people is said to be low in cognitive complexity; one whose constructs produced markedly different groupings among the other people is said to be high in complexity. A revision of the test (Tripodi and Bieri, 1963) was constructed in which constructs are provided and the subject is not required to generate his own. This has shortened the time necessary to take the test and the authors report that the complexity indices derived are comparable to the original measure.

Another instrument based upon the dimensional conception of complexity is the Groups of Nations Test developed by Scott (1963). This test is based upon an object sorting task which requires subjects to sort a provided list of nations into groups which have something in common. The index of complexity is based on the number of distinct groups produced.

The second major conception of complexity tends to incorporate the dimensional view. Harvey, Hunt and Schroder

(1961); Tuckman (1966a, 1966b); Schroder, Driver and Streufert (1967) and Harvey (1967) emphasize the integrative aspects of complexity. Thus in addition to differentiation and articulation, an important component of complexity is its degree of structural integration. This group of researchers also speak of the conceptual or self system, which as previously indicated, has wide implications for total personality functioning. Several instruments are currently being used for assessing the level of conceptual system functioning. A semi-projective measure developed by Harvey (1966) is the This I Believe Test (TIB). This test requires the subject to indicate his beliefs about a number of socially and personally relevant concept referents by completing in two or three sentences the phrase: "This I believe about----". The blank is replaced successively by one of the following referents: friendship, the American way of life, guilt, marriage, myself, religion, sin, majority opinion, people and compromise. On the basis of completions of these stems, subjects are classified in the four systems. Harvey (1966) reports that of the more than 1400 individuals whose TIB completions have been scored, approximately 30 per cent have been scored as predominantly System 1, approximately 15 per cent as System 2, approximately 20 per cent as System 3 and approximately 7 per cent as System 4. The remainder were admixtures of two or more of the systems and therefore could not be classified.

An attempt to objectify the scoring of the aforementioned instrument resulted in the Conceptual Systems Test (Harvey, 1967). A Likert scale is used and subjects indicate their degree of agreement or disagreement to questions such as the following:

15. I like to keep my letters, bills, and other papers neatly arranged and filed according to some system.

43. I believe that to attain my goals it is only necessary for me to live as God would have me live.

Another semi projective measure is the Paragraph Completion Test developed and described by Schroder et al (1967). Here the subject is asked to write two or three sentences in response to each of a series of sentence stems such as "When I am in doubt ---", "Confusion ---", "Parents ---", and "When I am criticized ---". Scoring is done by trained markers and inter rater reliability coefficients of from .80 to .95 are reported.

The Interpersonal Topical Inventory represents an attempt by Tuckman (1966) to objectify the scoring of the Paragraph Completion Test. Since it was used in the present study, it is discussed in a later chapter.

Correlates of Complexity

In an attempt to establish the validity of the construct in question, correlations have been computed with instruments purporting to measure similar constructs.

Dogmatism and Authoritarianism. Harvey (1966) reports studies in which the Rokeach Dogmatism Scale (Rokeach 1960) was completed by 20 representatives of each of the four systems. System 1 subjects scored the highest followed by Systems 2, 3 and 4 in that order. When F scale (authoritarianism) and dogmatism scores were split at the median into high-low segments, the following interesting pattern was observed: System 1 subjects tend to fall in the cell of high authoritarianism-high dogmatism, System 2 subjects to fall in low authoritarianism-high dogmatism, System 3 individuals to fall in the high authoritarianism-low dogmatism, and System 4 representatives to fall in the cell of low authoritarianism-low dogmatism.

Intelligence. When the semi projective measures of complexity are used, there appears to be a low positive correlation with intelligence. Harvey (1966) has described a study in which three different samples of subjects, classified into the four systems on the basis of the This I Believe Test, were administered the Wechsler Adult Intelligence Scale. The only sub-tests in which differences were found among the systems were Verbal Intelligence and Vocabulary, where Systems 2 and 4 scored higher than the other systems, with System 4 higher, but not significantly higher than System 2.

Schroder et al (1967) report correlations of between .12 and .45 between the Paragraph Completion Test and various group intelligence scores. This relationship appears to be similar to the findings reported by Reed (1966) who used high school students. On the basis of his somewhat nebulous results, Reed concludes that conceptual complexity as measured by the Paragraph Completion Test is "at least partially related to ability constructs (p. 50)". This low positive relationship would also appear to be supported by the findings of Bieri (1955) and those reported by Tuckman (1966b). In the latter study subjects were classified separately with the Interpersonal Topical Inventory and the Paragraph Completion Test into the four system groups. The groups did not differ significantly with either classification with respect to intelligence. The order of the means however was in the expected direction and was parallel to that reported by Harvey (1966).

All of the above mentioned findings, with the exception of those reported by Reed, are based on university populations where the range of intelligence would be expected to be more restricted than in the general population. In a high school population, where the range of intelligence is broader, the relationship between intelligence and complexity would be expected to be more apparent. This would be particularly evident when the

intelligence measure used was predictive of academic success and the complexity measure was at least partly dependent upon verbal fluency. It is these considerations which are reflected in the hypothesized relationship in this study between differentiation and intelligence.

Creativity. The parallels between the Mednick (1962) conception of creativity and the Schroder, et al (1967) notion of conceptual complexity are clearly drawn by Karlins (1967). According to Karlins, "both viewpoints are concerned with a structural approach to behavior and share two exploratory mechanisms, differentiation and integration (p. 266)". This relationship between the two constructs was empirically tested by Tuckman (1966b) who classified his subjects separately on the Interpersonal Topical Inventory and the Paragraph Completion Test. Using either instrument as the basis for classification, significant differences in the predicted direction were evident among the four system groups in their performance on a battery of creativity tests.

Latency of judgments. Construct validity is also provided by the research of Lanzetta (1963) and Sieber and Lanzetta (1964, 1966) who have noted individual differences in the amounts of time and information utilized by subjects. Those with more complex conceptual structures require both more time and more information before reaching a decision

than do less complex individuals. This research is in agreement with the views of Kagan, Moss and Sigel (1963) that latency period is determined by the number of alternative responses considered by the individual in the process of making a decision.

PART III - HYPOTHESIS DEVELOPMENT

Generality of Complexity

A question frequently raised with respect to conceptual complexity pertains to the generality of the trait in the total functioning of the personality. Theorists previously cited (ie. Harvey et al, 1961; Schroder et al, 1967) tend to be somewhat vague on this question. Particularly in the first mentioned reference (Harvey et al, 1961), the assumption seems implicit that the capacity to abstract is a unitary phenomenon of vast generality in the determination of cognitive behavior (Gardner and Schoen, 1962). In the subsequent publication (Schroder et al, 1967) the position appears to have been clarified somewhat as the authors suggest that " ... structural characteristics in an individual may vary across different stimulus areas - from interpersonal to political to mathematical stimuli, for example (p. 185)". This stance has also been adopted by Scott (1962, 1963), by Gardner and Schoen (1962), and by Crockett (1965). Research support for the latter position

is contained in the study by Signell (1966) where differences were found in the cognitive structures for the perception of people and nations. The changing emphasis in the direction of the domain specific aspects of complexity is evident in the study by Crouse, Karlins and Schroder (1968), in which the stems of the Paragraph Completion Test were altered in order to make the test domain specific.

Factor analytic studies designed to identify a general complexity factor among commonly used complexity measures (Vannoy, 1965; Gardiner, 1968; Stewin, 1969) have also yielded negative results. The authors of the latter two studies suggest, on the basis of the factors which were identified, that the complexity tests used might best be viewed as measuring different aspects of complexity.

The measure of "generalized complexity" in the present study tends to reflect the interpersonal domain. Thus the question of generality of complexity is viewed on a somewhat different level than is implied in the aforementioned studies. The central question in the present study can be conceptualized as an effort to determine whether subjects who score high on a measure of generalized interpersonal complexity will exhibit complex behavior when exposed to a specific stimulus from the interpersonal domain.

Group Differences in Complexity and Accuracy

Sex differences. A theoretical concept which is consistent with the view of the domain specificity of complexity is the "frequency of interaction" hypothesis proposed by Crockett (1965). Thus cognitive complexity is viewed as varying with the degree to which an individual interacts "frequently and intensively" with objects in his environment. Studies cited by Crockett (1965) in support of this hypothesis indicate that fraternity members have higher cognitive complexity scores than non fraternity college students (Mayo, cited by Crockett, 1965) and that extraversion is significantly correlated with cognitive complexity (Bieri and Messerley, 1957). In the aforementioned studies, the Role Construct Repertory Test was used which, as previously indicated, is based on a dimensional view of complexity and is restricted to the interpersonal domain. Crockett (1965) has found females to score consistently higher on this measure of complexity. He explains these differences by indicating that interpersonal relationships are likely to be of greater functional significance in a woman's life than in a man's. Douvan and Adelson (1966) would seem to concur with this point of view when they describe adolescent girls as being "less concerned with real skills than boys are, and more concerned with social and interpersonal reality (p. 342)".

The findings reported by Crockett (1965) are consistent with those reported by Hunt and Dopyera (1966) and by Gardiner (1968). They are also compatible with the results of person perception studies. Cline (1964) reports that women consistently obtained higher judging scores than men. A 1963 study by Exline (cited by Shrauger and Altrocchi, 1964) showed that women focused visually on those with whom they interacted more than men. This finding is congruous with the findings of Sawatzky (1968) which showed women to be superior in both the accurate perception of verbal cues and the accurate perception of visual cues.

On the basis of the theory and research presented, sex differences will be predicted with respect to both complexity and accuracy of person perception.

Urban-rural differences. There appears to be a lack of adequate theory and research applicable to predictions of urban and rural differences on the variables being considered in the present study. Barker (1968) however has summarized research comparing large and small high schools on a number of variables. On the basis of this research, he concludes that in smaller high schools, participants take more responsibility, engage in a wider range of different behavior in the settings, become highly dependent upon one another, and tend to evaluate themselves

and others in terms of their potential utility to the settings. On the basis of this information, Wicker (1969) applied the "frequency of interaction hypothesis (Crockett, 1965)", to differences in cognitive complexity between students in small and large high schools. The hypothesis was confirmed by his findings. Students in small high schools were found to be more complex than those in larger high schools. Although in the present study school size differed with respect to urban and rural students, there appear to be situational variables which would preclude a prediction of differences based on the Crockett hypothesis. One factor considered important is the centralized nature of the rural high schools used. Students are transported to these schools by bus and are returned to their homes immediately after classes. Consequently they are not able to participate in the variety of activities discussed by Barker (1968) as characteristic of the small high school student. Thus there does not appear to be an adequate rationale available for predicting differences between rural and urban students on the variables under consideration.

Conceptual complexity and behavioral variables. There is considerable research available to show that individuals who differ in their level of complexity also differ in a broad spectrum of behaviors. Some of this

research will be presented in order to provide support for proposed hypotheses.

Dichotomization of judgments. A characteristic of concrete functioning which is consistent with conceptual systems theory is the tendency to dichotomize or polarize judgments; to view persons or objects in 'black' or 'white' categories. This characteristic has also been associated with the position and intensity of one's own attitude or own stand on a social issue when discriminations and judgments are made related to that issue (Atkins, 1966; Hovland, Harvey, and Sherif, 1957; Manis, 1960; Upshaw, 1962; Zavalloni and Cook, 1965). A finding of the aforementioned studies was that when stimuli have some form of emotional or value significance for a person, he will tend to use more extreme judgments in rating these than if he were neutral. The theoretical explanation for this phenomenon is derived from the field of psychophysics and utilizes the concept of the attitudinal anchor. A classic study by Hovland, et al (1957), for example, showed that in the evaluation of a communication arguing for a moderately "wet" stand on the prohibition issue, "assimilation" and "contrast" effects were obtained, depending upon the distance between the position of the judge and the communication. Judges whose own positions were moderate, and thus closest to the communication, judged

the communication relatively accurately. Those whose positions were not far from the communication tended to judge it as more like their own than it actually was (assimilation). On the other hand, those farthest from the communication, that is, those who held more extreme positions, tended to judge it as more distant from their own position than it actually was (contrast). Manis (1960) had similar results when he had students evaluate the role of fraternities in American colleges. The mean standard deviations of judgments made by students who held strong views for or against fraternities were greater than of judgments made by students who did not feel strongly about the issue.

The approach taken by White and Harvey (1965) was to extend this research to include differences in personality variables. Acknowledging the work done with respect to attitudinal anchoring, these authors suggested that a possible weakness in the aforementioned studies was their neglect in controlling for the influence of personality. The finding, for example, that with increased extremity of attitude goes the tendency for the individual to dichotomize his psychological scale and to pile up judgments of the issue at the end of the scale could also be predicted from several theories. The three studied by the investigators were those of Adorno, Frenkel-Brunswick, Levenson, and Sanford (1950), Rokeach (1960), and Harvey

et al (1961). Greater authoritarianism, higher dogmatism, and greater concreteness are all presumed to be underlaid by poorly differentiated and integrated cognitive structures. This, in turn, should dispose the individual toward using more absolute, more undifferentiated, and more discontinuous internal standards. The study utilized Mormon subjects who varied in the above mentioned personality dimensions. These subjects then judged a series of statements according to favorableness-unfavorableness toward the Mormon religion. With effects of own stand controlled through matching of subjects within personality groupings, differences in concreteness-abstractness, but not in authoritarianism or dogmatism, significantly affected the usage of extreme categories, number of categories used, width of gap in judgmental scale, and the pro-ness of the items produced. This suggested to the researchers that at least some of the effects previously attributed to own stand could more appropriately be ascribed to variations on the concreteness-abstractness personality dimension. Another possibility suggested by these researchers was that position and intensity of own stand could be closely linked to personality and they suggested that only studies that obtained simultaneously measures of the effects of personality and of own stand could answer this question clearly. Hypotheses 6 and 7 of this study are designed to investigate further this question.

Conceptual Systems and Integration of Impressions

During the past decade, attempts have been made to determine whether individual differences in the ability to integrate contradictory information about persons (Asch, 1946; Gollin, 1954; Luchins, 1957a, 1957b) were dependent upon distinct personality variables. Mayo and Crockett (1964), using Kelly's Role Construct Repertory Test as a measure of cognitive complexity, reported that persons of high complexity tend to form better integrated impressions of others on the basis of contradictory information, than do persons of low complexity. These findings are consistent with the results of a study reported by Ware and Harvey (1967) in which the This I Believe Test was used as a measure of conceptual complexity. Concretely functioning persons manifested a greater need for consistency and tended to minimize the plausibility that the same person could simultaneously possess both good and bad characteristics. In other words they were "less able than abstract subjects to generate superordinate constructs of persons that would be consistent with their possessing simultaneously positive and negative characteristics (Ware and Harvey, 1967)".

An apparent weakness inherent in much of the research based on the Asch (1946) study, is that impressions are based on highly structured verbal inputs. Thus subjects are limited as to the amount of information on which to base

their inferences. With reference to their own study, Ware and Harvey (1967) suggest that an alternate approach might be that of "leaving individuals free in the amount of information they seek before reaching an impression of a specified level of generality ...". This was essentially the procedure followed in the present study. Subjects were presented with a stimulus person and left free as to the information they attended to. Differences are hypothesized among the conceptual systems with respect to the degree to which persons belonging to them are capable of forming integrated impressions on the basis of potentially contradictory information.

Conceptual Systems and Accuracy of Prediction

A basic study relating cognitive complexity to accuracy of person perception was conducted by Bieri (1955), who found a low positive correlation between complexity as measured by the Role Construct Repertory Test and accuracy in predicting the responses of another person on a questionnaire. Upon further consideration of these findings Bieri concluded that this relationship did not result from a general superiority in predictive accuracy among subjects high in cognitive complexity, but from a superiority in predicting when the other person actually differed from the subject. Leventhal (1957) came to a similar conclusion when he found that subjects low in

complexity predicted significantly greater similarity between themselves and others than did highs. Thus a characteristic of simple cognitive functioning is that the boundaries between self and the external world are not clearly differentiated; a fact which conforms with the theoretical position of Harvey et al (1961). Bearing in mind the previously mentioned theoretical and empirical relationships between the Rokeach (1960) theory of the open-mindedness-dogmatism continuum and that of conceptual systems functioning, the above mentioned findings are congruent with those reported by Sawatzky (1968). This latter study found open-mindedness to be positively related to the accurate perception of verbal stimuli, while a low positive relationship was evident between dogmatism and perception of visual stimuli. Since a characteristic inherent in the theory of dogmatism is that of defensiveness, the results were interpreted as meaning that dogmatic persons tend to fixate on those aspects of others which convey to them how others are reacting to them. Thus others are perceived in highly subjective fashion rather than objectively, with a disposition to sensitively understanding them. This relationship between personality characteristics and cues attended to will be further pursued in the present study and is reflected in Hypotheses 3 and 4.

Conceptual Systems and Kinds of Dimensions Used

The authors of the theory of conceptual systems functioning (Harvey et al, 1961; Schroder et al, 1967) have drawn a basic distinction between content and structural variables in cognitive functioning. Variation among individuals in the referents to which they conceptually link themselves has been referred to as content differences in self systems. Variation in how they tie or relate to these objects is referred to as structural or organizational differences. Although content and structure are theoretically independent, the developmental assumptions on which the theory is based have led the aforementioned theorists to posit a high relationship between an individual's level of abstractness and the content of his more central concepts. It is this relationship which is reflected in the characteristics of the four conceptual systems. Thus the content differences combined with the structural differences are viewed as producing a selectivity and directionality of functioning. Because of the emphasis on the structural aspect of conceptual systems functioning, research on the kinds of dimensions used has been largely ignored. This fact is decried by Leventhal and Singer (1966) who found a very weak relationship between cognitive complexity and a measure of impression formation based on a technique devised by Zajonc (1960). They did however find that

cognitive complexity predicted differential sensitivity to specific information contents by simple and complex judges. Simple judges seemed to stress the power or effectiveness dimension, while complex judges appeared more concerned with "the unique characterization of a person". On the basis of their findings the authors strongly suggest that further research in impression formation explore "the contents of the various assumptions, norms or sets which orient people to information about others before testing hypotheses on organization, ie., cognitive patterns (p. 224)".

Research specifically in the area of person perception has explored the question of differences among persons in the kinds of dimensions used. The problem with this kind of research however is that the subject is typically required to use fixed scales for specifying his judgments of a particular stimulus person. Interpretations of the results of such studies becomes difficult because the meaning and salience of the scales for the subject may be unclear, atypical, or even absent. Hastorf, Richardson and Dornbusch (1958) in their discussion of these weaknesses urge that researchers " ... study the qualities of a person's experience of others in terms of the verbal categories he uses in reporting that experience. The central characteristic of this type of methodology would be the eliciting of free and unrestricted descriptions of

other persons (p. 56)". It is this kind of rationale on which a pertinent study by Beach and Wertheimer (1961) was based. The use of the free response-content analysis approach to person perception was investigated. One of their findings indicated that the content of free verbal descriptions of people could be readily and reliably analysed. Another relevant finding was that subjects vary in the use of different categories, different evaluative tone, and different amounts of information.

In the present study differences will be hypothesized among the conceptual systems as to the kinds of dimensions employed in judging another person. Subjects will be given the opportunity to respond freely to the stimulus person. A content analysis will then be performed, based upon the factor analytically derived dimensions obtained by Osgood, Suci and Tannenbaum (1957). This procedure will be fully discussed in a later chapter.

CHAPTER IV

METHOD

The primary purpose of the present study has been stated as an attempt to view aspects of person perception research within the framework of conceptual systems theory. The first step in accomplishing this objective was to produce videotapes of interviews with selected high school students. These videotapes were then shown to the subjects of the study; high school students from both urban and rural areas. On the basis of written responses of the subjects to the interviewees, scores of accuracy and complexity were derived. Finally a measure of generalized complexity was administered which formed the basis for the classification of the subjects into conceptual systems.

Thus the methodology of this study can be viewed as taking place in two phases. The first of these pertains to the construction of the interview videotapes, while the second is concerned with the actual testing procedures. This sequence will also be evident in the presentation of the material of this chapter.

Construction of the Videotapes

The procedures used in presenting the persons to be judged were modelled after those developed and described

by Cline (1955, 1964) and Cline and Richards (1960, 1961a, 1961b). The films constructed by Cline were used in a previous study by the present author (Sawatzky, 1968). For several reasons however, they were not found to be completely satisfactory. First, the films were several years old and consequently the issues discussed did not appear to have general relevance for the adolescent population. Secondly, a variety of adult interviewees were used in the Cline films. Since the issue of the generality of person perception over a variety of persons has not been clearly resolved (Schrauger and Altrocchi, 1964), it was considered advisable to use interviewees of one age level and interpret the results with respect to that group only.

It was decided for the purposes of the present study to videotape interviews with high school students. Videotaping was used because of the availability of equipment and personnel, because the technical quality of sound and picture was thought to be superior to that of films, and because it was relatively less costly than producing films.

The high school interviewees were selected by a teacher of performing arts in a large Edmonton high school. Students of performing arts were selected since they are accustomed to public appearances and it was thought that they would be less inhibited in the interview situation than would most other students. Five students were

selected on the basis of their willingness and ability to express ideas in articulate fashion.

The interviews with the five students were video-taped at the University of Alberta by personnel working in the Audio Visual Division of the Faculty of Education. The interviews were unrehearsed. The interviewees entered the situation "cold" -- they had previously been given only a very general indication of the purposes of the interviews. The camera was in full view of the interviewees during the sessions. Interviews were conducted by the present author. In order to ensure equivalence over interviews all sessions followed a basic pattern, although some freedom was employed in varying the context or order of questions when the situation seemed to require it. The questions were on subjects of concern to high school students. The following areas were probed: (1) the purpose or aim of the school, (2) student involvement in establishing school rules, (3) characteristics of a good teacher, (4) extra-curricular activities engaged in, (5) the role of parents in relation to adolescents, (6) characteristics which seem to be associated with popularity in school, (7) attitude towards drugs, (8) religious and personal values, (9) reaction to criticism, (10) aspirations for the future, (11) reaction to the interview.

All of the interviewees were grade twelve students and were eighteen or nineteen years of age. Included in

this group were: 'A.G.' -- a highly articulate male musician who wore his hair long and was dressed in a sports coat and silk shirt during the interview; 'B.H.' -- a clean cut youth who wore jeans and an open neck shirt for the interview and had very definite, conservative opinions on issues such as student power and drug usage; 'C.I.' -- a personable socially oriented fellow who expressed some controversial views during the interview; 'D.J.' -- an attractive, mature young lady who expressed conservative views on government, religion, teachers and drugs and whose expressed ambition was to become an actress; 'E.K.' -- a petite girl who was casually dressed during the interview and who expressed an interest in eventually working with children's theatre.

Interviews with the first four of the above mentioned persons were each approximately ten minutes in length. Since the fifth one was somewhat shorter, it was not used in the present study.

Following the videotaping sessions, a battery of tests was administered to each of the interviewees. This was done in order to acquire a better understanding of their abilities, personality patterns and attitudes. The following tests were administered:

(a) Wechsler Adult Intelligence Scale

(b) The Adjective Check List (Gough)

(c) Sixteen Personality Factor Questionnaire

(d) Study of Values (Allport-Vernon-Lindzey)

(e) Attitudes Toward Issues Scale (Appendix B)

(f) Kuder Preference Record - Vocational

Design of the Study

In order to increase the reliability as well as the generalizability of results of this study (Sidman, 1960), an intergroup replicative design was employed. In essence, two studies were conducted and were, as closely as possible, organized in parallel fashion. The two samples differed somewhat in size. The larger group was referred to as the primary sample while the smaller group was called the replicative sample.

Subjects

The two samples were each made up of both urban and rural high school students. Information related to numbers in the samples and distributions according to sex and urban-rural residence is summarized in Table 1. A one-way analysis of variance was computed to determine whether the two samples were equivalent in terms of IQ. The results, summarized in Table 2 show no differences on this variable.

The urban students. The urban group was composed of students from a large public high school in the city of Edmonton. This particular school was selected since it

TABLE 1

DESCRIPTION OF THE SAMPLES

Primary Sample			Replicative Sample		
	Urban	Rural		Urban	Rural
Male	39	33	Male	33	31
Female	38	52	Female	25	52

TABLE 2

THE PRIMARY AND REPLICATIVE SAMPLES COMPARED ON IQ BY ANALYSIS OF VARIANCE

Source	df	MS	F	p
Samples	1	130.94	0.13	0.718
Error	301	1000.87		

tends to reflect the socio-economic levels of Edmonton. Eight grade eleven classes were randomly selected and the Interpersonal Topical Inventory was administered to all students in these classes. The remainder of the test battery was administered to the 135 students who consented to further participation during one of four testing sessions. The 77 students who attended the first and third sessions were assigned to the primary sample. The 58 students who attended the second and fourth sessions became a part of the replicative sample. Testing was done in the school cafeteria and the reading library.

The rural students. The rural group was made up of students from three centralized high schools located in small towns ranging in distance from fifty to one hundred miles from Edmonton. The entire grade eleven classes were tested in all of these schools. In the two largest schools this consisted of groups of 85 and 48. Since the third school was much smaller, the combined grade eleven and twelve class of 35 students was used. All testing was done during regular class time.

The Classification Measure

The Interpersonal Topical Inventory. This is a forced choice measure of conceptual structure devised by Tuckman (1966). It was selected for the present study

because of its objectivity of scoring and its favorable correlations with the commonly used, but subjectively scored, Paragraph Completion Test. A copy of the Interpersonal Topical Inventory has been included in Appendix A. Each test item was designed to represent a typical response for one of the systems of conceptual complexity. Thus the test allows the experimenter to classify a subject into one of the four conceptual systems on the basis of the number of responses he makes belonging to each system. Six stems are used: When I am criticized ---; When I am in doubt ---; When a friend acts differently toward me ---; This I believe about people ---; Leaders ---; When other people find fault with me ---. Each stem is followed by six pairs of alternatives which are lettered 'A' and 'B'. Of the seventy-two alternatives, eighteen fall into each of the four conceptual systems. Thus the subject's maximum score for any one system is 18. Classification norms based on scores made by 461 naval enlistees (median age equaling 18) and scores made by 90 Rutgers College freshmen are available. The college freshmen decile ranks (see Appendix A) were used in this study since this norming group appeared to be closer to the sample in terms of academic level than did the naval enlistees. Four raw scores are assigned to each subject, which are simply the numbers of choices he makes falling into each conceptual system. He is then classified in that system in which he scores in the eighth, ninth or

tenth decile, provided he scores in a lower decide in all the other systems. Any subject scoring equally high in more than one system cannot be classified. Thus system assignment is done on a relative rather than an absolute basis. Tuckman (1966), using a sample of 126 enlisted men with a median age of eighteen, reports the following distribution: 31 were classified as System 1, 26 as System 2, 22 as System 3, and 30 as System 4; 17 subjects (13.5 per cent) could not be classified because they scored equally high in more than one system or not high enough in any. Tuckman (1966, p. 378) reports a contingency coefficient of .54 (out of a maximum C of .87) between performance on his instrument and the Schroder Paragraph Completion Test. He further reports data that indicate inter-test agreement at or beyond 50 per cent for all systems except System 3, where a number of subjects classified in this way on the ITI were classified as System 1 on the Paragraph Completion Test.

Measures of Accuracy in Cues Attended To

Accuracy of Perception and Memory of Verbal Content. This is a 'true' or 'false' type of test developed for the purposes of the present study and modeled after a test devised by Cline and Richards. A sample copy of this test for one of the interviewees is included in Appendix C. The test for each videotape interview consists of 20 statements,

10 of which were made by the interviewee and 10 which were not made. Both the true and false statements were selected so that the subject areas discussed were equitably sampled. Several additional procedures were employed in constructing the 'false' statements. One approach was to construct statements which, considering the character, general viewpoints, and appearance of the interviewee, could have been made by him. Another approach was to simply negate a positive statement or make positive a negative statement made by the interviewee. The true and false items were randomly distributed. The accuracy of all statements was confirmed by having an independent rater score the items as true or false while viewing the videotapes.[1]

The test is administered by requiring subjects, after viewing each videotape, to fill in the circles beside those statements which were made during the interview. A score is arrived at by adding the correct responses.

Accuracy of Perception and Memory of Visual Content. This test has a format which is identical to that of Accuracy of Perception and Memory of Verbal Content. Subjects are required to fill in the circles beside those statements which are descriptive of some aspect of the

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[1]Since the inter rater reliability was high on this measure as well as those which follow, only two raters were used.

interviewee's general appearance, wearing apparel, or mannerisms during the interview. A basic consideration in the construction of the test was to equitably distribute the items reflecting these three areas. Since the interpretation of some of the items as true or false could be construed as being subject to individual interpretation, a second rater independently scored and confirmed the correct responses by marking the protocols while actually viewing the videotape. The true and false items were randomly distributed. A score is arrived at by adding the correct responses. A copy of one of these tests is included in Appendix C.

A Measure of Kinds of Dimensions Used

Through their factor analytic studies, Osgood, Suci and Tannenbaum (1957) have succeeded in isolating several major factors which seem to operate in meaningful judgments. In a variety of judgmental situations, factors which have been named evaluation, potency and activity, have repeatedly appeared. The relative weight of these factors have been fairly consistent, with evaluation accounting for approximately double the amount of variance due to either potency or activity. The latter two factors, in turn, have accounted for approximately double the variance of subsequent factors. The three factors combined typically account for about 50 per cent of the total variance. Since the evaluative factor,

accounting for about 70 per cent of the common variance, is obviously the dominant one, an attempt was made to subdivide it. Consequently, Osgood and his collaborators derived four factors from it -- a morally evaluative factor, a socially evaluative factor, an aesthetically evaluative factor, and an emotionally evaluative factor.

On the basis of the aforementioned research, it would seem reasonable to assume that the proposed factors would correspond with the major dimensions which people would use in making meaningful judgments. Therefore, the four evaluative factors, the potency factor and the activity factor were utilized in the present study as labels for describing self generated descriptive adjectives applying to a stimulus person. The following procedures were used: Subjects after viewing each video tape were required to list those attributes which they thought adequately described the interviewee (see Appendix C). For each of the descriptive words, they were asked to state why they considered it appropriate. In scoring the responses, each descriptive word was classified as representative of one of the factorial dimensions. The following outline was used as a guide for scoring the responses.

(1) Morally evaluative dimension - refers to a judgment based on the good-bad pivot and applies to the moral sphere. Words such as honest, fair, clean, strong willed, right might apply to this dimension.

(2) Aesthetically evaluative dimension - refers to a judgment based on the good-bad pivot and applies to dress and general appearance. Words such as attractive, handsome, well dressed and sloppy might apply to this dimension.

(3) Socially evaluative dimension - refers to a judgment based on the good-bad pivot which is applied to relations with others. Words such as friendly, popular, sociable, conceited, prejudiced, envious, and resentful might apply to this dimension.

(4) Emotionally evaluative dimension - refers to a judgment based on the good-bad pivot and applies to the emotional sphere. Words such as nervous, unhappy, excitable, calm, easily aroused, and bad tempered might apply to this dimension.

(5) Potency - refers to a judgment made using the strong-weak pivot. Thus the common character of potency or toughness is apparent here. Words such as tenacious, spineless, shallow, or confident might apply to this dimension.

(6) Activity - refers to a judgment in which the words active-passive are used as the pivot. Words such as progressive, involved, flexible, conservative, participating and independent might be applied to this dimension.

An assessment of the reliability of rating responses in this manner was computed after two independent raters scored the responses made by 91 of the subjects. The two ratings showed 85 per cent agreement.

Measures of Complexity of Person Perception

Differentiation. This term was previously defined as the number of distinct concepts entertained by a person with respect to a particular part of his world. Thus, for a given domain of cognition, one might assess its level of differentiation simply by asking the subject, in effect, to list its elements. This is essentially the procedure which Zajonc (1960) used and it was adopted for the purposes of the present study. Zajonc required his subjects to describe a stimulus object, namely, another person, by freely listing the qualities and attributes that characterized him. As explained in the section immediately preceding this one (see Measures of Kinds of Dimensions Used), subjects in the present study were required to list attributes which they felt would adequately describe each stimulus person. In addition (Appendix C), they were required to give reasons why each word selected was appropriate. These procedures were adopted since, as well as being readily adaptable to the filmed interview approach, they also seemed to satisfy the criteria outlined by Schroder et al (1967) for adequately measuring differentiation:

> Before calling a category a dimension, we should first ascertain that the arrangement of stimuli in the category was not identical to that in any other category. In other words, we should have evidence that each supposed dimension has functional uniqueness.
>
> A further problem in measuring differentiation is that, ideally, the number of dimensions which can emerge should not be arbitrarily limited by the experimental procedure.
>
> Finally, categories should not be trivial or meaningless. Ideally, one should have some test or guarantee of functional utility for a dimension; it should be shown to have some role in the person's thought processes or behavior (p. 166).

The second criterion was satisfied by giving subjects the opportunity to freely generate their own dimensions, thus ensuring that the number and kind of dimensions used would not be limited by the experimental procedures. The first and third criteria were dealt with by having subjects give reasons for selecting specific words as descriptive of the interviewee. This procedure made it possible when scoring the responses to determine whether two descriptive words were functionally equivalent in the subject's conceptual space. This procedure also ensured that the categories would not be "trivial and meaningless".

A further step in an attempt to accurately assess differentiation as defined, was incorporated in the scoring procedures. Zajonc (1960) takes the position that the complex functioning involved in differentiation is increased when the attributes represent many categories, rather than

merely a number of dimensions within one category. As explained in the preceding section (see Measurement of Kinds of Dimensions) each of the attributes assigned by a subject was classified as representing one of the factorial dimensions isolated by Osgood et al (1957). For purposes of this study each factorial dimension was treated as a separate category. A differentiation score was arrived at by adding the number of attributes assigned by a subject to the number of different categories or kinds of dimensions used. For example, a hypothetical individual might have used five different words to describe one of the interviewees. One of these might have been rated as morally evaluative, two as socially evaluative and one as an activity dimension. This individual would then receive a score of eight (the number of assigned attributes plus the number of separate categories).

Integration. This was defined as the extent to which dimensional units of information can be interrelated in different ways in order to generate new and discrepant perspectives about stimuli (Schroder et al, 1967). In the present study the ability to integrate in this manner was measured by having subjects summarize their impressions of the interviewee. The following instructions were given to students after they had performed the other tasks with respect to perception of the interviewee:

> On the basis of the attributes you have assigned to the interviewee, briefly summarize your impressions of him.

The aforementioned authors (Schroder et al, 1967) have proposed a scoring manual which was designed for inferring a level of conceptual structure from a verbal response. Verbal responses are scored on a seven-point scale which represents a continuum from low to high levels of integrative complexity. In scoring impression formation responses, however, they report experiencing some difficulty in distinguishing fine points along the integration index scale. Consequently, they use the manual in a more generalized way when dealing with this domain. The latter procedure was followed in the present study. Responses were scored in dichotomous fashion -- as exemplifying either low or high integration index. In assigning a rating, the primary considerations were: abstract structures should exemplify less compartmentalization and over-generalization, as well as greater awareness of the internal cognitive processes in the target person. Also, abstract persons should be more inclined to generate perceptions which indicate some conflict, that is, they will not likely be totally positive or negative -- and be able simultaneously to hold these in focus.

All responses were scored by the present author. However an inter rater reliability check was carried out. Twenty responses were independently scored by a Ph. D.

psychologist who has done extensive work in the measurement of conceptual structure. The percentage of agreement was 90 per cent, indicating a satisfactory inter rater reliability.

Semantic Differential Measures

The semantic differential represents a measurement technique devised and described by Osgood et al (1957). For purposes of the present study, a set of polar adjectives derived from work done by Aitken (1965) and representing the concept 'the way I see myself' were selected. Positive and negative poles were alternated, and the scale was scored by assigning '7' to the extreme positive response and '1' to the extreme negative response. An overall score was obtained by summing the scores for the individual items.

Attitudes Toward Issues. This is a short scale (Appendix B) which was devised specifically for the purposes of the present study and was used as a measure of subjects' and interviewees' attitudes toward a variety of issues of concern to high school students. The issues sampled are parallel to those which are discussed in the interview. Degree of agreement or disagreement with each statement is rated on a seven point semantic differential scale.

Intelligence Measures

The School and College Ability Test (SCAT) results for members of the sample were obtained from the records of the Department of Education, Province of Alberta. The SCAT is a test which is oriented specifically toward the prediction of academic achievement (Anastasi, 1968) and yields a verbal, quantitative and total score. The latter score was used for the purposes of this study.

Operational Definitions

The following terms have, in a previous chapter, been defined theoretically. They are now, for purposes of the present study, defined operationally.

Conceptual systems. This is operationally defined as a fourfold classification of subjects into four systems (see Chapter II) on the basis of their performance on the Interpersonal Topical Inventory.

Stimulus persons. This term is used interchangeably with interviewees and refers to the students who were interviewed on the videotapes.

Kinds of dimensions. This term refers to the labels which are assigned by raters to the self generated adjectives which subjects apply to the stimulus person. These are based upon the three major dimensions of connotative meaning isolated and described by Osgood et al

(1957).

Differentiation. This is operationally defined as the sum of the number of different attributes assigned by subjects to the stimulus person plus the number of categories or kinds of dimensions used.

Integration. This is operationally defined as a score of 1 (low level of integration) or 2 (high level of integration) assigned to a subject on the basis of his summary description of the interviewee.

Intelligence. For purposes of this study this is defined as a percentile rank based on scores obtained on the School and College Ability Tests (SCAT).

Dichotomization of judgment. For purposes of the present study this is defined as the use of extreme categories (1's and 7's) when making a judgment about a person or issue on a seven point semantic differential scale.

Accuracy of perception and memory of verbal content. This is defined as the number of correct responses on a test designed for this study (see Appendix C) and modeled after a questionnaire designed by Cline and Richards.

Accuracy of perception and memory of visual content. This is defined as the number of correct responses on a

test designed for this study (see Appendix C) and modeled after a questionnaire designed by Cline and Richards.

Administrative Procedures

All testing was done in group sessions and the same procedures were followed with all subjects, with one exception. Whereas in the urban school, the Interpersonal Topical Inventory was administered at a time prior to the remainder of the test battery, in the rural schools this instrument was administered with the other tests. Prior to their exposure to the videotapes, subjects were required to fill in those inventories pertaining to their own attitudes toward themselves and towards the issues which were to be dealt with in the interview (see Appendix B). The videotape of the first interviewee was then shown, after which those questionnaires pertaining to that interviewee were filled out (see Appendix C). The same procedure was then followed with respect to the second interviewee. Two different pairs of interviewees were used, with the primary group being exposed to 'A.G.' and 'B.H.', and the replicative group to 'C.I.' and 'D.J.'. Interviewees were paired on the basis of their differing philosophies, divergent views on current issues, and differences in dress and general appearance.

CHAPTER V

HYPOTHESES

The intention of the present chapter is to make explicit some of the hypotheses which have been suggested in the preceding sections. These hypotheses are grouped on the basis of the specific relationships being investigated. The first four hypotheses are central to the primary purpose of the study; to construe aspects of person perception research within the framework of conceptual systems theory.

(1) Persons who are disposed toward abstract conceptual functioning will manifest a higher level of integration in perceptions and judgments of other persons than will those who are disposed toward more concrete conceptual functioning.

(2) Persons who are disposed toward abstract conceptual functioning will manifest a higher level of differentiation in their perceptions and judgments of other persons than will those who are disposed toward concrete conceptual functioning.

(3) Persons who are disposed toward abstract conceptual functioning will perceive and remember verbal content more accurately than will those who are disposed toward concrete conceptual functioning.

(4) Persons who are disposed toward concrete conceptual functioning will attend more accurately to visual content in the interviewee than will those who are disposed toward abstract conceptual functioning.

The following hypotheses are subsumed by the general hypothesis that persons classified in the different conceptual systems will differ with respect to the kinds of dimensions which are used when judging another person.

(5) (a) A significant difference will be found among persons classified in conceptual systems 1, 2, 3 and 4 with respect to the use of aesthetically evaluative dimensions in perceiving and judging others. This difference will be partly attributable to the tendency for System 4 persons to use proportionately fewer of these dimensions than persons functioning at less complex levels.

(b) A significant difference will be found among persons classified in conceptual systems 1, 2, 3 and 4 with respect to the use of morally evaluative dimensions in perceiving and judging others. This difference will be attributable to the tendency for System 1 persons to use proportionately more of these dimensions and for System 2 persons to use proportionately fewer of these dimensions than will persons functioning at other levels of conceptual complexity.

(c) A significant difference will be found among persons classified in conceptual systems 1, 2, 3 and 4 with respect to the use of activity dimensions in perceiving and judging others. This difference will be partly attributable to the tendency for System 3 persons to use proportionately more of these dimensions than persons functioning at other conceptual levels.

(d) A significant difference will be found among persons classified in conceptual systems 1, 2, 3 and 4 with respect to the use of potency dimensions in perceiving and judging others. This difference will be partly

attributable to the tendency for System 1 persons to use proportionately more of these dimensions than will persons functioning at other conceptual levels.

A characteristic which is frequently ascribed to concretely functioning persons is the tendency to over-generalize and polarize when making judgments. Hypotheses 6 and 7 have been designed to investigate this property.

(6) Significant differences will be found among persons classified in conceptual systems 1, 2, 3 and 4 with respect to the frequency with which they use dichotomous categories in rating themselves. Persons classified at the System 1 level of functioning will be shown to use these categories with significantly greater frequency than those functioning at higher conceptual levels.

(7) (a) Significant differences will be found between persons classified in conceptual systems 1 and 4 with respect to the degree to which they dichotomize their judgments of a neutral communication by the stimulus person. System 1 persons will dichotomize their judgments significantly more often than will

those classified at the System 4 level of functioning.

(b) Significant differences will be found between persons whose own point of view on an issue is intensely pro or anti and those who are neutral on the issue, with respect to the degree to which they dichotomize their judgments of the neutral communication of a stimulus person. Persons who have a strongly pro or anti point of view on the issue will be more likely to dichotomize their judgments than will those who are neutral.

(c) A significant interaction effect will be evident between extremity of own position on an issue and conceptual system membership with respect to the dichotomization of judgments of a neutral communication. Persons classified at the System 1 level of functioning who have a strong point of view on an issue (pro or anti) will be more inclined to dichotomize their judgments of a neutral communication on that issue than will persons classified at the System 4 level of functioning who are strongly committed (pro or anti) to this issue.

Hypotheses 8 to 12 have been designed to investigate the degree of interrelationship among the measures used in the present study.

(8) A significant positive relationship will be evident between accurate perception and memory of verbal content and differentiation.

(9) A significant positive relationship will be evident between accurate perception and memory of visual content and differentiation.

(10) A significant positive relationship will be shown between integration and differentiation.

(11) A significant positive relationship will be shown between intelligence and accurate perception and memory of verbal content.

(12) A significant positive relationship will be shown between intelligence and differentiation.

The following hypotheses are subsumed by the general hypothesis that boys and girls will differ with respect to some aspects of accuracy and complexity in perceptions of others.

(13) (a) Girls will be more accurate in perception and memory of verbal content than will boys.

(b) Girls will be more accurate in perception and memory of visual content than will boys.

(c) Girls will exhibit a higher level of differentiation in judgments about others than will boys.

The final group of hypotheses is subsumed by the general hypothesis that no differences will exist between urban and rural students with respect to the accuracy and complexity with which they perceive others.

(14) (a) There will be no difference between urban and rural students in the accuracy with which they perceive and remember verbal content.

(b) There will be no difference between urban and rural students in the accuracy with which they perceive and remember visual content.

(c) There will be no difference between urban and rural students with respect to level of differentiation in perceptions and judgments of others.

(d) There will be no difference between urban and rural students with respect to level of integration in perceptions and judgments of others.

CHAPTER VI

RESULTS

The results are presented in sections which correspond with the divisions in which the hypotheses were organized. Before discussing specific results, data related to the classification of subjects into conceptual systems are outlined.

Classification of Subjects

As previously explained, subjects were classified on the basis of the Interpersonal Topical Inventory (Tuckman, 1966) into four conceptual systems. The distributions on this variable for the two samples are outlined in Table 3.

TABLE 3

SYSTEM CLASSIFICATIONS BASED ON THE INTERPERSONAL TOPICAL INVENTORY

Conceptual Systems	Primary Sample	Replicative Sample
1	35	20
2	30	22
3	55	47
4	21	18
Unclassifiable	22	33
Totals	163	140

The percentages of subjects who could not be classified because they scored equally high in more than one system or not high enough in any, is comparable to that reported by Tuckman (1966). The subjects who could not be classified were added to the samples in those parts of the study where the four conceptual systems were not being compared.

In order to establish the four groups as comparable, they were tested for equivalence on several relevant variables. As shown in Table 5, the four groups did not differ significantly ($p > .05$) in intelligence. The groups also did not differ significantly with respect to the relative proportions of boys and girls.

Evaluation of Hypotheses 1 - 4: Conceptual Systems As Predictors of Complexity and Accuracy in Perceptions of Persons.

The hypotheses in the first group were designed specifically to establish the relationship between membership in a conceptual system and some aspects of person perception. Standard one-way analyses of variance (Winer, 1962) were used to determine overall differences among the systems on four criterion measures. When an overall F was significant, the Scheffe test (Winer, 1962) was used for probing the differences between the individual group means. As shown in Tables 4 and 5, the first of the four hypotheses

TABLE 4

MEANS AND STANDARD DEVIATIONS OF CONCEPTUAL SYSTEMS GROUPS ON FIVE VARIABLES

Variable	Sample		System 1	System 2	System 3	System 4
Integration	Primary	$\bar{x}$	1.14	1.13	1.35	1.76
		S.D.	0.36	0.35	0.48	0.46
	Replicative	$\bar{x}$	1.10	1.18	1.21	1.56
		S.D.	0.31	0.39	0.41	0.51
Differentiation	Primary	$\bar{x}$	13.06	12.17	13.22	13.86
		S.D.	4.58	2.82	3.99	4.22
	Replicative	$\bar{x}$	13.65	12.86	14.43	14.50
		S.D.	3.87	3.85	3.44	3.34
Accuracy in Verbal Content	Primary	$\bar{x}$	32.08	31.77	33.78	33.24
		S.D.	3.45	3.42	2.65	3.22
	Replicative	$\bar{x}$	34.00	34.50	34.14	33.18
		S.D.	2.59	3.01	3.22	2.94
Accuracy in Visual Content	Primary	$\bar{x}$	24.94	25.13	24.58	24.05
		S.D.	2.89	3.05	3.51	2.73
	Replicative	$\bar{x}$	28.85	28.64	28.85	28.78
		S.D.	3.01	2.85	3.36	2.60
IQ Percentile	Primary	$\bar{x}$	45.40	45.60	49.53	56.71
		S.D.	31.49	30.40	29.88	34.76
	Replicative	$\bar{x}$	49.10	47.14	47.34	47.89
		S.D.	30.97	32.99	30.05	32.69

TABLE 5

SUMMARY OF ANALYSES OF VARIANCE FOR CONCEPTUAL SYSTEMS GROUPS ON FIVE VARIABLES

Variable	Sample		df	MS	F	p
Integration	Primary	Groups	3	2.09	11.93	0.000003
		Error	137	0.18		
	Replicative	Groups	3	0.76	4.53	0.005
		Error	103	0.17		
Differentiation	Primary	Groups	3	12.88	0.82	n.s.
		Error	137	15.75		
	Replicative	Groups	3	14.59	1.13	n.s.
		Error	103	12.92		
Accuracy of Verbal Content	Primary	Groups	3	35.50	3.65	0.01
		Error	137	9.72		
	Replicative	Groups	3	1.44	0.16	n.s.
		Error	103	9.18		
Accuracy of Visual Content	Primary	Groups	3	5.79	0.58	n.s.
		Error	137	9.98		
	Replicative	Groups	3	0.25	0.03	n.s.
		Error	103	9.48		
IQ Percentile	Primary	Groups	3	685.19	0.71	n.s.
		Error	137	970.00		
	Replicative	Groups	3	17.62	0.02	n.s.
		Error	103	978.36		

was clearly confirmed with both the Primary and the Replicative Samples. As predicted, integration was shown to be significantly related to conceptual systems membership. As indicated in Tables 6 and 7, Scheffe tests showed the major difference in both samples to be attributable to System 4 persons. Persons classified as System 4 differed significantly ($p < .05$) from those in the other conceptual systems on this variable while differences between all other pairs of means were non significant.

Hypothesis 2, which predicted a relationship between conceptual systems membership and differentiation, was not confirmed. Although the means tend to be ordered in the predicted direction (Table 4), no significant differences were found.

Hypothesis 3 predicted differences among persons classified in the four conceptual systems with respect to the accuracy with which they perceived verbal content. As shown in Table 5, the hypothesis was confirmed with the Primary Sample but not with the Replicative Sample. In the Primary Sample, a Scheffe test for multiple comparisons of means showed significant differences to exist between Systems 2 and 3. Since the findings of the Primary Sample were not repeated with the Replicative Sample, the hypothesis was not accepted as confirmed.

TABLE 6

PROBABILITY MATRIX FOR SCHEFFE MULTIPLE COMPARISON OF GROUP MEANS ON INTEGRATION: PRIMARY SAMPLE

	System 1	System 2	System 3	System 4
System 1	1.00	0.99	0.18	<0.01
System 2	0.99	1.00	0.18	<0.01
System 3	0.18	0.18	1.00	<0.01
System 4	<0.01	<0.01	<0.01	1.00

TABLE 7

PROBABILITY MATRIX FOR SCHEFFE MULTIPLE COMPARISON OF GROUP MEANS ON INTEGRATION: REPLICATIVE SAMPLE

	System 1	System 2	System 3	System 4
System 1	1.00	0.94	0.79	<0.01
System 2	0.94	1.00	0.99	0.05
System 3	0.79	0.99	1.00	0.03
System 4	<0.01	0.05	0.03	1.00

In the final hypothesis of the first division, differences were predicted among the conceptual systems with respect to the accuracy with which persons belonging to them perceived visual content. As shown in Table 5, no differences were found, thus disproving the hypothesis.

Evaluation of Hypothesis 5: Kinds of Dimensions Used.

The primary intent of this group of hypotheses was to investigate differences among the four conceptual systems in the kinds of dimensions employed in perceiving and judging others. Based upon conceptual systems theory, specific predictions were made as to the manner in which these groups could be expected to perform. As shown in Tables 8 and 9, none of the hypotheses was clearly confirmed with both samples. Some trends, however, were evident. With respect to the use of aesthetically evaluative dimensions, the trend in the Primary Sample was in the predicted direction with a progression evident from System 1 to System 4 in the frequency with which this dimension was used. Morally evaluative dimensions were predicted to be used most frequently by System 1 persons and least frequently by System 2 persons. As shown in Tables 8 and 9 the second part of this hypothesis was confirmed with the Replicative Sample. The overall difference among the conceptual systems in the use of this dimension was significant. A Scheffe test for comparison of individual

TABLE 8

MEANS AND STANDARD DEVIATIONS OF KINDS OF DIMENSIONS USED BY CONCEPTUAL SYSTEMS GROUPS

Kind of Dimension	Sample		System 1	System 2	System 3	System 4
Aesthetically Evaluative	Primary	$\bar{x}$	.77	.70	.67	.42
		S.D.	.87	.88	.79	.68
	Replicative	$\bar{x}$	.70	.59	.59	.77
		S.D.	.80	1.14	.88	1.00
Emotionally Evaluative	Primary	$\bar{x}$	1.14	.97	1.07	1.14
		S.D.	.81	1.03	.86	.91
	Replicative	$\bar{x}$	1.35	.91	.89	1.22
		S.D.	1.09	1.02	.94	1.11
Morally Evaluative	Primary	$\bar{x}$	.71	.47	.69	.71
		S.D.	.79	.63	.86	.72
	Replicative	$\bar{x}$	.40	.18	.72	.78
		S.D.	.68	.40	.77	.65
Socially Evaluative	Primary	$\bar{x}$	1.43	1.30	1.20	1.14
		S.D.	1.12	1.12	1.01	.73
	Replicative	$\bar{x}$	1.75	2.00	1.75	1.78
		S.D.	1.12	1.02	1.07	1.11
Activity	Primary	$\bar{x}$	2.49	3.10	3.64	3.71
		S.D.	1.76	1.69	1.84	2.69
	Replicative	$\bar{x}$	2.95	3.64	4.13	3.50
		S.D.	1.73	1.97	1.99	1.86
Potency	Primary	$\bar{x}$	.86	.50	.47	.95
		S.D.	1.17	.78	.72	.81
	Replicative	$\bar{x}$	.65	.55	.53	.44
		S.D.	.93	.80	.62	.86

TABLE 9

SUMMARY OF ANALYSES OF VARIANCE OF CONCEPTUAL SYSTEMS GROUPS ON KINDS OF DIMENSIONS USED

Kinds of Dimensions	Sample		df	MS	F	p
Aesthetically Evaluative	Primary	Groups	3	0.54	0.80	n.s.
		Error	137	0.67		
	Replicative	Groups	3	0.19	0.21	n.s.
		Error	103	0.89		
Emotionally Evaluative	Primary	Groups	3	0.20	0.25	n.s.
		Error	137	0.80		
	Replicative	Groups	3	1.30	1.26	n.s.
		Error	103	1.03		
Morally Evaluative	Primary	Groups	3	0.44	0.74	n.s.
		Error	137	0.60		
	Replicative	Groups	3	1.92	4.25	0.007
		Error	103	0.45		
Socially Evaluative	Primary	Groups	3	0.51	0.48	n.s.
		Error	137	1.05		
	Replicative	Groups	3	0.36	0.31	n.s.
		Error	103	1.16		
Activity	Primary	Groups	3	11.29	3.01	0.03
		Error	137	3.76		
	Replicative	Groups	3	0.30	0.49	n.s.
		Error	103	0.61		
Potency	Primary	Groups	3	1.94	2.55	n.s.
		Error	137	0.76		
	Replicative	Groups	3	0.14	0.23	n.s.
		Error	103	0.58		

means showed the differences between System 2 and System 3, and between System 2 and System 4 to be significant. Thus it appears that System 2 persons use fewer morally evaluative dimensions than do persons functioning at other conceptual levels. This trend tends to be verified by the order of the means for the Primary Sample.

Another trend which tends to coincide with predictions is with respect to the use of activity dimensions. Significant overall differences were found among the conceptual systems in the Primary Sample in the frequency of use of these dimensions. Although the Scheffe test showed no differences between individual pairs of means on this variable, there appears to be a tendency for System 3 and 4 persons to use this dimension with greater frequency than do persons classified as System 1 or System 2.

Finally, with respect to the use of potency dimensions, the predicted trend is evident in the Replicative Sample. Here a progression in the frequency of use of this dimension from System 1 to System 4 is apparent.

Evaluation of Hypotheses 6 and 7: Dichotomization of Judgments.

A characteristic frequently associated with concrete conceptual functioning is the tendency to dichotomize and

overgeneralize. The purpose of the two hypotheses under consideration was to evaluate the validity of this assumption with respect to two content domains. In both cases, dichotomization of judgment was defined as frequency of usage of the extremities (1's and 7's) on a semantic differential rating scale. For the evaluation of the sixth hypothesis, subjects were required to rate themselves on a 24 item semantic differential scale (see Appendix B). The mean number of 1's and 7's for each conceptual system was then computed. These data are summarized in Table 10. A standard one-way analysis of variance was used to determine whether overall differences were significant. As shown in Table 11, the differences for both samples were highly significant. As indicated in Tables 12 and 13, a Scheffe test for multiple comparisons of means used showed significant differences ($p < .05$) in the Primary Sample to exist between System 1 and System 2. In the Replicative Sample, System 1 persons differed significantly from those of all other Systems. Thus the hypothesis was confirmed.

Finally, based on the assumption that dichotomization of judgment would be reflected in larger variances, the question of differences among the conceptual systems on this variable was further pursued by comparing the systems with respect to mean variance. Again, in both samples, the conceptual systems differed significantly ($p < .05$) in the

TABLE 10

MEANS AND STANDARD DEVIATIONS OF CONCEPTUAL SYSTEMS OF DICHOTOMOUS CATEGORIES USED WITH THE SEMANTIC DIFFERENTIAL

Sample		System 1	System 2	System 3	System 4
Primary	$\bar{x}$	3.14	1.38	1.95	1.86
	S.D.	2.61	1.93	1.96	1.82
Replicative	$\bar{x}$	3.40	1.86	1.81	1.63
	S.D.	2.78	1.13	1.14	1.01

TABLE 11

SUMMARY OF ANALYSIS OF VARIANCE OF DICHOTOMOUS CATEGORIES USED BY CONCEPTUAL SYSTEMS

Sample	Source	MS	df	F	p
Primary	Conceptual Systems	18.55	3	4.13	0.008
	Error	4.49	136		
Replicative	Conceptual Systems	14.38	3	5.96	0.00009
	Error	2.41	105		

TABLE 12

PROBABILITY MATRIX FOR SCHEFFE MULTIPLE COMPARISON OF GROUP MEANS ON DICHOTOMIZATION OF JUDGMENT: PRIMARY SAMPLE

	System 1	System 2	System 3	System 4
System 1	1.00	<0.01	0.08	0.19
System 2	<0.01	1.00	0.72	0.89
System 3	0.08	0.72	1.00	0.99
System 4	0.19	0.89	0.99	1.00

TABLE 13

PROBABILITY MATRIX FOR SCHEFFE MULTIPLE COMPARISON OF GROUP MEANS ON DICHOTOMIZATION OF JUDGMENT: REPLICATIVE SAMPLE

	System 1	System 2	System 3	System 4
System 1	1.00	0.02	<0.01	<0.01
System 2	0.02	1.00	0.99	0.97
System 3	<0.01	0.99	1.00	0.98
System 4	<0.01	0.97	0.98	1.00

predicted direction.

Hypothesis 7 was designed to investigate the relative influence of conceptual systems membership, own attitude towards an issue, and the interaction of these two variables in the dichotomization of ratings assigned to the neutral communication of another person. Since a statistical design was required which would yield two main effects (conceptual systems and own attitudes) as well as an interaction effect, (conceptual systems x attitude), a two-way analysis of variance design (Winer, 1962) was employed. In order to meet the assumptions of this design as well as the prerequisites of the study, the following conditions needed to be met.

(1) Only those issues could be considered which were rated neutral by the interviewees on the Attitudes Toward Issues Scale. All ratings made by interviewees were subsequently confirmed in discussions with them.

(2) Only those issues could be considered on which there was disagreement among subjects as to their own attitudes toward the issues.

(3) Only those issues could be considered on which there was some disagreement among subjects in the ratings they assigned to the interviewee.

On only one issue, with one interviewee, were these conditions satisfied. The issue was the drug question (Attitudes Toward Issues, Question 3) and the interviewee

was A.G., who rated himself neutral on this issue. For purposes of the analysis, the seven point scale was collapsed to three levels, with ratings of 1 or 2 considered as 'pro' ratings; ratings of 3, 4 or 5 considered as 'neutral' ratings; and ratings of 6 or 7 considered as 'anti' ratings. In this part of the study, only the extreme groups; System 1 and System 4 were used. The distribution of attitudes on the drug question for these two groups is outlined in Table 14.

TABLE 14

DISTRIBUTION OF SUBJECTS IN TWO CONCEPTUAL SYSTEMS ON ATTITUDES TOWARD THE DRUG QUESTION: PRIMARY SAMPLE

Attitude	Conceptual System 1	Conceptual System 4
Anti	14	6
Neutral	13	11
Pro	8	4

As indicated, the classifying factors in the analysis of variance design were 'conceptual systems membership' and 'own attitude'. The ratings assigned by these groups to the communication of the stimulus person constituted the dependent variable. On the issue of concern, the ratings were either pro (1 or 2) or neutral (3, 4 or 5). Thus for the purposes of this study a rating

of 1 or 2 was regarded as judgment dichotomization, while a rating of 3, 4 or 5 was considered a more accurate assessment. The mean ratings for the groups are presented in Table 15. As shown in Table 16, the 'systems effect' was significant while neither the 'own attitude effect' or the interaction of the two factors reached the significance level. The direction of the 'systems effect' is apparent in the order of the means (Table 15). As shown, System 4 persons, particularly those who were themselves neutral on the issue were inclined to rate the communication as neutral. On the other hand, there was more of a tendency for System 1 persons to dichotomize their judgments. Thus the first part of Hypothesis 7 was supported. The second and third parts, which predicted an own attitude effect and an interaction effect were not confirmed in this study.

TABLE 15

MEAN RATINGS ASSIGNED TO THE COMMUNICATION OF THE INTERVIEWEE BY PERSONS GROUPED ON THE BASIS OF CONCEPTUAL SYSTEM AND OWN ATTITUDE

Groups	System 1	System 4
Anti	2.21	2.50
Neutral	2.46	4.08
Pro	2.13	2.50

TABLE 16

ANALYSIS OF VARIANCE OF RATINGS ASSIGNED TO THE COMMUNICATION OF THE INTERVIEWEE BY PERSONS GROUPED ON THE BASIS OF CONCEPTUAL SYSTEMS AND OWN ATTITUDE

Source	MS	df	F	p
Own Attitude	4.40	2	1.80	n.s.
Conceptual Systems	1.16	1	4.74	0.049
Interaction	2.77	2	1.14	n.s.
Error	2.43	51		

Hypotheses 8 - 12: Intercorrelations

In this group of hypotheses, relationships were predicted among a number of the measures used in the present study. The results for the two samples are outlined in Tables 17 and 18. As shown in the tables, Hypotheses 8, 9 and 10 were confirmed with both samples. Both accuracy of perception and memory of verbal stimuli and accuracy of perception and memory of visual content were shown to be positively related to differentiation. Differentiation, in turn was shown to be positively related to integration. The last two hypotheses, although substantiated with the Primary Sample, were not confirmed with the Replicative Sample. In the Replicative Sample, intelligence proved to be unrelated to both differentiation and accuracy of perception and memory of verbal content. Thus Hypotheses 11 and 12 were not confirmed.

TABLE 17

INTERCORRELATIONS AMONG VARIABLES FOR THE PRIMARY SAMPLE

Variables	1	2	3	4	5
1. IQ Percentile	1.000				
2. Accuracy in Verbal Content	.470***	1.000			
3. Accuracy in Visual Content	.076	.089	1.000		
4. Differentiation	.297***	.174*	.294***	1.000	
5. Integration	.218**	.170	.036	.227***	1.000

* - significant at .05 level
** - significant at .01 level
*** - significant at .001 level

TABLE 18

INTERCORRELATIONS AMONG VARIABLES FOR THE REPLICATIVE SAMPLE

Variables	1	2	3	4	5
1. IQ Percentile	1.000				
2. Accuracy in Verbal Content	.102	1.000			
3. Accuracy in Visual Content	.033	.710***	1.000		
4. Differentiation	.074	.421***	.434***	1.000	
5. Integration	.028	.362***	.285***	.400***	1.000

* - significant at .05 level
** - significant at .01 level
*** - significant at .001 level

Hypothesis 13: Sex Differences.

Based on a previously outlined theoretical rationale as well as on related research, differences were hypothesized between boys and girls with respect to the accuracy and complexity with which they perceived others. Of the three hypotheses dealing with this subject, one was clearly confirmed with both samples; girls (as shown in Tables 19 and 20) attained significantly higher levels of differentiation than did boys. Although no predictions were made with respect to differences in integration it appears that the trend here also is in favor of the female group. Although differences were not consistently significant on the accuracy measures, the trend was in the predicted direction. Girls obtained higher scores in accuracy of perception and memory of visual content, and in the Replicative Sample this difference reached the significance level ($p < .05$). In accuracy of perception and memory of verbal stimuli girls also tended to score consistently higher than boys. Thus, with the present sample Hypothesis 13 (c) was clearly confirmed. Hypotheses 13 (a) and 13 (b) were not confirmed.

Hypothesis 14: Urban-Rural Comparisons.

Differences between urban and rural groups were not hypothesized since an adequate theoretical rationale for directional predictions appeared to be lacking. Thus a group of hypotheses of "no difference" were advanced. As

TABLE 19

MEANS AND STANDARD DEVIATIONS FOR MALES AND FEMALES ON FIVE VARIABLES

Variable	Sample		MALES N-Primary = 72 N-Replicative = 64	FEMALES N-Primary = 90 N-Replicative = 77
Integration	Primary	$\bar{x}$	1.26	1.34
		S.D.	.44	.48
	Replicative	$\bar{x}$	1.13	1.29
		S.D.	.38	.48
Differentiation	Primary	$\bar{x}$	13.35	16.66
		S.D.	6.58	8.15
	Replicative	$\bar{x}$	18.03	21.84
		S.D.	8.14	8.60
Accuracy in Verbal Content	Primary	$\bar{x}$	32.50	33.00
		S.D.	10.06	10.83
	Replicative	$\bar{x}$	33.22	34.14
		S.D.	5.15	4.79
Accuracy in Visual Content	Primary	$\bar{x}$	24.42	24.87
		S.D.	3.51	2.88
	Replicative	$\bar{x}$	27.64	29.18
		S.D.	4.64	4.33
IQ Percentile	Primary	$\bar{x}$	52.21	45.70
		S.D.	32.95	31.15
	Replicative	$\bar{x}$	50.39	46.36
		S.D.	31.76	29.89

TABLE 20

SUMMARY OF ANALYSES OF VARIANCE FOR MALES AND FEMALES ON FIVE VARIABLES

Variable	Sample	Source	df	MS	F	p
Integration	Primary	Groups	1	0.26	1.21	n.s.
		Error	160	0.21		
	Replicative	Groups	1	0.90	4.70	0.03
		Error	139	0.19		
Differentiation	Primary	Groups	1	437.80	7.79	0.006
		Error	160	56.22		
	Replicative	Groups	1	508.12	7.21	0.008
		Error	139	70.48		
Accuracy in Verbal Content	Primary	Groups	1	10.06	0.96	n.s.
		Error	160	10.49		
	Replicative	Groups	1	29.94	1.22	n.s.
		Error	139	24.54		
Accuracy in Visual Content	Primary	Groups	1	8.06	0.80	n.s.
		Error	160	10.10		
	Replicative	Groups	1	83.00	4.18	0.04
		Error	139	19.87		
Intelligence	Primary	Groups	1	1694.31	1.66	n.s.
		Error	160	1021.53		
	Replicative	Groups	1	566.81	0.60	n.s.
		Error	139	945.65		

shown in Tables 21 and 22, three out of four of these hypotheses could not be rejected, although some interesting trends are evident. In the fourth of these hypotheses, significant differences were shown between the urban and rural groups with respect to level of differentiation. In both samples, the rural group appeared to function at a higher level on this measure than did the urban group. Paradoxically, this occurred in spite of the fact that on the accuracy measures, as well as in intelligence, the trend was in the direction of the urban group.

Summary of Results

The following statements are intended as summaries of the major findings of this study.

(1) Abstract conceptual functioning, as measured by the Interpersonal Topical Inventory, was found to be predictive of the ability to integrate impressions of others. Measures of differentiation on the other hand, as well as of accuracy of perception of visual and verbal content, were found to be unrelated to conceptual systems functioning.

(2) Conclusive evidence was not found in support of the assumed relationship between conceptual systems membership and the content of the dimensions used. Several trends are evident however which are consistent with the theory. One trend was the tendency for System 2 persons to

TABLE 21

MEANS AND STANDARD DEVIATIONS FOR URBAN AND RURAL GROUPS ON FIVE VARIABLES

Variable	Sample		URBAN N-Primary = 77 N-Replicative = 58	RURAL N-Primary = 85 N-Replicative = 83
Integration	Primary	$\bar{x}$	1.29	1.33
		S.D.	.45	.47
	Replicative	$\bar{x}$	1.21	1.22
		S.D.	.41	.47
Differentiation	Primary	$\bar{x}$	13.86	16.39
		S.D.	8.14	7.02
	Replicative	$\bar{x}$	18.36	21.34
		S.D.	7.98	8.82
Accuracy of Verbal Content	Primary	$\bar{x}$	32.79	32.76
		S.D.	2.96	3.49
	Replicative	$\bar{x}$	34.83	32.95
		S.D.	2.91	5.88
Accuracy of Visual Content	Primary	$\bar{x}$	24.71	24.62
		S.D.	2.76	3.53
	Replicative	$\bar{x}$	29.64	27.67
		S.D.	2.80	5.26
IQ Percentile	Primary	$\bar{x}$	53.82	43.86
		S.D.	33.99	29.55
	Replicative	$\bar{x}$	49.60	47.20
		S.D.	31.19	30.52

TABLE 22

SUMMARY OF ANALYSES OF VARIANCE FOR URBAN AND RURAL GROUPS ON FIVE VARIABLES

Variable	Sample	Source	df	MS	F	p
Integration	Primary	Groups	1	0.08	0.36	n.s.
		Error	160	0.22		
	Replicative	Groups	1	0.00	0.02	n.s.
		Error	139	0.20		
Differentiation	Primary	Groups	1	258.82	4.51	0.04
		Error	160	57.34		
	Replicative	Groups	1	302.23	4.20	0.04
		Error	139	71.96		
Accuracy in Verbal Content	Primary	Groups	1	0.06	0.01	n.s.
		Error	160	10.55		
	Replicative	Groups	1	120.19	5.03	0.03
		Error	139	23.89		
Accuracy in Visual Content	Primary	Groups	1	.31	0.03	n.s.
		Error	160	10.15		
	Replicative	Groups	1	131.62	6.94	0.01
		Error	139	19.52		
Intelligence	Primary	Groups	1	4007.31	3.98	0.05
		Error	160	1007.07		
	Replicative	Groups	1	196.44	0.21	n.s.
		Error	139	948.31		

use fewer morally evaluative dimensions than persons functioning at other levels.

(3) A clear positive relationship was evident between functioning at the System 1 level and the tendency to dichotomize judgments. System 1 persons were more inclined to view themselves, as well as the communications of the stimulus persons, in a polarized fashion than were those functioning at other levels. On the other hand, neither the 'own attitude' of the subjects nor the interaction between system membership and own attitude were found to be significant in rating the communications of the stimulus persons.

(4) Intercorrelations computed among the various measures of the study showed accuracy of perception of verbal and of visual stimuli to be positively related to differentiation. The latter measure, in turn, was related to integration. Intelligence was found to be unrelated to any of the other measures used.

(5) Finally, when comparisons were computed between the sexes and between urban and rural students, differences were found primarily on the measure of differentiation. The superior performance of girls and of rural students on this measure is viewed as supportive of the "frequency of interaction" hypothesis (Crockett, 1965).

CHAPTER VII

DISCUSSION AND IMPLICATIONS

The primary purpose of the present study has been stated as an attempt to investigate aspects of the process of person perception within the framework of conceptual systems functioning as measured by the Interpersonal Topical Inventory (Tuckman, 1966). The results are therefore interpretable from two perspectives; they can be viewed in terms of their contribution to the construct validation of the notion of conceptual systems functioning and they can be viewed in terms of providing insight into aspects of person perception. Both perspectives will be evident in the ensuing discussion.

An aspect of the conduct of the study which bears reiteration is that of the replicative design which was employed. Two different pairs of interviewees were presented to two independent samples. Only those results which were supported in both samples were presented. However, since the primary purpose of the intergroup replication was to determine the existence of uncontrolled or unknown variables (Sidman, 1960), the findings which were not replicated are not merely ignored but are viewed as providing incentive for further research.

Viewed from the perspective of conceptual systems functioning, the results of this study can be interpreted

as providing support for three general principles which represent distinctive aspects of the theoretical formulations of Schroder, Driver and Streufert (1967). Basic to these formulations, is the notion of integration as central to abstract conceptual functioning with differentiation occupying a more peripheral place. This pattern was evident in the present study where a clear positive relationship was apparent between ability to form an integrated impression of another person and complex conceptual functioning, while no relationship was evident between conceptual functioning and differentiation. On the other hand, these two aspects of complex functioning were themselves significantly correlated, lending support to the view that the "more dimensions one has, the greater the potential for complex organization in and among schemata (Schroder et al, 1967, p. 179)".

A second principle which is characteristic of the aforementioned theorists is their relative emphasis on the structural as opposed to the content aspects of conceptual systems functioning. It is on this point that their views diverge somewhat from the theorizing of Harvey and his associates (Harvey, 1966, 1967; Harvey and Ware, 1967) who place greater emphasis upon content. It is the structural or organizational properties of complexity which appear to be most clearly supported by the findings of the present study. This is apparent in

the previously mentioned finding with respect to the integration of impressions. It is also evident in the clear finding with respect to the dichotomization of judgments; a characteristic which seems to be a distinct aspect of System 1 functioning. System 1 persons differed significantly from those functioning at higher conceptual levels in their tendency to polarize their judgments both with respect to the ratings assigned to the communication of the stimulus person as well as their evaluation of themselves. On the other hand, little conclusive support was evident for attributing differences to persons functioning at the four levels of conceptual functioning with respect to the kinds of cues attended to or the kinds of dimensions used in judging others. However, the discrepancies in the performances of the two samples on these variables would appear to indicate the necessity of further research in this area.

Finally, the findings of the present study lend support to a view of complexity which is closely identified with Schroder and his associates. This group prefer to view conceptual complexity as a continuous variable rather than as consisting of four discrete categories. In the present study the most significant findings are restricted to System 1 and System 4 persons with limited evidence in support of the distinctive characteristics of the middle groups.

Another facet of the results of the present study which would appear to warrant further consideration is related to sex and urban-rural differences with respect to that aspect of complexity referred to as differentiation. As previously mentioned, differentiation is central to the concept of complexity advocated by those researchers (Bieri, 1955; Bieri, Atkins, Briar, Leaman, Miller and Tripodi, 1966; Crockett, 1965) who base their work on the personal construct theory of Kelly (1955). This group of researchers are also concerned with complexity solely as it applies to the interpersonal domain. The group differences in the present study with respect to differentiation, can be viewed as providing support for the "frequency of interaction" hypothesis advocated by Crockett (1965). This hypothesis is based on the notion that a complex set of constructs develops with respect to those objects that are of relatively great functional significance in an individual's life. Based on the well supported assumption that interpersonal relations are of more functional significance in our society for females than for males, the female superiority with respect to differentiation can be viewed as providing support for the Crockett hypothesis. The consistently higher scores attained by rural students with respect to differentiation could be interpreted in similar fashion if urban-rural differences are translated to mean differences between students of large and small

high schools. Wicker (1969), basing his study on the theories of Barker (1968) and Crockett (1965), hypothesized and found students of small high schools to be superior in interpersonal complexity and concluded that this was the case because of the greater functional importance of individual students in these schools. A similar prediction of differences in the present study appeared to be precluded by previously noted situational factors. A circumstance which was overlooked however was that prior to entering high schools these students attended small village and rural schools. Thus the results of the present study can be viewed as parallel to those reported by Wicker (1969) and as supportive of the "frequency of interaction" hypothesis.

Another perspective from which the results of this study can be viewed is from the standpoint of the measurement techniques employed. The videotaped interview proved to be an effective method of presenting "real" persons in standardized fashion to groups of subjects. The measures of integration and differentiation, based on free verbal responses, would appear to have greater validity than similar measures in other studies based on supplied dimensions which might have little or no relevance to the subject. Finally, the free verbal descriptions were shown to be amenable to reliable content analysis. A negative aspect of the study was the failure of the accuracy measures to provide a sufficiently broad range of scores. It would

appear that the interviews would have to be longer in order to provide sufficient material from which to sample verbal items. Also, a greater variety of visual items might be possible if there were more physical and/or emotional activity in the interview.

It would appear that the basic procedures of the present study, particularly with respect to obtaining a measure of complexity of person perception, might be usefully applied in a variety of situations. The societal implications for viewing others in complex rather than dogmatic and rigid fashion need no reiteration. Thus, meaningful work could be done in the area of prejudice, for example, by having subjects make judgments about an interviewee from one of the racial groups which has been the target of discrimination. The number and kind of differentiations and the level of integration could be compared with data obtained with respect to judgments about a person of the same race as the subject. On the basis of several theoretical models it could be argued that the judgments of persons who are the object of prejudice would be less complex than would those of persons in the 'in group'.

Another direction which the use of the techniques of this study might take is in evaluating the outcome of counseling or therapy. Progress in therapy is difficult to assess because of an inadequate qualitative conception

of "normality". Too frequently, normality is viewed in terms of its statistical connotations; thus progress becomes a matter of simple adjustment to societal norms. It is the view of the present writer that the concept of more abstract conceptual functioning might be conceived of as a possible objective to be attained in behavior modification. Striking similarities are evident between System 4 functioning and the characteristics which Maslow (1962) associates with self actualization or Combs and Snygg (1959) associate with the fully functioning personality. At the opposite extreme, as Harvey, Hunt and Schroder (1961) point out, pathological reactions such as schizophrenia or states of depression, are similar in that they show inflexible, overgeneralized interpretation or use of a single interpretative dimension. These characteristics are also central in System 1 functioning. Since the majority of cases in therapy or counseling are rooted in problems of social interaction, and since progression to a more abstract conceptual structure occurs through the process of differentiation and integration, it would appear justifiable to advocate the measurement technique used in the present study as one possible indicator of progress. Thus, for example, in dealing with problems essentially social in nature, one possible index of progress might be an increase in measures of complexity with respect to other persons.

Viewed in the aforementioned sense, "normality" characterizes what we should strive to produce in education and development (Hunt, 1966), although it is by no means the goal of many training practices in current institutions (Harvey, Hunt and Schroder, 1961). For example, it has been shown (Harvey, Prather, White and Hoffmeister, 1968) that a disproportionately large number of teachers are classifiable at the concrete level of conceptual functioning and exhibit the modes of behavior characteristic of this level of functioning; dictatorialness and punitiveness. School personnel have been repeatedly accused (Anderson, 1968; Friedenberg, 1967; Kozol, 1967) of encouraging accommodative rather than creative behavior in our schools. Of the various school personnel, counselors possibly deal most directly with aspects of human behavior. Consequently, an increasing number of researchers (Allan, 1967; Fox, 1969; Kemp, 1962, 1966; Whitely, Sprinthall, Mosher and Donaghy, 1967) have focused their attention on the identification of basic personality characteristics which might facilitate flexible and open counseling relationships. It would seem reasonable to suggest that the techniques of the present study might usefully contribute to this research. It might be predicted, for example, that ability to view adolescents in complex fashion, as this concept was defined in the study, would be one possible predictor of meaningful relationships with individuals of

this age group. It is the intention of the present investigator to examine this notion in future research.

R E F E R E N C E S

REFERENCES

Adorno, T.W., Frenkel-Brunswick, E., Levinson, D.J., and Sanford, R.N. The authoritarian personality. New York: Harper and Brothers, 1950.

Aiken, E.G. Alternate forms of a semantic differential for measurement of changes in self description. Psychological Reports, 1965, 16, 177-178.

Allen, T.W. Effectiveness of counselor trainees as a function of psychological openness. Journal of Counseling Psychology, 1967, 35-40.

Allport, G.W. The person in psychology. Boston: Beacon Press, 1968.

Anastasi, A. Psychological testing. New York: MacMillan, 1968.

Anderson, C.C. Galbraith, technology and education. Alberta Journal of Education Research, 1968, 14, 5-14.

Anderson, C.C. Student protest movements in the university and high school. Paper read at the meeting of the Canadian Association of Professors of Education, Toronto, 1969.

Asch, S.E. Forming impressions of personality. Journal of Abnormal and Social Psychology, 1946, 41, 258-290.

Atkins, A.L. Own attitude and discriminability in relation to anchoring effects in judgment. Journal of Personality and Social Psychology, 1966, 4, 5, 497-507.

Barker, R.G. Ecological psychology. Stanford: Stanford University Press, 1968.

Beach, L., and Wertheimer, M. A free response approach to the study of person cognition. Journal of Abnormal and Social Psychology, 1961, 62, 367-374.

Bieri, J. Cognitive complexity-simplicity and predictive behavior. Journal of Abnormal and Social Psychology, 1955, 51, 263-268.

Bieri, J. Complexity-simplicity as a personality variable in cognitive and preferential behavior. In D.W. Fiske and S.R. Maddi (Ed.), Functions of varied experience. Homewood, Ill.: Dorsey, 1961, 355-379.

Bieri, J. Cognitive complexity and personality development. In O.J. Harvey (Ed.), Experience, structure and adaptability. New York: Springer, 1966, 13-37.

Bieri, J., Atkins, A.L., Briar, B., Leaman, R.L., Miller, H., Tripodi, T. Clinical and social judgment: the discrimination of behavioral information. New York: Wiley, 1966.

Bieri, J., and Messerley, S. Differences in perceptual and cognitive behavior as a function of experience type. Journal of Consulting Psychology, 1957, 21, 217-221.

Bonarius, J.C.J. Research in the personal construct theory of George A. Kelly: role construct repertory test and basic theory. In B.A. Maher (Ed.), Progress in experimental personality research. New York: Academic Press, 1965, 2, 1-46.

Brody, J.M. Social factors and scientific imagination. In O.J. Harvey (Ed.), Experience, structure and adaptability. New York: Springer, 1966, 321-348.

Bronfenbrenner, U., Harding, J., and Gallwey, M. The measurement of skill in social perception. In D.C. McClelland (Ed.), Talent and society. New York: Van Nostrand, 1958, 29-108.

Chance, J.E., and Meaders, W. Needs and interpersonal perception. Journal of Personality, 1960, 28, 200-210.

Cline, V.B. Ability to judge personality assessed with a stress interview and sound-film technique. Journal of Abnormal and Social Psychology, 1955, 50.

Cline, V.B. Interpersonal perception. In B.A. Maher (Ed.), Progress in experimental personality research; Volume 1. New York: Academic Press, 1964.

Cline, V.B., and Richards, J.M.Jr. Accuracy of interpersonal perception - a general trait? Journal of Abnormal and Social Psychology, 1960, 60.

Cline, V.B., and Richards, J.M.Jr. A comparison of individuals versus groups in judging personality. Journal of Applied Psychology, 1961 (a), 45, (3), 150-155.

Cline, V.B., and Richards, J.M.Jr. The generality of accuracy of interpersonal perception. Journal of Abnormal and Social Psychology, 1961 (b), 62, 446-449.

Combs, A.W., and Snygg, D. Individual behavior. New York: Harper and Row, 1959.

Crockett, W.H. Cognitive complexity and impression formation. In B.H. Maher (Ed.), Progress in experimental personality research. New York: Academic Press, 1965, 47-90. Volume 2.

Cronbach, L.J. Processes affecting scores on "understanding of others" and "assumed similarity". Psychological Bulletin, 1955, 52, 177-193.

Crouse, B., Karlins, M., and Schroder, H. Conceptual complexity and marital happiness. Journal of Marriage and the Family, 1968, 30, 643-646.

Douvan, E., and Adelson, J. The adolescent experience. New York: Wiley, 1966.

Driver, M.J. Conceptual structure and group processes in an inter-nation simulation. Part One: The perception of simulated nations. Education Testing Service Research Bulletin, R.B. 62-15, 1962.

Dymond, R.F. A preliminary investigation of the relation of insight and empathy. Journal of Consulting Psychology, 1948, 228-233.

Fox, E.E. A life orientation scale: correlates of biophilia and necrophilia. Unpublished Doctoral dissertation, University of Alberta, 1969.

Friedenberg, E.Z. Coming of age in America. New York: Random House, 1967.

Gardiner, G.S. Some correlates of cognitive complexity. Unpublished Master's thesis, University of Alberta, 1968.

Gardner, R.W., and Schoen, R.A. Differentiation and abstraction in concept formation. Psychological Monographs, 1962, 76 (41, Whole number 560).

Gollin, E. Forming impressions of personality. Journal of Personality, 1954, 23, 65-76.

Haire, M. Role-perceptions in labor-management relations: an experimental approach. In H. Toch and C. Smith (Ed.), Social perception. Princeton: Van Nostrand, 1968, 44-59.

Harvey, O.J. System structure, flexibility and creativity. In O.J. Harvey (Ed.), Experience, structure and adaptability. New York: Springer, 1966, 39-65.

Harvey, O.J. Conceptual systems and attitude change. In C.W. Sherif and M. Sherif (Ed.), Attitudes, ego involvement, and change. New York: Wiley, 1967.

Harvey, O.J., Hunt, D.E., and Schroder, H.M. Conceptual systems and personality organization. New York: Wiley, 1961.

Harvey, O.J., Prather, M., White, B.J., and Hoffmeister, J.K. Teachers' beliefs, classroom atmosphere and student behavior. American Educational Research Journal, 1968, 5, 151-166.

Harvey, O.J. and Ware, R. Personality differences in dissonance resolution. Journal of Personality and Social Psychology, 1967, 7, 2, 227-230.

Harvey, O.J., White, B.J., Prather, M., Alter, R.D., and Hoffmeister, J.K. Teachers' belief systems and preschool atmospheres. Journal of Educational Psychology, 1966, 57, 373-381.

Hastorf, A.H., Richardson, S.A., and Dornbusch, S.M. The problem of relevance in the study of person perception. In R. Tagiuri and L. Petrullo (Ed.), Person perception and interpersonal behavior. Stanford: Stanford University Press, 1958, 54-62.

Heider, F. The psychology of interpersonal relations. New York: Wiley, 1958.

Hovland, C.I., Harvey, O.J., and Sherif, M. Assimilation and contrast effects in reactions to communication and attitude change. Journal of Abnormal and Social Psychology, 1957, 55, 244-252.

Hunt, D.E. A conceptual systems change model and its application to education. In O.J. Harvey (Ed.), Experience, structure and adaptability. New York: Springer, 1966, 277-302.

Hunt, D.E., and Dopyera, J. Personality variation in lower class children. Journal of Psychology, 1966, 62, 47-54.

Hunt, D.E., and Joyce, B.R. Teacher trainee personality and initial teaching style. American Educational Research Journal, 1967, 4, 253-259.

Jones, E.E., and Davis, K.E. From acts to dispositions, the attribution process in person perception. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1965, 219-266.

Kagan, J., Moss, H.A., and Sigel, I.E. Psychological significance of styles of conceptualization of basic cognitive processes in children. In J.C. Wright and J. Kagan (Ed.), Monographs of the society for research in child development. 1963, 28, 2.

Karlins, M. Conceptual complexity and remote-associative proficiency as creativity variables in a complex problem-solving task. Journal of Personality and Social Psychology, 1967, 6, 3, 264-278.

Kelly, G.A. A theory of personality - the psychology of personal constructs. Toronto: George J. McLeod Ltd., 1955.

Kemp, C.G. Influence of dogmatism on the training of counselors. Journal of Counseling Psychology, 1962, 9, 155-157.

Kemp, C.G. Intangibles in counseling. Boston: Houghton Mifflin Co., 1967.

Kozol, J. Death at an early age. Boston: Houghton Mifflin Co., 1967.

Lanzetta, J.T. Information acquisition in decision making. In O.J. Harvey (Ed.), Motivation and social interaction: cognitive determinants. New York: Ronald Press, 1963.

Leventhal, H. Cognitive processes and interpersonal predictions. Journal of Abnormal and Social Psychology, 1957, 55, 176-180.

Leventhal, H., and Singer, D.L. Cognitive complexity, impression formation, and impression change. Journal of Personality, 1964, 32, 210-226.

Luchins, A.S. Primacy-recency in impression formation. In C.I. Hovland (Ed.), The order of presentation in persuasion. New Haven: Yale University Press, 1957 (a), 33-61.

Luchins, A.S. Experimental attempts to minimize the impact of first impressions. In C.I. Hovland (Ed.), The order of presentation in persuasion. New Haven: Yale University Press, 1957 (b), 62-75.

Manis, M. The interpretation of opinion statements as a function of recipient attitude. Journal of Abnormal and Social Psychology, 60, 3, 1960.

Maslow, A.H. Motivation and personality. New York: Harper and Row, 1954.

Mayo, C.W., and Crockett, W.H. Cognitive complexity and primacy-recency effects of impression formation. Journal of Abnormal and Social Psychology, 1964, 68, 335-338.

Mednick, S.A. The associative basis of the creative process. Psychological Review, 1962, 69, 220-232.

Miller, H., and Bieri, J. An informational analysis of clinical judgment. Journal of Abnormal and Social Psychology, 1963, 67, 317-325.

Osgood, C.E., Suci, G.J., and Tannenbaum, P.H. The measurement of meaning. Urbana, Ill.: University of Illinois Press, 1957.

Peak, H. Psychological structure and psychological activity. Psychological Review, 1958, 65, 6.

Piaget, J. Psychology of intelligence. Paterson, New Jersey: Littlefield, Adams and Co., 1960.

Reed, S.C. Some relationships between conceptual complexity and mental abilities. Educational Testing Service Research Bulletin, R B 66-33. 1966.

Rokeach, M. The open and closed mind. New York: Basic Books, 1960.

Sawatzky, D.D. The relationship between open-mindedness and accurate interpersonal perception. Unpublished Master's thesis, University of Alberta, 1968.

Schroder, H.M., Driver, M.J., and Streufert, S. Human information processing. New York: Holt, Rinehart and Winston, 1967.

Scott, W.A. Cognitive complexity and cognitive flexibility. Sociometry, 1962, 25, 405-414.

Scott, W.A. Conceptualizing and measuring structural properties of cognition. In O.J. Harvey (Ed.), Motivation and social interaction. New York: Ronald, 1963, 266-288.

Secord, P.F., and Backman, C.W. Social psychology. New York: McGraw-Hill, 1964.

Shrauger, S., and Altracchi, J. The personality of the perceiver as a factor in person perception. Psychological Bulletin, 1964, 5, 289-308.

Sidman, M. Tactics of scientific research. New York: Basic Books, 1960.

Sieber, J.E., and Lanzetta, J.T. Conflict and conceptual structure as determinants of decision-making behavior. Journal of Personality, 1964, 32, (4), 622-641.

Sieber, J.E., and Lanzetta, J.T. Some determinants of individual differences in predecision information-processing behavior. Journal of Personality and Social Psychology, 1966, 4, 5, 561-571.

Signill, K.A. Cognitive complexity in person perception and notion perception: a developmental approach. Journal of Personality, 1966, 34, 517-537.

Stager, P. Conceptual level as a composition variable in small group decision making. Journal of Personality and Social Psychology, 1967, 5, 152-161.

Stewin, L.L. Set characteristics of conceptual systems. Unpublished Doctoral dissertation, University of Alberta, 1969.

Tagiuri, R., and Petrullo, L. (Eds.), Person perception and interpersonal behavior. Stanford: Stanford University Press, 1958.

Tajfel, H., and Wilkes, A.L. Salience of attributes and commitment to extreme judgments in the perception of people. British Journal of Social and Clinical Psychology, 1964, 3, 40-49.

Tripodi, T., and Bieri, J. Cognitive complexity as a function of own and provided constructs. Psychological Reports, 1963, 13, 26.

Tripodi, T., and Bieri, J. Information transmission in clinical judgments as a function of stimulus dimensionality and cognitive complexity. Journal of Personality, 1964, 32, 119-137.

Tuckman, B.W. Interpersonal probing and revealing and systems of integrative complexity. Journal of Personality and Social Psychology, 1966 (a), 3, 6, 655-664.

Tuckman, B.W. Integrative complexity: its measurement and relation to creativity. Educational and Psychological Measurement, 1966 (b), 26 (2), 369-382.

Upshaw, H.S. Own attitude as an anchor in equal appearing intervals. Journal of Abnormal and Social Psychology, 1962, 64, 85-96.

Vannoy, J.S. Generality of cognitive complexity-simplicity as a personality construct. Journal of Personality and Social Psychology, 1965, 2, 385-396.

Ware, R., and Harvey, O.J. A cognitive determinant of impression formation. Journal of Personality and Social Psychology, 1967, 5, 1, 38-44.

Werner, H. Comparative psychology of mental development. New York: International Universities Press, 1957.

White, B.J., and Harvey, O.J. Effects of personality and own stand on judgment and production of statements about a central issue. Journal of Experimental Social Psychology, 1965, 1, 334-347.

Whiteley, J.M., Sprinthall, N.A., Mosher, R.L., and Donagby, R.T. Selection and evaluation of counselor effectiveness. Journal of Counseling Psychology, 1967, 14, 3, 226-234.

Wicker, A. Cognitive complexity, school size, and participation in school behavior settings: a test of the frequency of interaction hypothesis. Journal of Educational Psychology, 1969, 60, 3, 200-203.

Winer, B.J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.

Zajonc, R.B. The process of cognitive tuning in communication. Journal of Abnormal and Social Psychology, 1960, 61, 2, 159-167.

Zavalloni, M., and Cook, S.W. Influence of judges' attitudes on ratings of favorableness of statements about a social group. Journal of Personality and Social Psychology, 1965, 1, 43-54.

A P P E N D I X A

Appendix A-1 -- A copy of the Interpersonal Topical Inventory (ITI)

Appendix A-2 -- Scoring Key for the ITI

Appendix A-3 -- Classification norms for the ITI

APPENDIX A-1

INTERPERSONAL TOPICAL INVENTORY

INSTRUCTIONS:

You will be given some situations and topics to which we would like you to respond. The responses are given in pairs. You are to choose one response from each pair. Choose the response that most closely fits your opinion or feeling and indicate your choice by circling the letter "A" or "B" corresponding to the response chosen. Always choose one member of each pair. Never choose both members of the pair and do not skip over any of the pairs. If you agree with both, choose the one you agree with most strongly. If you do not agree with either, choose the one you agree with most strongly. If you do not agree with either, choose the one you find the least disagreeable of the two.

EXAMPLE:

Here is an example of the way the questions will be asked and the way they should be answered. The manner in which you will indicate your choice between the two given responses is illustrated below:

When I am confused ...

Pair No.		
(i)		
	(A)	B
	I try to find a solution and end the confusion.	I completely ignore the fact I am confused.
(ii)		
	A	(B)
	I break out into a nervous sweat.	I remain calm at all times.

HOW TO RESPOND:

First: Decide which response you agree with most.

Second: Indicate which response you agree with most by circling the identifying letter. Thus, if in comparing the first pair of statements, you agree with the statement, "I try to find a solution and end the confusion," more than with the statement, "I completely ignore the fact that I am confused," you would circle the letter "A" (above the chosen statement). Having chosen one (never both, never neither) statement from the first pair of statements, you would then move on to the second pair. If, in considering the second pair, you find that you agree more with the statement, "I remain calm at all times," (as compared to the statement, "I break out into a nervous sweat"), you would circle the letter "B".

On the pages that follow there are 36 different pairs of responses. There are two pages for each item. You are to select one response from each pair, the one that more accurately shows your opinion of feeling and record your choice by circling the letter indicating the statement chosen. Be frank and indicate, in each case, your true feeling or opinion or the reaction which you actually would make in the situation. Do not indicate how you should feel or act; rather, indicate how you do feel and act.

Make sure that you are aware of the situation or topic that each pair of responses refers to. You will find the situation or topic indentified at the top of each page. All items on the page refer to the situation or topic appearing at the top of that page.

When you are finished, your paper should contain 36 circles. Check back and make sure that you have made 36 circles, no more no less.

Remember: (1) Respond only once for each pair; that is, choose one member of the pair, never both, never neither. Indicate your choice by circling either "A" or "B".

(2) When you are finished you should have made 36 circles.

Work at your own rate of speed but work straight through the inventory without stopping. Once you have completed a page do not return to it.

YOU MAY BEGIN

1. Imagine that someone has criticized you. Choose the response from each pair that comes closest to your feelings about such criticism. Indicate your choice by circling either "A" or "B".

When I am criticized ...

Pair No.		
A	(1)	B
I try to take the criticism, think about it, and value it for what it is worth. Unjustified criticism is as helpful as justified criticism in discovering what other people's standards are.		I try to accept the criticism but often find that it is not justified. People are too quick to criticize something because it doesn't fit their standards.
A	(2)	B
I try to determine whether I was right or wrong. I examine my behavior to see if it was abnormal. Criticism usually indicates that I have acted badly and tends to make me aware of my own bad points.		It could possibly be that there is some misunderstanding about something I did or said. After we both explain our viewpoints, we can probably reach some sort of compromise.
A	(3)	B
I listen to what the person says and try to accept it. At any rate, I will compare it to my own way of thinking and try to understand what it means.		I feel that either I'm not right, or the person who is criticizing me is not right. I have a talk with the person to see what's right or wrong.
A	(4)	B
I usually do not take it with good humor. Although, at times, constructive criticism is very good, I don't always think that the criticizer knows what he is talking about.		At first I feel that it is unfair and that I know what I am doing, but later I realize that the person criticizing me was right and I am thankful for his advice. I realize that he is just trying to better my actions.

A	(5)	B
I try to ask myself what advantages this viewpoint has over mine. Sometimes both views have their advantages and it is better to combine them. Criticism usually helps me to learn better ways of dealing with others.		I am very thankful. Often I can't see my own errors because I am too engrossed in my own work at the time. An outsider can judge and help me to correct the errors. Criticism in everyday life usually hurts my feelings, but I know it is for my own good.

A	(6)	B
It often has little or no effect on me. I don't mind constructive criticism too much, but I dislike destructive criticism. Destructive criticism should be ignored.		I try to accept and consider the criticism. Sometimes it has caused me to change myself; at other times I have felt that the criticism didn't really make much sense.

2. Imagine that you are in doubt. Choose the response from each pair that comes closest to your feelings about each doubt. Indicate your choice by circling either "A" or "B".

When I am in doubt ...

Pair No.		
A	(7)	B
I become uncomfortable. Doubt can cause confusion and make one do a poor job. When one is in doubt he should ask and be sure of himself.		I find myself wanting to remove the doubt, but this often takes time. I may ask for help or advice if I feel that my questions won't bother the other person.
A	(8)	B
I don't get too upset about it. I don't like to ask someone else unless I have to. It's better to discover the correct answer on your own.		I usually go to someone who knows the correct answer to my question. Sometimes I go to a book which will set me straight by removing the doubt.
A	(9)	B
I first try to reason things out and check over the facts. Often I approach others to get ideas that will provide a solution.		I think things over, ask questions, and see what I can come up with. Often several answers are reasonable and it may be difficult to settle on one.
A	(10)	B
I realize that I'll have to decide on the correct answer on my own. Others try to be helpful, but often do not give me the right advice. I like to judge for myself.		I usually try to find out what others think, especially my friends. They may not know the answer, but they often give me some good ideas.

A	(11)	B
I look over the problem and try to see why there is a doubt. I try to figure things out. Sometimes I just have to wait awhile for an answer to come to me.		I try to get some definite information as soon as possible. Doubt can be bad if it lasts too long. It's better to be sure of yourself.

A	(12)	B
I consider what is best in the given situation. Although one should not rush himself when in doubt, he should certainly try to discover the right answer.		I act according to the situation. Sometimes doubt can be more serious than at other times and many of our serious doubts must go unanswered.

3. Imagine that a friend has acted differently toward you. Choose the response from each pair that comes closest to your feelings about such an action. Indicate your choice by circling either "A" or "B".

When a friend acts differently toward me ...

	Pair No.	
A	(13)	B
I am not terribly surprised because people can act in many different ways. We are different people and I can't expect to understand all his reasons for acting in different ways.		I am usually somewhat surprised but it doesn't bother me very much. I usually act the way I feel towards others. People worry too much about others' actions and reactions.
A	(14)	B
I find out why. If I have done something wrong I will try to straighten out the situation. If I think he's wrong, I expect him to clear things up.		I feel that I may have caused him to act in a different way. Of course, he may have other reasons for acting differently which would come out in time.
A	(15)	B
I first wonder what the trouble is. I try to look at it from his viewpoint and see if I might be doing something to make him act differently toward me.		It is probably because he has had a bad day, which would explain this different behavior; in other cases he may just be a changeable kind of person.
A	(16)	B
It is probably just because something is bothering him. I might try to cheer him up or to help him out. If these things didn't work I would just wait for him to get over it.		I try to understand what his different actions mean. I can learn more about my friend if I try to figure out why he does things. Sometimes the reasons may not be very clear.

A	(17)	B
There has to be a definite reason. I try to find out this reason, and then act accordingly. If I'm right I'll let him know. If he's wrong, he should apologize.		I usually let him go his way and I go mine. If a friend wants to act differently that's his business, but it's my business if I don't want to be around when he's that way.

A	(18)	B
I don't get excited. People change and this may cause differences. It is important to have friends, but you can't expect them to always be the same.		I like to get things back to normal as soon as possible. It isn't right for friends to have differences between them. Whoever is at fault should straighten himself out.

4. Think about the topic of people in general. Choose the response from each pair that comes closest to your thoughts about people. Indicate your choice by circling either "A" or "B".

This I believe about people ...

Pair No.		
A	(19)	B
Whatever differences may exist between persons, they can usually get along if they really want to. Although their ideas may not agree, they probably still have something in common.		People can learn from those who have different ideas. Other people usually have some information or have had some experience which is interesting and can add to one's knowledge.
A	(20)	B
People can act in all sorts of ways. No single way is always best, although at certain times a particular action might be wiser than others.		Each person should be able to decide the correct thing for himself. There are always a few choices to be made and the individual himself is in the best position to pick the right one.
A	(21)	B
Some people think they know what's best for others and try to give advice. These people should not make suggestions unless asked for help.		There are certain definitive ways in which people should act. Some don't know what the standards are and therefore need to be straightened out.
A	(22)	B
I can tell if I am going to get along with a person very soon after meeting him. Most people act either one way or another and usually it is not difficult to say what they are like.		It's hard for me to say what a person is like until I've known him a long time. People are not easy to understand and often act in unpredictable ways.

A	(23)	B
People have an outside appearance that usually isn't anything like what can be found on the inside, if you search long and hard enough.		Each person is an individual. Although some people have more good or bad points than others, no one has the right to change them.

A	(24)	B
People can be put into categories on the basis of what they're really like. Knowing the way a person really is helps you to get along with him better.		People are unlike one another in many respects. You can get along with people better and better understand them if you are aware of the differences.

5. Think about the general topic of leaders. Choose the response from each pair that comes closest to your thoughts about leaders. Indicate your choice by circling either "A" or "B".

Leaders ...

	Pair No.	
A	(25)	B
Leaders do not always make the right decisions. In such cases, it is wise for a man to look out for his own welfare.		Leaders are necessary in all cases. If a leader cannot make the right decisions another should be found who can.
A	(26)	B
Leaders cannot provide all the answers. They are like other people -- they have to try to figure out what action is necessary and learn from their mistakes.		Leaders make decisions sometimes without being sure of themselves. We should try to understand this and think of ways to help them out.
A	(27)	B
I like a leader who is aware of how the group feels about things. Such a leader would not lead any two groups in exactly the same way.		A person should be able to put his confidence in a leader and feel that the leader can make the right decision in a difficult situation.
A	(28)	B
There are times when a leader should not make decisions for those under him. The leader has the power to decide things, but each man has certain rights also.		A leader should give those under him some opportunity to make decisions, when possible. At times, the leader is not the best judge of a situation and should be willing to accept what others have to say.
A	(29)	B
Some leaders are good, others are quite poor. Good leaders are those who know what is right for the man under them. These leaders deserve the respect of every man.		Leaders cannot be judged easily. Many things go to make up good leadership. Most people fall short in some way or another, but that is to be expected.

A	(30)	B
Leaders are needed more at certain times than at others. Even though people can work out many of their own problems, a leader can sometimes give valuable advice.		Some people need leaders to make their decisions. I prefer to be an individual and decide for myself, when possible. Most leaders won't let you do this.

6. Imagine that someone has found fault with you. Choose the response from each pair that comes closest to your feelings about such a situation. Indicate your choice by circling either "A" or "B".

When other people find fault with me ...

Pair No.		
A	(31)	B
It means that someone dislikes something I'm doing. People who find fault with others are not always correct. Each person has his own ideas about what's right.		It means that someone has noticed something and feels he must speak out. It may be that we don't agree about a certain thing. Although we both have our own ideas, we can talk about it.
A	(32)	B
I first wonder if they are serious and why they have found fault with me. I then try to consider what they've said and make changes if it will help.		If enough people point out the same fault, there must be something to it. I try to rid myself of the fault, especially if the criticizers are people "in the know".
A	(33)	B
They have noticed something about me of which I am not aware. Although criticism may be hard to take, it is often helpful.		They are telling me something they feel is correct. Often they may have a good point which can help me in my own thinking. At least it's worthwhile to consider it.
A	(34)	B
I may accept what is said or I may not. It depends upon who is pointing out the fault. Sometimes it's best to stay out of sight.		I accept what is said if it is worthwhile, but sometimes I don't feel like changing anything. I usually question the person.

A	(35)	B
I like to find out what it means; since people are different from one another, it could mean almost anything. A few people just like to find fault with others but there's usually something to be learned.		There is something to be changed. Either I am doing something wrong or else they don't like what I'm doing. Whoever is at fault should be informed so that the situation can be set straight.
A	(36)	B
I don't mind if their remarks are meant to be helpful, but there are too many people who find fault just to give you a hard time.		It often means that they're trying to be disagreeable. People get this way when they've had a bad day. I try to examine their remarks in terms of what's behind them.

APPENDIX A-2

ITI SCORING KEY

	SYSTEM			SYSTEM	
Pair No.	A	B	Pair No.	A	B
1	3	2	19	3	4
2	1	4	20	4	2
3	3	1	21	2	1
4	2	1	22	1	4
5	4	3	23	3	2
6	2	4	24	1	3
7	1	3	25	2	1
8	2	1	26	4	3
9	3	4	27	3	1
10	2	3	28	2	4
11	4	1	29	1	4
12	2	4	30	3	2
13	4	2	31	2	4
14	1	3	32	3	1
15	3	2	33	3	4
16	3	4	34	1	2
17	1	2	35	4	1
18	4	1	36	2	3

APPENDIX A-3

CLASSIFICATION NORMS FOR THE ITI

I. Norms based on 461 Naval enlistees (median age equals 18; intelligence from the upper half of the distribution for this group)

	System			
decile	I	II	III	IV
10	13-16	12-16	12-16	13-16
9	12	11	11	12
8	11	10	10	11
7	10-11	9	9-10	10-11

II. Norms based on 90 Rutgers College freshmen

decile	I	II	III	IV
10	12-16	12-16	12	14-16
9	11-12	11	11	13
8	9-10	10	10	12
7	9	9	10	12

Classify S into that system in which he scores in the 8th, 9th, or 10th decile provided he scores in a lower decile in the other three systems. Ss scoring equally high in more than one system cannot be classified. E.G. (using College norms)

13	6	11	6	classify as System I
7	11	10	8	classify as System II
8	9	10	9	classify as System III
6	6	11	13	cannot be classified

A P P E N D I X B

Appendix B-1 -- Attitudes Toward Issues Scale

Appendix B-2 -- Semantic Differential

APPENDIX B-1

Booklet Number 1.

Name _____

Grade _____

School _____

Age _____

Birthdate _____

This is a study about how high school students view others of their age group. You will view videotapes of interviews. After each one you will be required to do a series of exercises on the interviewee. Please do not open this booklet until you are instructed to do so.

ATTITUDES TOWARD ISSUES

The purpose of this task is to measure how you feel towards a variety of issues. You are to circle one of the 7 numbers to indicate your degree of agreement or disagreement.

Circling the point at the extreme 'agree' end (1) would indicate complete agreement.

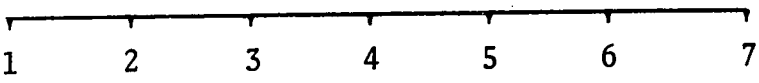
Circling the point at the extreme 'disagree' and (7) would indicate complete disagreement.

Circling the 4 would indicate that you don't have a strong position in either direction on the issue.

Circling 2 and 3 represent degrees of agreement while circling 5 and 6 represent degrees of disagreement.

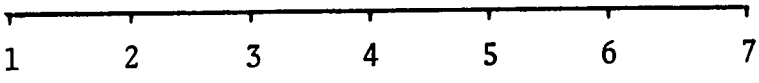
Now -- turn to the next page and indicate your degree of agreement or disagreement with each of the statements by circling the appropriate point on the scale.

1. The most important function of the school is to impart the kind of knowledge which will prepare students for a future career.



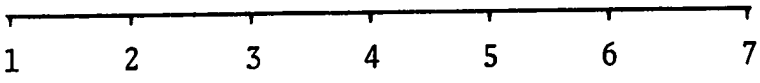
Agree Disagree

2. Students should have a much stronger voice in the establishment of school policies and rules.



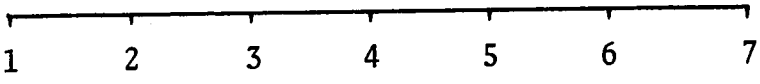
Agree Disagree

3. Since the potential dangers of drugs are well known, students who use them must be foolish and unstable.



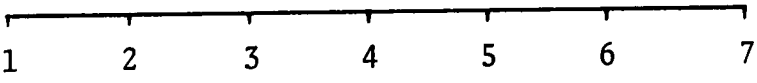
Agree Disagree

4. Students of 18 years of age are mature and responsible enough to take the responsibility of voting in provincial and federal elections.



Agree Disagree

5. A good teacher is one who knows his subject well and is able to communicate this knowledge to his students.



Agree Disagree

APPENDIX B-2

SEMANTIC DIFFERENTIAL

The purpose of this task is to measure how you perceive yourself.

You are asked to describe yourself by checking where you feel you fit on each of the 24 scales.

Each scale as 7 points.

If you circle number 1 or 7 this means that you feel you are very much like the first or last word.

If you circle number 2 or 6 this means that you feel you are somewhat like the first or last word.

If you circle number 3 or 5 this means that you feel you are slightly like the first or last word.

If you circle number 4 this means that neither of the words describes you, or that both words describe you equally well, or that both words seem unimportant or irrelevant for you.

As an example, the following 5 scales would mean that you have been described as: extremely fair; somewhat lenient; both calm and excitable; slightly dangerous; and neither foolish nor wise.

1.	fair	1	2	3	4	5	6	7	unfair
2.	severe	1	2	3	4	5	6	7	lenient
3.	calm	1	2	3	4	5	6	7	excitable
4.	dangerous	1	2	3	4	5	6	7	safe
5.	foolish	1	2	3	4	5	6	7	wise

Work at a fairly high speed as you describe yourself. Do not puzzle over individual items. Make each item a separate and independent judgment. It is your first impression, your immediate feelings that we want. On the other hand, please do not be careless.

The following is a description of the way I see myself.

1.	insensitive	1	2	3	4	5	6	7	sensitive
2.	strong	1	2	3	4	5	6	7	weak
3.	silent	1	2	3	4	5	6	7	talkative
4.	dishonest	1	2	3	4	5	6	7	honest
5.	excluded	1	2	3	4	5	6	7	included
6.	tough	1	2	3	4	5	6	7	fragile
7.	important	1	2	3	4	5	6	7	unimportant
8.	sad	1	2	3	4	5	6	7	happy
9.	follows	1	2	3	4	5	6	7	leads
10.	hot	1	2	3	4	5	6	7	cold
11.	involved	1	2	3	4	5	6	7	withdrawn
12.	shallow	1	2	3	4	5	6	7	deep
13.	discordant	1	2	3	4	5	6	7	harmonious
14.	pleasant	1	2	3	4	5	6	7	unpleasant
15.	friendly	1	2	3	4	5	6	7	unfriendly
16.	passive	1	2	3	4	5	6	7	active
17.	central	1	2	3	4	5	6	7	peripheral
18.	valuable	1	2	3	4	5	6	7	worthless
19.	dependent	1	2	3	4	5	6	7	independent
20.	slow	1	2	3	4	5	6	7	fast
21.	adaptable	1	2	3	4	5	6	7	rigid
22.	distant	1	2	3	4	5	6	7	close
23.	accepted	1	2	3	4	5	6	7	rejected
24.	bad	1	2	3	4	5	6	7	good

A P P E N D I X C

Appendix C-1 -- A measure of Accuracy of Perception and Memory of Verbal Content

Appendix C-2 -- A measure of Accuracy of Perception and Memory of Visual Content

Appendix C-3 -- Rating Interviewees Attitude Toward Issues

Appendix C-4 -- A measure of Differentiation and Kinds of Dimensions Used

Appendix C-5 -- A measure of Integration

APPENDIX C-1

Booklet Number 2

Name _____

QUESTIONNAIRE FOR

VIDEOTAPE "AG"

Please do not open the booklet until you have been instructed to do so.

A.G.

Instructions: Listed below are quotations depicting some general opinions and attributes which might or might not have been said in the interview you have just witnessed. Darken the circle for those that you are fairly certain were voiced in the interview. Please work as rapidly as possible.

0 The biggest detriment to his education was the board of education.

0 I think student government is rather useless.

0 Religion is not really in touch with the needs of society today.

0 Currently connected with musical theatre.

0 I like symphony concerts.

0 I like people to be honest.

0 I don't consider myself a hippie.

0 Maturity is not really a degree of age.

0 I am quite unhappy with the school right now.

0 Students values are very different from their parents.

0 I keep looking for the perfect person.

0 I've had alot of experience with them (drugs).

0 Trudeau seems to be a capable prime minister.

0 18 year olds should certainly be allowed to vote.

0 I try to take it with a grain of salt (criticism).

0 I think there should be more non violent resistance against the evils of society.

0 I don't think students should really touch drugs.

0 The school - should provide a general human understanding.

0 Students should be given the opportunity to set their own standards of conduct.

0 A student in certain areas is possibly better trained than the teacher.

APPENDIX C-2

A.G.

Instructions: Listed below are some physical and behavioral attributes which might or might not apply to the person you have just seen in the film. Darken the circle for those that you are fairly certain do apply to this person. Please work as quickly as possible.

0 moustache

0 wide tie

0 sandals

0 expressionaless face

0 wrist watch

0 medallion

0 few hand gestures

0 untidy hair

0 relaxes

0 long hair

0 puff hanky

0 hand on chin alot

0 slight stammer

0 dark suit

0 nervous laugh

0 seems energetic

0 many hand gestures

0 inaudible speech

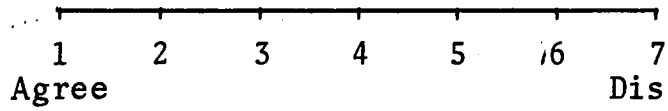
0 slumped posture

0 glanced up alot

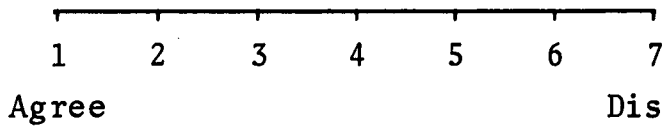
APPENDIX C-3

On the basis of statements made by the interviewee, and the way in which he reacted to questions, indicate how you think he feels toward each of the following issues. Circle the point on the agree-disagree line which you think would best represent his position.

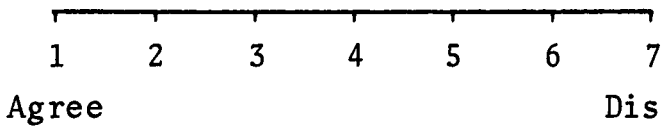
1. The most important function of the school is to impart the kind of knowledge which will prepare students for a future career.



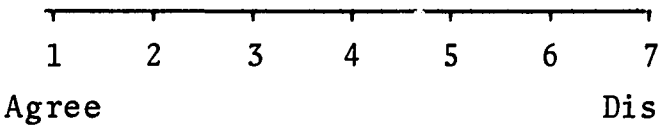
2. Students should have a much stronger voice in the establishment of school policies and rules.



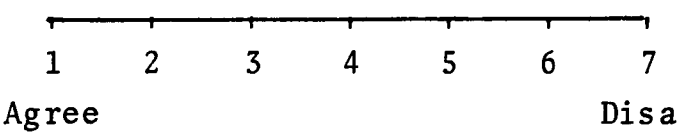
3. Since the potential dangers of drugs are well known, students who use them must be foolish and unstable.



4. Students of 18 years of age are mature and responsible enough to take the responsibility of voting in provincial and federal elections.



5. A good teacher is one who knows his subject well and is able to communicate this knowledge to his students.



APPENDIX C-4

In this exercise you are to write down as many words as you can think of that you feel describe the interviewee. You can put down whatever comes to your mind, since there is no one list of attributes that can be considered as either "correct" or "incorrect". Now for each of these words, write down those things you heard him say or noticed about him, that seem to support the use of each of these words as descriptive of him.

Example:

1. You might perceive an interviewee as friendly, honest, well liked, a good student and a radical.

2. He might have been perceived as friendly because he smiled a lot, he referred to himself as being an extrovert.

3. He might have been perceived as radical because he wore his hair long, he said he was editor of an underground newspaper, and he made a nasty comment about the "Establishment".

Note:

You may use the previous questionnaire to remind you of some of the interviewees characteristics. One characteristic may also be used several times -- to illustrate different descriptive words.

Please work quickly.

Words that describe the interviewee	Things you heard him (or her) say or noticed about him that seem to support each of the descriptive words.

APPENDIX C-5

On the basis of the attributes you have assigned to the interviewee, briefly (in two or three sentences) summarize your impressions of him. This summary should indicate which attributes you consider to be most important in understanding the interviewee.