

A RE-EXAMINATION  
OF CERTAIN ASPECTS OF ROKEACH'S STUDY ON DOGMATISM

by  
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## ABSTRACT

This study consists partly of a repetition of certain projects reported in Milton Rokeach's "The Open and Closed Mind" (1960) and partly of an attempt to enlarge upon his body of research.

Problems.

First: Will Rokeach's findings regarding differential behavior of subjects with extremely high and extremely low scores on his dogmatism scale in subsequent perceptual tasks be supported in a repetition of his experiments?

Second: Can dogmatism, as measured by Rokeach's "D"-scale, be regarded as representing a continuum? Rokeach typically compared the behavior of groups of subjects with extremely high and low D-scores on certain subsequent tasks; when he also employed a third segment, consisting of individuals with intermediate D-scores in a questionnaire task, this latter segment behaved quite erratically. At times it acted like the dogmatic "extreme", at other times like the non-dogmatic "extreme" and several times it went beyond the dogmatic extreme in its behavior. Rokeach offered two alternative explanations for the anomalous behavior of the Middle segment: chance effects inherent in the composition of this group and the possibility that the "D"-scale may not differentiate successfully between high- and middle-dogmatic subjects. He did not entertain a third possibility: that dogmatism may not represent a continuum. In other words, subjects with extremely high and

low D-scores may show many characteristic differences in their behavior but this does not justify making any assumption as to the probable behavior of subjects with other than extreme D-scores. Such discontinuity is always possible when research has been restricted to behavioral aspects of only extreme segments of a total group. It was felt that a repetition of the relevant experiment may help to decide which of the three alternative explanations should be accepted.

Third: This study was also designed to enlarge on Rokeach's body of findings on dogmatism. We expected that dogmatic subjects would find it harder than non-dogmatic subjects to accept suggested concepts on the Rorschach ink blots, and this possibility was to be investigated.

To avoid the above mentioned methodological difficulties involved in a two extreme group design, a three-segment design was adopted throughout this study.

#### Procedure.

Rokeach's "D"-scale, Form E, and a questionnaire on attitudes towards parents and others who influenced subjects' development, were administered to students in six classes of the University of British Columbia summer session. Of the total male group of 187 students, 17 with extremely high, 17 with extremely low and 17 with middle D-scores were selected for individual testing. The tests included the author's "Suggested Concept Rorschach Test", and three perceptual tasks previously used by Rokeach; two types of Kohs block tasks and the Jackson

(1956) adaptation of the Witkin Embedded Figure Test.

Results and Conclusions.

1) No relationship was demonstrated between subjects' D-scores and their willingness to accept suggested Rorschach concepts.

2) Rokeach's findings regarding differential behavior of extremely high and low dogmatic subjects on certain Kohs block tasks were supported, generally at reduced levels of statistical confidence.

3) Contrary to Rokeach's findings, the Witkin test differentiated significantly between the low D segment on the one hand and the middle and high D segments on the other.

4) Contrary to Rokeach's findings, no difference was demonstrated between any of our segments in regard to feelings expressed towards parents or breadth of influence reported, on the questionnaire.

5) The evidence of the present study supports the belief that dogmatism does not represent a continuum. Rather, it has a two-polar structure. Subjects with low D-scores define one pole, while persons with middle and high D-scores define the other pole.



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## CHAPTER I

### INTRODUCTION

The present study centers around certain findings of Milton Rokeach and his associates in regard to personality differences among "dogmatic (Closed)" and "non-dogmatic (Open)" individuals. The findings relevant to this study are summarized in Rokeach's "The Open and Closed Mind" (1960). Rokeach's research was carried out over a ten year period and extended to this continent as well as to Great Britain.

This chapter will present a brief summary of Rokeach's theoretical framework and describe his instruments relevant to the present study. It will also outline certain methodological difficulties encountered by Rokeach which this study is designed to resolve.

Background. Rokeach's work is an outgrowth of the research of Adorno and his group, summarized in "The Authoritarian Personality" (Adorno, 1950). This study examined the fascistic and ethnocentric personality pattern and was motivated by the ravages of the fascist and nazi ideologies. Its principal instrument was the California "F"-scale (for "fascist") and the "E"-scale (for ethnocentrism) (Adorno, 1950).

Rokeach freely admits the importance of Adorno's research

and its findings. Along with others (Shils, 1954) he feels however that - under the impact of the tensions created by fascism and antisemitism - this work centered too much on one particular type of authoritarianism, namely the right-oriented variety. Consequently, he set out to demonstrate that authoritarianism is a much more general personality variable than Adorno's work seemed to imply. He writes:

"Authoritarianism can be observed at any one time in history in a variety of human activities and we should think that it would have similar properties regardless of whether it is exhibited under Caesar, Napoleon, Hitler, Stalin, Khrushchev, Roosevelt or Eisenhower. What is needed is therefore a deliberate turning away from a concern with the one or two types of authoritarianism that may happen to be predominant at a given time. Instead, we should pursue a more theoretical ahistorical analysis of the properties held in common by all forms of authoritarianism regardless of specific ideological, theological, philosophic, or scientific content." (Rokeach, 1960, P.14).

The theoretical framework. What are these essential elements which underlie the character-structure of the authoritarian individual and which are independent of "content"?

In search for such common structural determinants, Rokeach focused his attention on what he calls the individual's "belief-system". He concludes that it is the particular structure of a person's belief-system which makes him dogmatic (authoritarian, closed minded), or non-dogmatic (open minded).

It is often necessary to start research with somewhat vague ideas which are hard to define operationally, in the hope that the research data themselves will enable one to



arrive at a clear, precise definition of these concepts later on. The concept of "belief-system" seems to be an example in case. Rokeach appears to use this term in two, somewhat different, ways. In its more restricted aspect, he uses it to refer to sets of individual beliefs or expectancies which are "held together" in the person's cognitive (and emotional) operations in some manner. In its wider aspect it is meant to include all the beliefs, sets, expectancies or hypotheses, conscious or unconscious that a person at a given time accepts as true of the world we live in. (Rokeach, 1960, p. 33). In this sense a person has many beliefs (e.g. that contraception is sinful; that there is life after death); some of these belong to certain belief-systems (e.g. the Catholic religion); and the total sum of a person's belief-systems make up his personal belief-system. The counter-part of the belief-system is the "disbelief system" - the ideas a person entertains about what is not true in regard to this world.

In Rokeach's opinion, research has been too concentrated in the area of how people deal with single beliefs, single expectancies, "Aufgaben", "Einstellungs-effect" etc., at the expense of examining how individuals deal with their belief-systems (1960, pp.18-19). In his "Open and Closed Mind", he attempts to fill in this apparent void. The difference between the Open and Closed mind is basically the difference between persons with belief-systems open to new beliefs, as against persons who are defensive against new beliefs and intent on holding on to their existing belief-systems.

If there are typical differences in the openness and closedness of persons' belief-systems, how do these come about?

People have two channels of information which may ultimately lead to a change in beliefs about how this world functions: personal experiences, and information received from others. A child's earliest information about the world generally comes from his parents. If the parents attempt to instill beliefs in the child which are contradicted by the child's personal experiences, or what he hears from other sources, the child has two choices: go along with the parents' beliefs, or to rely on his own experiences and question what his parents tell him. To the extent that such questioning leads to punishment, either direct or through a threatened loss of affection, the child may easily decide that it is unsafe to rely on one's own personal experiences. More and more, a child may come to rely on accepting the belief-system of his parents as the only "safe" way to deal with his environment. Later in life, other authority-figures may come to occupy the role formerly played by the parents and the person will rely more and more on interpretations of the happenings in the world emanating from "authorities" and less and less on the testimony of his own senses. Beliefs will change only when such changes are sanctioned by an accepted authority figure.

Since personal experiences which are contrary to expectancies generated by "immovable" belief-systems usually continue to occur throughout a person's life, the person has to invest

considerable energy into maintaining his sets of often unrealistic beliefs. New beliefs that do not fit into the "system" must be warded off at all costs - unless they are sanctioned by an accepted authority; in such case it is safe to make even a wholesale, "party-line" change.

Most people acknowledge more than one authority figure at the same time - perhaps the leader of their church, the leader of their party or nation, and their immediate superior in their work-situation. These different authority figures may have, and proclaim, differing and even contradictory belief-systems. Which one is a person to follow? One way of dealing with this situation is to "train oneself" to be able to keep mutually contradictory beliefs and expectancies in logic-tight compartments and follow one set in one situation (at church-meetings) and a contradictory set in other situations (at work) without ever realizing the internal contradictions.

Another result of such personality development is the identification of information with its source. If the information emanates from an authority figure, it is safe to accept it. If it does not, and is contrary to one's belief-system, it has to be warded off. One way to achieve the warding off of threatening information is to avoid people with different belief-systems (provided of course that they are not accepted authority figures). Since no two persons have identical belief-systems, the circle of people one can trust and associate with becomes narrower and narrower. The world becomes a lonely and miserable place; everybody is suspected of being subversive.

The present seems unbearable - the only hope is in some glorious future in which the cherished beliefs will not be questioned and the expectancies will come true. In the meantime, one is helpless, one must suffer and one must fight for the glorious "tomorrow".

This then is the character-sketch of the Closed person.

The Open person would occupy the opposite pole: he is open to new experiences; he is ready to change his beliefs, or belief-systems if the ones he entertains fail to predict accurately; he interprets information apart from its source; he does not reject people because of their belief-systems; people may be different, but the world on the whole is a friendly place - he can enjoy what today offers rather than concentrating on a "glorious future"; he can enjoy new experiences; he can play along with new ideas; if two sets of beliefs are mutually contradictory he will accept the more likely one - tentatively, always ready to change if it turns out "wrong".

What has been said about the prototype of the dogmatic personality would fit Adorno's "authoritarian personality" in every important respect; so would the developmental pattern. Rokeach's dogmatic personality however covers a wider field. A white person who marries a negro principally to demonstrate his objection to racial prejudice would probably be considered "non-ethnocentric" and "non-authoritarian" by Adorno, but "closed minded" by Rokeach. An Open person would marry a white, yellow or negro partner if he liked her but would not feel a need to make a martyr of himself to convince others that

his belief is "right".

In order to measure open and closed mindedness, Rokeach developed his basic instrument, the "dogmatism-scale" ("D"-scale). The "D"-scale is a questionnaire containing 40 to 64 questions in its various editions; subjects are asked to indicate agreement or disagreement with these statements on a 6-point scale. Like the "E"-scale and "F"-scale, all questions are worded in a way that agreement with them is supposed to characterize the Closed person, while disagreement characterizes the Open person. Form "E" of the "D"-scale is used in the present study and is reproduced in Appendix "B". Details of the "D"-scale as well as the method of its administration will be dealt with in Chapter IV.

Rokeach was convinced that the openness or closedness of a person's belief-system (as measured by the "D"-scale) is one of the most important, most central determinants governing the general functioning of his personality. Most of our behavior is ruled by beliefs and expectancies and so much of our behavior will be irrational if we are unable to adjust our belief-systems to the requirements of reality. In so far as these statements are correct, Closed people would be expected to show less adaptive behavior in many areas of endeavour than Open minded people. If such differences in adaptiveness can be demonstrated one may ask whether the "D"-scale correlates with intelligence, rigidity, or both. Actually, the Closed person's insistence on adhering to his beliefs does remind one of the concept of rigidity.

Rokeach has examined the possible relationship between intelligence scores and "D"-scores by such instruments as the American Council on Education test, the Ohio State Psychological examination and the Wonderlic test. He reports the typical correlation between scores on these tests and the "D"-scale as zero (1960, p.407).

He has also examined possible correlation between "D"-scale scores and rigidity as measured by the Gough-Sandford rigidity scale (1960, p.418). He found that Closed persons are more likely to be "rigid" than Open persons, but not necessarily so, and not vice versa. When Rokeach talks of "rigidity" he thinks of it in terms of Einstellungs-effect, the tendency to adhere to minor, almost mechanical features of doing some work, or insistence on adhering to single, isolated beliefs. This is not necessarily characteristic of the Closed person; Closed persons do not have too much trouble giving up single, isolated beliefs; rather, they have trouble in changing sets of beliefs, that is, belief-systems.

It is not the purpose of this study to examine the complex concept of rigidity except in so far as it touches on the present project; research on the rigidity concept has been recently summarized by Chown (1956). However, in subsequent paragraphs we will deal with certain problem situations which Open subjects were able to solve more efficiently than Closed subjects. These are typically problems which involve the assimilation of unusual sets of instructions; they do not differentiate more rigid persons from less rigid ones. Rigid

persons find it more difficult to analyze problem situations where no new instructions (new sets of beliefs) are involved - such as the Witkin test, which will be discussed later in this chapter.

While there appear to be no typical differences between intelligence and rigidity scores of Open and Closed individuals, Rokeach reports on many other areas in which Open and Closed persons do differ. Actually, the larger part of "The Open and Closed Mind" deals with just these differences. Before focusing on the particular projects relevant to the present study it may be worth while to mention a few of the areas in which Open and Closed subjects appear to show characteristically different behavior.

These areas cover differences in: the choice of denominational colleges; maintenance of value systems over a five to six year period; the enjoyment of new musical systems; the constancy or direction of change, in occupational choices; interfaith marriages; reference to "present" and "future" in TAT stories - to mention only some of the areas of investigation.

Rokeach's findings relevant to the present study. Many of the reported differences among Open and Closed groups are novel and, indeed, provocative. Some of the most interesting findings, from the present author's point of view, were differences reported between the functioning of Open and Closed groups on certain perceptual tasks. It so happened that about the time of publication of "The Open and Closed Mind", the present author was also engaged in demonstrating certain personality variables

as a function of a perceptual task. The task was the location of suggested concepts on the Rorschach inkblots and the personality variable was the "willingness to accept (reasonable) suggestions from superiors in the work situation" as against "insisting on carrying out projects according to one's own set patterns". The Rorschach test is at least partly a perceptual task; and the willingness to be "open minded" about suggestions coming from others rather than adhering to one's own "beliefs" (in performing a task) would seem to be a personality variable much like "Open mindedness" as described by Rokeach.

The apparent similarity between the personality variable which was under scrutiny by the present author and Rokeach's Open-Closed-mindedness raised the question as to whether any relationship could be demonstrated between individuals' "Suggested Concept Rorschach scores" and their scores on the "D"-scale. Also, could any relationship be found between subjects' SCRT scores and the scores these subjects obtained on the perceptual tasks of Rokeach?

The "Suggested Concept Rorschach Test" (SCRT) will be described in detail in Chapter II. In the following paragraphs we shall discuss the relevant perceptual tasks used by Rokeach.

It will be remembered that Open and Closed individuals were found not to differ in intelligence; consequently, they should not differ in performance of tasks which are known to have a high correlation with intelligence tests. Two such tests in the perceptual field are the "Witkin Embedded Figure Test" (Witkin, 1950) and the ordinary "Kohs block test". These



tests will be discussed in detail in Chapter IV; suffice to say here that in the Witkin test subjects are expected to "find" simple line-drawings "hidden" in more complicated patterns, and in the Kohs block task they are instructed to reproduce relatively simple, two-colored patterns with colored blocks. Since the solution of these problems only requires the following of simple "everyday" instruction, rather than the acceptance of a set of unusual "beliefs", Rokeach predicted that Open and Closed individuals would not differ significantly in their performance of these tasks.

Open and Closed subjects should however differ in efficiency of performance on tasks which require the integration of new, unusual "belief-systems". Open individuals should experience less difficulty than Closed individuals in their attempts to "integrate" such new belief-systems into their own system. Consequently, they should be able to solve such problems more easily than Closed persons.

To test this hypothesis, Rokeach devised a set of three new, unusual instructions which a person had to observe simultaneously while rebuilding the Kohs block patterns. The instructions are to use more blocks than originally (nine or sixteen, instead of the original four); to build the pattern "rotated" at right angles as compared with the position represented on the card; and at the same time, reverse the red-white color scheme shown on the pattern.

Rokeach believed that individuals would react to this set of unusual instructions in a way similar to the way they would

ordinarily react towards acceptance of new belief-systems. In other words, the three (simultaneous) instructions were to act as a laboratory model of new belief-systems. If this were so, Open individuals should solve this problem in less time, and with less failures, than Closed individuals; "failure" means the inability to solve a problem in the five minute time limit set for rebuilding each pattern. Rokeach called this test the "Kohs synthesis" test, as opposed to the simple four-block Kohs problem which he refers to as the "Kohs analytical test".

The three tasks mentioned (Witkin, Kohs analytical and Kohs synthesis) were given to 17 students with the lowest D-scores, and 16 students with the highest D-scores, selected from a pool of about 400 students. Rokeach and Levy (Rokeach 1960, pp.257-269) report no significant difference between mean scores of these two groups on the Kohs analytical tasks or their scores on the Jackson (1956) adaptation of the Witkin test. However, they report significantly more failures and generally longer solution times for the Closed segment than the Open segment on several of the Kohs synthesis tasks.

A second area of considerable interest to this author was encountered in a study by Rokeach and Kemp "Anxiety and Childhood Experiences" (Rokeach, 1960, pp.347-365). This presents the differences of extremely high-D and low-D scoring subjects as well as middle-D subjects, in regard to questionnaires about their feelings towards their parents, the breadth of outside influences on their development, and the presence of anxiety

symptoms.

This report deserves particular interest not only because of the interesting substance of the findings but perhaps even more because of certain methodological issues which are suggested by them.

Before discussing the methodological issues we shall summarize the purpose and design of this study in some detail as these matters are crucial from the point of view of the present investigation.

The purpose of the study was to test the prediction that persons with extremely high D-scores would express glorification of parents more often and ambivalent feelings less often than individuals with very low D-scores; also that high D-score individuals would report a more constricted social influence in their youth as well as the presence of more anxiety symptoms than low-D subjects. Actually no prediction was made as to the way middle-D scoring subjects would react.

This study was carried out at a Presbyterian college with students enrolled in a sponsored program for social welfare work. All these students had high religious values. The two "extreme" segments consisted of 25 students each, while the middle-D scorers were represented by 50 students. Unfortunately, the study gives neither the number of subjects in the total group from which the three segments were selected, nor does it give the mean D-score of the one group or of the three segments.

The first questionnaire contained two questions: "What sort of person was your father?" and "What sort of person was your

mother?". Responses to each of these questions were (separately) categorized into three classes: "ambivalent", "mildly ambivalent" and "glorifying". Average agreement among three judges working independently on the categorization of the responses is reported at 90 per cent.

The Open and Closed segments showed considerable differences in their reactions in the predicted direction: while about two-thirds of the Open segments expressed "ambivalence" towards both parents, only 12 per cent of the Closed segments did so. On the other hand, about 30 per cent of the Closed segments' responses were classified as "glorifying" against 12 per cent for the Open segments. "Mild ambivalence" was expressed in about 22 per cent of the cases by the Open segments as against about 58 per cent by the Closed segments in regard to both parents. Rokeach summarizes the differences between Open and Closed segments as follows:

"When we compare these results with those reported in the Authoritarian Personality (Adorno, 1950), there is agreement in so far as the Open Ss express ambivalence towards parents. There is also agreement in so far as the Closed Ss are less able to express ambivalence, and generally glorify their parent more. These results are on the whole consistent with the notions put forward by Frenkel-Brunswick (1949) that the ability to express emotional ambivalence toward parents predisposes one to form an authoritarian outlook on life" (1960, p.359).

The second questionnaire (given to the same three segments) asked: "What other people (relatives, guardians, friends, etc.) influenced your development?" Rokeach writes as follows:

"The reason for asking this (question) was to find out about the extent or breadth of influence and identifications outside the immediate family. It is reasonable to assume that those who are characteristically more Open in their belief systems will report that in childhood they were influenced by persons beyond the confines of the immediate family. Conversely it is reasonable to expect that those with relatively Closed systems will report a constriction of extra family influences and identifications.

The responses to this question were categorized into three degrees of breadth of identification with others. First were those who reported that they identified only with the local clergyman and/or boy scout leader. The second category included a somewhat broader set of identification. Several people were mentioned rather than just one or two, such as clergyman, boy scout leader, friends with whom one shared a sport or hobby, teacher, farmer on whose farm one had spent part of a summer vacation, etc. The third category is a general response, the S saying that he was influenced by a number of people with no reference to any particular person or group.

Three judges working independently agreed in their categorization on 95 per cent of the responses" (1960, p.360).

Sixty per cent of the Closed segment mentioned only "clergyman and/or boy scout leader", as against 8 per cent in the Open segment; and only 8 per cent of the Closed segment gave a "general response" as against 72 per cent in the Open segment. These data again appear to substantiate the predictions in regard to the Closed and Open segments.

Two more questionnaires, regarding anxiety symptoms, were administered to the same group and in both of them the Open and Closed segments behaved as predicted. The Closed segment admitted to roughly six times the number of anxiety symptoms as did the Open segment; and the mean age at which bed-wetting stopped was

reported as 2.2 years by the Open versus 6.2 years by the Closed segment. The rationale of the questionnaires is explained by Rokeach (1960, pp 361-362) as follows:

"As Frenkel Brunswick (1949) has pointed out, the inability to express emotional ambivalence toward parents necessitates the repression of hostility. This should be anxiety-provoking. Since Open Ss are more able to express ambivalence, we should expect them to show fewer symptoms of anxiety as compared with closed-minded Ss."

The role of the Middle segment. Since dogmatism is represented as a continuum from closed-mindedness to open-mindedness throughout Rokeach's work, one would expect the Middle segment of a group to show tendencies which lie somewhere in between the extremes of the two polar segments' behavior. Alternately, the relationship might be curvilinear - but in any case a degree of continuity should be apparent. If we examine the results obtained by Rokeach for the Middle segment - where such has been used - we find no evidence of continuity; on the contrary, the behavior of the Middle segment varies from task to task, sometimes approaching one segment's pattern and another time the other extreme segment's pattern; at times it "exceeds" both. Before we examine Rokeach's explanation of this unexpected phenomenon it may be advisable to analyze the behavior of the Middle segment in the questionnaires reported above as well as in the only other project where a 3-segment design was used by Rokeach.

In the questionnaire regarding parents, (Rokeach 1960, p. 359), the Middle segment expresses "glorification" in 72 per cent of the responses versus only 30 per cent for the Closed

(and 12 per cent for the Open) segments. In other words, it strongly exceeds the Closed segment in the direction away from the Open segment. At the other pole, namely, expression of ambivalence, it again exceeds the Closed group by having only 7 per cent of the responses in this class versus 12 per cent for the Closed (and 64 per cent for the Open) segments. In the middle category of "mild ambivalence", however, we find the Middle segment indistinguishable from the Open segment at about 22 per cent, as against 59 per cent for the Closed segment.

In the questionnaire regarding "others who influenced", (1960, p. 361), 70 per cent of the Middle segment reports the most constricted identification ("clergyman and/or boy scout leader") as against only 60 per cent for the Closed (and 8 per cent for the Open) segments. At the other "extreme" category ("a general response...") we find the Middle segment for once between the Open and Closed segments but almost at the Closed end (Closed, 8 per cent; Middle, 11 per cent; Open, 72 per cent). In the "middle category", ("several people specifically mentioned"), the Middle segment is once again identical with the Open segment and quite far from the Closed segment (Open, 20 per cent; Middle, 19 per cent; Closed, 32 per cent).

In the questionnaire regarding anxiety symptoms, both Middle and Closed segments report about six times the number of symptoms reported by the Open segment. The mean age when bed-wetting stopped is again considerably higher for the Middle segment (8.5 years) than the Closed segment (6.2 years; Open segment, 2.2 years).

It can then be said that on the whole the Middle segment behaves in these tasks more often like the Closed segment - exceeds the Closed segment occasionally in the direction away from the Open segment - but at times acts indistinguishably from the Open segment.

Only one other three-segment study is reported by Rokeach and Kemp (Rokeach, 1960, pp. 335-347); it deals with differences in changes of values and occupational goals of a group over a five to six year period. This appears to be the same group which participated in the "Childhood anxiety" project just discussed and was thus highly selected both in terms of its uniformly high religious values and also in terms of its occupational goals. The course was one designed to train professional boy scout leaders.

The Allport-Vernon "A Study of Values" (1931) method was used to measure the initial value-system as well as changes in it five or six years later. At the time of the initial test, the three segments were homogeneous in terms of the rank-order of values measured by this test.

Five years later, religious values still retained the first rank in the value system of all three segments. In the other values the Middle segment showed no change in their rank orders; the other two segments showed shifts in their respective value-systems but the directions in which these shifts occurred were significantly different for the Open and Closed segments. Details of these characteristic shifts are not relevant to this study and will not be reported.



As to changes in occupation, the large majority of the Middle segment was still in the same profession for which the study course had prepared them five years earlier, namely, boy scout leader. The high-D segment had mostly moved into commercial and military administration, whereas the low-D segment had migrated into social service occupations requiring higher professional training.

To what extent could these results be interpreted as supporting the concept of a continuum in dogmatism?

Firstly, neither group segment showed a change in their principal value, religion. Secondly, the Middle segment remained unchanged both in regard to the structure of their remaining values and in their occupational choice, while the two other segments moved in different directions.

The lack of change in religious values would indicate an area of similarity among the three segments rather than an area of difference. As such, it contributes nothing towards the solution of the continuity problem.

The fact that the two extreme segments had showed differential changes in the rest of their value system, while the Middle segment had remained steady, again does not appear to be helpful in arriving at a conclusion. The values measured by the Allport-Vernon scale are not considered as occupying polar relationships to each other in the sense that either value could be regarded as the opposite to another value, or combination of values. A continuum, however, acts as a bridge between two opposite poles. If there are no poles, there is no continuum.

In other words, the three segments did act differently but not in terms of the usual meaning of a continuum.

The same reasoning appears to be applicable to the differences in changes of occupation among the three segments.

It would seem as if this study of Rokeach's neither supports nor strongly contradicts the assumption that the dogmatism scale is in effect a continuum.

How does Rokeach deal with this troublesome question of the Middle segment?

He does not appear to feel that the behavior of the Middle segment requires any particular explanation in the "change of value system" project. In regard to the anxiety questionnaire results, he writes as follows:

"When we consider all the results presented in this section as a whole, it is safe to say that the middle and closed groups do not turn out to differ strikingly from each other as might have been expected from the results on attitudes toward parents. Rather, both middle and closed groups are found to differ markedly from the open group. Why the middle and closed groups do not differ much from each other is a problem that will merit further investigation. We are presently at a loss to explain it. (Present author's italics). One possibility is that there may be little psychological difference between a middle and high score on the Dogmatism Scale - that both may represent equally high degree of closedness. Another possibility is that the nature of the sample may have something to do with it. It will be recalled that the Ss were all students at a Presbyterian college, all high in religious values, all enrolled in a sponsored program of training for social welfare with youth. Thus, they may be atypical with respect to the meaning to be assigned to a particular score on the Dogmatism Scale, or with respect to parent-child relationship, or with respect to

neurotic symptoms. It is hard to say." (Rokeach, 1960, pp.363-364.)

In regard to the parent questionnaire, he writes:

"However, we must note that it is the middle scoring Ss who most often idealize their parents, considerably more than the closed Ss. It is difficult to account for this finding since there is little theory or empirical research to guide us. The research on the Authoritarian Personality was also conducted with extreme high and low scorers, and this is also generally true in the present work. At the moment we can only draw explicit attention to these unexpected findings and go on to see if they are encountered again in other comparisons to follow." (Rokeach 1960, p.360.)

The explanations quoted above would appear to be condensable into the following three "statements":

- a) For some reason, the Middle segment appears to behave generally more like the Closed segment rather than occupying the expected position between Open and Closed segments. This is unexpected, and may be due to lack of differentiation of Middle and Closed individuals by the instrument (the "D"-scale).
- b) Alternately, the cause may lie in chance factors connected with the selection of the group.
- c) Further research is required to establish which of these alternatives may hold true.

The present author sees no reason to question statements (b) and (c) above. Chance factors connected with the selection of a particular group may distort findings at any time. The only

way out of such difficulty is repetition, with a different group.

The statement contained in (a), however, appears as an oversimplification. Undoubtedly the Middle segment behaves more like the Closed than the Open segment. In some cases, however, it exceeds the Closed segment considerably in the direction "away" from the Open group; it behaves almost like a "Super-Closed" group. This happens in regard to the tendency to glorify parents, two of the neurotic symptoms (thumb-sucking and sleep-walking) as well as the mean age at which bed-wetting stopped. On the other hand, in expression of "mild ambivalence towards parent" and reports of influence from "several people specifically mentioned" the Middle segment becomes indistinguishable from the Open segment.

Once we accept that the Middle segment does not really behave much like the Closed segment, it becomes meaningless to try to explain the Middle-segment phenomenon as a result of possible insensitivity of the "D"-scale at the high end.

A more radical, though perhaps less pleasant, thought would be to assume that dogmatism is simply not a continuum, a possibility which does not seem to have been considered by Rokeach. Still, considering that most of his research on dogmatism was carried out with extremely high-D and low-D individuals, such a possibility should have been envisaged. When research is confined to differences in some behavioral aspect of only extreme segments, the differences found may be valid only for people with such extreme scores; no assumption as to the behavior of the rest of the population is necessarily justified.

The questionnaire-study has been discussed in great detail because its results focus attention on some apparent shortcomings of Rokeach's methodology. To summarize:

- a) Some of the groups were highly selected both in terms of rather extreme homogeneity and also in terms of unusual social background and value-systems.
- b) Many of the projects were carried out only once even though the results were confusing in some respects.
- c) Most of the studies were carried out on the extreme segments of a group, in terms of D-scores. This a priori leaves open the question as to whether dogmatism is a continuum.

The clarification of the anomalous behavior of the Middle segment would seem to require a repetition of the relevant studies within a framework which does not contain the same methodological shortcomings.

This chapter has dealt with the origins and structure of Rokeach's theoretical framework. It appeared that previous research regarding the authoritarian personality was largely concerned with particular content-elements of authoritarianism, such as ethnocentrism, antisemitism, etc. Rokeach believed that authoritarianism is more usefully characterized by its structural aspects and focused attention on the makeup of the authoritarian person's belief-system.

We then followed what is believed to be the typical development of the dogmatic mind, from the early days of childhood; we also gave a character-sketch of the typical Closed minded personality.

Since the structure of our belief-system is regarded as one of the most important aspects of our personality, Rokeach predicted that differences could be found in many different areas of behavioral manifestation between Open and Closed personality types. Such presumed differences were investigated by Rokeach and his co-workers in a number of research projects. Most of these studies had a "two extreme segment" design. In other words, the behavior differences of only the segments with extremely high and low D-scores were made subject of these studies.

Two of these studies have been examined in detail. The first study was of particular interest to the present author because it dealt with perceptual task performance as a function of personality differences; this was a field which he himself was exploring by means of a new test, the SCRT. The second study reported in detail was one in which Rokeach had used a three-segment design. The anomalous behavior of the Middle segment in this study was used to point out certain possible methodological shortcomings of Rokeach's work which he had himself partly conceded. It has been pointed out, however, that his tentative explanations of the anomalous behavior of the Middle segment do not appear to take all of his findings into consideration and that the abandonment of the continuity concept of dogmatism may well become necessary as a result of further research.

## CHAPTER II

### THE SUGGESTED CONCEPT RORSCHACH TEST

The Suggested Concept Rorschach Test is an outgrowth of certain experiences which the present author had in connection with the "testing the limits" phase of the Rorschach test in an industrial setting. The usual purpose of this phase is described by Klopfer and Kelley:

"In the testing-the-limits phase, the examiner exerts pressure in a systematic and controlled way in order to provoke reactions in directions avoided or not clarified by the subject in his spontaneous reaction...

Naturally, the importance of this phase is in inverse proportion to the richness of the other two phases, the performance proper, and the enquiry." (1946, pp.51-52.)

While performing the "testing the limits" in the usual manner, the author became impressed with considerable differences among individuals in their ability (or willingness) to accept suggested concepts regardless of the "richness" or "poorness" of their own spontaneous production. It almost seemed at times as if the subject was reacting (positively or negatively) to suggestion of seeing something rather than the particular concept he was asked to locate.

At times, individuals with very meagre spontaneous protocols seemed to be able to see practically anything suggested to them. The meagre spontaneous production was interpreted as a sign of shyness and raised no questions in the author's mind

at the time.

At other times however, highly intelligent individuals with rich spontaneous production refused to accept any concept suggested to them. They either simply denied being able to see what they were asked to, or offered alternate concepts which were actually very similar to the suggested concept. For instance one individual refused to see the popular bears in Card II but suggested that they may be dogs; he also denied that the green part at the bottom of Card X could remind one of a caterpillar but suggested that it might represent a tomato-worm. When asked why Card II could be interpreted as dogs but not bears, he pointed to the ears and observed that they were at the wrong angle for bears, but at the correct angles as far as dogs are concerned. The "trouble" with the caterpillar was explained as being due to two tiny lines ("hairs") at the head-part which caterpillars are not endowed with but presumably tomato-worms are.

When this subject was asked during the interview period (following the testing) whether his superiors had ever criticized him or his work in any respect, he replied: "The only criticism I ever had was that I refuse to go along with any suggestion as to the details of my work. This of course is not true." He then went on to explain how he always made a practice of discussing with his subordinates only the general aspects of their work assignments, leaving them with large areas of "freedom of decision". He also reported going out of his way to generate suggestions from his staff and spontaneously gave examples of the loyalty which this approach had created.



This individual had a particularly rich, spontaneous Rorschach protocol. Furthermore, rather than simply rejecting suggested concepts, he produced alternative and at least equally acceptable concepts. None of the concepts he had suggested were sufficiently different in terms of their usual connotations to suggest that some frightening aspect of the suggested concept may have interfered with its acceptability.

One possible explanation of this unexpected behavior would be that this person in fact resented any suggestion from superiors, the author momentarily occupying the position of authority. The fact that he welcomed suggestions from subordinates does not necessarily contradict this interpretation: it is obviously quite possible for a person to react differently to suggestions from subordinates than to suggestions coming from superiors.

Industry having a basically authoritarian structure, it would be very useful to be able to predict a person's willingness to accept suggestions coming from "above". It would be especially useful to be able to obtain this information by subtle means. Could it be that a person's reactions to suggested Rorschach concepts would be typical of his reactions to "going along" with suggestions emanating from a superior?

For some time after this experience, the author carefully watched the "testing the limits" phase in other subjects. At least two more experiences followed in which individuals with rich protocols were unwilling to accept any, or almost any, suggested concepts. Some of them were again countered by similar, alternate concepts. And in both cases, the individuals

admitted having been criticized on account of "argumentativeness" or "unwillingness to accept others because they have different ideas" - usually by their wives or friends. Both denied that the criticism was justified.

The clue seemed one worthwhile to follow up. This required standardization of the procedure of testing the limits, and validation of the findings against an external criterion. A search of the literature back to 1948 indicated no previous work in the general area of using suggested Rorschach concepts to inquire into personality variables in the sense described here.

Standardization of suggested concepts. It seemed logical that the popularity level of the suggested concepts should be both variable within any one card, and a known quantity in terms of the group on which they are to be used. Beck (1944) provides a list of concepts in terms of their popularity in the clinical setting, in spontaneous Rorschach production; however, one should not necessarily assume that concepts will retain their rank order of popularity regardless of group or setting.

If a test could indeed be developed along the lines suggested it would seem to have its greatest usefulness in the industrial field. It therefore seemed reasonable to attempt to gather concepts of known popularity among applicants for jobs in business or industry.

A local firm of industrial psychologists supplied the Cox-Forced-Choice-Rorschach protocols of 74 (presumably normal) job-applicants. In this form of the Rorschach test, the person is presented with three sets of ten concepts each per Rorschach card

and instructed to select the most likely, most appropriate, concept from each of the three sets, i.e. three per card. This results in 30 responses for the ten cards.

The 74 protocols were analyzed for frequency of selection of each of the 300 responses. Nine concepts were selected for each Rorschach card, three each from the following three "classes" of popularity:

- a) Concepts which had been selected by more than 20 per cent of the "base group" (popular concepts);
- b) Concepts which had been occasionally selected but by not more than 5 per cent of the base group;
- c) Concepts selected by no one in the base group.

It was actually desired to obtain reactions to about six suggested concepts per Rorschach card in the forthcoming test and it seemed best to draw the concepts in equal number (i.e. two each) from each of the three classes of popularity. These figures were of course set quite arbitrarily except in so far as a test of reasonable length would have to result. Approximately six responses per card would seem to fulfill this requirement. The reason for selecting a total of nine concepts will now be explained.

Since the test was expected to measure individuals' willingness to go along with suggestions of the examiner, it seemed desirable to require the subject to give first a spontaneous response and only then follow up with the suggested concepts.

One would imagine that more willingness would be required to go along with a suggested concept after one has made up one's mind what the blot "really" represents than if no such perceptual structuring has occurred.

This approach required that more than six concepts per card should be available for suggestion if actually six were to be obtained. Obviously the subject may announce one of the six concepts as his spontaneous production. Even later in the procedure the person tested may remark that he has actually seen a suggested concept spontaneously. The nine concepts per card would thus provide one "spare" concept in each category. The concepts for each of the ten cards are listed in Appendix "D".

The question then arose as to whether presentation in any particular order of popularity would have any predictable effect. Since no research was available in this area, it was decided to present the concepts in random order of popularity. The concepts were typed on file cards with their popularity index (a, b or c) marked on the card. They were to be shuffled before presentation to assure randomness, and two of each class presented per Rorschach card in the order of their occurrence. Whenever the third card would turn up in any category it would simply be put aside - except of course if the subject had "used up" one of the concepts in that class as his spontaneous production. Responses indicating that the subject had spontaneously seen the concept were not going to be scored since they were not a result of suggestion.

Scoring system. An 8-point scoring system was developed

(see Appendix "E") to rate each response in terms of the subject's expressed willingness to "go along" with the suggested concept. The lowest score is assigned to the answer implying the fullest acceptance; the highest score is attached to responses indicating the fullest rejection.

It would seem that introduction of unusual, complementary concepts would indicate the "perfect acceptance"; e.g. when "bears" are suggested on card II and subject replies: "Oh yes - as a matter of fact, they are after a piece of meat!" The strongest rejection of the suggested concepts in terms of the present framework would be the offering of an alternative concept. (Example: "Bears - no, but they could be dogs.")

If a subject announces more than once in regard to any one category that he has seen the suggested concept spontaneously his scorable answers per card will drop below six.

In order to overcome any difficulty resulting from unequal number of scorable responses per card, it is necessary first to calculate a mean score for each card. This consists of the sum of response scores for the card divided by the number of responses. The test score for the subject is the sum of the mean scores.

Reliability and validity. An attempt was made to validate the test against a criterion of judgment by superiors in the industrial setting. Superiors were asked to designate those of their subordinates most willing, and least willing, to go along with suggestions, and then persuade them to submit to the test. Only 16 subjects were obtained in this manner because most

superiors ran into a blank wall of refusal from the subjects who were to represent the "closed minded" pole of the assumed continuum; some announced that they would rather resign than submit to the test. It became obvious that validation in an industrial setting would have to be carried out as part of pre-employment testing.

The scores of the 16 subjects, however, made it possible to calculate the reliability of the test; scores obtained on odd numbered cards were correlated with scores obtained on even numbered cards. This resulted in an  $r=.864$  which increases to  $.926$  when corrected by the Spearman-Brown formula. It thus appears that the test is measuring something reliably.

Relevance of 6CRT to the present project. At about the time of the validation impasse, the author read Rokeach's "The Open and Closed Mind". He was immediately impressed by the possibility that the personality of the "dogmatic person" as described by Rokeach may be similar in many relevant aspects to the personality of an individual who refuses to accept suggestions on the Rorschach cards. Both individuals would appear to be defensive against suggestions.

The feeling of possible relationship was enhanced by the fact that Rokeach's Open and Closed subjects were reported to act differently on certain perceptual tasks as well; obviously, the Rorschach test is a type of perceptual task itself.

One task which differentiated among Rokeach's Open and Closed segments was the Kohs synthesis task; it requires the subject to restructure his perceptual field according to three

instructions given by the examiner. Another of Rokeach's tasks (the Denny Doodlebug problem, Rokeach, 1960, pp.171-181) required conceptual reorganization according to instructions from the examiner and, here again, Open subjects did significantly better than Closed subjects.

It seemed to the author that the problem of seeing things in inkblots is a combined perceptual-conceptual task; the simpler the concept, the closer the task is to the perceptual pole; the more complex the concept, the more conceptual the problem becomes.

If dogmatic and Open-minded subjects act differently both on certain conceptual and on certain perceptual tasks, and if the acceptance of suggested concepts on the Rorschach involves both of these elements, perhaps the tendency to accept or reject suggested concepts on the Rorschach would be predictable from a person's D-score, and vice versa.

In discussing the Denny Doodlebug task, Rokeach particularly emphasizes the Open subjects' apparent willingness to "go along" with new ideas; this of course requires the ability to give up one's own ideas, at least momentarily. Closed subjects appear to be too defensive about their own beliefs and ideas to be able to do this.

Again, in the chapter dealing with the enjoyment of new musical systems (Rokeach, 1960, pp.270-285) we find the Open group developing a liking for modern compositions (Bartok, Schoenberg) while the Closed group refuses to budge from their previous likes (which did not include the modern composers).

It seemed to the author that there may be a great deal of

similarity between the ability to play along with new percepts and concepts and the ability to accept a change in one's "percepts-concepts" on the Rorschach cards. Conversely, individuals who are reluctant to play along with "foreign" concepts in general may wish to adhere to their own, spontaneous, Rorschach concept. It seemed therefore worth while to examine whether the SCRT and the "D"-scale measured the same dimension.

It will be recalled that Open and Closed groups did not react differently in two perceptual tasks which did not involve some change - the Kohs analytical task and the Witkin test.

The author is prepared to admit that there is a face similarity between the task of locating simple figures in a complex design (Witkin test), and locating suggested concepts in the ink blots. So it was considered possible that SCRT scores would co-vary with Witkin scores. Witkin scores however were reported to bear no relationship to D-scores.

While this possibility was admitted, it was not considered likely. Each Witkin problem has only one correct answer; anyone who has worked with ink blots will probably admit that many a concept may be seen in several parts of any particular blot, and in many blots, if one tries hard enough and if the concept itself is not too highly structured. One of the least popular concepts in the SCRT is "house and garage" on card VII. The author has frankly no idea where it "should" be seen. One subject however managed to see it in the two bottom "Ds" of the blot, the part which is frequently seen as a butterfly; one of the "wings" represented the house, the other the garage -seen



from a plane! This subject could see just about every concept suggested. Many of the SCRT concepts require subjects to see "dog's head", "sitting dogs" and other concepts of this order. It was the author's feeling that anyone who is really "free" to entertain new ideas, new concepts and is not too meticulous, compulsive or defensive, can probably see a great many things somewhere in the blots. This would then make the SCRT a very different test from the Witkin test. Nevertheless the possibility that a relationship may exist between SCRT and Witkin scores merits examination.

This chapter summarized the steps which led to the development of the SCRT. The high reliability of the instrument was mentioned as well as the fact that so far it has not been validated against any criterion. We then examined the reasons underlying the expectation that the SCRT may measure something analogous to dogmatism and why it is possible, though not probable, that SCRT scores and Witkin scores would show a relationship to each other.

### CHAPTER III

#### PURPOSE OF THE STUDY

The present study has three purposes:

1) To examine whether the predicted relationship between the SCRT scores and D-scores can be demonstrated. In other words, will Open segments be more willing and/or able to accept suggested concepts on the Rorschach cards than Middle segments, and will Middle segments be more willing in this respect than Closed segments? If such a relationship were found, it would also be expected that SCRT scores would co-vary with the Kohs synthesis tasks, since these have been reported to differentiate between Open and Closed segments by Rokeach. Conversely, SCRT scores would be expected to show no relationship to performance on the analytical perceptual tasks, i.e., the Kohs analytical task and the Witkin test: Rokeach reported no co-variance of analytical perceptual task scores and D-scores.

In case the predicted relationship between SCRT scores and D-scores failed to materialize, possible co-variance of SCRT and Witkin scores is to be explored. The face similarity between these two tasks would render such examination advisable.

2) To determine, by replication of Rokeach's perceptual experiments and questionnaire regarding parents and others who exercised influence in people's development, whether his

relevant findings are generalizable to a new, less homogeneous, group of subjects and, by implication, to at least the general educated part of the population.

3) To examine whether the concept of continuity of Dogmatism is tenable. The question as to possible lack of continuity was raised by the anomalous behavior of the Middle segment in the questionnaire study. Rokeach offered another tentative interpretation acceptable to this author: chance factors due to the unusual homogeneity and social background of the particular group. A replication of the study with a different, less homogeneous group could be expected to settle this problem. If the Open and Closed segments act generally the way Rokeach's respective segments had acted and the Middle segment again shows the anomalous behavior of vacillating from Open to "Super-Closed" patterns, it would seem reasonable to reject the concept of continuity of the Dogmatism concept.

Additional evidence in this respect should be obtainable from the pattern of the Middle segment on the Kohs synthesis task. To maintain the concept of continuity, the Middle segment's scores should be somewhere in between the scores of the two extreme segments.

Ideally, it would be desirable to carry out the purposes of the present study by means of a large scale correlational design. Shortage of time rendered such approach impractical. The next best design would appear to be a three-segment design, and this has been adopted throughout the present study.

## CHAPTER IV

## INSTRUMENTS

The present study will use five instruments:

- A) Rokeach's Dogmatism scale, Form E.
- B) Four cards of the "Suggested Concept Rorschach Test (SCRT)".
- C) Four Kohs block patterns, to be reproduced exactly as the pattern indicates (Kohs analytical task).
- D) The same four Kohs block patterns but with instructions to reproduce them (simultaneously) with nine or sixteen blocks, rotated at right angles as compared with their position in the pattern, and (in that position) with the red-white color scheme reversed (Kohs synthesis task).
- E) A three-question questionnaire, asking subjects to respond to the following questions: "What sort of person was your father?", "What sort of person was your mother?" and "What other people (relatives, guardians, friends, etc.) influenced your development?"

The five instruments will now be described in detail.

### A) The Dogmatism Scale

The Dogmatism scale is Rokeach's basic instrument in his research regarding the Open and Closed Mind. He writes as follows:

"The primary purpose of this scale is to measure individual differences in openness or closedness of belief systems. Because of the way we have defined open and closed, the scale should also serve to measure general authoritarianism and general intolerance. Our procedure in constructing the Dogmatism scale was essentially deductive. We scrutinized the various defining characteristics of open and closed systems. We then tried to construct statements designed to tap these characteristics.

Our assumption was that if a person strongly agrees with such statements, it would indicate that he possesses one extreme of the particular characteristic being tapped, and if he strongly disagrees, that he possesses the opposite extreme....

Above all, each statement in the scale had to be designed to transcend specific ideological positions in order to penetrate to the formal and structural characteristics of all positions." (Rokeach, 1960, pp.71-72.)

The major personality traits of Closed individuals, as seen by Rokeach, were mentioned in Chapter I. It may be interesting to quote a few items along with the personality characteristic which they are designed to tap.

The Closed minded person was described as having isolated belief-systems which may be in logical contradiction to each other. One statement in the "D"-scale aiming at this trait is the following: "The highest form of government is democracy and the highest form of democracy is a government run by those who are most intelligent."

The strong intolerance towards those holding different belief-systems would be indicated by agreement with the following statement: "In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp."

The feeling of helplessness and anxiety would be shown by agreement with: "Man on his own is a helpless and miserable creature."

Two more examples will be given, one statement aimed at tapping compulsive tendencies, the other a paranoid outlook: "There is so much to do and so little time to do it"; "I have often felt that strangers are looking at me critically."

The Dogmatism scale underwent various refinements and four successive revisions. The present study utilizes Form E which contains 40 statements (Appendix "B").

All statements are "unidirectional" in that agreement is scored as indicating closedness. In this respect the scale is similar to the California "E" and "F"-scales. These scales have been criticized on account of the possible set effect which this unidirectionality may produce. Rokeach discusses this problem, but arrives at the conclusion that the set effect, if any, is not likely to be of sufficient influence to interfere with results in a serious manner. He furthermore points out that the differences found between Open and Closed groups cannot be accounted for by set effect (1960, pp.405-407). Efforts to reverse the direction of some of the statements ran into the same difficulties as had been reported by Christie,

Havel and Seidenberg (1956) concerning the attempted reversal of "F"-scale statements.

Rokeach recommends that "D"-scale statements be interspersed with "padding" - in other words, statements from other scales, or just any irrelevant statements. This recommendation has not been followed in the present study in order to shorten to the bare minimum the time required for administration. Still, care was taken to arrange the statements in a sequence so that no two statements aimed at tapping the same characteristic follow each other closely.

Rokeach also recommends that the scale be administered anonymously. To be able to select subjects with the desired scores for subsequent testing, he usually asked his groups to indicate their age, religion, place of birth and place of residence on the forms. When these data were later compared with the registrar's records it was possible to identify the "author". In the present study, anonymity was not pretended.

Scoring. Subjects are instructed to express their degree of agreement or disagreement with each statement by writing Plus-3 to plus-1 for agreement, or minus-3 to minus-1 for disagreement; there is no zero point. Plus-3 indicates strong agreement, minus-3 strong disagreement. We thus have a 6-point scale. An individual's score is simply the algebraic sum of his response numbers. As a matter of convenience (to avoid dealing with negative scores), each score is increased by four. The theoretical range of scores thus reaches from 40 to 280 for the 40-item scale.

Reliability. Rokeach reports reliability of Form E of the "D"-scale as .78 and .81 respectively for two studies in which subjects were first given the longer Form D of the "D"-scale and some months later the present Form E. The correlations were calculated between scores obtained on the two forms and then corrected for the shortness of Form E (1960,p.89).

Previous findings with Form E. Rokeach reports the means and standard deviations on this form of the "D"-scale obtained for seven groups (1960, p.90). The means vary from 141.3 to 152.8 in six of the seven groups, while rising to 175.8 for a group of English workers. The standard deviations range from 22.1 to 28.3. Five of the seven studies were carried out at Ohio State University, one in an English college and one with English workers.

Administration in the present project. The lists of statements comprising the "D"-scale were distributed in class after an introductory talk by the present author (see Appendix "A" for the talk and Appendix "B" for the "D"-scale). Further details of the administration will be reported in Chapter V.



## B) The Suggested Concept Rorschach Test (SCRT)

Test material. Four standard Rorschach cards, two colored and two black and white, were selected (Cards III, IV, VII, VIII) and presented in that order. This number of cards seemed adequate for exploratory research, as previous findings indicated an  $r = .822$  correlation to hold between scores on four cards and scores on all ten cards.

Administration. Introduction of the test follows standard Rorschach procedure with the following change: instead of the subject being asked to tell what he sees in the card, etc., he is asked to

"tell the first thing you see that the blot reminds you of, that it could represent. After you tell me the first thing you see, I am going to ask you to see five or six other things in the card and I want you to tell me whether, or how well, you can see them; are they there or are they not there....can you see them easily or only if you really stretch your imagination....or not at all. To put it differently: imagine someone says he sees the thing I am going to tell you to try to see. I want you to tell me whether you would agree that the blot does represent the thing, that is can be reasonably called that - or 'not really' - or 'definitely not'".

The card is then handed to the subject. As soon as he gives his first spontaneous response, the examiner says: "Fine - now I want you to see...."

Six of the nine available concepts per card are suggested to the subject, two in each class of popularity. (See Appendix "D" for a list of suggested concepts.) The cards containing the concepts are shuffled before each administration so they will occur in random order of popularity. Once two cards of a given

popularity level have been suggested, the third one is skipped when it comes up. Any card bearing a concept which the subject announced as his spontaneous production is also skipped. If the subject states or implies that he has "seen" a suggested concept spontaneously, such concept is not scored and the third concept in the respective class of popularity is used (and scored) instead.

Scoring. Each response is scored on an 8-point scale. The scoring scale, with examples, is attached as Appendix "E". The scores are added separately for each Rorschach card and divided by the number of responses obtained on that card; this results in a mean card score. Score of a subject is the total of the mean card scores.

### C) The Kohs Block Tasks

The test. The test consists of two parts which are scored separately: the Kohs "analytical" task and the Kohs "synthesis" task.

In the analytical task, the subject is shown a pattern on a card (see Appendix "F") and asked to reproduce it with four blocks as quickly as he can. The four blocks are put in front of the subject in form of a square, white side up.

As soon as he has reproduced the pattern, he is given nine or sixteen blocks and instructed to reproduce the same pattern with this larger number of blocks, rotated at right angles and the red-white color scheme reversed (as compared with the pattern). This then is the Kohs synthesis task. The three instructions of the synthesis task must be carried out simultaneously and the subject is not allowed to build the pattern first and then rotate it; neither is he permitted to turn his head so he can see what the pattern would look like at right angles.

The total task consists of four patterns, each of which is first built of four blocks "as is" (analytical task), and then rebuilt in terms of the synthesis task with nine or sixteen blocks, rotated and color reversed (synthesis task).

Materials. The blocks used here are part of the Wechsler intelligence test. The patterns have been obtained from Dr. Rokeach. Of the seven patterns originally tried by Rokeach

only four differentiated in some manner among his Open and Closed groups. These four were selected for the present project: B-1, A-3, A-4 and B-2. The A-series is reproduced with sixteen blocks in the synthesis phase, while the B-series is reproduced with nine blocks. One other pattern (A-2) is used as an untimed exercise.

Instruction. Since the analytical phase is followed immediately by the synthesis phase for each of the four patterns, the instructions cover both the analytical and the synthesis phase simultaneously. (See Appendix "G".)

If the subject has considerable difficulty in reproducing the practice synthesis task, he is given help sparingly.

Scoring. Both tasks are scored (separately) in terms of seconds required to complete them. The analytical task has no time limit whereas the synthesis tasks have a time limit of five minutes for each task. If any task is not completed in the time limit it is scored as "failure" and a 300 second score assigned to it.

At times subjects announce that they have completed the task when the pattern is reproduced incorrectly. In case of minor error, the examiner asks the subject whether he really thinks it is done correctly; this is usually sufficient to get the subject to correct it. In case the subject has violated one of the basic instructions, i.e., built the pattern "as is" (not rotated), or without reversing the color scheme, the examiner destroys the pattern and instructs the subject to start again. In such cases, time is still measured from the moment

the subject first started on the task; in other words, he does not get additional time for rebuilding the incorrectly built pattern.

Rationale for inclusion. This test is included in the present study for the following reasons:

- a) To examine if Rokeach's findings (that Open and Closed groups do not differ in their Kohs analytical scores) would be upheld on repetition.
- b) Since it was expected that D-scores would co-vary with SCRT scores, it should also be expected that Kohs synthesis scores should co-vary with SCRT scores. Conversely, it is not expected that SCRT scores should co-vary with Kohs analytical scores since the latter did not co-vary with D-scores. It is part of the present project to examine whether these expected relationships can be demonstrated.

Rokeach's rationale for including the Kohs tasks. The reason for including perceptual tasks, and in particular the Kohs synthesis task, among the problems given to Open and Closed groups is explained by Rokeach as follows:

"Our structural approach commits us to expect consistencies in open and closed persons with respect to all kinds of systems and to search them out in widely separated areas of behavior. For, if a person's total belief system can indeed be meaningfully placed along a spectrum from open to closed, then this total state of mind should be reflected in any area of human functioning that requires that new systems be entertained and formed.

"In this chapter we will ask whether open and closed persons differ in their ease of synthetizing perceptual systems...." (1960, pp.258-259)

(In the synthesis task) there are three beliefs or sets which the subject has to overcome and reintegrate - a size set, a position set and a color set....By the very nature of the task, he cannot deal with the three sets one at a time. He must deal with them all at once in an integrative fashion." (1960, p.261)

Since the analytical Kohs task does not require a change of "belief-systems", Open and Closed subjects were expected to perform indistinguishably on it. (See also Witkin test as an analytical task in the following section.)

#### D) The Witkin Embedded Figure Test (1)

The test. This test consists of requiring subjects to find (and outline) simple figures contained in more complex figures, from memory; they are first shown the complex figure, then the simple figure; then the simple figure is again covered up and the complex figure exposed. If the subject forgets what the simple figure looks like, he may ask to see it again (while the complex figure is covered up) and the time required for this operation is not included in his time score.

The adaptation by Jackson (1956) of the original test was used both by Rokeach and in the present project; the sequence of the problems as used by Rokeach was also retained unaltered and results will be reported in that order.

Administration. Details of the administration become obvious from the "Instructions". (Appendix "H")

Scoring. Subjects were timed in seconds on each of the twelve cards and the seconds required to solve each problem constitute the respective scores. Time limit per problem was three minutes, as per Jackson (1956). Those who failed to solve a problem in this time were assigned to the "fail" category and their time score for the problems taken as 180 seconds.

Rationale for inclusion. This test is included in the present study for the following reasons:

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(1) The test material is obtainable from Dr.H. Witkin, Downstate Medical Center, 450 Clarkson Ave., Brooklyn 3, N.Y.

- a) To examine if Rokeach's findings (that Open and Closed groups do not differ in their Witkin performance) would be upheld in a repetition.
- b) There is a face similarity between finding simple figures in complex figures, and locating suggested concepts in the (complex) Rorschach cards. However, it was not expected that SCRT scores would co-vary with Witkin scores (see Chapter II) but the possibility cannot be overlooked and will require examination.

Rokeach's rationale for including the Witkin test.

Rokeach believes that Open and Closed subjects do not differ in "analytical" ability, only in "synthetizing" ability. He included the Witkin test among his perceptual tasks as an analytical test on which his Open and Closed groups should perform indistinguishably. His reasons for considering the Witkin test "analytical" are perhaps not set out as clearly as one might desire. The relevant section of his book will therefore be quoted in detail:

"Witkin and his associates describe the basic purpose of their tasks as being the measurement of individual differences in the ability to separate 'item from field'." (Witkin, 1954, p.116)

"The ability to separate item from field is the ability to break down the field, that is, to perceive analytically. This ability to analyze is what their battery of perceptual tasks appears to be tapping.

The conceptual breaking down of beliefs embedded in a belief system seems to be closely analogous to the perceptual 'separation of item from field'."



E) The Questionnaire about Parents and Others  
who had Influenced Subject

The questionnaire contains three questions: "What sort of a person was your father?" and "What sort of a person was your mother?" and "What other people (relatives, guardians, friends, etc.) influenced your development?". The exact form of the questionnaire is reproduced as Appendix "C".

The answers to the two first questions were to be classified (by three judges) into three categories: "ambivalent", "slightly ambivalent" and "glorifying". Rokeach gave a few examples for each category (1960, p.358), which are given to the judges for reference; they are reproduced in Appendix "K" with instruction to the judges reproduced in Appendix "I".

The answers to the last question were also to be classified into three categories, following Rokeach: "clergyman and/or boy scout leader", "several people specifically mentioned" and "a general response with no reference to any one person or group". Since this appeared to be the type of "factual" classification which does not require psychological sophistication, it was decided not to importune judges but rather have it performed by the author.

## CHAPTER V

### SUBJECTS AND PROCEDURE

Subjects for the present project were selected from University of British Columbia 1961 summer session students. It was desired to get a non-homogeneous group so that any results would be reasonably applicable to the "general educated population".

Since summer school is compressed into a six-week period and students are not usually available near exam time, special care had to be taken to gather the group data within the first two weeks; furthermore, individual testing sessions had to be reduced to a minimum of time and group testing also had to be as short as possible in order to get the professors' cooperation to give up badly needed class time.

To achieve these objectives, the apparent anonymity suggested by Rokeach in the administration of the "D"-scale was dispensed with; it would have taken too long to locate the desired students by indirect means for the later individual testing. Consequently, subjects were asked to identify themselves on the questionnaire. They were assured, however, that the information given would be treated entirely confidentially as required by strict professional ethics. The address to the classes preceding the administration of the

D questionnaire is reproduced in Appendix "A".

In order to reduce class time to a minimum, "padding" of the "D"-scale was also eliminated.

It is legitimate to ask whether these changes from normal procedure may have introduced distortions which invalidate any findings of this project. This question will be dealt with at the end of the present chapter in some detail. Indications are that such distortion did not occur.

The permission of six professors was obtained to administer the "D"-scale and the questionnaire in their classes. The classes were as follows: Psychology 100, Psychology 201, Commerce 252, Commerce 151, Political Science 301 and Education 400. All classes were mixed in sex, but it was suspected that mean male and female D-scores may vary significantly. Therefore, in the study, D-scores of males and females in one class were compared. The difference in means, shown in Table I

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TABLE I

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supported this suspicion and further research was henceforth restricted to male students.

Apparently not all students were impressed with the promise of confidential treatment of their responses; 24.6 per cent of the male group did not identify themselves. Their D-scores are, however, included in the total group scores reported in this project and their questionnaire responses are also included in the relevant part of the study.

T A B L E    I  
DIFFERENCE IN MEAN D-SCORES BETWEEN  
MALE AND FEMALE PSYCHOLOGY 100 STUDENTS

	N	$\bar{D}$	Diff.	t
Male	58	156.3	13.8	2.36*
Female	43	142.5		

\* Significant at  $p < .05$  (F-test for difference in variances insignificant)

The proportions of students who reported their names ("available" for further research) versus those who failed to identify themselves ("not available") are shown in Table II for each of the classes.

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TABLE II

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It will be noted that the mean D-scores of the available and unavailable groups are almost identical. Further data on differences between these groups will follow at the end of this chapter.

The number of Ss to represent each of the Closed, Middle and Open segments was arbitrarily set at 17. Rokeach had used 17 and 16 Ss respectively for his extreme segments in the Kohs and Witkin tasks. The 17 "available" Ss with the highest and lowest D-scores respectively were selected for the extreme segments whereas the 17 available Ss whose D-scores were closest to the total group mean D-score were selected to represent the Middle segment. The mean D-scores of each of these segments is shown in Table III.

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TABLE III

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All except one of the Ss who entered their names in the first place and who were selected for the experimental segments de facto co-operated in the individual testing later on.

T A B L E      II

MEAN D-SCORES FOR AVAILABLE AND NOT AVAILABLE  
SUBJECTS IN THE SIX SUMMER SCHOOL CLASSES COM-  
PRISING THE TOTAL GROUP

Class	Available		Not Available		Total		Percent Not Available
	N	$\bar{D}$	N	$\bar{D}$	N	$\bar{D}$	
Comm. 252	9	150.44	0	-	9	150.44	0
Comm. 151	9	146.60	7	152.9	16	149.34	44
Psych. 100	42	153.85	16	162.80	58	156.30	28
Psych. 201	45	145.89	3	188.70	48	148.56	6
Pol. 301	19	149.90	9	132.90	28	144.40	32
Ed. 400	17	149.60	11	139.90	28	145.40	39
Total	141	149.52	46	151.65	187	150.0	24.6

$G = 26.09$

T A B L E    III  
 COMPARISON OF MEAN D-SCORES, DATA CONCERNING  
 THE AGE, YEARS OF HIGHER EDUCATION, AND A  
 MEASURE OF INTELLIGENCE FOR THE THREE EXPERI-  
 MENTAL SEGMENTS

	Open N=17	Middle N=17	Closed N=17	Total N=51
Mean D score	108.53	150.9	194.5	150.0
Range of D-scores	70-124	146-157	176-213	70-213
Mean age (years)	27.8	28.0	27.1	27.6
Median age (years)	24.0	25.5	22.5	24.5
Range of age	21-52	18-43	18-56	18-56
Mean years of education past grade 12	3.5	2.9	2.6	2.7
Mean seconds to solve four Kohs analytical problems	81.2*	85.8*	82.9*	83.3*

\* An analysis of variance to test the significance of difference among the "simple Kohs block" time scores of the three groups confirmed the null hypothesis:  
     "between" variance 84.35  
     "within" variance 998.41

One question which arises is the possibility of differences among the experimental segments in intelligence or other possible relevant features. Two rough indices of intelligence were examined: the mean time required to solve the Kohs pattern analytical tasks and the mean years of education beyond high school. Table III indicates that the performance on the Kohs analytical task is about equal among the three segments. Years of post high school education vary little, and there is little difference in the mean or median age among the three groups.

This leaves us with the obligation to enquire into possible distortions in the present group composition due to lack of padding of the "D"-scale and lack of apparent anonymity.

The following areas of possible distortion were considered:

- a) The D-distribution might be quite different in terms of mean and  $\sigma$  than those found by Rokeach.

This does not appear to be the case. Rokeach reports the results of seven studies with Form E of the "D"-scale (Rokeach, 1960, p.90), their means ranging from 141.3 to 175.8 (the latter being English workers) and their standard deviations ranging from 22.1 to 28.2. The present total group mean and  $\sigma$  were well within this range and actually very close to those reported for "English Colleges II" ( $\bar{D} = 152.8$ ,  $\sigma = 26.2$ )

- b) The distribution might be badly skewed towards the open end; or alternatively, because of putting down their names, Ss might "pussyfoot" and not express any strong opinions.



This again does not appear to have happened. An  $\chi^2$  test for goodness of fit proved normality of the distribution; "pussyfooting" would result in a contraction of the spread; but our  $\sigma$  is higher than three out of the seven standard deviations quoted for this form of the test by Rokeach in his Table 4.3 (1960, p.90).

- c) The mean D-score and scatter should be significantly different for the available and non-available groups. This possibility was examined by means of a t-test.

The group variances were in fact different at  $.05 > p > .01$  as determined by an F-test. This made it necessary to compute first a weighted criterion t, in order to determine the significance of the difference between the means.

The resultant  $t = .501$  was considerably smaller than the weighted criterion t (which equalled 1.99 for  $p \leq .05$ ), leading to acceptance of the null hypothesis in regard to the difference between means of the available and non-available group.

- d) Further evidence of comparability of groups comes from examination of the feelings expressed towards the father and mother in the questionnaire. These will be dealt with in detail in Chapter VI.

Two more details relevant to the present discussion will, however, be mentioned. For one, our group expresses at

times open hostility towards the father and four of the seven "hostile" (1) responses came from "available" subjects. This is not compatible with the assumption that our subjects were more hesitant about expressing their real feelings than Rokeach's; there were no hostile responses reported in Rokeach's group! Secondly, the proportions of glorifying, mildly ambivalent and ambivalent responses for our total experimental group are almost identical with those reported for Rokeach's group (1960, p.359). If lack of anonymity creates a stifling and distorting effect, it would more likely occur in the area of expressing ambivalent and/or hostile feelings against parents than in the relatively "safe" area of the "D" scale.

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(1) Judged "hostile" by at least one of the three judges.

## CHAPTER VI

## RESULTS

## A) The Suggested Concept Rorschach Test

The SCRT scores of the three experimental segments failed to produce the expected differences. The mean SCRT scores of the three segments as well as the mean SCRT score and  $\sigma$  for the three combined segments are represented in Table IV. A

TABLE IV

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Kruskal-Wallis one-way (rank) analysis of variance (Siegel, 1956, pp. 184-193) resulted in an insignificant  $\chi^2 = 1.69$ . (It was necessary to use a non-parametric test as the distribution of SCRT scores did not follow the normal curve.)

A rank order correlation calculated between SCRT and Witkin time scores resulted in an insignificant Spearman

$\rho = .118$ , indicating that the SCRT and the Witkin test do not measure the same dimension.

It may be of interest to mention that the correlation between odd and even cards (scores on Cards III and IV, vs. Cards VII and VIII) was again very high, reaching an  $r = .828$  when corrected by the Spearman-Brown formula; this is the same value for  $r$  which was attained in the previous research, confirming high reliability for this test. This unfortunately contributes nothing to the questions raised in the present project.

TABLE IV  
 MEAN SCRT SCORES OF THE THREE EXPERIMENTAL  
 SEGMENTS AND MEAN AND STANDARD DEVIATION  
 OF THE SCRT SCORES FOR THE COMBINED GROUP

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	Open group	Middle group	Closed group	Total group
Mean SCRT score	16.67	16.13	15.42	16.07
$\sigma$ . . . . .				2.471

## B) The Kohs Block Tests

- a) The analytical task. The mean time scores of the three experimental segments on this task were very close: 81.2 seconds, 85.8 seconds and 82.9 seconds for the Open, Middle and Closed segments respectively. An analysis of variance to test the significance of the differences yielded a "between" variance of 84.35, against a "within" variance of 998.41, leading to the acceptance of the null hypothesis. This is in line with Rokeach's findings and also serves as a rough indicator of equal mean intelligence of the subjects in the three segments.
- b) The Kohs block synthesis tasks are analyzed in two ways: pass/fail ratio and time scores; each of these indices is further examined in two ways: once for all four tasks combined and secondly in terms of individual tasks.

The pass/fail ratio for the combined four tasks is presented in Table V. An  $\chi^2$  test to determine the over-all signi-

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TABLE V

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ficance of difference in the 3x2 table yields an insignificant  $\chi^2 = 1.372$ , corresponding almost exactly to  $p = .50$  for such distribution occurring by chance when no real differences exist.

T A B L E   V  
PASS/FAIL RATIO OF THE THREE EXPERIMENTAL  
SEGMENTS COMBINED FOR THE FOUR KOHS "SYNTHESIS" TASKS

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	Open N=17	Middle N=17	Closed N=17
Pass	60	49	51
Fail	8	19	17
Total	68	68	68

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(The differences are not significant.)

Pass/fail ratios for individual Kohs synthesis tasks are reproduced in Table VI. An inspection of the results is suf-

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TABLE VI

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ficient to realize that the differences among the three segments are small indeed. The largest single difference occurs in task B-2, where none of the Open segment failed while the Middle and Closed segments produced three failures each. The significance of difference between the results of the Open segment, on the one hand, and the combined Middle-Closed segments on the other hand, was tested by Fisher's exact test (Siegel, 1956, pp. 96-104), yielding  $p = .113$  for this distribution occurring by chance. This  $p$  is so large that we are forced to the conclusion that the results have occurred by chance.

Mean solution times (in seconds) of the three experimental segments for the four Kohs "synthesis" tasks are shown in Table VII. It will be remembered that failure on a problem

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TABLE VII

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resulted in assignment of the time limit (300 seconds) as the solution time. This results in a non-normal distribution of time scores requiring a non-parametric method for testing the significance of differences. The Kruskal-Wallis one way (rank) analysis of variance among total time scores of the three segments resulted in an  $\chi^2 = 3.51$  at 2 df, indicating

T A B L E VI

PASS/FAIL RATIOS OF THE THREE EXPERIMENTAL  
SEGMENTS ON THE INDIVIDUAL (4) KOHS BLOCK SYNTHESIS TASKS

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	<u>Task B-1</u>		
	Open	Middle	Closed
Pass	15	13	13
Fail	<u>2</u>	<u>4</u>	<u>4</u>
Total	<u>17</u>	<u>17</u>	<u>17</u>

	<u>Task A-3</u>		
	Open	Middle	Closed
Pass	16	12	14
Fail	<u>1</u>	<u>5</u>	<u>3</u>
Total	<u>17</u>	<u>17</u>	<u>17</u>

	<u>Task A-4</u>		
	Open	Middle	Closed
Pass	12	10	10
Fail	<u>5</u>	<u>7</u>	<u>7</u>
Total	<u>17</u>	<u>17</u>	<u>17</u>

	<u>Task B-2</u>		
	Open	Middle	Closed
Pass	17	14	14
Fail	<u>0</u>	<u>3</u>	<u>3</u>
Total	<u>17</u>	<u>17</u>	<u>17</u>

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T A B L E     VII

MEAN TIME (IN SECONDS) REQUIRED BY THE THREE  
EXPERIMENTAL SEGMENTS TO REPRODUCE EACH OF THE  
FOUR KOHS BLOCK "SYNTHESIS" TASKS. (FAILURE  
TO REPRODUCE TASK IN 5 MINUTE TIME LIMIT RESULTED  
IN 300 SECOND TIME SCORE BEING ASSIGNED)

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Tasks	Open	Middle	Closed
B-1	141.4	159.8	192.8
A-3	145.8	187.9	192.6
A-4	202.1	236.1	235.2
B-2	134.5	136.9	162.2
All four tasks:	623.8	720.7	782.8

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(None of the differences are significant.)

that this distribution could have occurred by chance when no real difference exists at  $p = .20$ .

Rokeach had used a "two extreme group" design for this task. Since one purpose of the present project is to enquire into the question of repeatability of certain results reported by Rokeach, it would seem appropriate to examine whether the two extreme segments of our groups follow the pattern of Rokeach's extreme segments on the Kohs "analytical" and "synthesis" tasks. The results of this enquiry will be reported in the same order as the three-segment results were reported and are derived from the data presented in Tables III, VI and VII.

On the simple Kohs problem (Table III), the mean solution times of the Open and Closed segments are almost identical (81.2 seconds, vs. 82.9 seconds); this conforms to Rokeach's findings.

On pass/fail ratio for the four combined "synthesis" tasks (Table VI), the Open segment does better than the Closed segment at  $p < .025$  as determined by a one-tailed  $\chi^2$  test. Rokeach's results (calculated from his data, but not reported by him in this form) achieve a  $p < .005$  in this regard. Here our findings again support Rokeach's, although at a reduced level of confidence.

The pass/fail ratio on individual tasks (Table VII) present the following picture:

Task B-1: Difference not significant ( $p > .24$ ) for present segments; Rokeach reports  $.05 > p > .10$ .

Task A-3: Difference significant at only  $p = .797$  as determined by Fisher's exact test. Rokeach reports  $.05 < p < .10$ .

Task A-4: Difference obviously not significant on inspection. Rokeach reports significant difference at  $p < .05$ .

Task B-2: Difference does not reach significance ( $p = .113$ , by Fisher's exact test). Rokeach reports no significant difference.

The time scores on the combined synthesis tasks (Table VIII) between Open and Closed segments were tested for significance by the Mann-Whitney U-test (Siegel, 1956, pp.116-127), since failure scores resulted in non-normal distribution of these scores. The combined time scores favor the Open segment at  $p < .01$  (one-tailed test). Rokeach did not report on combined time scores and his data do not permit determination of significance level. However, by implication (from data reported for the individual tasks), the difference would be expected to turn out significantly for his segments.

The time scores on individual synthesis tasks present the following picture:

Task B-1: Obviously no significant differences between Open and Closed segments. The task was included because Rokeach had reported significant difference in pass/fail ratio.

Task A-3: Difference significant at about  $p = .06$  ( $U = 98$ ;  $p = .05$  would require a  $U \leq 96$ ). This conforms to Rokeach's significance level reported at  $p = .06$ .

Task A-4: Difference significant at about  $p = .10$ . Rokeach reports  $p = .06$ .

Task B-2: Difference not significant ( $p > .10$ ). Rokeach reports difference significant at  $p = .09$ .

On the whole, the differences in the performance of the present Open and Closed segments on the "synthesis" tasks are not unlike those reported by Rokeach for his Open and Closed segments. Our significance levels are generally lower than Rokeach's, but in no case is the trend reversed.

## C) The Witkin Test

The Witkin test results were also analyzed in four ways: pass/fail ratios and time scores, with both of these indices again examined in terms of the total task (12 problems combined) and in terms of each individual problem.

The pass-fail ratio for the 12 combined problems are reproduced in Table VIII. In spite of the fact that the results of the Closed and Middle segments are very close, the

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TABLE VIII

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over-all difference in pass/fail ratio among the three segments reaches a significance level of  $p < .02$  as determined by a  $\chi^2$  test (two-tailed, since no difference was predicted). While Rokeach did not report on pass/fail ratio of his segments on this test, he did report insignificant differences in time scores and thus, by implication, one would not expect significant differences in pass/fail ratio.

The significant difference is actually attributable to the fact that the Open segment passes more often (and fails less often) than either the Middle or the Closed segments. A  $\chi^2$  test restricted to testing the significance of difference between pass/fail ratio of only the Middle and Low segments yields a  $\chi^2 = 7.939$ , significant at  $p < .01$  (whereas a similar test between Middle and Closed segments yields an insignificant  $\chi^2 = .515$ ). The difference between Open and Closed segments is significant at  $p < .05$ .

T A B L E    VIII  
 NUMBER OF PROBLEMS SOLVED AND FAILED ON THE  
 TWELVE PROBLEM WITHIN TEST BY OPEN, MIDDLE  
 AND CLOSED SEGMENTS

Number of problems	Open N=17	Middle N=17	Closed N=17
Passed	190	172	177
Failed	14	32	27
Total	204	204	204

(1) For significance of differences, see Table IX

Due to the over-all differences reported above it seemed appropriate to examine the pass/fail ratio on each of the 12 problems individually. The results in respect to four cards which did show significant differences between segments are in Table IX. The low expected frequencies of failure on individual cards made it impossible to compare the three segments'

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TABLE IX

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performance simultaneously on any one problem by the  $\chi^2$  method; instead, two groups at a time were compared with each other, either by  $\chi^2$ ; or by Fisher's exact test when the expected frequencies were too small for  $\chi^2$ .

Summarizing the results regarding pass/fail ratios:

Card D-1 differentiates Closed from Middle segment at  $p < .05$ . (It does not differentiate between Open and Middle or Open and Closed segments). Two-tailed  $\chi^2$  test was used.

Card E-1 differentiates Closed from Open segment at  $p = .0512$  (Fisher's exact test was used).

Card H-1 differentiates Open from Middle segment at  $p = .022$  (by Fisher's exact test).

Card E-5 differentiates Open from Closed segment at  $p = .0512$  (by Fisher's exact test).

Time score differences among the three segments are reproduced in Table X in regard to each of the 12 problems.

T A B L E IX  
 LEVELS OF SIGNIFICANCE AT WHICH CERTAIN WITHIN  
 CARDS DIFFERENTIATE AMONG THE EXPERIMENTAL SEGMENTS  
 IN REGARD TO PASS/FAIL RATIO

Card (Problem)	Closed from Open	Closed from Middle	Open from Middle	Among three groups
D-1	n.s.	< .05	n.s.	n.s.
E-1	.0512	n.s.	n.s.	n.s.
H-1	n.s.	n.s.	.022	n.s.
E-5	.0512	n.s.	n.s.	n.s.
All 12 cards combined	< .05	n.s.	< .01	< .02



The mean time for the combined segments on the combined tasks (568.0 seconds) is rather close to the time reported by Witkin

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TABLE X

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(1950) of 587.9 seconds for his male group, in spite of the fact that his 5-minute limit per problem might have been expected to push his time scores well beyond ours; it will be remembered that our time limit per task was only 180 seconds. On the other hand, the present results differ substantially from those calculated from Rokeach's reported data (1960, p.264) of 732.0 seconds. The fact that Rokeach used partly females may account for some of this difference, as we know from Witkin (1950) that females require longer time on the average on this test.

The largest difference among the three segments appears in the last problem, E-5. A Kruskal-Wallis analysis of variance, however produced only a  $\chi^2 = 4.94$  (2 df), resulting in a significance level of  $.10 > p > .05$ .

In view of this finding it seemed unnecessary to perform further analyses of variance and the null hypothesis for difference among the three "D"-scale segments in Witkin time scores is accepted.

On the surface of it, this would appear to support Rokeach's findings of "no difference on Witkin time scores". Rokeach however reported only on extreme segments of his group and so it is appropriate to look into possible differences between Witkin time scores in regard to our two extreme seg-

# T A B L E X

MEAN TIME (IN SECONDS) REQUIRED BY THE THREE EXPERIMENTAL SEGMENTS  
TO SOLVE EACH OF THE TWELVE WITKIN PROBLEMS AND MEAN TIMES REPORTED  
FOR THE SAME TASK BY ROKEACH AND WITKIN

Group	Problems												Total
	C-1	D-1	E-1	A-2	C-2	G-1	A-3	H-1	E-3	C-3	D-2	E-5	
Open	53.3	60.5	24.9**	106.1	25.5	16.1	8.9***	22.4**	54.5**	17.3	12.6	19.2**	421.3
Middle	28.1	112.5	53.9	114.5	24.1	15.6	13.9	82.5	76.8	33.8	22.1	52.3	630.1
Closed	49.9	74.4	70.5**	125.2	24.9	17.4	22.1***	60.3**	95.0**	28.3	13.8	70.4**	652.1
Mean of 3 segments	43.7	82.5	49.8	115.3	24.8	16.4	15.0	55.1	75.4	26.5	16.2	47.3	568.0
Rokeach's mean of Open/ Closed segments	64.5	67.0	57.4	150.9	42.9	19.7	30.2	98.0	88.0	60.2	12.2	45.7	736.7
Witkin's Male group	71.7	59.8	54.9	131.2	36.7	10.7	10.3	81.9	39.4	51.2	14.6	25.5	587.9

\*\* Difference between Closed and Open segments significant at  $p < .025$

\*\*\* Difference between Closed and Open segments significant at  $p < .01$

ments. As in the Kohs block time score comparison, it is again necessary to resort to the Mann-Whitney U-test here. The following results are derived from analysis of the data summarized in Tables VIII, IX and X.

Total time for the 12 combined Witkin cards in the present study was shorter for the Open (as against the Closed) segment at  $p < .05$  (two-tailed test). Rokeach only analyzed time scores on individual cards for differences and reported no significant difference on any of the 12 problems. Therefore one would not expect to find significant differences between total time scores either. Our results (of shorter time required by the Open segment) therefore appear to contradict Rokeach's findings, at least indirectly.

Time score differences on individual Witkin cards among the Open and Closed segment was again examined by means of the Mann-Whitney U-test (two-tailed); only differences significant at  $p < .05$  will be reported. These are:

Card E-1: Open segment "better" at  $p < .05$

Card A-3: Open segment "better" at  $p < .02$

Card H-1: Open segment "better" at  $p < .05$

Card E-3: Open segment "better" at  $p < .05$

Card E-5: Open segment "better" at  $p < .05$

These findings are in direct contradiction to Rokeach's results (1960, p.264). He reported no significant difference for any of the 12 time scores between his Open and Closed segments.

### E) The Questionnaires

Since responses to two of the questionnaires were classified by judges, it was necessary to set up rules as to the categorization of a response in case of disagreement among the judges.

The following rules were adopted categorizing responses where there was lack of unanimity among the judges:

- a) When two judges agreed, with the third disagreeing, the category adopted by two judges was "accepted".
- b) When all three judges disagreed among themselves, the response was assigned to the fourth category, i.e., "not categorizable in terms of the first three categories".

The frequencies and percentages of complete agreement, partial agreement and total disagreement among the judges in respect to the responses about father and mother are shown in Table XI.

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TABLE XI

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The frequencies and percentages of agreement and disagreement between each pair of judges are shown in Table XII.

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TABLE XII

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T A B L E    X I

FREQUENCIES AND PERCENTAGES OF COMPLETE AGREEMENT,  
PARTIAL AGREEMENT AND TOTAL DISAGREEMENT AMONG THE  
THREE JUDGES IN RESPECT TO CATEGORIZING RESPONSES  
IN THE PARENT QUESTIONNAIRE

Question- naire	Complete agreement		Partial agreement		Complete disagreement		Total	
	f.	%	f.	%	f.	%	f.	%
Father	30	41.0	39	53.5	4	5.5	73	100.0%
Mother	31	42.0	36	48.5	7	9.5	74	100.0
Combined	61	41.5	75	51.0	11	7.5	147	100.0

T A B L E    X I I  
 FREQUENCIES AND PERCENTAGES OF AGREEMENT AND DISAGREE-  
 MENT IN REGARD TO CLASSIFICATION OF THE "FATHER" AND  
 "MOTHER" RESPONSES AMONG PAIRS OF JUDGES

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Judges	Father quest.				Mother quest.			
	Agree f.	%	Disagree. f.	%	Agree f.	%	Disagree f.	%
1 & 2	54	74	19	26	54	73	20	27
1 & 3	39	54	34	46	37	50	37	50
2 & 3	37	51	36	49	39	53	35	47
Mean % agreement			60%				59%	

While the level of complete agreement among judges (41%) is far from the level reported by Rokeach (95%): complete agreement is approximately ten times that expected by chance (Appendix "J") and complete disagreement is only 15% of what might be expected by chance.

One of the reasons for the relatively low level of agreement of the judges can be derived from examination of Table XIII, which indicates that two of the judges tended to agree with each other in about 75 per cent of the judgments (on both questionnaires), while the third judge tended to disagree with both. This third judge did not make use of the "not categorizable" category, but preferred to force all

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TABLE XIII

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responses into one of Rokeach's three categories.

The two judges who tended to agree with each other also (individually) arrived at the conclusion that the "non-categorizable" responses may be broken down meaningfully into "hostile" and "non-categorizable" classes. This new class has been included in the table reporting the results.

Table XIII gives the distribution of responses to the question: "What sort of person was your father?"; in terms

T A B L E    XIII

FREQUENCY AND PERCENTAGE OF RESPONSES TO "WHAT SORT OF  
A PERSON WAS YOUR FATHER?" BY OPEN, MIDDLE AND CLOSED  
SEGMENTS IN EACH OF FIVE CATEGORIES

	Open N=23		Middle N=26		Closed N=24		Total N=73		Total excl. non class N=61 %
	f.	%	f.	%	f.	%	f.	%	
Glori- fying	7	30.4	11	42.5	8	33.3	26	35.5	42.5
Mildly ambi- valent	7	30.4	5	19.1	7	29.1	19	26.1	31.2
Ambi- valent	3	13.1	4	15.3	4	16.7	11	15.1	18.0
Hostile	4	17.4	0	0.0	1	4.2	5	6.9	8.3
Not classi- fiable	2	8.7	6	23.1	4	16.7	12	16.4	
Total	23	100.0	26	100.0	24	100.0	73	100.0	100.0



of Rokeach's three categories, with two categories ("hostile" and "not classifiable in these terms") added.

The fact that certain responses were "hostile" and others not classifiable in Rokeach's terms makes exact comparison of Rokeach's and the present group impossible. However, a fair approximation can be achieved by combining the hostile responses with the ambivalent ones and disregarding the non-classifiable responses.

Table XIV gives the comparison in terms of percentages between the present groups' and Rokeach's groups' data in this manner.

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TABLE XIV

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A  $\chi^2$  test of the 3x3 table represented in Table XIV results in an insignificant  $\chi^2 = 2.379$ . At 4 df. it would have to reach 9.49 to be significant at  $p = .05$ . This is contrary to Rokeach's findings. As an inspection of Table XIV will prove: the present group and Rokeach's group do not differ much in terms of total group percentages as to glorification, expression of ambivalence or mild ambivalence; rather, the differences occur within the segments.

It is also interesting to note that the present Open group expresses more glorification and less ambivalence than the Closed group which is in direct contradiction to Rokeach's findings.

T A B L E   XIV

COMPARISON OF THE DISTRIBUTION OF THE RESPONSES OF THE PRESENT SEGMENTS AND ROKEACH'S SEGMENTS TO THE QUESTION: "WHAT SORT OF PERSON WAS YOUR FATHER?", WHEN HOSTILE RESPONSES ARE COMBINED WITH AMBIVALENT RESPONSES AND UNCLASSIFIABLE RESPONSES ARE DISREGARDED FOR THE PRESENT GROUPS; IN PERCENTAGES

	Open		Middle		Closed		Total	
	Pre- sent	Rokeach	Pre- sent	Rokeach	Pre- sent	Rokeach	Pre- sent	Rokeach
Glori- fying	33.3	12.0	55.0	70	29.6	28	38.3	46
Mildly ambi- valent	33.3	24	25.0	22	25.9	60	27.9	32
Ambi- valent	33.3	64	20.0	7	44.5	12	33.8	32
	100.0	100	100.0	100	100.0	100	100.0	100

Table XV gives the distribution of responses to the question, "What sort of person was your mother?". None of the judges rated any of them as "hostile", so Rokeach's three categories were used with a "not classifiable in these terms" category added.

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TABLE XV

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An inspection of this table is sufficient to predict that a test of significance will not lead to much. As expected, an  $\chi^2$  test for the 3x3 table (i.e. after elimination of the non-classifiable response category) yields an  $\chi^2$  of 6.368, whereas  $\chi^2$  would have to reach 9.49 to be significant at  $p = .05$  with 4 df.

The distribution (with unclassifiable responses eliminated) will now be compared to Rokeach's distribution to this question, in terms of percentages.

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TABLE XVI

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Once again, the results point to a rather surprising similarity of reaction when the present and Rokeach's group are looked at as "total groups" - with no similarity however when the respective segments (Open, Middle and Closed) are compared individually.

T A B L E X V

FREQUENCY AND PERCENTAGE OF RESPONSES TO "WHAT SORT OF  
PERSON WAS YOUR MOTHER", BY OREN, MIDDLE AND CLOSED  
GROUPS IN EACH OF FOUR CATEGORIES

	Open		Middle		Closed		Total		Total excl. not classifiable
	f.	%	f.	%	f.	%	f.	%	%
Glori- fying	10	43.5	12	46.4	12	48.0	34	46.0	52.2
Mildly ambi- valent	9	39.1	4	15.3	4	16.0	17	23.0	26.2
Ambi- valent	2	8.7	6	23.0	6	24.0	14	18.9	21.6
Not classi- fiable	2	8.7	4	15.3	3	12.0	9	12.1	
Total	23	100.0	26	100.0	25	100.0	74	100.0	100.0

T A B L E X V I

COMPARISON OF THE DISTRIBUTION OF THE RESPONSES OF THE PRESENT AND ROKEACH'S SEGMENTS TO THE QUESTION: "WHAT SORT OF PERSON WAS YOUR MOTHER?", WHEN UNCLASSIFIABLE RESPONSES OF THE PRESENT GROUP ARE ELIMINATED: DATA ARE REPORTED IN TERMS OF PERCENTAGES

	Open		Middle		Closed		Total	
	Pre- sent	Rokeach	Pre- sent	Rokeach	Pre- sent	Rokeach	Pre- sent	Rokeach
Glori- fying	47.6	12.0	54.6	74	54.6	32	52.2	49
Mildly ambi- valent	42.8	20	18.2	19	18.2	56	26.2	28
Ambi- valent	9.6	68	27.2	7	27.2	12	21.6	23
Total	100.0	100	100.0	100	100.0	100	100.0	100

We shall now turn to the results of the third question: "What other people (relatives, guardians, friends, etc.) influenced your development?"

Rokeach (1960, pp.360-361), categorized his responses into three categories, as follows:

"Clergyman and/or boy scout leader"

"Several people specifically mentioned"

"A general response with no reference to any one person or group!"

An attempt to fit the present groups' answers to this question into Rokeach's three categories met with immediate difficulties. As to the first category: not one of our 65 Ss answered "clergyman and/or boy scout leader", while 70 per cent of Rokeach's Middle group and 60 per cent of his Closed group were in this class. This difference, however, only led to an empty category for our group; the real difficulties arose from the fact that his second and third categories are poorly defined.

Rokeach's second category, "Several people specifically mentioned", is "explained" in the text as follows:

"Several people were mentioned rather than just one or two, such as clergymen, boy scout leaders, friends with whom one had shared a sport, etc."

This leaves the question wide open as to the proper classification of the following frequent responses: "Friends"; "Brothers and sisters"; "Two stepfathers" - in other words, any answer which refers to (a) only one or two people who are not boy scout leaders or clergymen (b) only members of the

immediate family. To confuse things further, five of our Ss denied explicitly any outside influence (implying that they were only influenced by their parents).

Rokeach's third category is not elaborated on in the text.

This leaves us with the problem of classifying answers which combine reference to one or two individuals and groups of a general nature, such as: "Aunts, uncles, brothers, friends - I couldn't begin to name them all" or "Father's friends (some in business, others in diplomatic service), grade 7 teacher". Even the question as to what constitutes a "group" is left open. Are "Friends", "Father's friends", or "My high school teachers" a group? How about "brothers and sisters"?

It was foreseen that a fourth category ("Not fitting Rokeach's three categories") might have to be added to Rokeach's three categories. After some considerable effort to fit at least a large part of the responses into the three original categories, it became obvious that the addition of a fourth category would not overcome the problem - the three categories did not form even a "rough" continuum. They may have fitted the answers of Rokeach's group but the lack of continuity and inadequate description of terms appeared to render them useless for any meaningful classification of the present groups' responses.

The answer seemed to lie in the direction of establishing an entirely new set of categories, well defined as to content

and suitably constructed to test the hypothesis in question. The following categories were adopted:

- 1) No one (beyond immediate family, i.e. parents and siblings)
- 2) "Enlarged family" (uncle(s), aunt(s), grandparent(s).)
- 3) At least one, but not more than two "outsiders"
- 4) More than two "outsiders".

These categories seem to form a continuum ranging from the most constricted immediate family influence to influence by many "outsiders". They would also appear suitably to test Rokeach's hypothesis that Open segments should report significantly greater breadth of influence outside of the immediate family than Closed segments. (1960, p.360).

The categories will now be described in greater detail.

The immediate family is usually considered to consist of parents and siblings. Therefore the most "constricted" category might logically contain those admitting of influence from "no one" (except their parents), or from brother(s) and/or sister(s) only.

The next, somewhat less restricted category would contain those referring to what might be called the "enlarged family", namely uncle(s), aunt(s) and/or grandparent(s), (with or without simultaneous reference to siblings) but no one outside this immediate and/or enlarged family group.

A third category takes in those referring to at least one



but not more than two "outsiders" (with or without simultaneous reference to the immediate or enlarged family).

The fourth (and last) category includes those who admit to influence from more than two "outsiders", either by naming them directly or by using generic terms implying more than two persons as: "Friends", "High school teachers", "World War 2", "Anyone I came in contact with helped a little".

All but two responses of our group fitted easily and naturally into these classes. The two questionable responses were: "Friends" (which was assigned to category 4) and "Relatives played a major part from the social point of view" which was assigned to category 2.

The data, thus classified, are reproduced in Table XVII.

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TABLE XVII

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Inspection of this table indicates no major differences among the three segments.

T A B L E   XVII  
 FREQUENCY OF RESPONSES TO "WHAT OTHER PEOPLE  
 (RELATIVES, GUARDIANS, FRIENDS, ETC.) INFLU-  
 ENCED YOUR DEVELOPMENT?" BY OPEN, MIDDLE, AND  
 CLOSED SEGMENTS

	Open	Middle	Closed	Total
Mean D-Score	107.81	150.41	192.91	N.A.
Type of response	f.	f.	f.	
Immediate Family	2	6	4	12
Enlarged Family	4	5	6	15
One or Two "Outsiders"	3	1	2	6
Three or More "Outsiders"	12	10	10	32
Total	21	22	22	65

## CHAPTER VII

### DISCUSSION AND CONCLUSIONS

The present study was aimed at finding answers to the following questions:

- 1) Is there any relationship between dogmatism, and the ability (or willingness) to accept suggested concepts on the Rorschach ink blots?
- 2) Rokeach found differences between high D-scorers and low D-scorers in their performance on one perceptual task but not on two other; he also found differences between their responses to a questionnaire: are his conclusions upheld in a repetition of the study?
- 3) Where will the performances and responses of the Middle segment on the "D"-scale stand relative to the Open and Closed segments?
- 4) Is one justified in agreeing with Rokeach's assumption that dogmatism (as measured by the "D"-scale) is a continuum?

The findings of the present project are quite definite in regard to the first question. No relationship was demonstrated between dogmatism and acceptance of suggested Rorschach concepts.

The second question cannot be answered in quite such definite terms; in some ways the findings seem to raise more questions than they answer.

The 4-block Kohs analytical task results upheld Rokeach's findings. There were no differences among our segments. Obviously, however, the same result would have been expected if the segments had been randomly selected rather than on the basis of their D-scores. This result alone does little towards supporting, or detracting from, Rokeach's theoretical framework.

Some of the Kohs block synthesis tasks showed a degree of differentiation between the extreme segments in the direction predicted by Rokeach, although generally at a lower level of significance than Rokeach had reported for his segments. In no case, however, was the direction of the results opposite to that found by Rokeach. It does seem that extremely Open subjects do somewhat better, on the average, than extremely Closed subjects on the Kohs synthesis tasks.

None of the differences in the synthesis tasks was significant when all three segments were considered simultaneously. This was true whether pass/fail ratios or time scores were examined. This result, as well as the performance of the Middle segment, has direct bearing on the question as to whether the "D"-scale represents a continuum. It will be discussed in the section dealing with this problem (pp.99-104).

We shall now turn to the results of the Witkin test. Like the Kohs analytical task, this was expected to show no differ-

ence among our three segments. While this expectation was confirmed in regard to time scores, it proved quite wrong in regard to pass/fail scores; the total pass/fail scores differentiated at  $p < .02$  level when all three segments were considered simultaneously.

A further surprise awaited us when we compared time scores of only the extreme segments: on five of the twelve cards, subjects in the Open segment solved the respective problem on the average in less time than subjects in the Closed segments. The differences were significant at  $p < .025$ .

It is a frequent occurrence to find no significant differences where others have succeeded in doing so. It is somewhat perplexing to find them where they were predicted not to occur.

Could these findings have arisen as a result of differences in the intelligence level among the subjects in the three segments? Jackson (1957) reported a negative correlation between intelligence scores and Witkin scores ( $r = .57$ ) that is, more intelligent subjects solve the Witkin problems in less time.

This interpretation does not seem readily acceptable. For one, the Kohs "analytical" task scores are known to correlate with intelligence and our three segments showed no significant differences on this test. As a matter of fact, the Open and Closed segments' Kohs analytical scores were almost indistinguishable. Secondly, Rokeach (1960, p.194) states that Open and Closed segments do not usually differ in intelligence; he points out that in only one instance in all his research did he find

the Open segment to be higher in intelligence than the Closed segment (1960, p.262). This, then, seems to make it unlikely that the Witkin score differences arose as a function of difference in intelligence levels among subjects in the three segments.

Chance could distort the findings basically in two ways: one might select one's group (by chance) in a way which influences the results in an unusual manner; or the performance of a "properly selected" group may show unusual differences due to chance events. Only repetition with different groups can give final answers in either case - but tentative conclusions may be drawn as to the probability of chance influences: by examination of the significance levels of the differences found as well as the number of indicators which differentiate between groups. In the present case both of these indicators argue against our results having been due to chance. The significance level of the difference in pass/fail ratio among the three segments is quite high ( $p < .025$ ); and five out of the twelve Witkin problems differentiate the extreme segments at  $p < .05$  in regard to time scores.

It seems then that neither difference in intelligence among the three groups, nor "chance" seems to offer a likely explanation for the unexpected Witkin results in the present study. We shall therefore accept, tentatively, the suggestion that Witkin scores differentiate among individuals according to their position on the dogmatism scale. Simultaneously we recommend that an intelligence test be made part of any future

research project in this area and segments selected according to their D-scores be carefully equated on this variable.

We may now examine the results of the questionnaire. Like the SCRT scores, this questionnaire failed to produce any differences among our three segments, or even among extreme segments of our group. This result should perhaps have been expected in regard to the third question ("breadth of influence") because the categories used by Rokeach to classify the answers of his group appear to have been tailor-made to fit his rather narrowly constituted group. Furthermore, in the present author's opinion, they were not even properly designed to test his hypothesis. These considerations were dealt with in detail in the last chapter and will not be repeated here.

The reasons for the absence of the predicted differences among the three segments in expressing "ambivalence", "mild ambivalence" or "glorification" towards their parents are less obvious. Our findings contradict not only Rokeach's results but also seems to negate what might be expected on the basis of Frenckel-Brunswick's work on which this study of Rokeach's was based (Rokeach, 1960, pp.361-362).

What makes the "negative" results the more remarkable is the fact that the distribution of "ambivalent", "mildly ambivalent" and "glorifying" responses for our combined segments (51 subjects) is almost identical to the distribution reported by Rokeach for his combined segments. This is certainly not something to be expected by chance. The mystery deepens when

we consider the difference in the constitution of the two groups. Rokeach's group was unusually homogeneous in its social background and occupational goals and subscribed to a rather unusual value system. Our group was designed to be as heterogeneous as possible within the limits of academic attendance.

Had the combined results not been so similar, a relatively simple interpretation of the difference in results could have been offered. It would have been suggested that it may be ascribed to the lack of anonymity for two-thirds of our group in spite of everything that was said in Chapters V and VI in this regard. It will be remembered that Rokeach's subjects worked under conditions of assumed anonymity whereas two-thirds of our group had foregone this precaution by consent.

Due to the similarity of the combined results, this interpretation does not appear reasonable.

These results make it necessary to question Rokeach's basic assumptions in regard to differences in expressions of "glorification", "mild ambivalence" and "ambivalence" towards parents between highly dogmatic (authoritarian) and strongly non-dogmatic subjects. Since his study was based on similar findings by Frenckel-Brunswick (1949), the latter author's conclusions come into question.

The results regarding repeatability of certain findings of Rokeach may now be summarized as follows:

- a) The 4-block Kohs analytical task proved to be repeatable with identical results.



- b) The Kohs synthesis task mostly showed the differences predicted and found by Rokeach among extreme segments though at lesser significance levels than had been reported for Rokeach's group.
- c) The Witkin test appears to differentiate among High, Middle and Low segments in pass/fail ratio, and among extreme segments both in pass/fail ratio and in terms of time scores. While this establishes the Witkin test as a better indicator of dogmatism than the Kohs synthesis tasks, the results are obviously contrary to Rokeach's.
- d) The results of the questionnaire study were also in direct contradiction to Rokeach's findings, suggesting that Open, Middle and Closed subjects do not differ in their expressions of "glorification", or "ambivalence" towards their parents; neither do they differ in breadth of influence reported in regard to their development.

We shall now turn to the matter of the performance of the Middle segment on the various tasks, relative to the Open and Closed segments' position.

This question came up for discussion because of the anomalous behavior of the Middle group in Rokeach's questionnaire project. It will be remembered that this segment acted on the whole more like the Closed segment - and at times, like a

"Super-Closed" segment - while occasionally it dropped to a level indistinguishable from the Open segment. The major reason for repetition of the questionnaire about parents and "others who had influence" was to see whether upon repetition with a less biased group the Middle segment would come to occupy a more "normal" position between the Open and Closed segments.

Since the questionnaire demonstrated no difference among the three segments, it proved of no use in elucidation of the status of the Middle segment.

We are thus reduced to the examination of the Middle segment's performance on the perceptual tasks.

There was, of course, no difference expected or observed between the three segments on the Kohs analytical task.

The position of the Middle segment in the Kohs synthesis tasks is at best of secondary interest because the differences in measures of performance in the three segments failed to reach acceptable levels of significance. With this reservation, we observe that the Middle segment subjects had exactly the same pass/fail ratio on three of the four Kohs synthesis tasks as the Closed segment subjects and demonstrated a score half way between the Open and Closed subjects' scores on the fourth task (A-3).

If we examine the combined four task mean time scores of the three segments, we find the Middle segment about half way between the Open and Closed segments but somewhat closer to the

Closed end (Table VII, p.67). In only one of the individual tasks do we find Middle subjects doing worse, on the average, than Closed subjects, and here the difference is quite negligible. In other words, on the Kohs synthesis tasks the Middle segment acts mainly as if it were part of the Closed group. It occupies middle position on two indicators. At no time does it veer toward the Open segment, nor does it act as a "Super-Closed" group.

The most reliable test of the position of the Middle segment should be its behavior on the Witkin test because here over-all significant differences were demonstrated among the three segments' pass/fail ratios. Inspection of Table IX will show that for all twelve cards combined the difference between the pass/fail ratios of the Middle and Closed segments is not significant, whereas the difference between the Middle and Open segments is significant at  $p < .01$ . By this index, the Middle segment behaves like the Closed one. Actually, Middle subjects failed a few more problems on this test than Closed subjects but the difference is not large enough to suggest that the Middle segment acted like a "Super-Closed" segment.

We shall now examine the behavior of the Middle segment on the four individual problems which were found to differentiate significantly among segments (Table IX).

Only one of the twelve problems (D-1) differentiates the Middle from the Closed segments significantly ( $p < .05$ ). In this problem subjects of the Open and Closed segments produced almost

identical results while the Middle subjects registered a high rate of failure. Since the Middle and Closed groups were differentiated in only one of twelve problems and the significance level reaches only  $p < .05$ , the result cannot be taken very seriously and should probably be attributed to chance.

Thus the examination of differences among pass/fail ratios of the three segments in the Witkin test suggests that the Middle segment is not clearly distinguishable from the Closed segment on this test.

The differences in mean time scores on all twelve cards of the Witkin test did not reach acceptable levels of significance among the three segments and therefore this index can only be given secondary consideration. In other words, the same condition prevails here as did in regard to the Kohs synthesis tasks; the differences may have easily arisen by chance.

As examination of Table X (p.76) will show the total mean time required for subjects in the Middle segment is again very close to the mean time of Closed subjects, and quite far from the Open subjects' time score.

In only three individual problems do the Middle subjects exceed the time requirements of the Closed subjects and in only two of these does this difference reach appreciable size. One of these is card D-1, mentioned above in connection with similar findings in regard to pass/fail ratio; the other card is H-1. At the other extreme, Middle subjects solve two problems in shorter mean time than Open subjects (C-2 and G-1).

In both cases however the difference was not only negligible between Middle and Open segments, but also between Open and Closed segments. In other words, these two cards simply do not differentiate between any of the segments.

It appears, then, that this indicator (scores on individual problems) again places the Middle and Closed segments together.

We shall now summarize the position of the Middle segment in relation to the Open and Closed segments' position. The Middle segment acts indistinguishably from the Closed segment on all of the statistically reliable indicators; it occupies a middle position only occasionally, and on indicators of insufficient statistical reliability; it acts neither as a "Super-Closed" segment, nor similarly to the Open segment.

Rokeach suggested that the anomalous behavior of the Middle segment in his questionnaire study may be due either to the unusual and constricted composition of the group dealt with; alternately, he suggested that it may be due to lack of sensitivity of the "D"-scale in segregating Closed and Middle subjects. His latter alternative was rejected in the present study on the grounds that his Middle segment did not, in fact, behave much like his Closed segment.

In the present repetition of his study, however, the Middle group actually does appear to behave like the Closed segment; and this happened not only in the questionnaire study but in the perceptual tasks as well.

This leads us to conclude that:

- a) the anomalous behavior of the Middle group in Rokeach's questionnaire study was probably due to the unusual composition of the group.
- b) it does seem that there are no real differences between subjects with high D-scores and subjects with Middle D-scores.

We are now ready to examine the final question: is one justified in regarding the "D"-scale as a continuum?

The strongest indication against regarding the "D"-scale as a continuum came from the questionnaire results of Rokeach; if our Middle segment had behaved in a similarly anomalous manner on this or any other "test", the answer to our question would have been an unqualified "no".

The questionnaire did not differentiate at all among our segments; neither did the SCRT nor the Kohs analytical task. The Kohs synthesis task and Witkin time score differences among segments failed to reach acceptable levels of significance. This leaves us with only the Witkin pass/fail scores to arrive at a decision, with perhaps the Kohs synthesis and Witkin time scores as "auxiliary criteria".

In terms of the Witkin pass/fail scores, the Middle segment acted indistinguishably from the Closed segment. It acted similarly on all auxiliary indicators except the Kohs synthesis total time scores, where the Middle segment occupied a position

rather close to the actual mid-point.

This evidence leads us to the tentative conclusion that the "D"-scale, at least in its present form, does not constitute a continuum. People with low D-scores seem to occupy one pole and people with middle or high D-scores occupy the opposite pole.

Rokeach himself offered the suggestion that the "D"-scale, in its present form, may not distinguish between Closed and Middle subjects (1960, p.363). It is a philosophical question whether it is appropriate to postulate the existence of a continuum if the instrument which operationally defines this continuum consistently produces only "polar" results.

Perhaps the philosophical part of the "argument" may be resolved by restating Rokeach's position in somewhat different words, as follows:

"With the present form of the "D"-scale we have been able to demonstrate differential behavior in certain areas between groups with very low D-scores on the one hand, and groups with either middle or high D-scores on the other. It is suggested that the "D"-scale questionnaire can probably be refined further so it will "select" a Middle segment which will occupy a position somewhere in between the high-D and low-D segments in a consistent manner, while at the same time the composition of the high-D and low-D groups would not change materially."

It was not the purpose of the present study to analyze the structure of the "D"-scale questionnaire or to suggest possible improvements in it.

One tentative suggestion will however be offered for segregating the hypothetical Middle segment (if such exists) more adequately from the Closed segment. Only further research

can determine whether this method will lead to the desired result.

There is only one way in which an individual can get high (or low) D-scores, namely by agreeing (or disagreeing) strongly with the items in the "D"-scale. There are, however, many ways in which a person can obtain a middle D-score. Two extreme ways would be to (a) express strong disagreement on about half the items, and equally strong agreement on the other half; (b) express very mild agreement and very mild disagreement, in about equal proportion.

The person who expresses mostly very strong agreement and disagreement would seem to have strong, definite belief and disbelief systems. Would it not be reasonable to assume that he belongs more to the dogmatic than the Middle segment? If this assumption is correct it would follow that the Middle group may be "contaminated" with high-D subjects under the present scoring system. This might explain why the Middle segment appears to act more like the Closed end.

There is a relatively simple way to test this assumption in future research. In addition to adding subjects' scores on the "D"-scale algebraically, we can also add them without regard to the plus or minus sign. Those with very high "absolute" scores would be removed from the Middle segment and tentatively assigned to the Closed segment; the cutting point would of course have to be determined arbitrarily in such exploratory research; 20 per cent may be a reasonable starting point.

An attempt was made to examine this possibility in the



present project, as an afterthought. The scores of the Middle segment were added without regard to plus or minus sign and the performance of the five subjects with the highest absolute scores was compared with the performance of the remaining twelve subjects in regard to the various perceptual tasks. No consistent differences were found; this may be due, however, to the extremely small size of the "high absolute score" group. The "regular" and "absolute" D-scores of the

---

TABLE XVIII

---

Middle segment are reproduced in Table XVIII.

Summary of findings: The findings and conclusions of the present study can be summarized as follows:

- 1) Rokeach's "D"-scale does not appear to constitute a continuum as alleged by its author. It seems to have a two-pole structure; those with low D-scores cluster around one pole and those with middle or high D-scores cluster around the other, at least in terms of similarity of behavior on certain perceptual tasks.
- 2) Contrary to Rokeach's findings, Jackson's adaptation of the Witkin Embedded Figure test seems to differentiate Open segments on the one hand and Middle and Closed segments on the other. Open subjects fail the tasks significantly less frequently than Middle or Closed subjects. The tendency of Open subjects to

## T A B L E XVIII

"REGULAR" AND "ABSOLUTE" D-SCORES OF SUBJECTS IN  
THE MIDDLE SEGMENT

Subject	Regular D-score	Absolute D-Score
1	150	254
2	149	251
3	157	251
4	152	248
5	151	247
6	149	241
7	151	237
8	153	237
9	151	237
10	153	237
11	155	237
12	146	232
13	147	231
14	151	231
15	152	224
16	147	223
17	152	214

perform better is also evident in terms of time scores though the difference does not reach an adequate level of significance. It does not appear likely that these differences can be due to differences in intelligence levels among the subjects in the three segments.

- 3) Rokeach's findings were upheld in regard to differential behavior of extremely Open and Closed segments on some of the Kohs synthesis tasks, but at reduced levels of confidence. No over-all differences were found when all three segments were considered simultaneously.
- 4) Rokeach's findings were upheld in regard to lack of differences among groups selected on the basis of their D-scores on the simple four-block Kohs analytical task.
- 5) Contrary to Rokeach's findings, the three experimental segments showed no difference in their expression of "glorification", "mild ambivalence" or "ambivalence" in regard to their parents; neither was there any difference in the breadth of influences beyond the immediate family group reported by the three segments. This finding also raises questions regarding relevant findings by Frenckel-Brunswick.

- 6) The results did not support the present author's expectation that Closed subjects would be less willing (and Open subjects more willing) to accept suggested concepts on the Rorschach ink blot cards.
- 7) It was suggested that the two-pole structure of the dogmatism scale may be a function of the present scoring system in that it may contaminate the "real" Middle group with certain individuals who may be more appropriately classed as Closed subjects. A simple method for examining this possibility in future research was suggested.
- 8) Since the differences which the present experimental segments demonstrated on the Witkin test may conceivably be due to differences in mean intelligence levels, it was recommended that this variable be carefully controlled in future research.

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## APPENDIX "A"

APPROXIMATE TEXT OF TALK GIVEN TO VARIOUS CLASSES  
PARTICIPATING IN THE PRESENT PROJECT AS AN INTRO-  
DUCTION TO THE ADMINISTRATION OF THE  
"D"-SCALE AND THE QUESTIONNAIRE

Ladies and gentlemen, I would like to ask your co-operation in a research project sponsored by the Department of Psychology of this University. As you know, a university is not only an institution of higher learning; part of its function is to pursue research, and in the social sciences research requires the participation of human beings. Some of you may have engaged in research projects yourself, and others may do so at a later date - I sincerely hope that this fact alone will assure your active co-operation.

The project I am engaged in actually consists of two parts. The first part requires you to fill in a public opinion questionnaire which I will hand out shortly. It contains 40 statements and you are asked to agree or disagree with each statement on a six-point scale. If you agree strongly with the statement, you put a plus-3 opposite it on the margin; if you "generally" (but not strongly) agree, you mark it plus-2; if you just barely agree (but agree more than disagree) you mark it plus-1. Similarly, if you strongly disagree, you mark it minus-3, etc.

There is also a three-question questionnaire attached in which you are asked about what sort of persons your parents were when you were growing up, and what other people may have influenced your development.

Ordinarily this type of questionnaire should be anonymous. This time, however, I am going to ask you to attach your name and phone number to it. The reason is that for the second part of this project I shall want to ask a certain number of you to sacrifice an hour to meet me individually in the Psychology Department. In order to be able to arrange this meeting, I have to know your names. I realize that this is an unusual request, but I can assure you that psychological ethics require that nothing you put down on this questionnaire will be divulged to anyone. The report on the research project will not mention any names and in fact nobody but myself will see your individual questionnaires. As I have said before, the only reason for asking you to put your names down is so that I can get in touch with a number of you for the second part of this project. (In the last three classes the following sentence was added:)

## APPENDIX "A" (Cont'd)

Of course, if anyone feels strongly about not putting his name down, this is perfectly all right. Even then, I would ask you to fill out both the public opinion questionnaire and the questionnaire about your father and mother. Thank you.

## APPENDIX "B"

THE DOGMATISM SCALE (FORM E)  
AND INSTRUCTIONS FOR COMPLETION

July 1961

UNIVERSITY OF BRITISH COLUMBIA

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about still others. Whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the right margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3; or -1, -2, -3, depending on how you feel in each case:

+1: I agree a little	-1: I disagree a little
+2: I agree on the whole	-2: I disagree on the whole
+3: I agree very much	-3: I disagree very much

The last page contains three questions relating to your family background which you will find quite self-explanatory.

\* \* \* \* \*

1. In the history of mankind, there have probably been just a handful of really great thinkers . . . . .
2. It is better to be a dead hero than to be a live coward . . .
3. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person . . . . .
4. To compromise with our political opponents is dangerous because it usually leads to betrayal of our own side . . . . .
5. Once I get wound up in a heated discussion I just can't stop . . . . .
6. In times like these, a person must be pretty selfish if he considers primarily his own happiness . . . . .



7. A group which tolerates too much difference of opinion among its own members cannot exist for long . . . . .
8. My blood boils whenever a person stubbornly refuses to admit that he is wrong. . . . .
9. Most of the ideas printed today aren't worth the paper they are printed on. . . . , . . . . .
10. There are a number of people I have come to hate because of the things they stand for. . . . .
11. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects . . . . .
12. The present is all too often full of unhappiness - it is only the future that counts . . . . .
13. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all" . . . . .
14. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on . . . . .
15. It is only when a person devotes himself to an idea or cause that life becomes meaningful . . . . .
16. The highest form of government is Democracy and the highest form of Democracy is a government run by those who are most intelligent . . . . .
17. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own . . . . .
18. The United States and Russia have just about nothing in common . . . . .
19. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes . . . . .
20. Man on his own is a helpless and miserable creature . . . . .
21. If given a chance, I would do something of great benefit to the world . . . . .
22. There are two types of people in this world: those who are for the truth, and those who are against it . . . . .

## APPENDIX "B" (Cont'd.)

23. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups . . . . .
24. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what others are saying . . . . .
25. Of all the different philosophies which exist in the world there is probably only one which is correct . . . . .
26. Most people just don't know what is good for them . . . . .
27. Fundamentally, the world we live in is a pretty lonesome place . . . . .
28. When it comes to differences of opinion in religion, we must be careful not to compromise with those who believe differently from the way we do . . . . .
29. The main thing in life is for a person to want to do something important . . . . .
30. Most people just don't give a "damn" for others . . . . .
31. I'd like it if I could find someone who could tell me how to solve my personal problems . . . . .
32. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp . . . . .
33. There is so much to be done and so little time to do it . . . . .
34. A man who does not believe in some great cause has not really lived . . . . .
35. It is only natural for a person to be rather fearful of the future . . . . .
36. The worst crime a person could commit is to attack publicly the people who believe in the same things he does . . . . .
37. In a heated discussion I often find it necessary to repeat myself to make sure I am being understood. . . . .
38. A person who thinks primarily of his own happiness is beneath contempt . . . . .
39. While I don't like to admit this even to myself, my secret ambition has always been to become a great man like Einstein or Beethoven or Shakespeare . . . . .
40. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted . . . . .

APPENDIX "C"  
THE QUESTIONNAIRE

When you were growing up:

1) What sort of person was your father?

---



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2) What sort of person was your mother?

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3) What other people (relatives, guardian, friends, etc.) influenced your development?

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\* \* \* \* \*

A small "sample" of this group will be asked to cooperate in the second part of the present study - by coming individually (at any time convenient) to the Psychology Department hut for about one hour, some time during the next 2 to 2½ weeks. In order to be able to get in touch with you to arrange for this one hour period (should you be selected), please mark down your name, phone number, the best time of the day to call you, and the probable best day of the week and hour of the day for the one hour period.

Thank you.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Best time to call

Best time (probable) for one hour period: \_\_\_\_\_  
(if known)

\* \* \* \* \*

## APPENDIX "D"

LIST OF SUGGESTED RORSCHACH CONCEPTS FOR THE  
 SCRT TEST (CONCEPTS MARKED "a" ARE "POPULAR";  
 CONCEPTS MARKED "b" ARE SEMI-POPULAR; CONCEPTS  
 MARKED "c" ARE UNUSUAL)

## Card I.

- a.1. Bat hovering
- a.2. Butterfly flying
- a.3. Pelvis
- b.1. Clouds
- b.2. Messy black stuff
- b.3. Animal's head
- c.1. Bell
- c.2. Cliff
- c.3. Statue

## Card II.

- a.1. Black bear's head
- a.2. 2 Scotties
- a.3. 2 Clowns
- b.1. Bird
- b.2. Smoke
- b.3. White fish
- c.1. Indian head
- c.2. George Washington's head
- c.3. Boot

## Card III.

- a.1. Cannibals
- a.2. Waiters bowing
- a.3. 2 men pulling
- b.1. Colored butterfly
- b.2. 2 birds
- b.3. Red brooch
- c.1. Black slippers
- c.2. Bucket
- c.3. Black bow tie

## Card IV.

- a.1. Animal skin
- a.2. Fur rug
- a.3. Pair of overshoes
- b.1. Black dog's head
- b.2. Man sitting down
- b.3. Cow's head
- c.1. Scotty dog
- c.2. Witch on a broom
- c.3. Flower vase

## Card V.

- a.1. Bat flying
- a.2. Butterfly
- a.3. Flying squirrel
- b.1. Buck's head
- b.2. Bird's beak
- b.3. Ballet dancer
- c.1. Man from Mars
- c.2. Dirt
- c.3. Animal's head

## Card VI.

- a.1. Animal skin
- a.2. Fur rug
- a.3. Cat's whiskers
- b.1. Lighthouse
- b.2. 2 kings' heads & crowns
- b.3. Snake's head
- c.1. Clouds
- c.2. Bed post
- c.3. Bird in nest

## APPENDIX "D" (Cont'd.)

## Card VII.

- a.1. Lambs gambolling
- a.2. Aerial view
- a.3. Women gossiping
  
- b.1. Elephant's trunk
- b.2. Statue
- b.3. Feathered head-dress
  
- c.1. Dog's head
- c.2. White lamp
- c.3. House & garage

## Card VIII.

- a.1. Medical drawing
- a.2. Flesh colored orchids
- a.3. Colored insignia
  
- b.1. Red paint
- b.2. Green tree
- b.3. Heaven and hell
  
- c.1. Pink cushion
- c.2. Book
- c.3. Pink coat

## Card IX.

- a.1. Colored tropical growth
- a.2. Medical drawing
- a.3. Atomic explosion
  
- b.1. Mist
- b.2. Pink baby
- b.3. Candle
  
- c.1. Pink jacket
- c.2. Carrot
- c.3. Child on tricycle

## Card X.

- a.1. Surrealist painting
- a.2. Coral
- a.3. Bugs climbing
  
- b.1. Daffodil
- b.2. Sitting dog
- b.3. Pagoda
  
- c.1. Brown dog
- c.2. Buddha
- c.3. Rosebud

\* \* \* \* \*

## APPENDIX "E"

## RATING SCALE FOR THE SUGGESTED RORSCHACH CONCEPT TEST

Score

Acceptance, plus spontaneous introduction of  
complementary concept . . . . . 0

## Examples:

Bearheads, Card II: "Sure - as a matter of  
fact, they are after a piece of meat!"

Cannibals, Card III: "Yes - and here is a  
pair of monkeys watching them."

Acceptance with elaboration of somewhat unusual  
qualities of the concept . . . . . 1

## Examples:

Waiters bowing - Card III: "Yes - here is  
the apron!"

Green tree - Card VIII: "Mhm - I'd call  
that a Japanese yew."

a) Acceptance with spontaneous elaboration of  
usual qualities of the concept  
and/or  
b) Acceptance with expression of approval . . . . . 2

## Examples:

a) Bears - Card II: "Yes - the nose looks  
just like a bear's nose."

a) Cannibals - Card III: "Yes - they look  
real primitive!"

b) Bears - Card II: "Fine!"  
"Oh yes!"  
"Could easily be!"

b) Cannibals - Card III: "Yes, they look  
just like cannibals."

## APPENDIX "E" (Cont'd.)

<u>Hesitant acceptance (as before) but with preference expressed for alternative concept . . . . .</u>	Score 5
--	------------

Note: To be assigned to this category it is essential that the concept be accepted, in spite of preference. If doubtful, S. should be asked.

Examples:

Bears, Card II: "They could be bears though they look more like dogs to me."

Cannibals - Card III: "Well, I guess they could be though they look more like waiters to me."

<u>Straight rejection without alternative concept offered . . . . .</u>	6
---	---

Examples:

"No."

"No, I can't see that."

"Cannibals - Card III: "No, they still look like waiters to me."

<u>Rejection, with alternative concept offered . . . . .</u>	7
--	---

Examples:

Bears - Card II: "No, but they could be dogs."

Pink coat - Card VIII: "No - to me this looks like a fox fur."

Note: Occasionally an S will first reject a concept but after one or two other concepts have been gone over may return to the one he had rejected. ("Oh, now I can see ....") In such case the initial rejection should be cancelled and the acceptance registered.

## APPENDIX "E" (Cont'd)

Score

Straight acceptance with no elaboration  
or criticism . . . . .

3

Note: The following type of remark or specification does not constitute criticism and is rated 3:

"Could be, although I wouldn't have seen it myself."

"Yes - when you look at it upside down."

Examples:

"Yes, could be."

"Yes."

"Mhm."

"Yes - and there is one on the other side."

(This is rated as straight acceptance because everything is "duplicated" on the other side of Rorschach cards.)

- |  |   |                 |
|--|---|-----------------|
| a) <u>Hesitant acceptance</u>          | ) |                 |
| b) <u>Partial acceptance</u>           | ) |                 |
| c) <u>Acceptance with criticism of</u> | ) | But no alterna- |
| either the similarity of the           | ) | tive concept    |
| blot area to the concept, or           | ) | offered         |
| a "strong" criticism of the            | ) |                 |
| concept itself.                        | ) | . . . . .       |

4

Examples:

- a) "I guess it could be...."  
 "If I stretch my imagination...."  
 "I guess it has some resemblance to...."

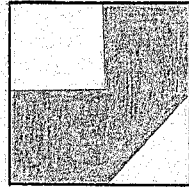
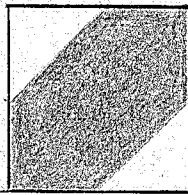
- b) Animals climbing - Card VIII: "I can see the animals but they are not climbing."  
 Witch on a broom - Card IV: "I can see a witch but she has no broom."

- c) Dog's head, Card IV: "I could see it - but sure wouldn't want to have a dog like that."  
 Carrots, Card IX: "I guess so - but I wouldn't want to eat them - they were in the earth too long!"

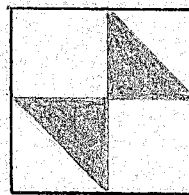


## APPENDIX "F"

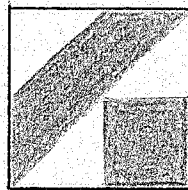
## THE KOHS BLOCK PATTERNS

A - 2  
(Exercise)

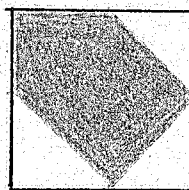
B - 1



A - 3



A - 4



B - 2

APPENDIX "G"

INSTRUCTIONS FOR THE KOHS ANALYTICAL  
AND SYNTHESIS TASKS

The 16 Kohs blocks are placed on the table; also the cards with the patterns are placed on the table upside down.

"We have 16 blocks here (point to the blocks). They are all the same. Would you like to examine one?" (Hand one block to subject.)

"We also have a few cards here, each containing a different pattern. You will be asked to reproduce each pattern in two different ways with the blocks. First, I will ask you to build the pattern exactly as it is shown on the card, with only four blocks, as quickly as you can. When you have done this, I shall ask you to rebuild the pattern but with three differences: first, you will be asked to use either nine or sixteen blocks, instead of four. At the same time you are to rebuild the pattern at right angles to the way it is shown on the card; and thirdly, you are to reverse the color scheme at the same time - in other words, what is white on the pattern should be red, and what is red on the pattern should be white."

(Show pattern A-2 and place four blocks in front of subject in a square pattern, white side up.)

"First, you are to build this pattern exactly "as is" with these four blocks."

(Wait until subject has completed this task.)

"Fine. Now I want you to rebuild the same pattern but with all 16 blocks (place the 16 blocks in front of subject), but imagine that the card is at right angles and build it that way; you are also supposed to reverse the color pattern at the same time. (Turn the card 90 degrees.) So you build it as if the card would be in front of you like this - but what is red on the card now should be built white, and vice-versa. Do it as quickly as you can. This is just an exercise and I won't be timing you, but you will be timed on the other cards."

If the pattern is one of the "B" series which is to be built with nine blocks in the synthesis phase, subject must be advised that the pattern he is to build must be symmetrical, but the proportion of the red and white area will not be exactly as shown on the card.

## APPENDIX "H"

## INSTRUCTIONS AND PROCEDURE IN THE WITKIN TEST

"I am going to show you a series of colored designs. Each time I show you one of these designs I want you to describe the over-all pattern you see in it. After you have examined each design, I will show you a simpler figure which is contained in the larger design. You will be given the larger design again and your job will be to locate the smaller figure in it. Let's go through one to show you how it's done."

Show S the larger design (sample) for 15 seconds. Then turn it over and show him the smaller figure for 10 seconds. After that, say: "I will now show you the original figure again and you are to find the smaller figure in it." Remove the smaller figure. After S finds the figure say: "Would you now trace the figure with this?" (a retracted pen)

Then: "This is how we will proceed on all trials. I would like to add that in every case the smaller figure will be present in the larger design. It will always be in the upright position - in the same position as the smaller design is in when I show it to you. It will also be exactly the same shape and size as the smaller figure. Work as quickly as possible since I will be timing you. As soon as you have found the smaller figure knock on the table so I can register the time, then proceed to trace the figure for me. If you ever forget what the smaller figure looks like while looking for it, tell me and I will show it to you again. Are there any questions?"

## APPENDIX "I"

INSTRUCTIONS TO JUDGES IN REGARD TO CLASSIFICA-  
TION OF RESPONSES TO "WHAT SORT OF PERSON WAS  
YOUR FATHER?" AND "WHAT SORT OF PERSON WAS YOUR MOTHER?"

You are requested to sort the attached cards (which contain answers of male summer school students to the questions "What sort of person was your father?" and "What sort of person was your mother?") into one of four categories; but "father" and "mother" responses are to be kept separate

1. Ambivalent
2. Mildly ambivalent
3. Glorifying
4. Not fitting in any of the above three categories.

The first three categories are the ones into which answers to an identical questionnaire were categorized by Kemp and Rokeach, as reported in Chapter 19 of Rokeach "The Open and Closed Mind" (1960). Sample answers to each category, reported by Rokeach, are attached on separate cards except, of course, the last category.

Private correspondence with Dr. Kemp indicates that the three categories were adequate for his sample; for instance, he states:

"If my memory serves me correctly, no responses of overt hostility were given. One explanation for this could be that these students were very selective coming from social service oriented and highly respected families in their separate communities; they were carefully screened for admittance to the program."

If, after the first sorting, you feel that sufficient cards in Category 4 could be classified into one additional category, please do so, and indicate the name of the chosen category on the envelope.

## APPENDIX "J"

CALCULATION OF THE SAMPLING DISTRIBUTION OF FREQUENCIES  
OF COMPLETE AGREEMENT, PARTIAL AGREEMENT AND TOTAL DIS-  
AGREEMENT WHEN THREE JUDGES ASSIGN A STATEMENT TO ANY  
ONE OF FIVE CLASSES

a) Complete agreement -

	Probability
The three judges can agree on any of the five categories; therefore possible events . . . . .	5 .04

b) Partial agreement - (two judges agree, while one disagrees)

Two judges can be selected from the three in three different ways

Two judges can agree on any one of the five categories

The remaining judge can choose any of the remaining four categories

Therefore possible events: 3x5x4 . .	60	.48
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c) Complete disagreement

The first judge can select any of the five categories

The second judge can choose any of the remaining four categories

The third judge can choose any of the remaining categories

Therefore possible events: 5x4x3 . .	<u>60</u>	<u>.48</u>
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Total possible events	125	1.00
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## APPENDIX "K"

EXAMPLES GIVEN BY ROKEACH FOR CATEGORIZATION OF  
 RESPONSES TO QUESTIONNAIRE ABOUT FATHER AND MOTHER  
 INTO "GLORIFYING", MILDLY AMBIVALENT" AND "AMBIVALENT"  
 CATEGORIES

## a) Ambivalence toward parent

Father: "Stubborn, quick tempered, but at times good natured, and just a nice guy".... "A quiet person who has done for me what I wanted if he thought it was o.k. However, he has never been a pal to whom I could take my troubles. We had a lot of fun, though, and heed each other's advice."

Mother: "some of the time she was a reserved autocrat in the home; other times she was different and likeable, almost lovable.... "Was good to me over minor things, but didn't handle the hard things too well. She had her good and bad points."

## b) Mild ambivalence

Father: "A pretty good Dad most of the time but comes down hard on things that count, which may be good...." "Very strict at times but on the whole not too hard to get along with, and understanding at all times."

Mother: "Made you toe the mark, but when you were in trouble she was real understanding. You could count on her being fair...." "She gave you the feeling you could do things. Sometimes she was hard on you when you didn't quite make the grade but most of the time she was encouraging and kind."

## c) Glorification of parent

Father: "A very fine person who tries to uphold the Christian virtue of life." "Friendly, intelligent, frank, generous, likes to spend time with his family and do things for us."

Mother: "The best, no limit in any way." "Very wonderful and understanding, kind hearted toward her children". "Unselfish, loving, tireless".