

A STUDY OF THE RORSCHACH TEST
AS A TEST OF INTELLIGENCE FOR YOUNG CHILDREN
FIVE-, SIX- AND SEVEN-YEARS OF AGE

by

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CHAPTER I
INTRODUCTION

Twenty-six years ago, in 1921, Hermann Rorschach published Psychodiagnostik, (116) a monograph, in which he reported the results of his experimentation with an ink-blot test which he had administered to 117 normal adults and 288 abnormal adults. As he stated in the monograph, Rorschach considered this publication to be but a preliminary report of his work in a field that needed further extensive investigation.

Rorschach believed the test to be unique in that from this test alone an experienced administrator might obtain for a given individual a picture of his personality structure, an evaluation of his intellectual level and an indication of the interaction between the affective and intellectual aspects of the whole person. Such a comprehensive use of the instrument required that the administrator not only make use of all the material he could obtain through the test, but also that he evaluate the results in a thoroughly configurational manner, interpreting each part of the test in its relationship to all the other parts within the whole.

The evaluation of the individual's psychological assets and liabilities was based on his perceptual responses to ten more or less formless ink-blot cards. But as Rorschach points out the perceptual experiences are so inextricably interwoven with the associative processes, memory, ideational content, ability to organize and other intellectual activities, that the perceptual responses serve as the means through which other aspects of the intellectual functioning may be judged.

Rorschach considered his test to be a more adequate test of intelligence than many other testing tools because "it presents an intelligence test almost completely independent of previous knowledge, memory, practice, and degree of education." (116, p. 183)

Although Rorschach did all of his work with adults, he was nonetheless interested in the application of the Rorschach Test to children. He wrote: "It must not be forgotten that some components of intelligence are differently developed at different ages. It is obvious that these components will be quite different in a five year old child from those in a ten year old, but there will be variations in the interplay of the components even after the 20th, 30th, or 40th year, etc. The material available at the present time does not allow the construction of a more definite picture of these intra-individual variations of the components of intelligence." (116, p. 66)

Rorschach also expressed the need for studies at different chronological age levels in order to determine the personality pattern as reflected in the test at various developmental levels. That he realized that the establishment of norms was essential to any sound interpretation was evidenced in the following:

"The development of the experience type and the changes which occur in it during the course of the individual's life span present a different problem. The experience type of a three year old child is different from that of a ten year old, that of an adolescent different from that of a thirty year old man, and that of a person of fifty is different from that of the very old. If the developmental

changes in the experience type of a large number of subjects could be charted on the experience type schemes, each would show individual differences, but there would also very probably be parallel developments to be observed. It is, of course, impossible to examine the intra-individual development of the experience type; we must be content with conclusions drawn from inter-individual studies. For this purpose, we must develop a picture of the average changes with age, taking at least 100 observations in each group for the purpose. This would be an immense task, the more difficult because it would be complicated by questions concerning the comparison itself. . . .

"The results now at hand allow us to glimpse only a few short periods of the average life span in relation to changes in experience type. We can guess at other parts of it, but for the most part, we remain in the dark." (116, p. 95)

Now, twenty-six years after Rorschach's original contribution, there are varying opinions as to the value of the Rorschach test as is shown in Faterson and Klopfer's survey of Psychologists' opinions concerning the Rorschach Method. (34) Yet it has proved so valuable to some psychologists that a person with such a broad background as Rapaport states "that it is beyond doubt the most potent single diagnostic instrument clinical psychology possesses." (111, p. 73) Krugman, head of The Bureau of Child Guidance of the Board of Education of New York City, where the test has been used routinely for years, says that "To date, the most

successful of the projective techniques is the Rorschach." (88, p. 80)

In spite of the proved value of the test there has been a conspicuous lack of well-controlled studies at the younger age levels. The need for such studies has been expressed by Rorschach workers with increasing frequency of late years. To demonstrate the need of such studies as the present one, we shall quote three of the outstanding authorities in the field, namely Krugman, Hertz, and Beck.

Krugman, in 1940, wrote:

"Still another need in Rorschach work is to determine the characteristics of various children's age groups. It is important to know whether Rorschach's criteria for abnormality in adults apply to young children, pre-adolescents, or adolescents. Work in this area has not been well organized and there is contradictory material in the literature. Are pre-school children negativistic? Should we expect more but poorer whole responses from six and seven year olds, with poor form, DW's, and perseveration, than we get from older children of the same intelligence level? Is age a factor in the number of responses, in constriction or expansion, in the number and type of color responses, movement responses, etc.? Do the same color shock criteria apply to all ages of children? . . . These are a few of the questions for which we do not know the answers."

(87, p. 99)

Hertz, who has contributed the most important study in the area of adolescent Rorschachs, wrote in 1941: "Furthermore, norms for

each chronological age level, or at least for certain age ranges, are urgently needed. There is a deplorable lack of norms for children under ten years of age. Any interpretation of records of children under that age must be viewed with the greatest caution. No matter how competent the examiner, he lacks justification for interpreting results if norms are not available. The conscientious Rorschach examiner must restrict himself to limits within which valid judgments are possible." (64, p. 515)

Beck, who in 1928 wrote the first doctoral dissertation on the Rorschach Test, and who is one of the most prolific writers in the field, summarized in July of 1945 (9) the work that had been done up to that time. He stated that valid and probably reliable personality patterns had been established for some groups, namely healthy adults of superior intelligence, the feebleminded, the schizophrenics and, to a more limited extent, the patients who had sustained some organic brain injuries.

Investigation, Beck believes, is needed in the areas of the average adult, the psychopathic personality, the sub-groups of the neuroses, delinquents, sex deviates, the epileptics, etc., and quite outstandingly the area of children. Of this area, Beck says, "In children we are applying the principles developed in adult Rorschach records. That they work is no justification for the lack of principles derived from work directly with children. This is not to depreciate the numerous Rorschach test investigations in children. But a systematic Rorschach study of the child, in which both the factors of growth and of environmental influence are duly weighted is yet to be reported." (9, pp. 523-524)

Although lately there has been a slightly increasing number of studies on children's Rorschachs, the most important of which will be summarized in the fourth chapter of this study, most of these studies were carried out on groups which were either (1) small, (2) highly selected, since generally most of the children were of superior or very superior intelligence, or (3) in which the chronological age or the mental age has not been very narrowly defined. In a number of studies the authors have attempted to superimpose patterns of interpretation which would be appropriate for an adult, but which may be without validity for a child.

Since adequate genetic studies are lacking, we may legitimately ask the following questions:

1. At what age level is the Rorschach protocol sufficiently differentiated to be a definite aid in understanding the personality beyond that which an experienced person could gain in almost any testing or free play situation?

2. What constellations so regularly appear at different age levels that they could be used as a basis for judging deviations in the individual's responses?

3. At what chronological age are perceptual responses sufficiently differentiated to warrant using Rorschach protocols as a means of evaluating mental age?

4. How accurately do protocols at various chronological age levels reflect differences in mental age levels? That is, can the test ever give more than a very rough and uncertain estimate of intelligence on the lower age levels?

5. What differences might one expect in protocols from children with similar mental age levels, but of different chronological ages?

The main purpose of this study has been to gather normative data on the Rorschach Test from five-, six- and seven-year-old children, in order to contribute to the evaluation of the test as an instrument for discriminating different levels of intelligence within these age groups.

A second purpose has been to find out how the Rorschach protocols of children five years of age with average intelligence differ from protocols of children who are five years old but who are advanced mentally.

A third purpose has been to find out how the Rorschach protocols of average children vary from those of children who have the same mental age but different chronological age.

We have taken perhaps a rather crude approach to the problem, but one which has seemed appropriate to the present stage of development of knowledge about the validity of the Rorschach as a test of intelligence for children. We have chosen to study both quantitatively and qualitatively certain inter-group and intra-group similarities and differences of response of five groups of children.

The groups are designated and defined as is shown in the following table:

TABLE I

Group	Number C. A.		Mental Age		Intelligence Quotient	
			Average	Range	Average	Range
Group V-A (Average)	12	5	5-4	5 to 5-6	106.5	100-109
Group V-S (Superior)	12	5	6-1	5-10 to 6-3	120.8	117-126
Group V-VS (Very Superior)	12	5	6-8	6-5 to 7-3	132.6	128-145
Group VI (Average)	40	6	6-1	5-6 to 6-6	101.8	91-108
Group VII (Average)	40	7	7-1	6-6 to 7-7	100.8	93-110

The chronological age groups were quite narrowly defined, since each child was given the Rorschach Test within thirty days of his birthday, and in nearly all instances, within fifteen days of his birthday.

In this study we will make:

1. A comparison of the Rorschach protocols from three groups of children of average intelligence, Group V-A, being five years of age chronologically; Group VI, six years of age; and Group VII, seven years of age as is shown above in Table I.

2. A comparison of the Rorschach protocols from three groups of children all of whom are five years of age chronologically, but each group representing a different level of intelligence. For this, Groups V-A, V-S, and V-VS are used.

3. A comparison of the Rorschach protocols of children of like mental age, but of different chronological ages to see what possible differences in quality of organization and degree of elaboration or differentiation may occur. In this section of the study, the Rorschach tests from Group V-S are compared with those from Group VI, and the Rorschach tests from Group V-VS are compared with those from Group VII.

CHAPTER II
THE RORSCHACH TEST AS A MEANS OF MEASURING
INTELLIGENCE

A. Definition of Intelligence

Although the major part of the discussion in Psychodiagnostics is in the chapter headed "Intelligence," Rorschach frequently uses the word intelligence in quotation marks and does not define precisely what he means by the word. However, he states that "the test is capable of evaluating the individual components of what is called 'intelligence,'" (116, p.23) and he lists these components as:

1. Capacity for continuous, active attention (F+ and sequence.)
(The factor in the test that particularly reflects the component mentioned is placed in parenthesis at the end of the component by Rorschach.)
2. Optimum clarity of perception, of engrams, and of associative processes in assimilation (F+).
3. Optimum of ability to discipline the logical function; this is an automatic function arising in the individual.
4. Optimum of 'dispositional' energy of associative activity, i. e., a conscious or unconscious 'willing' to produce complicated performances (W).
5. The ability to distribute the emotional and associative factors by means of a goal idea which maintains direction of attention.

6. Optimum ability to form stereotyped association sets, and, in contrast.
7. Optimum freedom and ease of flow of associations from sets which otherwise would tend to stereotype associations markedly (Percent Animal Responses).
8. Optimum number of individually determined engrams, optimum originality or ability to form original associations. These faculties must be optimal in the sense that they do not interfere with the capability to adapt to the associative scope of others (Percent Original Responses).
9. Wealth of associations (Variability, Original Responses).
10. Availability of associations (Particularly W).
11. Capacity for 'inner creation' (M).

"All of these components may be more or less developed so that there may be an incalculable number of variants, partial and total, or 'intelligence.'" (116, pp. 65-66)

Although not as tersely expressed these components contain basic ideas very similar to those expressed by Wechsler, who defined intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment." (149, p. 3) Rorschach mentions the "goal idea which maintains direction of attention," the "ability to discipline the logical function," and the optimum originality that does not "interfere with the capacity to adapt to the associative scope of others."

Rorschach's emphasis on the energy necessary "to produce complicated performances," originality and creativeness, remind one of Stoddard's definition which is as follows: "Intelligence is the ability to undertake activities that are characterized by (1) difficulty, (2) complexity, (3) abstractness, (4) economy, (5) adaptiveness to goal, (6) social value, and (7) the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces." (127, p. 4)

B. The Uniqueness of the Rorschach as a Test for Evaluating Intelligence

In Rorschach's list of components of intelligence it will be seen that the intellectual and non-intellectual factors of the personality are inextricably interwoven. Because of the constant interplay of the intellectual and non-intellectual factors, one theoretically can obtain from the Rorschach protocol insights into the way in which a person uses his intelligence and get a qualitative picture of the subject's ability to analyze, to organize, to observe the obvious things that others are observing, to handle abstract ideas, etc. The interweaving of the intellectual and non-intellectual aspects makes the Rorschach test unique in that it is the only testing instrument from which, when the responses are highly enough differentiated, one may ascertain the general intellectual capacity of the subject, the subject's intellectual efficiency in relationship to his potential capacity and may obtain

a picture of the personality structure which may give indications of why the individual is not operating up to the level of his capacity if he is not doing so.

Disrupting factors in the life of the individual may influence his efficiency on any intelligence test so that he cannot make full use of his capacity. From an organismic viewpoint it is not that his emotions affect his intellectual functioning but rather that the disrupting influences affect the total individual in those aspects of his behavior that are termed intellectual and emotional. On other intelligence tests one may even obtain some idea of possible disturbance through the scatter in performance and qualitative observations, but one might not get as clear a picture of the extent and kind of disturbance as the Rorschach would give.

To some examiners the obtaining of the qualitative aspects of the intelligence on the Rorschach may seem to offset the lack of accuracy in determining the intellectual level on which the subject is operating especially since other tests may be used for obtaining the level of intellectual ability, and since the Rorschach ideally should be used as one of a battery of tests.

Krugman has stated that, "An important use of the Rorschach at the Bureau (of Child Guidance of the Board of Education of New York City) is to assist in the determination of intellectual status when psychometric results are not conclusive. Many children, especially problem children, are not properly measured by objective tests, discrepancies may occur, the clinical impression by the psychologist may not agree with the objective results, certain

racial groups may be inadequately measured by standard instruments, or records of achievement and school performance may be at variance with test results. The Rorschach frequently makes possible a working diagnosis with respect to intelligence, and a number of questions can be answered by its use. These, of course, are tied up with the entire personality constellation on the examination. Here are some of the questions the Rorschach may assist in answering:

What is the native intelligence?

What is the probable functioning level?

Are abstract or concrete abilities predominant?

Is the ability to organize, synthesize or analyze well developed?

How adequately is patient measured by psychometric tests?

(Compared with clinical impression, school record, opinion of others, etc.)

Do the intelligence tests give adequate measures of richness, independence, originality, or depth of intellectual processes, or of the shallowness, poverty, and vulgarity of the intellectual processes?

Is the child able to utilize the intelligence he possesses or is there strong repression of intellectual factors along with affective factors? Is the inability to utilize intelligence marked--does anxiety prevent functioning, or is the opposite true: is there a consuming ambition, with sublimation along intellectual lines, and therefore, better than average achievement for intellectual level (strong intellectual drive)?

Are we dealing with a conforming, stereotyped, or perseverating mind? Are there marked negativistic traits that are carried over into intellectual processes and interfere with learning?

What special interests are present?" (89, p. 507)

Regardless of the assets of the test, the question of the degree of accuracy with which the test can be used to discriminate levels of intelligence remains to be considered. If the test does not differentiate the different levels of intelligence accurately, one would question the more subtle and exacting use of the test as a tool for evaluating the efficiency of the mental functioning in relation to the potential mental ability.

Vernon (145), in 1933, summarized the studies that had been done dealing with the Rorschach as a test of intelligence, and reported a study he had made with college students. He concluded that "it seems doubtful whether any single category or any numerical composite of scores will ever give a really satisfactory correlation coefficient in an unselected group, with recognized criteria of intelligence. Clearly the Rorschach method cannot serve as a test of intelligence in the psychometric sense; it is definitely inferior to the Binet test in that it cannot provide a convenient numerical score which may be objectively tested for reliability and validity." (145, p. 279)

In contrast to the above opinion Klopfer and Kelley in 1942 stated that "Roughly speaking, the Rorschach results have been found to correlate as highly with intelligence test results as

the results of different intelligence tests correlate with one another," and that "It is possible to evaluate a Rorschach record and to 'guess' in the majority of cases within a range of ten points what the intelligence of the subject in terms of a Binet I. Q. might be."

(84, p. 274) Klopfer and Kelley's claim is in keeping with Hunter's report (69) that in 76 per cent of the cases she studied she could, on the basis of the Rorschach test, estimate within five points the Intelligence Quotient as shown on the Binet test. Hertz, (57) in 1935, discussed all the work that had been done in this area and again, in 1941, reviewed the literature.(60) We shall not attempt to summarize these earlier studies which deal chiefly with adults and older children, but will confine ourselves to a review in Chapter IV of the studies that have been made on younger children.

C. Criteria for Evaluating Intelligence in the Rorschach Test

Rorschach divided the subjects he tested into six groups as far as levels of intelligence were concerned. The protocols of intelligent subjects he found to be characterized by:

- "1. A large percentage of clearly visualized forms.
2. Many kinaesthetic influences acting in the perceptive process.
3. A large number of whole answers.
4. Good apperceptive types: W, W--D or W--D--Dd.
5. Optimum rigidity of sequence of mode of apperception (orderly).

6. Small percentage of animal answers. In other words, increased variability of interpretations.

7. Neither too large nor too small percentage of original answers." (116, 56)

According to Rorschach, in order that a subject might produce a high percentage of good forms he must be able (1) to concentrate his attention on the task, (2) to have clear engrams, "for if the memory images are not clear and definite, accurate form visualizations will be impossible," (116, 56) (3) to recall those images, and (4) "to select the most fitting of the various similar images which arise." (116, 57) Hence the percentage of clearly and accurately differentiated form responses becomes an indication of the clarity of the associate processes, of the length of span of attention, of the ability to concentrate and of intelligence. Rorschach emphasized not only the importance of the quality of the form but also the number and quality of original responses as is shown in the following table compiled from Rorschach by Beck. (12, 38)

Table II

Rorschach Norms for Different Intellectual Levels

Intelligence Level	W	M	C	F+%	A%	O%
Very superior	10 or more	5 or more	4-7	'90-100	'10-20	'30-50
Superior	7-10	'5 or more	'1.5-3.5	'80-100	'20-35	'20-30
Average	4-7	'2-4	' .5-2.5	'70-80	'30-55	'0-20
Low average	3-4	'0-2	'1.5-6	'60-70	'50-70	'0-20
Morons	1-3	'0	'4-7	'45-60	'60-80	'30-40
Imbeciles	0-2	'0	'5.5-8.5	'0-45	'80-100	'40-70

The factors listed by Rorschach have come to be considered the traditional criteria by which intelligence can be evaluated. However, Klopfer and Kelly, using a similar list, place the emphasis not alone on the number, but also on the quality of W and M responses, for a protocol may have a comparatively large number of W responses which are of such poor form accuracy and poor quality of organization and differentiation that they indicate a low level of intellectual ability. Klopfer and Kelly's summary of the criteria of intelligence is as follows:

- Number and quality of W
- Number and quality of M
- Form accuracy level
- Number and quality of original responses
- Variety of content
- Succession of responses. (84, 269)

We shall discuss our own findings in relation to these criteria since this study has been done within the framework of Klopfer's system of scoring and interpretation.

The criteria listed by Rorschach and by Kelly and Klopfer can be reduced to three basic factors, namely:

- 1) The degree of accuracy existing between the form of the blot area of the card and the form of the concept expressed.
- 2) The quality of organization as shown by the interrelationships or interaction of the parts within the configuration.
- 3) The degree of differentiation of the parts within whole responses as reflected in the location, the determinants, and the contents.

D. Problems Arising When One Attempts to Evaluate Intelligence
On the Basis of Perception

Perception has to be an intrinsic part of all intelligence testing, but some types of tests or test items emphasize the perceptual processes more than others. Some items test the level of perceptual differentiation as do the Mutilated Pictures on the six-year level of the Terman-Merrill Revision, Form L, of the Stanford Binet test; some require predominantly perceptual discrimination coupled with memory as does the reproducing of patterns in bead stringing and reproducing of designs from memory in the above mentioned test; other tests require perception as a basis for analysis and reproduction as do the Kohs Block Designs and the Arthur Stencil Test, while still others require an ability to analyze and make a closure as do the Manikin and Profile Tests, and the Healy Picture Completion Tests. Street (128) constructed a test based on the principle of perceptual closure which he attempted to use rather unsuccessfully as a test of intelligence.

Aside from the Rorschach, however, none of these formal tests emphasizing perception show the genetic growth in perception so interestingly or convincingly as does the Goodenough Drawing of a Man Test (45) which reflects the increasing accuracy of form, the increasing quality of organization and increasing degree of differentiation that parallels mental growth of young children. In this test, if a child is able to draw a circle, he is accredited with a basal mental age of three years. If a child draws a little figure consisting of a face in which are eyes, and a mouth, supported

by two lines for legs, he is accredited with a mental age of four years, etc. Knowledge of the genetic growth reflected in drawing is a valuable asset in evaluating the perceptual organization and differentiation that is found in the Rorschach responses of young children.

Many problems should be considered in relation to the evaluating of intelligence on the basis of perceptual experiences on the Rorschach Test, such as:

1. The instrument's being used simultaneously as a test of personality as a whole and of intelligence.
2. The relative degree to which the perceptual experiences are influenced by the condition of the person or the test situation in comparison to other means of measuring mental ability such as knowledge of vocabulary, etc.
3. The establishment of the criteria for making accurate judgments of different levels of intelligence. One must know the level of form accuracy, the degree of organization and the differentiation that occur at different age levels. Essential for this knowledge is (1) the careful choosing of normative groups, (2) the establishment of norms, and (3) the determination of the range of variables that may be present on the same intellectual level.
4. The evaluation of all aspects of each protocol, since the Rorschach must always be interpreted configurationally. The possibilities are so varied that the equating of one protocol with another is difficult. One protocol may show comparative superiority in one area and relative inferiority in another.

5. The problem of summarizing the data in such a way that the results may be compared with the results of other tests. Methods for quantifying the results other than by making summaries of the various categories have been developed by several persons. Schneider (123) marked the subjects on a 1- to 4-point scale for W, M, F per cent and the O per cent categories. The four scales yielded a composite set of marks ranging from 4 to 16. Even with such a simple method of quantifying results he found coefficients of correlation of $+0.42$ to $+0.53$ between the composite ratings as obtained above and the Intelligence test scores. Beck (3) developed organization scores that were based on the comparative amount of energy that it took to organize the different cards as wholes, parts or in various combinations of parts. Individuals' total organization scores for all the responses can be compared inter-individually. Varvel (142) reported a study done on 138 college students in which he found the coefficient of correlation to be $+0.365$ between the organization scores obtained by the method outlined by Beck and the Intelligence Test scores on The American Council of Education Psychological Examination. Hertz (61) has a much simpler means of evaluating the relative complexity of a response, the response being given a value from 0.5 to 1.5 according to the "synthetic" ability evidenced and the degree of accuracy and originality. Klopfer and Davidson (83) have worked out a scale ranging from -2 to +5 with half-step intervals for evaluating form accuracy, organization and differentiation simultaneously,

the final score for the test being expressed in terms of the average score for all the responses. No articles have appeared which report on the relationship between scores obtained by the method suggested by Klopfer and Davidson and intelligence as rated by means of some other test.

Aside from factors that might influence perceptual experience in general, there are some factors that should be taken into consideration as they affect the Rorschach responses particularly of small children, such as:

1. The amount of interest the blots have for the child which does not seem to be dependent upon the degree of intelligence. A highly intelligent child may give very perfunctory responses whereas a less intelligent child may look long and earnestly at the cards, producing more and better responses. The writer tested one six-year-old child with an intelligence quotient of 163 on Form L of the Terman-Merrill Revision of the Stanford-Binet test, who produced a very poor Rorschach protocol though he had enjoyed greatly the previous intelligence test. Swift found that "those children whose first tests showed the greatest spontaneity and richness of content, almost invariably were bored and impatient when asked to repeat the test." (134, p. 215)

2. Another factor that is related to the above is that of the length of the attention span and the ability of the child to concentrate which may influence not only the total number of responses, but the quality of them, for as Rorschach said, "A high percentage of good form presumes, first the ability to

maintain attention throughout the whole of the test, that is a real ability to concentrate; only when this ability is present are clear perceptions possible." (116, p. 56)

3. It is often difficult and sometimes impossible to elicit through inquiry any aid in scoring. The child may become impatient with questions. To the usual inquiry of "What about the card makes this look like a butterfly?" the child may answer conclusively, "It is a butterfly," and further questions may be not only fruitless but irritating.

4. A small child's use of determinants is so limited that there is often very little basis for fine differentiation between children.

5. The basis for evaluating intelligence in children is somewhat different from that in adults since a child's perceptual experiences are different from an adult's, a question which will be discussed in the next section.

E. The Perceptual Organization of a Child

Werner (151) uses the following antithetical pairs of concepts to describe extremes in genetic levels of perception: (1) syncretic-discrete, (2) diffuse-articulated, (3) indefinite-definite, (4) rigid-flexible, (5) labile-stable. These paired concepts which are not mutually exclusive are helpful in analyzing the differences that occur between the perception of young children and adults. We shall discuss these pairs of concepts as they apply to the Rorschach test.

1. Syncretic-discrete

The term syncretism as it is usually applied to perception and thinking means the merging of logically separate patterns of thought into a new pattern in which there are illogical and conflicting elements. Discrete in counterdistinction to syncretic means that the perception or concept is "relatively specific, singular and unambiguous."

Syncretism is apparent in dreams when there is a fluidity of boundaries between images and between ideas that is not experienced ordinarily in the waking state. Syncretic creations may occur in dreams that have no counterpart in reality.

Although syncretism may be found in humor, in poetry and in symbolisms, syncretism in its most arresting form is found in schizophrenics. The schizophrenic in his thinking may merge himself with his surroundings, confuse objective and subjective reality, ignore reality boundaries in his perceptions and make confluent patterns of thought that in our culture have been differentiated and separated. Syncretism in children's perceptions often seem to arise from the lack of ability of the child to differentiate adequately one concept from another when both concepts have been suggested by some aspects of the object or of the Rorschach card, whereas a more mature observer would choose one concept in preference to the other or each concept in turn.

Syncretism in its most pronounced form in Rorschach is seen in contaminated responses, in confabulatory combinations and to a lesser degree in confabulatory responses.

Contamination is a term applied in Rorschach literature to the condition that results from the fusing of two logically discrete patterns of thought in the interpretation of one spatial area. The contamination may invade the entire area or may be more specifically related to one aspect of the area. Rorschach cited as an example of contamination the response "the liver of a respectable statesman," given to Card IV and states that this card which is frequently perceived as a man, is not infrequently perceived as a degenerative organ. Here one idea contaminated another idea. The contaminations of children are usually of a simpler nature, for example one child gave the response of "rabbit-butterfly" to Card V, and inquiry did not disclose that the child saw these as separate entities, although the responses of butterfly and of rabbit are each very frequently given by young children to this card. Another child saw, in the black portion of Card III, aspects that suggested conflicting ideas which he resolved by the response "duck-men." This response is, of course, closely akin to a pattern of thinking common in our culture in which we invest animals with human characteristics; the Walt Disney animals are little human-animals.

Confabulatory combinations are those in which spatially discrete parts are interpreted logically, when each part is considered independently but the parts are organized into an illogical whole on the basis of spatial contiguity or proximity of the parts. For example, on the top of Card VI, wings are frequently seen in the transverse section, a snake is frequently seen in the area between

the wings, and the small protruding marks are seen as whiskers. If all of these are combined into "a snake with wings and whiskers," one has an illogical and a confabulatory combination. A similar illustration might be cited in the response to Card VIII of "bears walking on butterflies." The response of butterfly to the lower orange-pink part of the card is commonly given; butterfly to the blue-gray area is not infrequently given. The concepts attached to the discrete part are all adequate; the syncretic element is found in bringing these parts together in an illogical functional relationship or configuration.

Confabulatory responses are those, in which on the basis of a single differentiated part, meaning is assigned illogically and diffusely to the whole card or to an entire part. A frequently cited example of a confabulatory response is that of "A cat because it has whiskers" to Card VI.

Whereas in contamination and in confabulatory combinations there is a fusion of two or more concepts illogically within a spatial area, in confabulation there is a fusing of spatial areas illogically under a single concept.

2. Diffuse-articulate

The young child's responses are predominantly global and of a diffuse nature. Because of the poor quality of the wholes as far as form quality, organization and differentiation are concerned, the number of W may not in any way indicate intelligence as it may for adults. The quality of the W in children is more important

as a criterion for evaluating intelligence than the number of W. In fact, some D responses might indicate a higher level of perceptual discrimination than some W responses.

Diffuseness is also seen in the confabulatory DW responses in which the child on the basis of a part of the blot assigns an illogical meaning to the rest of the card. The problem of DW responses in children needs more critical consideration than has been given to it, a point which will be discussed later under the subject of scoring.

The diffuseness may be apparent not only in the location to which the child responds, but also in the determinants and content. The child may ignore, more or less, the form and respond to diffuse shading producing a high number of K responses or in an undifferentiated way to color areas, producing a high number of C responses. The diffuseness and lack of discreteness may also be reflected in the low incidence of M responses. In order to produce human movement responses, one must be able to differentiate parts within a gestalt and to perceive articulation among the parts. M seldom appears below the mental age of five years. It is interesting that articulation of the joints is perceived on the Rorschach cards generally at about the same mental age level that articulation of the joints appears in children's drawings. Because of the comparatively late appearance of M responses this criterion is not particularly helpful in differentiating the levels of intelligence of very young children.

The contents of a small child's responses are apt also to be diffuse in nature. Contents such as "grass," "tree," "clouds," "smoke" are unarticulated expanses of the same thing. This diffuseness in content is an important thing to bear in mind in evaluating the quality of form. Such concepts represent indefinite rather than inaccurate forms. The standards of judging the form quality in children should be based on the perceptual organization that is common at the various mental age levels.

3. Indefinite-definite

The quality of indefiniteness in a child's perception is so akin to the diffusion that both aspects might easily be discussed under one heading. There is an aspect of indefiniteness that has not been discussed before, however. A child may have nebulous impressions of the blot area that cause him to shift uncertainly from one type of organization to another or from one concept to another. Small children frequently shift the position of the tail and head on an animal, nothing in the blot being convincing enough to settle the question for them. Or again, a child may organize the whole blot as a man, but shift in a second and be able to see nothing but the face. The same area of the blot may be seen as a lion, alligator and a mouse in quick succession. In such cases the concepts themselves seem to be indefinite and poorly differentiated.

4. Rigid-flexible

The rigidity of a young child's thinking and perceptual experiences go along with the subjectivity of his judgments. Having attached one concept to an area, he may not be flexible enough to

perceive another organization even though it is repeatedly pointed out to him.

He may not be flexible enough either to change his concepts with a change in the cards. Hence he may with perseveration project the same interpretation on to all the cards. This perseveration naturally limits the range of concepts mentioned by the child. The degrees of perseveration have been discussed by Klopfer and Margulies. (85) The relationship of eidetic imagery to perseveration has not been investigated, but there may possibly be some relationship between the two.

5. Labile-stable

The young child's thinking with its subjective character, its tendency toward physiognomic interpretation, and its diffuseness carries with it a lability as far as adequate adjustment to external stimuli is concerned. A more flexible mode of perception might lead to a more appropriate dynamic adjustment to reality and hence to a greater stability in adjustment.

F. Criteria for Judging the Intelligence of Children by the Rorschach Test

A discussion of the global, syncretic, diffuse, indefinite, labile and yet often rigid tendencies in a child's perceptions brings us to the point of inquiring into the criteria for judging intelligence in children on the basis of their perceptual experiences in this test. The studies that have been done on children's Rorschachs do not entirely agree as to the trends that parallel increasing mental

growth. However, in general the following trends have been pointed out:

Number of Responses. There is a slight gradual tendency for the number of the responses to increase with mental age, but the variability in number is so great at almost any age that the actual number of responses cannot be used as a criterion of intelligence.

Location. Although Rorschach used the number of W as a criterion for judging intelligence, this does not hold for very young children since they tend to give a predominance of diffuse, poorly differentiated wholes. Although the average number of W may increase with age, the percentage of W tends to decrease after six years of age. At about this age the differentiated parts, both the usual and unusual details, increase slowly but steadily. This increase is so gradual that the use of details cannot be used as a criterion for differentiating intelligence.

Determinants. The determinant most commonly used by children is that of form. The percentage of form responses tends to decrease with age as the use of other determinants is increased. Although the percentage of F responses may decrease, the quality of the form accuracy increases with age, hence the relative proportion of superior, average and poor form responses becomes one of the most important criteria for differentiating levels of intelligence.

The determinant second in frequency of use is color. Very small children tend to give plain color responses in a primitive way. As children's mental age increases there is a growing

tendency to couple color with some consideration of form as is reflected in the increased occurrence of CF responses. This symbol means that color is the dominant determinant and form is of secondary consideration. A yet higher level of intellectual development seems to be reached when form is used as the dominant determinant and color is of secondary significance. The symbol used for this combination is FC. Not only the number but also the quality of the form of FC responses tend to increase with mental age.

The determinant third in frequency of use is that of movement. Among the movement responses animal movement, FM, occurs the most frequently with young children. The number tends to increase with age. Human movement, M, appears generally much later than FM. Klopfer reports that the average number of M for children under eight is less than one. However, M tends to increase with increase in mental age.

Comparatively few shading responses have been reported, but they tend to increase with increased differentiation.

Content. With increasing age the number of categories tends to increase. The most frequently used category is that of animal. As the child matures, the proportion of human responses tends to increase.

Populars. Some of the authors have pointed out that the number of popular responses increases with age. The ten popular responses used by Klopfer have been designated as popular on the basis of one adult out of three using such responses. A child's

increasing use of popular responses would indicate that he is progressing toward the level of perceptual discrimination expected of the adult.

Originals. Some writers also report an increase in the number and quality of original responses with increasing mental age. Since an original response by the commonly accepted definition is a response that is used by only one out of a hundred persons, and since we have no norms of frequency for children, this definition and this criterion for judging intelligence can be seriously questioned.

It will be recalled that Klopfer and Kelly listed the following criteria for evaluating intelligence, (1) number and quality of W, (2) number and quality of M, (3) the form accuracy, (4) the number and quality of original responses, (5) the variety of content, and (6) the succession. Of these criteria some are more applicable to children than others. For reasons pointed out above, the number of W and the number and quality of O do not seem to be particularly applicable to children. Another of these criteria, succession, is also not particularly applicable since comparatively so few responses are given.

In summary, the most useful criteria for evaluating intelligence in children seem to be the quality of W responses, the number and quality of M and FM responses, the quality of form responses, the number and quality of FC responses, the number of popular responses and the use of human content. As the human content and the variety in the content increase, the animal content tends to decrease.

CHAPTER III

THE PRESENT STATUS OF STANDARDIZATION OF THE RORSCHACH TEST

A. Areas in which Standards Are Needed

When we speak of standardization of an intelligence test, we mean the setting up of standards by which the performance of the individual on the test can be evaluated in terms of the group. The factors that must be taken into consideration in the setting up of standards are (1) the choice of material for the test, (2) the formulation of rules for administering, (3) the setting up of rules for scoring, (4) the choice of groups on which to establish norms, (5) the interpretation of the scores in relationship to the norms, (6) the investigation of the validity of the test and (7) the determination of the reliability of the test.

After Rorschach's original work there developed two rather antithetical trends in regard to the establishing of objective standards, one trend being away from and one trend toward more objective standards. Some held that the interpretation of the Rorschach test should be accepted as an art in which statistical data were superfluous. Among such workers, there was a tendency for interpretations to become qualitative, subjective and intuitive. Other workers criticized such intuitive interpretations as lacking objective proof. Beck in 1944 quoted Wells, who wrote in 1930: "At present it must be acknowledged that many Rorschach Reports read more like reports of an astrologer or palmist than does anything else in psychological literature; there is no validation in

a statistical sense,'" and Beck adds that, "The twelve years that have passed, with the mountain of literature that has appeared on the test since then should not permit this statement to be valid today. However it is." (100, p. 19)

Many of the early workers compensated to some extent for the lack of objective standards by broad individual experience that served as a basis, although perhaps a poorly-defined basis, for comparisons and judgments.

However, there has grown steadily the conviction on the part of many workers such as Beck (8, 9, 17 and 18), Hertz (53, 55, 57, 58, 60 and 64), and Krugman (87) that if the instrument is to gain the status of scientific respectability, more attention must be given to bringing about the following: (1) a uniformity of procedure in administering the test, (2) an objective basis for scoring, (3) the establishment of norms, (4) the testing of the hypotheses about the interpretive significance of the various scoring categories and the interrelationships that may exist among these categories and other aspects of the test, (5) the establishment of the validity and (6) the establishment of the reliability of the test as one for measuring the intellectual and non-intellectual components of the personality. Beck (18) has emphasized the importance also of semantic clarification of terms, a more rigorous operational defining of terms such as total personality, and more stringent defining of the various categories, in order to clarify the meaning of the areas for which validation is sought.

The differences of opinion about the standardization of the Rorschach test result in part from lack of clarity of definition of the term standardization and an absence of an adequate delimiting of the areas in which standardization might be of value.

In spite of the varying opinions upon what the standard practices should be, there is a rather common agreement that standardization would be desirable in the following areas, if for no other reason than that there would be a more scientific basis for comparing the results of the different studies:

I. Administration

The different methods of administering the Rorschach Test were summarized by Hertz in 1936. (51) There exists today a wide variation of practices in the administration as is shown, for example, in the differences in procedures used by Klopfer (84) and Rapaport. (110) There are not only differences between systems but also variations of practice within a system as is evidenced by Swift's (131) reported modification of the technique used by Klopfer as she applied the test to young children. The controversial points in administering the test will be discussed more fully in Chapter V.

II. Scoring

Several different systems of scoring are used in this country, such as those of Klopfer (84), Beck (5), Hertz (61), and Rapaport (110), that vary in complexity. In some systems there are categories that have no counterpart in other systems. Terms used in one system may have a different meaning when used in another system. Hence comparisons of results obtained by the different systems become complicated.

III. The Establishment of Norms

Two factors which make the establishment of norms on the Rorschach Test much more difficult than for most tests are (1) the almost limitless number and variety of individual responses and (2) the fact that the test is interpreted configurationally, each part deriving its significance in relation to the other parts. Although these factors enhance the value of the test as an instrument for differentiating one unique personality from another, they do add to the complexity of the problems of scoring, of the establishing of norms, and of interpretation.

Little has been done until comparatively recently toward the establishment of norms for young children. The investigations that have been made will be reported in Chapter IV. Genetic studies that show the growth of perceptual development as reflected in the Rorschach test seem to be of prime importance and theoretically should precede studies of validity in which one investigates the degree of accuracy with which the test differentiates levels of development perhaps not yet defined.

Norms should be established for location categories, the popular responses, original responses and for the evaluation of the quality of form. The quality of form should eventually be judged in relation to the given age level rather than in terms of adult norms.

The desirability of uniformity of norms becomes obvious when one considers, for example, the wide variation of practice in the designating of popular responses. In Beck's system there are twenty

popular responses, whereas Klopfer uses only ten popular responses. This discrepancy exists in spite of the fact that the actual number of popular responses is considered to be interpretatively very important. Each of the main systems of scoring has a different basis for establishing the popular responses as far as statistical frequency is concerned. Only comparatively recently has there been an attempt to evaluate popular responses at the different age levels.

IV. Interpretation

Rorschach stressed the need of experimental validation of some of his assumptions about the interpretative significance of some of the categories and interrelationships among the categories. Rickers-Ovsiankina (115) has reviewed the experimental work that has been done in this line and has pointed out problems that need further research.

Unfortunately there has been a tendency to superimpose interpretations that have been found to be appropriate to the adult level, on to children's protocols without knowing what average children at the different age levels normally give in the way of responses. Relationships that may evidence poor adjustment or emotional regression in adults may accompany at some levels of childhood, normal and healthy adjustment. It is essential to find out what is usual with children before one is justified in theorizing about assumed deviations.

B. Validity

Although there is agreement about the desirability of uniformity in administering and scoring the test and about the need

for norms at different age levels, there have been sharply differing opinions about the methods that should be used to establish the validity of the test.

When we discuss the validity of the Rorschach test, the problem of the definition of the term validity arises. Generally the term validity when applied to a testing instrument means the degree of accuracy with which a test measures what it purports to measure. However, the term is often used rather loosely in the Rorschach literature, referring to the test as a whole or to various aspects of it, to a single test given to a single individual or to the test applied to a group of individuals. Also, the terms reliability and validity are often confused.

When we consider the term validity in its generally accepted meaning, in relation to the Rorschach test, it becomes apparent that we are dealing with a very complicated problem since the test purports to be a test of personality and of intelligence at one and the same time.

These two aspects of the whole person, according to traditional practice, call for rather different types of validation. In testing intelligence the individual's similarity to the average is stressed, whereas in testing the personality the uniqueness of the individual as he deviates from the usual is stressed.

Intelligence can be measured in a quantitative fashion in terms of demonstrated achievement. If an intelligence test is well standardized, one can measure a given subject's performance against definite norms that have been established, and with more

or less accuracy express the subject's level of intellectual functioning in a summary fashion in terms of developmental level, of mental age, or of Intelligence Quotient, depending on the testing instrument.

The subject's personality, however, is much too complex to be epitomized in a single number. If a clinician wants to preserve a picture of a personality, he must do so by means of a verbal description of the subject's various interests and traits of covert and overt behavior. For greater accuracy of evaluation he may use a rating scale or he may merely attempt to make his description more precise by a more careful choice of words. If the clinician uses the Rorschach test, he will have the total protocol and the psychogram which will present summaries of the scoring categories and quantified measures of relationships existing among the scoring categories. But when the Rorschach expert comes to his final interpretation, he will with the aid of his qualitative observations, translate the psychogram and other quantitative summaries into a description of the structure of the personality and of the dynamic factors within the personality. He will describe and define with qualifying adjectives the uniqueness of the personality in terms of traits, tendencies and goals.

Since the intelligence level can be expressed to a considerable extent in quantitative terms while the rest of the personality has to be described chiefly in qualitative terms, tests for the intellectual and non-intellectual aspects of the individual have called for somewhat different approaches to the subject of validity.

Since the majority of the persons who have investigated the validity of the Rorschach Test have sought to evaluate the test as an instrument for differentiating one personality from another, we shall discuss first the various approaches that have been used to investigate the test as a personality test and then briefly mention the approaches that have been used to investigate the validity of the test as an instrument for differentiating levels of intelligence.

The chief methods that have been used in trying to establish the validity of the Rorschach test as an instrument for evaluating the total personality are the following:

A. Experimental approach.

B. The general clinical approach.

(1) Study of the individual protocol in relationship to the clinical data.

(2) The "Blind diagnosis."

(3) The study of deviate groups.

C. Techniques for indicating the degree of validity.

(1) The matching technique.

(2) Correlating results of the Rorschach test with the results of other methods of evaluating the individual.

A. The Experimental approach.

This approach has to do predominantly with testing the validity of the theoretical assumptions made in the interpretation of the test.

Rorschach theorized about the significance of the various scoring categories and the relationship among the categories. He himself suggested many problems for research such as those of investigating (1) the significance of the space-rhythm relationships, (2) the assumption that the M factor represents inner living and (3) the hypothesis that the sum of color and the relationship within the color categories represent the emotionality of the subject. Rorschach stated: "It has been found empirically that the influence of colors in perceiving the figures may be taken to represent the extent of emotional excitability and actual excitement; the basis for this deduction is, however, quite insufficient to satisfy the demands of scientific logic. There is a definite correlation between the extent of emotional excitement, the extent of motor activity and the number of responses influenced by color perception. The causes, the etiological sources, of this correlation remain to be discovered." (116, p. 98)

Stimulated by such statements, Oeser (101) designed an experiment in which he presented subjects tachistoscopically with colored geometrical forms. The clarity of form and the intensity of the color were systematically varied. Oeser found that the same subjects who responded predominantly to color in this experiment, also responded predominantly to color in the Rorschach test, and that the subjects who gave high color responses on both tests were much more prone to be emotionally labile, to give away to emotional outbursts and to be more suggestible than were the subjects

who responded predominantly to form. Other studies investigating color and form are discussed by Rickers-Ovsiankina. (115)

B. The general clinical approach.

1. Study of the individual protocol in relationship to the clinical data.

As Rorschach gathered data, he formulated tentative hypotheses on the basis of his empirical findings about the interpretive significance of various perceptual experiences and about the importance of various relationships. These hypotheses served as the bases for evaluating the "structure of the personality." When Rorschach could reconstruct the picture of a personality from the protocol of a patient which corresponded closely to the clinical picture of the subject, it was assumed that such a process demonstrated the validity of the test as actually measuring what it purported to measure. One of the most interesting of the recent studies of this variety is that of Young and Higginbotham. (155) The authors, after having given the Rorschach test to a group of boys, had the opportunity of observing the behavior of the boys in a camp during the summer and hence were able to check on the validity of the test as an instrument for discriminating the different types of personality.

2. Blind Diagnosis.

The term blind diagnosis as it applies to the Rorschach Test is a term used to indicate (a) that the interpreter has before him only the protocol of the subject with information about his sex and age, or (b) that the interpreter administers the test but has

no other knowledge of the subject. The former meaning is the one generally used; however, the latter occurs repeatedly in the literature. Benjamin and Ebaugh (21) have pointed out that if the Rorschach Test is carefully given and qualitative observations noted, the former method of blind diagnosis may be almost as illuminating as the latter. A record may have such carefully recorded notes of all the individual's behavior, such as those records furnished by Lois Murphy (23) that the interpreter has an excellent substitute for first-hand observation of the individual. Of course, it is not only legitimate but highly desirable to use all the cues in obtaining as accurate a picture of the subject's personality as possible, just as it is in any other test situation, but one should be critical of how much of the picture can be deduced from the formal characteristics of the protocol itself, and how much of it is gleaned from the full description of the individual's general behavior.

This method of blind diagnosis was used by Rorschach in studying the protocol sent to him by Oberholzer. (116, pp. 184-216) Krugman (89) also used this method in his clinic, he himself making the "blind diagnosis," on which work he reported that although the interpretations were not always correct, the results of several thousands of comparisons between the Rorschach records and the case material showed that Rorschach interpretations came at least as close to the psychiatric examination as an examination by another psychiatrist would have done.

Other studies using "blind diagnosis" as a basis for judging the validity of the test as an instrument for evaluating the

personality are those of Benjamin and Ebaugh (21), Hertz and Rubenstein (67) and Hartoch and Schachtel. (23)

3. The study of deviate groups.

Rorschach and subsequent experimenters have found that certain groups of deviates such as the depressives, the schizophrenics, etc., give protocols significantly different from normal individuals. These studies of deviate groups have been considered as empirical substantiation of the validity of the test as an instrument for differentiating types of personalities.

C. Techniques for indicating the degree of validity.

1. The matching technique.

The matching method is one in which an expert attempts to match a series of Rorschach records with the series of descriptions of the subjects' personalities prepared by another expert, these descriptions being based either upon the subjects' Rorschach records or upon observations of the subjects' behavior. This method may be used for the protocols as a whole or in relation to any aspect of interpretation within the protocol which has been decided upon for matching.

The matching method has very obvious drawbacks such as (1) being dependent upon subjective evaluations by the judges; (2) the degree of accuracy in matching depending somewhat on the number of protocols in the series; (3) there being such comparative homogeneity in the protocols of some subjects that if the number of subjects were very large it might be impossible to match all the cases even though the individual interpretations were accurate.

"Both the clinical examination and the Rorschach test, subtle though the latter may be in comparison to other methods, are crude instruments

when measured against the rich variety of human personality.

Several sketches from both sources would be enough alike to make an accurate matching a matter of chance." (21, p. 1165)

Vernon (144) developed the pattern for matching which Troup (138) used in her study of twins. Swift (131), Gair (40) and Davidson (27) all used the matching method in attempts to evaluate Davidson's signs of maladjustment in children. Rosenzweig (117) outlined a complete project for validating the Rorschach test by the matching method.

2. Correlating results of the Rorschach Test with the results of other methods of evaluating the individual.

Ford (37) reported such a study in which a group of children was divided into three sub-groups on the basis of their emotional adjustment as indicated by the teacher's ratings on four items on the Olson Behavior Rating Scale, and into three sub-groups according to their social adaptation as indicated by the color responses on the Rorschach test. She found that there was a contingency coefficient of .50 when such groupings were made.

Rorschach approached empirically the study of the test as an instrument for differentiating levels of intelligence. He found from practical experience that certain criteria were helpful as a basis for differentiating the six levels of intelligence which he designated in his study. Most of the subsequent investigations have been of this general nature, that is, groups who are known to differ in levels of mental ability have been tested with the

Rorschach to see how the known differences are reflected in the Rorschach protocols or scoring categories. The present study is of this variety. In addition to this approach two others have been used to some extent:

1. Certain combinations of scoring categories which reflect levels of intelligence are given numerical value. The scores for such evaluations are then correlated with other criteria of mental ability, such as with teacher's estimates of intelligence or with the results of other tests of known validity. Such a study was made by Schneider. (123)

2. Another approach to the study of validity is that of matching protocols with various criteria of intelligence such as the Intelligence Quotient. Such a study was made by Hunter. (69)

C. RELIABILITY

Comparatively little consideration has been given to the problem of the reliability of the Rorschach test in the literature. On first consideration this may seem rather remarkable since so much emphasis is being placed on making the scoring more objective, on establishing norms and on proving the validity of the test. It may also seem remarkable in the light of the fact that the validity of the test is so closely related to its reliability.

The term reliability of a test is used with two slightly different meanings, the first having to do with the self-consistency or the internal-consistency of the test instrument, and the second meaning having to do with the dependability with which one may

obtain like results under like conditions when the same test is used as a retest or an equated form of the same test is used for the second test.

Self-Consistency

The degree of self-consistency is generally established by correlating the results of one-half of the test with those of the other half. The halves may be defined by separating the odd-numbered items from the even-numbered ones, dividing the first half of the items from the second half, or even by other schemes of dividing, the method used being dependent on the type of test. The term self-consistency may even be applied to the degree of consistency between two equated forms of the same test, each form being considered a part of the larger whole.

The split-half method is not logically applicable to the Rorschach test for the following reasons:

1. The test is a configurational one in which the whole test is needed for interpretation of the personality or for evaluation of the level of intelligence. Each part gains its significance from its place in the whole.
2. No one card can be equated with any other card, and no group of cards can be equated to any other group of cards. Each card was chosen, as Rorschach explained, because it tended to call for a different set of perceptual experiences than any other card.
3. A standard sequence in which the cards are to be presented has been arranged because the perceptual experience on one card

may affect the perceptual experience on another card. The pattern of progression of perceptual experience becomes in itself an important factor in interpretation.

In spite of the inappropriateness of applying the split-half method of study to the Rorschach, such studies have been made by Hertz (56), Vernon (145), and Thornton and Guilford. (137)

Dependability on a Retest

When we consider the dependability of the Rorschach as shown by the results of re-examination with the same test, we are confronted with involved problems. Suppose that the second test shows marked changes from the first. Theoretically these changes in the protocol might be due to:

1. A change in the subject's personality that is faithfully reflected in the second protocol;
2. If the person has not really changed, the difference in the second protocol may reflect the lack of reliability of the test, that is, its lack of dependability in calling forth the same type of responses. To the extent that the test lacked reliability it would also lack validity.

The interrelatedness of these factors as they apply to the individual would also, of course, apply to the questions of the validity and reliability of the test in its use with groups. It is this complexity of factors that has led to the great confusion of terms in many of the discussions on validity and reliability.

Often, especially in the earlier discussions, the two terms which have discrete meanings when applied to tests in general, were used interchangeably when applied to the Rorschach test.

The dependability with which a testing instrument will call forth the same results on the first test as on subsequent tests can be studied from two different manners of approach:

1. When the same form of the test is used for both the test and the retest.

2. When an equated form is used for the retest.

In each of these approaches the reliability may be evaluated either by:

- (a) Finding the degree of correlation that exists between the first tests and the second test, or by

- (b) Matching of the protocols by a series of competent judges.

1. The practice of retesting with the original Rorschach test has been evaluated differently by various workers. For example, Rorschach wrote: "If the test is repeated with the same plates, conscious or unconscious memory enters to warp the result. Analogous series of plates, different from the usual ones but satisfying the prerequisites for the individual plates of the basic series are necessary for these situations." (116, p. 53)

Other investigators do not agree with the necessity of having a parallel series. Piotrowski states that the only way of measuring the reliability of the Rorschach method is by "reexamination after a certain length of time. There is no practice effect in the Rorschach method because there is no conscious effort. The memory

factor is not so important as it would seem." (109, p. 443) The question of the place memory plays in retest has never been adequately investigated.

One of the first studies reported on the reliability of the Rorschach test as judged by the test-retest method was that of Mira (96) who gave retests to a group two weeks after the original tests. He concluded that the changes that occurred in the protocols reflected changes within the personality. He also concluded that the test was reliable, but his conclusion was not supported by any statistical evidence.

The first study of reliability by the test-retest method that was carried out with a satisfactory degree of thoroughness was that of Troup (138) who tested ten pairs of twins, ten to fourteen years of age, six months apart and had these protocols judged by six well trained Rorschach workers using the matching technique. Three judges were able to match all the protocols correctly, one matched ninety per cent correctly, and two judges matched eighty per cent correctly.

Fosberg (35) in 1941 made the most thorough study of the reliability of the Rorschach Test that had yet been made. He not only investigated the reliability of the Rorschach, but also made a comparable or parallel study on the Bernreuter Personality Test, so that he could compare the reliability of the two tests. After having given fifty adult subjects the Rorschach test, he repeated the test three times, the first time with the instructions for the subject to make the best possible impression of his personality,

the second time with instructions to the subject to make the worst possible impression of his personality, and the third time the test was given again under standard conditions, with the exception that the subjects had already taken the test three times within a comparatively short time. Fosberg found that there was a very high degree of correlation between the original test and the several retests and also between the several retests showing that the Rorschach test had a high degree of reliability. The results on this test were in sharp contrast to those on the Bernreuter Personality which showed that the subject could easily manipulate the test in order to present the type of personality picture which he wished to present.

A number of studies have been made using the test-retest method in which the authors have demonstrated to their own satisfaction that certain variables introduced experimentally did not change the basic personality pattern, that is, that the reliability of the test is so great that it cannot be easily influenced. Such a study was made by Wertham and Bleuler (153) who used the drug mescaline as the experimental variable. Kelley, Margulies, and Barrera (76) report a study of retests given to twelve patients during the amnesic period following convulsive shock therapy which was administered on the same day that the first Rorschach test was given. It was found that the electric shock therapy did not change the basic personality pattern. These findings were substantiated by those of Beck (19) in a similar study.

The investigation that has the most significance in relation to the present study is that of Swift (131) who made a rather extensive investigation of the reliability of children's Rorschachs at the pre-school laboratories of the State University of Iowa. Swift retested groups of children after varying lengths of time and worked out the degree of correlation existing between the categories used in the first tests and in the retests. The first part of the study was made on forty-one children ranging from 3 years, 1 month to 6 years, four months, the average chronological age being 4 years, 5 months, and the average mental age being 5 years, 10 months. The retest occurred after a thirty-day interval. The reliability coefficients for the twelve separate scoring categories that were used, ranged from $+ .15$ to $+ .83$. Fifty-one per cent of the responses on the retest were identical with the responses given on the first test, the range being from 8 to 100 per cent. In many cases the identical responses were the popular responses.

A second part of the Swift study was made on a group of children who were retested after fourteen days, at the end of the first seven days of which period, the group was given a test with the Behn-Rorschach cards. A third part of the study was that in which the original group was retested after a period of ten months.

Swift concluded that:

"Reliability coefficients for individual categories were too low to permit confidence in measures of them obtained from a single presentation of the test. Repetition of the test within a short time, and use of the combined scores as the total score, resulted

in reliabilities which compare favorably with those of many tests at the preschool ages. Nine of the twelve scoring categories had corrected reliability coefficients above $+.72$. Considering the difficulties inherent in applying quantitative procedures to material of the type given by the Rorschach Method, and the fact that interpretations based on the results are not made in terms of single factors but of constellations of these factors, the results justify the clinical use of the test as a reliable method." (131, p. 41)

Since none of the studies in which parallel blots have been used, have had much bearing on the study of reliability because of the difficulty of equating cards, we shall but summarize what Rorschach had to say about parallel series and mention the names of some of the persons who have worked with them. Rorschach thought that parallel series of blots were needed, which should be carefully equated card by card to the original set, and that the production of such series was not as difficult and time-consuming as it first appeared to be. (116, p. 53) Ink-blots supposed to be similar to the Rorschach ink-blots have been used by various persons such as Behn-Eschenberg (20), Struve (129), Weil (150), and Swift. (131)

In this chapter we have pointed out that although the Rorschach Test presents greater problems as far as standardization is concerned than most tests because of the almost limitless possibilities of individual responses and the configurational nature of the test, nevertheless there are certain aspects of the test for which more definite and uniform standards should be set up, such as the method

of administering and the method of scoring. Norms are needed for average children at different age levels before we are justified in making claims as to what an individual test shows either in relationship to intelligence or to personality. Logically it would seem that normative studies should precede studies of validity. We have also discussed the methods that have been used to establish the validity and the reliability of the test.

CHAPTER IV

REVIEW OF NORMATIVE STUDIES OF CHILDREN'S RORSCHACHS

We shall not attempt to cover fully the literature on Children's Rorschachs, but we will give a brief historical framework for orienting the present study and then review the recent studies that have the most bearing on the present investigation.

Rorschach, as has been stated previously carried on all of his experiments with adults. In his book Psychodiagnostics he confined his remarks about children's Rorschachs to a discussion of the need for norms on the different age levels and to theoretical assumptions of what one might find in the tests of young children. However, in his book he does refer to two persons who had done work with children, namely Szymon Hens and Behm-Eschenburg. Hens published in 1917 a study called, "Testing the Imagination of School Children, Adults, and Mental Patients by Means of Formless Blots," which emphasized the content of the test rather than "the pattern of the perceptive process." (116, 102) And of Behm-Eschenburg Rorschach wrote that "the work of H. Behm-Eschenburg (1921) is the first contribution to the systematic study of various age groups. He examined 220 school children from the ages of 13 to 15." (115, 96)

Studies in which the Rorschach cards were used were made in Europe on adolescents and preadolescents by such workers as Mira (96) in 1925, Lœpfe (91) in 1926, Loosli-Usteri (93) in 1929, Schneider (123) in 1929, Dubitscher (30), in 1933 and Kerr (78)

in 1934 whose study dealt with 365 children, a group which included not only adolescents but children down to seven years of age which was the youngest group to be studied up to that time.

David Levy introduced the Rorschach Test in this country in 1924. He and Beck, his student, were connected with the Institute of Child Guidance in New York City, where they were the first persons in this country to use the Rorschach Method with children. In 1931 Beck contributed his first article on the use of the Rorschach Test with problem children (14) and in the following year, 1932, he published his study on the Rorschach in relation to the Feeble-minded (12). Klopfer was the first, in 1939, to write on the application of the method to preschool or early childhood levels. In 1941 (89) and 1943 (88) Krugman published articles about the use of the test in Child Guidance Clinics.

Although journal articles have appeared on the subject, not much attention has been given to Children's Rorschachs in the books. Beck in his monograph, Introduction to the Rorschach Method (5) has a chapter on problem children but confines his discussion in his Rorschach's Test (15) to the adolescent and adult years. Bochner and Halpern (24) have one chapter on children's protocols. Klopfer and Kelley make but very few scattered references to children in The Rorschach Technique. (84) Ford in 1946 published The Application of the Rorschach Test to Young Children (37), the most complete study on children's Rorschachs that has been published. This book will be summarized later in this chapter.

In the several investigations on children's Rorschachs that are summarized in this chapter, different methods of administering and scoring have been used so that the results are not always comparable.

Kerr in England in 1934, published the first study in English in which there was an attempt to investigate the validity of the test and also to establish some norms for children of different age levels. Three hundred and sixty-five English children were tested ranging in age from seven to fourteen, forty of whom were between seven and eight. Some of the children were normal, some mentally defective, and some were anti-social. Lack of data regarding the mental age levels of the children tends to detract from the value of the norms presented.

Kerr's results show that there was a tendency for W, M, and originals of good quality to increase with age while the A percentage declined, and this was especially true of full or "dilated" protocols. This bears out Rorschach's conclusions. However, she warns that "in the case of the koartive subjects it is wise to exercise great caution, as usually they give less than the average number of whole answers for their chronological age and a very much higher animal percentage." (78, p. 183)

The first article in this country dealing with Rorschach norms for young children was that of Sunne, 1936, (130) who had as his immediate purpose the establishment of norms on the lower age levels. He tested 1653 white children and 2068 Negro children in nursery schools, kindergartens, and first grades in New

Orleans, and 712 mountain children all of whom were in the primary grades. Mental ages were obtained on all the children from the Stanford Revision of the Binet Test, the Yerkes Point Scale and Goodenough Drawing of a Man Test. Summe reports, "Close similarity at all year levels of the means of the majority of the (Rorschach) categories. . . . The same patterns occur from the fourth year on through the different chronological and mental ages, and a considerable number of retests indicate a stability of these patterns as great as that of the I. Q." (130, p. 309)

Another investigator, Hunter, (69) made one of the most systematic attempts to check on the validity of the test as a measure of intelligence as well as a measure of personality adjustment. The subjects of her study were fifty children in Honolulu who ranged in age from eight to twelve years. The following questions were proposed for study.

1. Can the Rorschach test be used to indicate emotional stability and degree of integration or maturity of personality?
2. Can the Rorschach test be used to obtain an estimate of intelligence sufficiently accurate to serve as a check on other intelligence tests?
3. Can the Rorschach test throw any light upon the problem of discrepancies between potential ability as indicated by the Binet and actual school achievements?

The matching technique suggested by Vernon was used in the study of stability and maturity, which Hunter concluded "was a very rough method of comparison, calculated to differentiate only the extreme cases."

In the matter of judging intelligence the study showed more encouraging results considering the fact that the scores on the other intelligence tests were unknown to Miss Hunter when she made her estimates of intelligence by the Rorschach Test. She rated each child's intelligence as shown by his performance on the Rorschach on a five-point scale. "The Contingency coefficient on a five-point table between the psychologist's estimates and the Binet IQ's was .69: between the psychologist's estimates and Maze IQ's C was .60: between psychologist's estimates and the averages of the Binet and Maze IQ the coefficient was .78. According to Garret the highest coefficient possible on a five-point contingency table is .89." (69, p. 290)

Hunter was able to estimate the intelligence of the children within five points of the Binet score in 76 per cent of the cases.

In summary Hunter makes the following statements:

"It does seem possible to draw the following tentative conclusions from this investigation: first, the Rorschach test can be used to obtain an estimate of intelligence sufficiently accurate to serve as a check on other tests of intelligence. Second, the test seems to indicate general all-around level of functioning somewhat better than either the Binet or the Maze tests alone. Third, it does seem capable of bringing to light emotional conflict which does not always appear in response to other tests and cannot always be observed in the child's behavior during the examination period, but is often amply corroborated by teachers' observations.

Fourth, insofar as it seems capable of indicating emotional blocking or dissipation of energy by neurotic fear, it should help to explain discrepancies between potential ability as indicated by the Binet and actual school achievement." (69, p. 294)

We will discuss a study carried out by Paulsen (103) at some length because of its bearing on the present study. She chose 82 children, 47 girls and 35 boys ranging in age from 5 years and 11 months to 7 years and 5 months, most of the children being within the age range of 5 years and 11 months to 6 years and 10 months. These normal children were representative of the Manhattan Public Schools as a whole. Each child was given a Rorschach, a Revised Stanford-Binet, Form M, the Goodenough Drawing Test, and a simple achievement test.

The Intelligence of the group is reported in the following figures:

	Mean I. Q.	Median I. Q.	Range of I. Q.
Boys	98.2	97.5	71-120
Girls	97.7	97.9	69-129

The attitude of the different children toward the Rorschach varied considerably from that of being bored to that of being intrigued with the test.

Paulsen, who wrote that "there was no question about the scoring (except for F plus) in about two-thirds" of her records reported the following findings:

Responses: The average number of responses was 15.

Apperceptive type: There were about as many W as D; however, small d and Dd were given infrequently. Space responses were given by the more intelligent children who tended to be more assertive. The quality of the W increased with intelligence, the superior children giving more accurate, better organized and more highly differentiated wholes often of a combinatory nature. Boys, generally speaking, gave more W responses than girls, whereas girls tended to give large and small details slightly more than boys.

Movement responses: Movement responses of some kind were given by 57 per cent of the boys and 38 per cent of the girls. M and MI responses increased with intelligence. Only those responses were credited with M in which the child gave clearly an M response in the performance or indicated his intention of doing so in the inquiry. Some children added an M element as they narrated which is an artificial type of movement response. The number of M responses is not in agreement with the study of Dubitscher, who reported that there were no M responses at the six-year level.

Form responses: The F per cent was inversely related to intelligence, that is the greater the use of other determinants and the greater the differentiation of the more intelligent children, the less dependence there was on pure form. However, the quality of the form or the form accuracy increased with intelligence.

Color responses: All but 28 per cent of the subjects gave some color responses. There was doubt about some of the scoring because some children would not respond to the inquiry, and

especially was this true when the scorer tried to distinguish between FC, CF and C responses. FC responses were given by 25 per cent of the boys and 34 per cent of the girls. These responses increased significantly from the dull to the superior children. CF responses were given by 49 per cent of the boys and 57 per cent of the girls. Here, there was no significant difference in the dull, average, and superior children. C responses were given by 38 per cent of the boys and 51 per cent of the girls. More poor C responses are given by the less gifted.

Shading responses: The use of shading both of the c and K categories increased significantly from the dull through the average, to the superior children.

Contents: There was a definite increase in the number of human responses with increased intelligence. The content also became more varied.

Popular responses: Paulsen used Beck's list of popular responses. She found that more popular responses were given by superior children. Only six out of the eighty-two gave no P responses. Of these six, two were of border-line intelligence, two were recommended for psychiatric examination, and two were quite infantile. The increased incidence of P with increase in intelligence seems logical since the popular responses, are determined on their instance in adult protocols. Paulsen concluded that the complete absence of any P's seemed to be the one single sign that was more significant than any other in indicating a pathological condition.

Experience Type, M:C Ratio: Fifty-nine per cent showed extensive ratio, that is the sum of C exceeded the M. Twenty-seven per cent showed an introversive ratio, that is the M is greater than the sum of C. The extroversial swing at this age was also noted by both Dubitscher and Klopfer. The duller children showed more restriction, and the brighter children showed comparatively fuller expression. Girls showed more color responses and boys more movement, but the overlapping was great.

Paulsen's study led her to the following conclusions:

1. Factors that were most closely associated with intelligence as measured by the Terman-Merrill Revision of the Stanford Binet Test, Form M, were:

- (1) Quality of W's
- (2) Quality of M's and number
- (3) Number and quality of FM
- (4) Number of FC in relation to CF and C
- (5) Number of Human Responses
- (6) Number of P responses
- (7) F+ per cent

2. There are cases "in which the Rorschach points to a quality of intelligence not revealed by the Binet, and conversely, there are a few children with higher IQ's than would have been predicted from the Rorschach." (103, p. 28)

3. "The response at this age is qualitatively so different from that of the ten-year-old group (probably even eight-year-old children) that the usual criteria (with the possible exception

of P) for differentiation between the pathological and normal cannot be taken too literally." (103, p. 29) As judged from criteria appropriate to an older group, about half of the six-year-old protocols seemed in some degree pathological.

The next three studies are a sequence of studies that have appeared in the Rorschach Research Exchange. The authors vary, but the goal is the same, namely that of gaining more definite information about the Rorschach reactions of early childhood. Rorschach Reactions in Early Childhood, Part I (85), was written by Klopfer and Margulies with contributions having been made by Murphy and Stone, Part II (74) was written by Kay and Vorhaus, and Part III (148), by Vorhaus.

Klopfer and Margulies report on material that was collected from 205 protocols taken from 155 children between the ages of two and seven years, from various nursery schools and day schools, the protocols having been gathered by several different investigators.

A small number of these children ranged from 80 to 100 in Intelligence Quotient, while 80 to 90 per cent of the group had Intelligence Quotients ranging from high average to superior levels.

The authors discussed the various degrees of perseveration that exist in the Rorschachs of very young children and reported that only one of the five-year-old children and none of the six-year-old children gave perseverated responses to over three cards.

The average number of responses for the 52 five-year-olds and the 23 six-year-olds was 18.4, and the ranges were from 6 to 36 for the former group and from 9 to 35 for the latter group.

That Paulsen, in comparison, found an average of only 15 responses on the six-year level might be explained in part by the fact that she was not dealing with as many superior children. The authors found that of the group of five-year-olds, only six children, or 12 per cent, of the group rejected cards, only two of whom rejected more than two cards, and of the six-year-olds only one child rejected cards.

The following figures show the average number of the major determinants in the age groups in which we are particularly interested:

Age Group	M	FM	m	Total F	FC	CF	C
4 - 4.11	.67	1.78	.15	6.56	.88	1.24	.54
5 - 5.11	1.11	2.09	.23	8.88	1.29	1.44	.75
6 - 6.11	.95	3	--	8.91	2.08	.78	.69

(85, p. 21)

Klopfer found that 54 per cent of the five-year-olds and 65 per cent of the six-year-olds gave M responses. He concluded, however, that "The average per child never reaches one M and it is most likely that M's are to be found almost exclusively in superior children below the eight-year level." FM's increase with age while "the average number of m as well as the proportion of children using it seems too small and irregular to warrant any specific significance in early childhood." (85, p. 21)

The children of this study reached the peak of their CF responses between the ages of five and six years, or about a year earlier than the more nearly average group of Paulsen's. It was

not until the approach of the seventh year that the FC responses appeared in a predominance among the color responses.

Although the number of pure form responses decreased with age, the percentage at all the levels remains at about fifty per cent.

In Rorschach Reactions in Early Childhood, Part II, (74), Kay and Vorhaus centered their interest on the "intellectual aspect of personality development" and attempted "to ascertain the development of certain cognitive factors" especially as revealed in an analysis of location scores in children as reflected in the Rorschach protocols of 138 children ranging in age from two to six years, eleven months. Only thirty-three of the records were obtained by Vorhaus, the others being the same that were used in the preceding study. (85)

The conclusions of the study were as follows:

1. The number of responses increases significantly with age from 11.6 in the four-year-old group to 19.5 in the six-year-old group.
2. The number of rejections of cards decreases with age.
3. The actual number of W responses increases until the age of six years, but the percentage of W decreases after four years as the D and d become more prominent due to increased differentiation. The arbitrary W decrease with age. The W depending on organization are fewer at all levels than those depending on mere outline. The "pseudo-psychotic responses," that is those showing confabulation, contamination, fabulation, and confabulatory combination, increase somewhat with age up to the seven-year level.

4. The percentage of children giving popular responses increases with age. The W popular responses are more frequent at each age level than the D popular responses. The popular response to Card VI requiring shading as a determinant does not appear until the fifth year.

Kay and Vorhaus point out that this study and the following one have three main limitations: (1) The material was collected by different authors; (2) data on mental ages and Intelligence Quotients were lacking for groups with different chronological ages; and (3) some of the groups are rather small to use as the basis for conclusions.

Vorhaus in Rorschach Reactions in Early Childhood, Part III, (148) reported on the same 138 children that were reported on in the study which she did with Kay, but in this section of the study she gives a detailed analysis of the frequency areas used "from the point of view of form level and content, with an eye to noting significant age differences." The problem as stated "is to determine to what extent pre-school children respond perceptually to the same configurational units as does the unselected sample whose location choices were made the basis of the Klopfer and Kelley list of Usual Large and Small Details." (148, p. 71) Vorhaus was interested not only in usual details, but also in the areas that often elicit popular responses.

She found that the rank order of preference for the usual details was for the most part the same for children as for adults

although there were some differences. When differences did occur, they seemed to be due to:

1. Differences in interest level in the two groups as far as the content was concerned. Adults would frequently respond to Card I with "pelvis," a concept outside the child's realm of interest, whereas children were apt to respond to the vertical center of Card V with "rabbit," a concept quite appealing to them but not so challenging to an adult. Adults show, generally speaking, much interest in humans while the children seldom respond with human content, the animal content being more interesting to them.

2. Some blot areas can be very easily differentiated by adults which seem to be a little too difficult for a child to organize as a sub-gestalt. Thus, on Card IX, the pink D area is easily seen as an "elephant's head" by adults, a content appealing to a child but the area itself is too difficult for a small child to organize. The same holds true for the "deer's head" on Card IX.

3. Some details, because of their color and size, are particularly arresting to children. On Card X the large pink portion ranks first with children but only ninth with adults.

The blot areas not included under normal details that most frequently stood out for children were the white spaces on Cards II and VII and the "little house" on Card VII, a figure that resembles a child's graphic representation of a house.

It was found that the responses which are listed by Klopfer and Kelly as popular responses for adults appeared very frequently

in the children's responses, except for the "green worm" on Card X. Frequency tables are given showing (1) the frequency of popular responses at each of the different age levels, (2) the frequency of certain responses which appear a little less often than the popular responses, and (3) the frequency of responses not often used by adults but used repeatedly by children, such as the four-legged animal or bird for Card III, a four-legged animal for Card IV, and tree for Cards VI, VIII, and X.

Some concepts show a steady increase with age, some show a peak at a given age with a subsequent decline in their use, and some show no discernable pattern.

The differences between the Roschach protocols of boys and girls was investigated by Stavrianos (126) who studied 131 children ranging in age from five to eleven years. This total group she divided into three sub-groups as follows: Group I ranged from five to seven years in age, Group II, from seven to nine years of age, and Group III, from nine to eleven years of age.

Since Stanford Binet tests were available for only about one-third of the children, teacher's ratings were used to divide the subgroups into below average, average, and above average groups. The boys and girls were quite roughly equated as to intelligence and in the first group even as to age. Because of these factors the tendencies reported are interesting rather than conclusive and convincing.

Stavrianos concluded that girls in their Rorschach responses showed more intellectual maturity than boys of the same chronological age. The greater maturity was evidenced in the following areas:

1. Location. Girls shift away from vague wholes and show greater differentiation in the choosing of sub-wholes or parts, (D and d), at an earlier age than boys.
2. Determinants. The girls between five and seven showed a number of M responses, the boys none.

The girls showed a greater impulsiveness than boys from the ages of seven to nine as indicated by the fact that (a) the color relationships as evidenced by the ratio of FC to CF and C, were less mature in the girls' responses than in the boys'; (b) the form accuracy was not as good at this age among the girls as among the boys.

3. Content. The girls between five and seven gave more mature content responses including many H and Obj. responses whereas the boys gave more nature, anatomy, and sex responses.

A preliminary study was carried on by Gair (40) the purpose of which was to show how the Rorschach protocols of a group of twenty-nine seven-year-old children, with highly superior intelligence, compared with the protocols of more average groups of children ranging between seven and eleven years in chronological age.

The ranges and the averages of the chronological ages, of the mental ages, and of the Intelligence Quotients were:

	Range	Average
C. A.	7-1 - 7-6	7-3
M. A.	9-11 - 12-8	10-8
I. Q.	135 - 174	146

Gair compared the responses of these very superior children to the responses of the different age groups used by Stavrianos. The following trends are of interest:

Number of Responses. The average number of responses of this very superior group is 15.1 and above the average for the seven- and eight-year-old groups of Stavrianos, who found for that age group an average of only 13.3 responses.

Manner of Approach. This group of superior children gave more W and fewer D responses than the seven-year-old children of average mental ability, or even average children of slightly older groups. The W's from the superior group were of superior quality. Many of the additionals were D.

Determinants. Analysis of the determinants showed greater maturity in the following:

(a) The F percentage was lower than for the average seven-year-old group, showing proportionately a greater use of other determinants. The form was of superior quality.

(b) The N percentage of Gair's study is similar to that of the nine- to eleven-year-old group of Stavrianos.

(c) Crude C's were lacking. However, the CF responses were high, perhaps because of the refusal to use crude C responses, and perhaps because of the greater emotionality of this particular superior group. The FC percentage is above that found by Stavrianos in either the nine- or eleven-year-old groups.

(d) The present group gave more shading and achromatic responses than did the Stavrianos groups, showing greater differentiation and perhaps indicating factors of emotional significance.

Content. These highly superior children showed:

(1) As high a use of H and Hd responses as did the nine- to eleven-year-old group of Stavrianos.

(2) A much wider range of interests as shown through variety of content than was evidenced in the average nine- to eleven-year-old group.

Gair's study suggests that superior children show finer differentiation and a greater breadth of interest than do average children of the same mental age level as the superior children.

Emotional Maturity. The children were judged by their teachers to be well adjusted children. As a group they showed six of Davidson's "signs" (40, pp. 36 and 37) indicating good adjustment namely, the sum of color was greater than the achromatic and surface texture responses, the F% was less than 50%, Dd and S were less than 10%, FC was greater than CF, there was an absence of pure C responses, and the animal % was less than 50%. Moreover, when the group was divided into three groups according to comparative degrees of

adjustment it was found that five signs "all show a trend in the expected direction in differentiating the three maturity groups." These signs were the sum of C is greater than $Fc + c + C'$, P, R, FC is greater than CF and the percentage of responses to the last three cards is equal to 40% or over of the total responses.

The very interesting suggestion is made in relation to the possible significance of the high number of CF responses that superior children may show a slower pace in emotional development than in intellectual growth.

Hertz, who has made the outstanding contribution in establishing norms for adolescents, has turned her attention in a recent investigation to the problem of establishing norms for young children for the manner of approach, that is the relative number of responses that fall into each of the several Location Categories. Aware of the spuriousness of attempting to evaluate children's Rorschachs on the basis of adult Rorschachs, Hertz and her co-worker, Ebert (65) investigated the manner of approach for six-year-old and eight-year-old children.

The subjects were 242 six-year-old children, 111 boys and 131 girls, and 208 eight-year-old children, 90 boys and 118 girls. The average Intelligence Quotient for the younger group was 117 as judged by the Stanford-Binet Intelligence Test. For the older group, the average Intelligence Quotient was 124 as judged by the Terman-Merrill Revision of the Stanford-Binet Test. It is important to note in this connection that a six-year-old child with an Intelligence Quotient of 117 would have a mental age of seven years.

And an eight-year-old child with an Intelligence Quotient of 124 would have a mental age of nine years, eleven months, or almost ten years. So Hertz is not using an average group on which to establish her norms.

Hertz and Ebert (1) present norms for usual and rare details which they offer as "scoring criteria for Rorschach records of similar age, mental age and cultural status;" (2) discuss the propensity each card has for eliciting whole, usual detail, rare detail and space responses; and (3) summarize the characteristics of the mental approach of each of these two age groups, comparing the characteristics of each group with the other and with the twelve- and fifteen-year-old groups which Hertz had studied earlier. Whereas for adults the generally accepted ratio of W to usual details is about 1:3, Hertz reports that the six-year-old group gave 41 per cent W responses and 39 per cent usual detail responses.

Hertz and Ebert conclude that "while six-year-old children grasp certain large common and obvious factors in objective situations, they more characteristically react to the whole, often unanalytically and uncritically. Eight-year-old children likewise embrace the whole of a situation on occasion, but they show ability to analyze it into its obvious and essential features. They show more capacity to react differentially to the different aspects of objective situations. It may be said that at least from eight years on, children tend to become more analytical and more specific. At this age, the beginnings of mature patterns of mental procedure become

evident. The characteristic manner of approaching problems and situations is little different in eight-year-old children from that of older children or adults." (65, p. 23) It should be kept in mind that these eight-year-old children were approximately ten years of age mentally.

In 1944 Swift (131) reported on 82 children, 37 boys and 45 girls, who were enrolled in the Preschool Laboratories of the State University of Iowa. The chronological age range was from 3-1 to 6-4, the average being 4-8. The average Intelligence Quotient was 124.6, with a range from 92 to 165. Swift presents normative data showing the frequency of various categories, the relationship between a number of the categories and mental and chronological age factors and a comparison of the performance of the two sexes.

She investigated (1) the validity of the test, using the matching method and (2) the reliability of the test, which has been mentioned briefly on pages 52-53 of the present study.

She also reports her investigation of the relationship that existed between a single personality variable such as insecurity as measured by the Rorschach test and behavior that is symptomatic of insecurity. Fifty children of the above-mentioned group, 22 boys and 28 girls, were studied. These children, all of whom were "normal," ranged in age from 4-0 to 6-0, the average being 5-1. The average Intelligence Quotient was 123, the range being from 100 to 156.

The data on the degree of the child's insecurity in his day by day behavior were collected by means of (1) a teacher rating scale and (2) interviews with the parents. "Data concerning the Rorschach measure of insecurity were obtained from two sources: (1) ratings of insecurity made by an experienced Rorschach interpreter on the basis of two complete Rorschach records for each child, and (2) quantitative analysis of the Rorschach records in terms of eleven 'signs' of insecurity or maladjustment." (153, p. 205)

The signs used by Swift are listed below, the relationships indicating good adjustment are shown in the parentheses.

- "(1) Relation between FC, CF and C (FC should equal or exceed CF and C)
- (2) Relation between Sum-C and $Fc + c + C'$ (Sum-C should exceed $Fc + c + C'$)
- (3) Relation of M to FM (M should equal or exceed FM)
- (4) Frequency of F responses (F should not exceed 50%)
- (5) Presence of C' (There should be few C' responses)
- (6) Presence of pure C responses (There should be not more than one pure C response)
- (7) Presence of K responses (There should be few K responses)
- (8) Presence of m responses (There should be few m responses)
- (9) Sum-C should exceed zero (There should be some responses using color)
- (10) Number of rejections (More than two cards should not be rejected)

(11) Frequency of Popular responses (There should be at least four Popular responses)" (131, p. 57)

It seems to the writer that Swift's study illustrates excellently the need of establishing norms for children. It is fallacious to suppose that one can meaningfully superimpose patterns indicating maladjustment in adult Rorschachs upon children's Rorschachs. The signs are inappropriate for children for two reasons: (1) some of the so-called "signs" are characteristics that are usual in children's Rorschachs. They become significant of maladjustment on the adult level because they represent an immaturity commonly found in children; and (2) some of the signs are dependent on a level of maturation not yet reached by the child.

It is not surprising then, that Swift found that the signs of insecurity in adult Rorschachs did not serve to distinguish the protocols of the four- to six-year-old children who were emotionally insecure from those who were not as judged by teacher's and parent's evaluations. She concluded, however, that "more hopeful data with regard to validation of the Rorschach measures of insecurity were found when situational or stimulus factors were used as criteria." (133, p. 205)

In a recent book, The Application of the Rorschach Test to Young Children (37), Ford has reported on her studies of (1) the reliability of the Rorschach Test, (2) the validity of the determinants of personality and (3) the validity of the determinants of intelligence. She used 123 children ranging in chronological

age from three to eight years and in mental age from four to nine years, eleven months. The average Intelligence Quotient was about 124.

This investigator used fifty-five of the children in her study of reliability and found by the test-retest method that there were positive correlations ranging from $+.38$ to $+.85$.

When evaluating the Rorschach Test as a method of studying personality, Ford centered her analysis on (1) the M:C-sum ratio which is supposed to indicate the introversive-extroversive pattern of the personality; (2) the significance of the number and kind of color responses as being indicative of emotional stability; (3) the use of P as reflecting social conformity; (4) the Manner of Approach or Mode of Apperception as compared with that of the adult and (5) the succession or pattern of sequence as far as the location areas are concerned.

The Marston Introversion-Extroversion scale was used with thirty of the children as a check on the introversive-extroversive pattern or Erlebnistyp as reflected by the M:C-sum ratio in the Rorschach test. Ford found that the correspondence between the two was 60 per cent when only the M:C-sum was used, but that it rose to 73 per cent when the M:C-sum with the addition of the R (VIII-X):R Ratio was used. Ford further found that when the subjects were divided into three groups on the basis of their emotional adjustment as indicated by the teacher's ratings on four items on the Olson Behavior Rating Scale and the group was divided into

three groups according to the social adaptation as indicated by the color responses on the Rorschach Test that there was a contingency coefficient of $+.50$.

In studying the validity of the determinants of intelligence, Ford divided the total group into three sub-groups of varying chronological ages and mental ages but of approximately the same average intelligence quotient level. She compared these groups and found the following:

Number of Responses: The total R increases with chronological and mental age.

Location: That there is little correlation between the mental age and the number of W. Small children give many poorly organized W. The number of W decrease slightly as the mental age increases. D and Dr increase with mental age.

Determinants: There is a marked increase of F, F+, F+%, M+%, O+% with chronological age and mental age, and a less marked increase in M+, M%, FM and F%%. There was a decrease of F% as other determinants become relatively more frequent. C-sum (including C, CF and FC) showed almost no variation with age.

Contents: The A and H increased slightly. The H% increased with mental age but the A% remained about the same this not bearing out, on the children's level, Rorschach's assumption that the A% was inversely related to intelligence. The variety of content tends to increase with age.

Frequency of Responses: P responses tend to increase with the age but was highest for the middle group. 0 and 0% increase with age. There is a marked increase in 0+% with increasing age.

Two measures have been introduced by Ford in evaluating intelligence:

1. Obj., which stands for the total number of persons, animals or objects mentioned in the entire protocol and hence gives an additive summary of the total differentiation in the content area.

2. OL is a symbol used to denote organizational links. "This represents the number of logical connections within a record. For example, the response, 'a man walking a fence' would receive the score of 2 OL." (37, p. 28)

Both of these categories show decided increase with increased mental age.

Ford also attempted to compare the results of her group in relation to various levels of Intelligence Quotients. This comparison does not seem particularly meaningful because of the wide variation of chronological and mental ages represented within these groups.

It is evident that most of these investigations deal with superior or highly superior children. There are only two studies that deal to any great extent with average children: (1) that of Paulsen in whose group there was a very wide range of intelligence as she divided different age groups into below average,

average, and above average subgroups. The groups which Hertz studied had very high average or superior intelligence. No reports have appeared in the literature of studies made on children of just average intelligence.

CHAPTER V

THE PRESENT STUDY

A. The Purpose of the Study

Several diverse opinions of the value of the Rorschach Test as an instrument for evaluating intelligence were discussed in Chapter II. Some investigators such as Hunter, Klopfer, and Krugman, have reported very favorably on the test as a test of intelligence, and yet there are no established norms for young children of average mental ability at the different chronological ages to demonstrate the extent to which the Rorschach Test does differentiate the different mental age levels.

The present study which is exploratory in nature has the following purposes:

1. The main purpose is to find out both the qualitative and quantitative characteristics of Rorschach protocols of average children at the age levels, five, six and seven years, and to evaluate the differences among these groups to see if the differences are sharply enough defined so that they could serve as a basis for judging a protocol to belong to one group rather than another.

2. A second purpose is to find out what differences exist between groups of children who are chronologically five years of age but who vary in mental ability. We have chosen for this comparison children of average, superior and very superior mental ability.

3. A third purpose of the study is to compare the protocols of children who are of similar mental age but who differ in chronological age. We have chosen to compare the protocols of children who are five years of age chronologically but approximately six years of age mentally with the protocols of average six-year-old children and to compare the protocols of children who are five years of age chronologically but approximately seven years of age mentally with the protocols of average seven-year-old children.

(See Table I, page 8)

B. The Subjects

The present study was carried out in Lawrence, Kansas, a city of about 15,000 population. The population is relatively homogeneous and relatively stable. The subjects came mainly from the five elementary schools in the city. A few subjects, children of residents of Lawrence, were not yet enrolled in school at the time of the study.

The following criteria were used in choosing the children of whom the above mentioned groups were composed:

1. The child had to be of the correct chronological age and within thirty days of his birthday at the time the Rorschach Test was given.

2. The mental age of the child was judged on the basis of two tests, the tests used being the two forms, M and L, of the Terman-Merrill Revision of the Stanford-Binet Test. Only children whose Intelligence Quotients on both of the tests fell between 90

and 110 were placed in the average groups. The two Intelligence Quotients of the superior children fell between 115 and 130 and the two Intelligence Quotients of the very superior group fell between 124 and 147. The two tests were given in order to determine as accurately as possible the levels of intelligence with which we were working, since there may be considerable variability of performance between the test and retest on the above mentioned scales, especially with young children. Such variability has been pointed out by many authors among whom is Katz (73) who found that on retests forty per cent of the three- to five-year-old children showed fluctuation of twenty or more Intelligence Quotient points.

3. The children were all making an adequate enough adjustment in school so that their behavior had not presented any particular problem in the class room. A few of the protocols, however, according to the usually accepted criteria for maladjustments, did show some signs of maladjustment.

The two Intelligence Quotients on the two intelligence tests for each child were averaged so that a single mean Intelligence Quotient was assigned to each child. Since the intelligence tests were given at varying time intervals from the Rorschach Test, a correction for the mental ages had to be made by establishing a mental age as of the date on which the Rorschach Test was given on the basis of what the mental age had been at the time of the intelligence tests.

C. The Procedure

The Cards: The original ten Rorschach Ink-blot cards were used. These cards have been widely enough used so that it scarcely seems necessary to describe them here.

The Examiners: All the Rorschach Tests were given by two examiners, the writer and an assistant who was trained by the writer. The writer had worked with the Rorschach Test with adults for four years and had given over fifty tests to young children before the present study was begun.

Good rapport was established before any testing with the ink-blot was begun. Each child was given the Rorschach Test by the same person who previously had administered at least one form of the intelligence test.

Places: The tests were administered in testing rooms furnished by the schools during school hours or in the Psychological Clinic of the University of Kansas. The child was alone with the examiner at the time of the test.

Position of the subject: The subject was placed slightly in front of and to the left of the examiner.

The Administration of the Test: The administration of the test is divided into three parts (1) the performance, (2) the inquiry and (3) testing the limits.

(1) The performance. The instructions were very simple; with the cards face down the examiner picked up the first card and said,

"This card has a kind of picture on it," and when the examiner handed the first card in an upright position to the child she asked, "What do you see on the card?" We also told the child that he could turn the card over face down when he was through with it. If the child said it looked like paint or ink, he was asked what the paint or ink looked like. If he was at all curious about how the blots were made, we explained briefly the procedure, promising to show him how to make ink-blots at the end of the test. We demonstrated the making of the ink-blot at the end of the test to only seven or eight children.

Responses and remarks were recorded verbatim. Notes were made of any overt reaction to the card. Encouragement with a nod, a smile or a simple comment was given but never with the suggestion that more responses were expected.

The reaction time, that is the time between the presentation of the card and the first response, was recorded for each card. The timing was done with an ordinary watch with a second hand. The writer wore a wrist watch on the inner side of the left wrist thereby making the timing so unobtrusive a part of the procedure that the child was not aware that he was being timed.

(2) The Inquiry: The inquiry was not given until after the performance proper on all of the cards had been completed. The purpose of the inquiry was (1) to clear up any uncertainties about the location, determinants or contents and (2) to give the subject an opportunity to give further responses if he so desired. All the additional responses were recorded and tabulated separately from the main responses.

Although the relationship between the responses given in the performance to the responses given in the inquiry may be quite significant in relation to the personality pattern, the dividing of the two groups of responses, as far as evaluating the general intelligence is concerned, seems a somewhat questionable practice. It is interesting to note that Kay and Vorhaus (74) in analyzing the quality of the wholes combined the main and additional responses because they were "interested in what the child had been able to do any time during the performance." That a response is given in the inquiry by a child rather than in the performance proper seems to be largely a matter of the child's fresh attention to the card and the result of his having a longer time for maturation of perceptual experiences in relation to the card. Several of the children gave one diffuse response to Card X in the performance and then in inquiry gave four or five rapid responses to different details.

The inquiry presents special problems in relation to children because of the following factors:

(a) The relative lack of interest or ability of the child to analyze what about the card made him respond as he did. When a child is at a stage where he is giving diffuse and global responses, he is probably also at the stage where he is unable to analyze the reason for his giving the response he did.

(b) The change in the child's perceptual experiences which may lead him to deny the first concept assigned to the card, to vacillate between the two concepts or to fuse the first and second concepts. The child's own confusion complicates the problem of inquiry.

(c) The suggestibility of children. A cooperative child will try to be accommodating and to assign some reason for his choice. He may try to find reasons (1) on the card or (2) from his associations with the concept given. An example of the first type is to be found in the protocol of the child who explained his choice of concepts on all the achromatic cards with "cause it's black," although blackness had little or no connection with the concepts given. An example of the second variety is found in the response of a child who, when asked what kind of a butterfly he saw on Card V, said, "Yellow." In an attempt to explain his choices the child may give a narrative or fabulatory explanation that may have only a devious connection with the original perception.

Because of the suggestibility of the child one has to be very careful about the type of questions asked. This point will be discussed more fully shortly.

In the inquiry about the location we most frequently asked, "Where on the card do you see . . .?" If uncertainty about the location still existed, we used two other methods of approach: (1) we asked the child to show us a part of the concept mentioned, for instance, if the child had given the response "bear" we might ask the child to point to the nose, tail, paws, etc.; or (2) we pointed to different areas of the card and asked what they were. This pointing to a specific part of the card may focus the child's attention on that area of the card with the result that an additional response may be given.

In the inquiry when in doubt about the determinants, we asked, "What about the card makes it seem like . . .?" In trying to find out whether a child had seen movement, we most frequently used two types of inquiry, (1) pointing to the various parts of the card where movement would be most likely to be seen and asking what that part was, and (2) pointing to a part of the card adjacent to the concept and asking what that was, to see if there was any action relationship between the concept and the surrounding area. For example, on Card III when the black area had been seen in the performance as men, without motion being stipulated, in the inquiry we would point to the lower center black area that is often seen as a basket and ask what that was. The question, "Is he alive?" when applied to a human or an animal seems to us of questionable value. Most children, preferring the idea of the creature's being alive would answer in the affirmative while some of them would answer laconically, "It's dead!" When one asks the child how he knows it is alive, one is rather demanding that action be given as proof. We have not followed the practice of assigning an additional movement response when movement is suggested to the child through analogy.

When trying to find out if the child saw color, we asked first what about the card made it look like the concept mentioned. If this brought forth no suggestion of color, we asked, "What kind of a is it?" Also, when in doubt, we pointed to the figure on the location chart and asked the child, "Does this look as much like a on here?" This frequently elicited color, although that a child does not point out a color difference does not

necessarily mean that he has excluded color in his original perception.

Vorhaus, in correspondence, suggested in doubtful situations that the examiner close his eyes and say to the child, "Let's play like I can't see it and you tell me all about it so I'll almost see it."

However, this practice was not followed in the present study because it seemed to stimulate the child to describe the blot area, rather than to aid in finding out whether or not color had helped to determine the concept given originally.

(3) Testing the limits: The purpose of this part of the test when testing an adult is to find out to what extent the subject can use location areas, determinants and contents which he did not use spontaneously in the performance or give in response to the questions which are permitted in the inquiry. Since none of the responses given during the testing the limits are scored, the examiner is free to use various types of suggestions to find out the degree of a person's ability to respond to various aspects of the card. This part of the test usually proves to be quite unproductive with small children and hence is rather generally omitted. The inquiry generally tests the limits of the child's ability to respond. However, because of the apparent significance of the populars as reflecting intelligence we decided, sometime after the present study was begun, to test the limits of the child's ability to give popular responses. With the majority of the children tested, at the end of the inquiry we would point to each of the popular areas to which the child had not already given a response and ask him what it was. In some instances we even named the usual popular concept and asked the child if he could see it.

Recording: The responses were recorded verbatim as were also any remarks made by the child. Notes were made of any significant physical reactions. The responses were recorded on a mimeographed blank which was so divided that it had a margin an inch wide for recording the scoring at the extreme left of the sheet, this margin being followed by two very narrow columns for the recording of the time and the position of the cards. The remainder of the sheet was divided into two fairly wide columns, one of which was marked Performance and the other Inquiry. At the top of the sheet there were blanks for the name of the subject, the birthdate, the date of test, the school and the grade.

The responses were tabulated on the Individual Record Sheets prepared by Klopfer and Davidson.

The Goodenough Drawing of a Man Test was given at the same time or close to the time of the Rorschach Test. The children were also asked to draw their conception of the following which are frequently given as responses by children: dog, cat, rabbit, butterfly, bird, spider, and tree. We wished to discover what characteristics were used to differentiate one animal from another and the comparative degrees of differentiation between the various levels. These drawings will be referred to again but only briefly in the present study.

D. Scoring and Interpretation of Scoring Symbols

The protocols of the present study were scored according to the Klopfer system. After each record was scored, it was rechecked at least twice to eliminate as far as possible any inconsistencies in scoring. Controversial points were referred to Mrs. Pauline Vorhaus,

a teacher of the Rorschach method at Columbia University, for decision since she had published two studies on the Rorschach with young children which were scored according to the Klopfer method. She is, of course, in no way responsible for any errors in this study.

The difficulty of scoring children's Rorschachs is evidenced in the statement made by Paulsen that "there was no question about scoring (except for F+) in at least two-thirds" (103, p. 25) of her records. This statement also suggests the importance of reporting the criteria used in scoring and the caution that should be observed in comparing the results of different investigators without a knowledge of the scoring methods.

Because the standards for scoring are so variable in different systems and there are so many controversial points within a system it has seemed wise to record in some detail the criteria used in scoring in the present study. The numerous problems encountered in the scoring of children's Rorschachs seem to arise from three main sources:

1. The indefiniteness and diffuseness of a child's perceptual organization and of his thinking in relation to concepts given in the response.
2. The inability of children to analyze the reason for their response, so that even the inquiry may not clarify uncertain points.
3. There are no published norms for young children of average intelligence at the different chronological age levels. There are no norms for average children for determinants, content, populars or originals, nor are there any norms for evaluating the quality

of W, M, F and O responses, even though the quality is clearly of significance in evaluating the level of intelligence.

The individual investigator has three possible choices in evaluating the quality of responses. First, he may use the adult standards. To judge the quality of a child's perception by the standard of the average adult's perception theoretically seems to be as spurious as judging a five-year-old child's drawing of a man by the standards used for the average adult's drawings. However, using adult standards in Rorschach for scoring children's responses does have the advantage of giving a relatively stable and familiar framework for evaluation. Second, the investigator might choose with care a sufficiently large number at each age level so that he could eventually establish standards for judging the quality of responses in terms of each age level. A third course that the investigator might follow is to use the adult standards of scoring as a background for superimposing judgments of the quality of children's responses, basing those judgments on the restricted samplings that the investigator has gathered. This individual modification of scoring increases the difficulty of making meaningful comparisons between studies.

We have followed the first method of scoring except in respect to the scoring of originals which will be discussed at the end of the present section on scoring.

The first problem of scoring is to decide what constitutes a scorable response in counterdistinction to a remark or comment such as "That's pretty," or "pretty colors" which is not scored. A real

response must have the potentiality for being scored and must be scored in relation to three aspects, location, determinants and content which will be discussed shortly.

Another of the basic problems of scoring is to define a main response in counterdistinction to an additional response. We have followed Klopfer and have given the status of a main response only to those responses that are given in the performance proper and which are not subsequently rejected in the inquiry. The responses scored as additional responses are (1) those which appear for the first time in the inquiry or (2) those which are given originally in the performance but are rejected in the inquiry. We question the soundness of dividing children's responses into the main and additional responses as far as interpretive significance in relation to intelligence is concerned. That a response is given additionally rather than in the main seems often to be a matter of (1) attention and (2) increased time for maturation rather than because a child has emotional reasons for not accepting one concept as readily as another. Some problems related to rejections of responses will be discussed later in the chapter.

Additional scoring symbols may be added to a main response if elaboration of the response either in the performance or in the inquiry would make such symbols appropriate. In like manner additional scoring symbols may be added to an additional response.

The individual responses in a protocol can be so numerous and infinitely varied that they may defy analysis and summarization for purposes of comparing protocols until they have been reduced to

certain common classifications or categories. These categories can be subsumed under the headings listed below. Each response must be analyzed in relation to the following general headings:

I. Location. This term has a specialized meaning in Rorschach terminology. It refers to the type of perceptual organization used in response to the blot area of the card. The location indicates whether the subject responds to the card as a whole, to sub-gestalts that are commonly perceived, or to parts that are seldom perceived. Location should not be confused with merely the position of the area on the card.

II. Determinants. In evaluating a response, one must judge the chief determining factors that led the subject to give the response which he gave, whether that factor be form, color, shading or one of the other possible determinants.

III. Content. This heading includes the various conceptual categories such as human, animal, object, etc.

IV. Frequency. Responses at the two extremes of statistical frequency are recorded; at one extreme is the popular response that is given by one out of three persons and at the other extreme is the original response, which by definition is given by only one out of a hundred persons.

The categories listed below are those which have been used or referred to in the present study. For more complete information about scoring according to the Klopfer and Kelly method see The Rorschach Technique. (84) The scoring symbols given are a sort of shorthand used to represent the various categories. We shall limit

our discussion of interpretation almost entirely to those points that have a direct bearing on the present study.

I. Location

W is the symbol used to indicate that the whole blot area was used in the response. Previous studies have shown that the quality of W in a child's protocol is of more significance than the total number of W responses as an indicator of intelligence. Since the quality is of such significance, we have attempted to evaluate the quality of W in this study. We have divided the W responses into four general categories. In the first three of these categories, form is the dominant determinant, and the classifications are designated as W-, W and W+ according to the quality of the form of the W response or according to the quality of the logic used in combining parts of the card within the whole. The fourth category includes all those W responses in which form is not the chief determinant.

W- responses include the following:

1. Arbitrary responses are those in which there is no possible logical connection between the card and the concept given. An example of this would be the response "piano" to the whole of Card VIII. Only a few such responses were given in this study.

2. Perseverated responses are those in which an idea, given perhaps appropriately to one whole card, is superimposed illogically on to the whole of subsequent consecutive cards in a series. The subject continues to give the idea he has in his mind in spite of the fact that the stimulus area logically calls for another concept. For example, if a child responds to the whole of all ten cards with

butterfly, Cards III, IV, VI, VII, VIII, IX, and X would be scored as W-, Cards I and V which are on the popular level of form accuracy would be scored as plain W, as would also Card II for which butterfly is considered to be as accurate a form response as it is for Cards I or V. We have included under the heading of perseverated responses only the W response which is a repetition of the response given to the immediately preceding card and which is inappropriate to the card in question. Other poor responses even though the concept was used previously, but not immediately preceding the card in question, we have listed merely as F- because of inaccurate form.

3. Responses with poor or inaccurate form are those in which the form accuracy is below the level of popular responses. Examples of such responses would be "alligator" or "man" to the whole of Card VI.

There are cases in which the response of just animal would warrant a plain W, whereas the stipulation of a specific animal might make the form of the blot inaccurate in relation to the concept given. For example, the response of "animal" to the whole of Card IV would warrant a plain W, whereas the calling of the card a rabbit would call for the use of a W-.

4. DW, response is one in which a meaning has illogically been assigned to a whole on the basis of some differentiated part. This is what is ordinarily called a confabulatory response. Although this type of response is always scored F- for an adult, it may actually represent a step in advance of a diffuse whole in that the child has differentiated out a part and attached a logical meaning

to the part even though he illogically extends the interpretation to the whole. An example of this type of response given to Card VII would be, "That looks like a little door (small white area at bottom of card) and the rest is a house." In inquiry the child explained that it looked like a house "because this thing right up here is a part of the roof." The little door had suggested the house but later in explaining why it was a house he chose the roof as the determining factor. The door is an adequate response; an adult would reject the idea of the house as illogical. Another example that is frequently cited is that of "cat" to the whole of Card VI "because it has whiskers."

This scoring category seems to the writer to be one of the least satisfactory from a logical standpoint especially as it is applied to children's responses. One scarcely seems justified in assuming that the child is assigning meaning to the whole card on the basis of one small area because he mentions only that one area. He may be responding configurationally to the whole of the card but when pressed for an explanation he may point out but one part. One six-year-old child responded to the whole of Card VI with "a cat standing on its hind feet," and pointed subsequently to the whiskers. That whiskers is not an essential part of the concept of cat for a child would seem to be evidenced by the fact that of the thirty-three six-year-old children drawing a series of animals, twenty-one of the children put no whiskers on the cat, five put whiskers only on the cat, and five of the children put whiskers on all their animals.

However, we have used the DW category when the child has given a verbalization that makes it seem appropriate.

5. Positional Responses. This type of response is one in which a child assigns rather illogical meaning to parts of the card on the basis of position. For example, on Card IX one child called the top orange peaks on the card, the ears of a monkey, the long narrow slits in the center, the eyes, and the pink at the bottom, the feet. Such responses often occur along with perseveration. The child superimposes his subjective interpretation and then with logic that is acceptable to him, but not to a more critical person, explains the interpretation. This type of response can be combined with a DW response so that a differentiated part may perhaps give the original suggestion for a response that has to be supported from the child's point of view by pointing out the position of other parts of the concept. In our present study these positional explanations seemed to indicate a greater maturity than the plain DW responses. They seem to indicate an attempt to explain logically more than one part of the card or response.

6. Fabulation. This term is used in the way that Vorhaus and Kay have defined it, that is as "a response in which the subject facetiously combines several blot areas, each of which is sensibly interpreted (like snake, whiskers and wings in the top area of Card VI) combining them into a new fantastic concept in which the various ideas are merged" into a single concept such as "a snake with whiskers and wings." (74, p. 74)

7. Fabulatory Combination is a term which when applied to the whole means the illogical organization of parts within a whole, each part of which independently may have good form and be an adequate response. It is the logic of the organization that is poor, the organization being based on the spatial proximity or juxtaposition of the parts with a disregard of the relative size of the areas rather than on a logical connection between the individual concepts. An example of such a response was given to Card VIII when a child said, "This man (top blue-gray D) is reaching down for this candy (lower orange-pink D) and these candy wolves (side pink animals) are climbing upon him." Another child gave the following response to Card VIII, "A bear climbing on those butterflies." Both the top blue-gray D and the lower orange-pink D were seen as butterflies. The form quality of each of these parts is acceptable. It is the combination that has been fabulated and hence the W would be assigned a W-quality. In this study we have assigned main D to the parts and have scored the W- additionally. This particular problem will be discussed more fully later in the chapter.

It should be pointed out that in children's responses some of the parts in a fabulatory combination may not be of as good quality as others as is illustrated in the following responses to Card IX, "Kind of like round things on the bottom (bottom red) and monkeys standing on top (green and orange together)," and in the inquiry the child added, "They are climbing up a big Easter egg (light area between top orange). The balls are down here. They are red."

The part of the Easter egg which shows and the red balls are acceptable, the monkeys could not be considered good form.

Combinatory wholes are assigned a W- only if they are illogical or fabulated. If the organization is logical, they may be assigned a plain W or if the organization and the differentiation are superior, they may be assigned a W+.

8. Contaminated responses are those in which two discrete concepts have been fused illogically in response to one spatial area, as for example, the response of "the inside and the outside of a cat" to all of Card II. In the inquiry the child repeated his original statement and also pointed out the lower red area as "the little red tail," the upper d (castle) area as the tongue, the space immediately above this and between the two upper red areas as the open mouth, and the center space as "a piece bit out by a dog." The whole upper portion was both the outside of the cat and the inside of the mouth.

When the concept of a human and the concept of an animal have been merged into a human-like animal interpretation, if the form is reasonably good we have scored the response as a plain W since such concepts are commonly used in our culture. Such responses are given rather frequently to the black area on Card III.

Kay and Vorhaus (74) have pointed out in their report that fabulations, confabulations, the fabulatory-combinations and the contaminations increase with age up to seven years.

W responses include the following:

1. Popular responses. Popular responses have been so designated because at least one adult out of every three gives these responses. The form quality is established on a statistical basis. There are ten responses that have been designated as popular by Klopfer and Kelley (84, pp. 179-181). The popular response most frequently given by the children in the present study was that of bat, butterfly or bird (or any winged creature with the body in the center) to the whole of Card V. Eighty-eight per cent of the seven-year-old children gave a popular response to Card V. The same concept that is popular for Card V is also for Card I.

2. Responses to the whole cards in which the form accuracy is comparable to the accuracy in the popular responses. This criterion is indefinite and calls for subjective evaluation. Examples of such responses are "Hallowe'en face," to Card I, "butterfly" or "clown clapping hands" to Card II, "tree," "gorilla," or "man" to Card IV, "hammock" or "necklace" to Card V, and "turtle" to Card VI.

3. Indefinite but not inaccurate form. There are many concepts such as maps, leaves, bushes, etc., that logically could have any one of a number of forms.

4. Combinatory wholes that are on a popular level. The combinatory whole most frequently given by children in this study is that of the "bear climbing a tree" on Card VIII. The bear (pink animal) is a popular response and the remainder of the card makes a tree of acceptable form. The combination is logically acceptable.

Another such response would be "A butterfly by the water" for Card VI. Although the combinatory wholes are tabulated with the whole responses in the evaluation of the quality of whole responses, they are scored in this study according to the principles discussed on pages 109-110.

W+ responses

Since three of the groups in this study are of average intelligence and since we have used adult standards of scoring, one would expect to find few, if any, W+ responses to most of the cards.

W+ responses are those which are superior to popular responses in (1) the degree of accuracy existing between the blot area and the concept given, (2) the degree of differentiation and (3) the quality of organization. The responses may be superior in any one or in all of these aspects. However, we shall give responses to illustrate each area of superiority. The responses we have chosen are borderline between W and W+ and have been judged perhaps too leniently because they are superior to the most of the responses given in this investigation.

Illustrations for each aspect of superiority follow:

(1) Accuracy. We have scored as W+ the response to Card IV of "Just the bottom part of a man sitting on a post" because the response seemed more accurate than the response of "man" to the whole of the card.

(2) Differentiation. One very superior five-year-old child inverted Card VII and said, "Two elephants dancing around on a stage" and in inquiry added, "the elephants are dancing on one leg. They

have such little eyes (seen in shading) they can scarcely see. The top is the stage." Even a popular response may be superior if it is highly enough differentiated.

(3) Organization. The response to Card V (inverted) "When the wind blows" was scored as a W+ since the child explained in inquiry that the main part of the blot was the cradle "cause it's made round like this and here is the baby falling out. Here are its hands and feet."

W responses in which form is not the dominant determinant include such responses as clouds to Card VII in which the determinant is K, indicating that diffuse shading is the chief determinant, and "an autumn woods" to Card IX in which the determinant is CF, indicating that color is the chief determinant.

W, response to the major part but not to all of the blot area. As far as perceptual development is concerned the use of W (called a cut-off W) may indicate an advancement beyond crude and inaccurate whole responses, depending, of course, on the quality of the W. The W areas to which children respond most frequently are probably: (1) the entire black portion on Card III which is generally seen as men, animals or birds; (2) the entire portion between the pink animals on Card VIII which is commonly responded to as tree, mountain or house, (3) the entire black area on Card II which is interpreted as being "bears," "dogs' heads" or "smoke;" (4) all of Card VII except the small white area at the bottom of the card which is commonly seen as a little white house, the remainder of the card being perceived as smoke or clouds.

The quality of W has been evaluated on the same basis as W responses.

D, response to large usual detail. We have used the Klopfer and Kelley tables (84, pp. 95-99) for scoring these details. Klopfer did not use a statistical basis for establishing these usual details as did Hertz, who labeled a detail as normal if it was given by one out of five persons. The studies of Hertz and Ebert (65) indicate that children tend to perceive the same sub-gestalts that adults do. The use of usual details on the part of young children gradually increases with age showing an increased ability to differentiate parts within the whole.

d, responses to small usual details. These small usual details are the ones defined by Klopfer and Kelley (84, pp. 95-99)

Dd, symbol used to cover all the categories of unusual details. This heading includes the following symbols:

dd, response to a tiny detail. The tiny detail must be a very small but easily discernible area definitely demarcated from the surrounding area by an abrupt change in shading, color or the white of the card. The use of the dd category indicates an ability to differentiate clearly very small areas of the card. Comparatively few such areas are used by small children. The most frequently used dd areas probably are "The little white house" area at the bottom of Card VII and the small orange-brown area inside the inner yellow areas on Card X.

de, response to an edge detail. Such a response uses just the edge of the card and does not go back into the card. All the profile

responses using just the edge of the card fall in this category. This category was not used by any of the children in this study.

di, response to an inner detail. These responses, which vary in size, are imbedded within the shading of the interior of the blot and are not sharply defined as the dd responses. This type of response was not used by the children in this study.

dr, response to rare details. Any locations not falling under any of the above symbols or within the category of a space response would be a dr. It may vary in size from that of a dd to half the area of the blot. If the response is to a blot area that exceeds half the blot area of the card but is less than the whole blot, the response is considered a W. The only exceptions to this are the areas that have already been designated as D areas, such as the entire lower part of Card VI. The dr category may include unusual organizations of several usual areas or it may cut across usual details. A dr response may vary in quality from the poor quality found in the arbitrary organization of a young child to highly superior quality.

S, response to space. A space response may include all or any part of the white area. The use of space for the main part of a response shows a reversal of the usual figure and ground manner of perceiving. Theoretically a high incidence of space indicates negativism or obstinacy in a person. This theory has not been proved in relation to children. The children in this study gave comparatively few main space responses, but they gave many responses calling for an additional scoring for space, such as the response of "an

animal face" to the whole of Card I, pointing to the space as eyes and mouth of the animal. Vorhaus suggested that an additional space response be scored when the subject expresses the feeling of need for space to be filled in as did the child who said in response to Card VII, "If there were more of it, it would look like a rabbit," and in inquiry added, "ears and front paws and tail. It's supposed to go down here, and the back legs. If there was more here (center space) it would be the rest of his head and body." (Just one rabbit). A number of the children expressed a need for filling in this space.

One important problem in scoring needs a fairly full discussion and that is the problem of scoring parts or details in relation to the whole. The method of handling this problem assumes importance in relation to two aspects of the test that are taken into consideration in interpretation, (1) the total number of responses and (2) the relative proportion of D and W responses that are scored as main responses, the main responses being considered of prime importance and the additional responses being relegated to a place of relative insignificance. The method of handling this problem should be taken into consideration in comparing data from different studies. Differences in method of handling this problem may be in part responsible for the great variation in the number of responses reported by different investigators.

Differentiated wholes seem to fall into two main categories (1) those in which different parts are differentiated within a whole and the parts are differentiated according to a central closely knit concept and (2) those in which the whole blot is differentiated

into several discrete parts, each one of which could stand independently, and these discrete parts are brought together by some unifying idea to form a combinatory whole. We have scored the closely knit wholes as W in spite of the differentiation of the parts, not listing separately the parts, whereas we have scored the combinatory wholes so that the D is given preference over the W in the main. This may not be an entirely satisfactory method of scoring but it is the one we have followed in the present study.

1. Perhaps one of the simplest patterns of differentiation in which the central concept dominates or determines the meaning of the parts is that in which a card, such as Card IV, is perceived as a "man with big feet, big face and a body." This response is scored as a W in spite of the fact that if the face or feet had been mentioned separately, either concept would have been scored as a usual detail. When the unifying concept determines the interpretation of a part of the blot as an object seen in close relationship to the main concept, the response is still scored as a whole without the object's being scored separately as to location. For example, if the subject gives a response to Card II of "two clowns with red hats on, clapping hands," we score the response as a W. The upper red areas would not likely be interpreted as hats were it not for their positional relationship to the clowns and hence, in this instance, they are not scored as separate D areas.

This principle of scoring is extended still further to include those responses where larger portions of the card are interpreted according to a central concept, for example the response "The cradle

will fall," to Card V (inverted) in which the central figure is seen as the baby falling from the cradle. This response was scored as a W without the parts being scored separately.

2. Combinatory wholes are those in which the whole has been differentiated into discrete parts each one of which might stand independently but which are combined according to a unifying idea. As has been said previously, we have followed the policy of scoring the details as main responses and scoring the W or Ws as has seemed appropriate in different types of responses.

We shall give several examples of how we have scored combinatory whole responses or responses with such tendencies.

(a) If a combinatory whole has been made up of just a D and a W, we have scored each one separately as a main response, but bracketed them together. The most frequently occurring response of this kind in the present study was "Bears climbing on a tree," on Card VIII when the entire area between the bears was seen as a tree.

In a similar manner when a child has responded to Card II with, "It's all fire and smoke, we have given the fire a main D and the smoke a main W. The response to Card VII of, "It's a little white house with a chimney and smoke all around it," we have scored in the main a D for the house and a W for the smoke. If the white area alone was responded to as a "white house" the location was scored as a D; if the center black area was added as the chimney, the house and the chimney together were scored as a D.

(b) If two D responses were given together in such a way that when they were combined they would cover the area of a W or Ws, we

scored each D separately as a main response and bracketed them together, giving an additional W or a \aleph as the particular response demanded. An example of this would be the response to Card VIII of "Two bears walking on a tree," when only the upper blue-gray D area was seen as a tree in which case two main D were scored and an additional \aleph was used.

(c) If the entire area of the card is responded to in terms of separate D entities that are combined by a unifying concept, we have scored the several areas with D in the main bracketing them together but giving the whole an additional W. For example, if to Card VIII, the response is given "Two bears climbing onto a tree (upper blue-gray area) from these rocks down here," (lower orange-pink area) we have scored the response with three main D and one additional W. In such responses the quality of the main D may vary, some may be of more accurate form than others.

This method of scoring has (1) increased the total number of main responses and (2) the relative proportion of main D responses in the present study.

Although the combinatory W are given an additional scoring, we have not ignored them in evaluating the quality of the total number of W. We have added these to the main W for consideration in judging the quality of W responses.

II. Determinants

M, response to human movement. A response is scored M if human movement is seen in a complete figure or any part of a human figure or in an animal figure or in part of an animal figure which is seen

as in human-like movement. Interpretively M is one of the criteria for evaluating intelligence, the use of M indicating an interest in human activity and indicating a level of differentiation that has permitted the discrimination of parts and articulation of one part in relationship to another. M is also supposed to be indicative of the inner resourcefulness or inner creativity of the individual. Rorschach considered M to indicate a person's ability to experience kinaesthesia empathetically. M responses are not found generally in children under five unless they are of superior intelligence. Children project human movement most frequently on to the black areas of Card III, interpreting the figures as men carrying something or as little animals in human-like motion.

FM, response to animal movement. This symbol is used when the movement is seen in a whole animal or in any part of the animal. FM is much more frequently given than M by children, probably because the differentiation of the human figure is more difficult than the differentiation of an animal figure which may have any one of numerous shapes.

m, responses to abstract or inanimate movement. This covers all movement not covered by the M and FM symbols, such as the rising of smoke, the blowing of clouds, whirlpools, volcanoes in eruption, gravity, magnetic forces drawing, etc. Such movement is comparatively rare with children. A large number of m responses theoretically indicates anxiety or tension.

Small m is used additionally when the face of a human or animal is interpreted as having some facial expression, such as grinning, ferocious, mad, etc. Such interpretations were not assigned to any of the responses by the children in this study.

mF, is used if inanimate movement is dominant but is combined with indefinite form.

Fm indicates that form is dominant and movement is used secondarily, or closely combined with definite form.

K, response in which shading is used to represent three-dimensional diffusion. This symbol is used for clouds, smoke, etc. If a child says in response to the black on Card II, "It's smoke because it is black," we have scored this just a K for the determinant without further consideration of the black at the suggestion of Vorhaus. A large proportion of such responses in adults theoretically indicates anxiety, inner tensions and insecurity. With small children these may have a different significance reflecting a diffuse undifferentiated perception that is not uncommon with children.

KF, response in which some form is used along with shading representing three dimensional diffusion. In cloud responses where some attention is given to form, this symbol is used.

FK, response in which form is used with shading to give perspective or vista responses. This symbol is used for vista responses even though the form is perceived as indistinct and obscured by the distant shading. The use of shading is essential to the use of FK. Linear perspective interpreted as giving distance without the use of shading does not call for an FK. Just as young children do not use perspective in drawing so they do not interpret shading in terms of perspective until about the seventh year. This symbol has been used very infrequently in the present study.

F, responses in which form is the only determinant. The majority of children's responses fall in this category. Since the quality of the form responses is one of the major criteria for estimating intelligence, it is important to establish as definite criteria as possible for evaluating the quality of the form. Rorschach himself used a statistical basis for evaluating form as he judged the accuracy of a form response on the basis of the frequency with which that response occurred in 100 protocols. The infrequently given responses were evaluated subjectively in relation to the form quality of the more frequently given responses. Rorschach used two categories, F- and F+ as does also Hertz, the F+ responses including the form responses that are on the popular level or which are superior to the popular level and the F- response, including the form responses that fall below the popular level. Rapaport uses four levels of form accuracy F-, F⁻, F⁺ and F+. Klopfer divides F into only three categories as far as quality is concerned F-, F and F+. This classification will be used in the present study.

Since different systems use different criteria for defining the quality of F+ responses, the significance of the proportion of F+ to the total number of form responses, generally expressed in terms of F+%, would naturally vary from system to system. This is an important consideration to keep in mind since the F+% has been accepted as one of the main criteria for evaluating intelligence.

F- responses include the arbitrary, perseverated, fabulatory, fabulatory-combination, confabulatory, positional, contaminated and inaccurate responses discussed under W of this section, and

the same types of responses when they apply to parts of the card rather than the whole.

F responses include popular responses, those judged to be on the level of popular responses in accuracy and responses which though somewhat indefinite are not inaccurate in relationship to the concept given.

All the large (D) and small (d) usual details are considered as plain F responses if they are not elaborated or more highly differentiated than the usual detail responses.

F+ responses include those responses which are superior because they have unusually accurate form, a fine degree of differentiation, an unusually good organization or combinations of any of these three attributes. Popular responses which have unusually good differentiation may be scored as F+.

It seems that more than three categories of quality would have a decided advantage in trying to differentiate the genetic levels in children's responses.

c, response in which shading is used as the sole determinant of a perception of surface texture. Surface texture could include ideas such as rough, soft, glossy, etc. If a person responded to the interior of Card IV with "fur" and ignored completely the form, such a response would be a plain c.

cF, response in which shading has been used for surface texture and in which form is indefinite and of secondary importance. Responses such as a "scrap of fur" and "a piece of cotton" would be scored cF.

Fc, response in which form is of dominant consideration but shading used for surface texture is also used. An example of such a response is "a dog with long woolly fur" to the top two-thirds area on Card VII when it is turned sideways, or "a woman with fuzzy hair" to the top D of Card VII. When hair responses are given in which form is definite and shading is used to give the impression of hair, Fc is used. A response such as "whiskers" to the top of Card VI, when only the shape is used, does not warrant the use of Fc. The use of texture shows a sensitivity to the nature of shading and theoretically indicates tact or a desire for contact depending on the relationships within the protocol. Very young children will often respond to a heavily shaded card by patting it and perhaps saying, "Nice kitty!" as if they might be responding to the texture without verbalizing it in which case texture would, of course, not be scored. Description of the surface effect indicates that the child has reached at least a level of maturation in which he is able to respond to more than the mere outline of the card. None of the children in this study gave the popular response of an animal skin to Card VI.

C, response in which color is the only determinant. This symbol is assigned to such responses as blood, fire, sky, etc., where the color is used without consideration of form. Color responses may also include color description, C_{des}, color symbolism, C_{sym}, and color naming, C_n.

C_n , response in which the color is named. For a child interested in designating colors a C_n response has interpretively a very different significance from a C_n in an adult who has theoretically passed that primitive level of interest in color.

Theoretically a number of plain C responses is supposed to indicate an explosive, uninhibited emotionality, an affective lability in which the individual is not restrained by logical consideration. Although one would expect a number of C responses in very young children, plain C responses would suggest emotional difficulty in the adult.

CF, response in which color is dominant and form is of secondary importance. Responses such as "a splash of blood," "a smear of lipstick," and "a scrap of blue cloth" would be scored CF. This symbol indicates a slightly greater control of primitive affective reactions than does a plain C. The CF symbol appears frequently among the color responses of five and six-year-old children. When "this is fire and smoke" is given to Card II or III, we have used two main scorings, D, CF, Fire and W, K, Smoke, bracketing them together. When a child responds to the middle part of Card VIII with "tree because it is green and pretty" we have used W, CF, Pl (for plant) in scoring. If the child, however, brings in the shape by mentioning either the trunk or the top, we have scored this an FC, the quality of the FC depending on the area included in the response.

C/F, response in which color is the main determinant and form is used. An example of such a response would be an indefinite map

response in which the color suggested the idea and the shape is of relatively little significance, or in anatomical charts where the color is dominant and the form of minor significance.

FC, response in which form is primary and color is secondary. In such a response the color logically fits with the form of the concept mentioned, whether the concept belongs in the realm of nature or falls in the category of man-made objects. FC theoretically represents a more mature stage of affective control than the CF or C responses. Hence with increased mental maturity, if it is accompanied by an increased emotional maturity, one would expect an increase of FC. A response of "a red bow" or a "red butterfly" to the middle red area on Card III would require a scoring of FC for the determinant.

F--C is a type of FC response in which the color is used more artificially than with the natural FC combinations. A score of F--C would be used for the response, "It's a pink elephant," (bottom of Card IX) the color being explained by the statement that "it is like an elephant in a story book." Comparatively few such responses were given by the children in this study.

Color is scored additionally when it is used in addition to another main determinant, or is used in only part of a concept. For example, the response of "Two clowns with red hats on that are clapping hands," to Card II would call for W, M, H (for human) in the main, and FC scored additionally for the red of the hat.

In a similar manner if a child would give the response to the entire black and lower red of Card II that "Two bears are fighting and blood is running out of them," one would score the response with W, M, A (for the animals) in the main, and with an additional CF for the blood.

The scoring of color responses represents a particularly difficult problem not only in respect to when to use color at all but also as to when to use FC in preference to CF for reasons mentioned on page 23. The difficulty in deciding what responses should be considered FC and what CF should be kept in mind in comparing the findings of different investigators.

In this study some scoring of color was done by conjecture in cases such as the following:

1. When a child expressed a feeling of delight in the color and followed such an expression by a response that implied color, or when the child used an adjective such as pretty, indicating a responsiveness to the color, in conjunction with the concept named.

2. When the concept itself strongly suggested color such as the response to Cards VIII and IX of "decorations."

3. When the child expressed a responsiveness to color in one card and perseverated on subsequent color cards, as when a child gives a response to Card VIII of "tree because it's green" and in response to Card IX and X says, "It's a tree, too."

C', responses in which the sole determinant is an achromatic color. This response would be used chiefly in the naming of black as a color.

C'F, responses in which an achromatic color is the primary determinant and form a secondary determinant. "A black spot where it has been burned," would be scored as a C'F. The adjective dark, if it is used to describe surface impression, calls for achromatic scoring, as would be the case in the response to Card VI, "A telephone

pole (top D) with the explanation in the inquiry that the lower part was "ground because the ground really is dark." This response would be scored D, F, Obj. (for object) with an additional W and additional C'F for the "dark ground." An additional W is given on the supposition that the bottom part would not have been perceived as ground without the telephone pole.

FC', responses in which form is primary and achromatic surface color is secondary. The response of "black butterfly" to Card V would call for FC' as a determinant. A predominance of black and grey in an adult may indicate depressive tendencies or color shyness. With small children black seems to be used frequently just as a color and when so used seems not to have the significance that it does with adults.

III. Content

H, response in which the whole human figure is used or so much of the figure that the response presupposes that the rest of the figure is there. For example, when Card V is inverted, the small area (head of rabbit) is occasionally seen as the bottom of a dancing figure or the bottom of a small child's figure. Such a response is scored d, M, H.

Hd, response in which a part of a human figure is used, such as a head, arm, hand, etc. Hd should be differentiated from a human anatomical response, the former always being used if the part is seen as a portion of a living person in counterdistinction to anatomy (At) which is used if some dissected or inside portion of the human anatomy is seen.

(H), response in which a human-like creature is named. (H) is used for fairies, brownies, witches and other imaginary creatures that have human characteristics without having full human status. Such responses occur comparatively frequently with children or immature adults. A human skeleton if seen as a human being either in action or not in action is scored with an (H), according to Vorhaus.

(Hd), response in which a part of a human-like creature is seen.

A, response in which the whole or the major part of an animal is used. The A responses are much more frequent among children's responses than any other category within the Content area, and even normal adults may have up to 50% animal responses. The high percent of animal responses with children may be due in part at least to (1) their interest in animals, (2) the numerous varieties of sizes and shapes that are subsumed under the animal concept, (3) their level of differentiation does not permit them to see the more highly differentiated human form and (4) the cards themselves lend themselves to being seen as animals as evidenced by the high frequency of animal responses even among adults.

Ad, responses in which a part of an animal figure is seen.

The line of demarcation between Ad and animal anatomy, A At, is analogous to the difference between Hd and At. The more intelligent persons tend to have more H and A than Hd and Ad, in fact the criteria for a satisfactory relationship for the adult is a ratio of 2 to 1 between $H + A$ to $Hd + Ad$.

A Obj, responses in which an object derived rather directly from an animal is used. A Obj. would be used to cover fur skins, skulls, etc.

At, response in which human anatomy is used. The human anatomy may be seen as a dissected part, as in an X-ray picture or in an anatomical chart. The type of response that becomes most problematical in this area is the response which children so frequently give of bone. The small child generally does not differentiate between an animal bone and a human bone. We have scored the bone as At when the subject indicated that it was a human bone.

A At, response in which animal anatomy is used. We have scored bone as A At only when the subject has made clear that he sees the area in question as an animal bone.

N, response in which nature concepts are used. Such concepts include landscapes, mountains, sunsets, rivers, scenery, etc.

Pl, response in which a plant is used. Flowers, shrubs, leaves, plants, etc., are within the Pl category.

Geo, response in which a geographical concept is used. Topographical maps, outline maps, islands, gulfs, etc., not seen in vista are geographical.

Art, response used to designate design, paintings, finger painting, statues, etc. In the present study there was an unusually high instance of design. We have included just plain paint under this category also.

Arch, response in which architecture in some form is mentioned. We have scored churches, houses, and bridges under this category. We have scored chimney as architecture, but a fireplace as an object.

Fire, response in which fire is used. Such responses are often given to Cards II and III because of the bright red, but occasionally

such a response is given to black such as on Card IV where the child is influenced by the smoke.

Cloud, response in which clouds are used. This concept is frequently given to Card VII where the shading is the chief determinant, but may also be given to colored portions, especially the pink portions of certain cards.

Blood, response in which blood is used. Such responses are most frequently made to the bright red areas on Card II or Card III.

Smoke, response in which smoke is used. Smoke is given most frequently in conjunction with the fire responses on Card II and III and to the heavily shaded cards, that is on Cards IV, VI and VII.

Bones. A response of "bones" that does not fall clearly into At or A At is scored bones.

IV. Frequency

There are three groups of responses that are defined in accordance with the frequency of their occurrence. These groups are made up of popular responses, the usual large and small details and the original responses. These groups might be thought of as on a continuum of frequency, the populars being the most frequent, the usual details being given by approximately one out of every five persons and the originals being given very infrequently. Since we have already discussed the usual details, we shall discuss here only the popular and original responses.

P, popular response. The basis on which a popular is so designated varies with different investigators. Rorschach, himself,

established a response as popular if one out of every three persons gave that response. Hertz uses the statistical frequency of one out of every six. We have used Klopfer's definition of populars. (See 84, pp. 179-181) He, as Rorschach, uses the criterion of one out of three as the basis for defining a popular.

If a subject gives two popular responses to one area, two populars are recorded for that area. For example, if a subject responded to the inner red area on Card III with "(1) It's a red butterfly and (2) it's a red ribbon too," one would score two P for the area, one for each response. Only one child in the present study gave two popular responses to the same area. Although there are ten popular responses, one might theoretically give more than ten populars by giving to some areas two or more concepts that are designated as P. Actually, this rarely happens.

The scoring for one of the popular areas needs some clarification, that area being the entire black on Card III. This is scored as a popular only when, with the card in an upright position, the subject gives a response indicating that he sees human beings in motion or animals such as the Walt Disney animals in human-like motion. Examples of the latter would be "monkeys carrying pocket books" or "Those are little dogs with coats on and they are carrying little cushions."

No additional popular is scored for this area. Neither human beings seen without action nor animals seen in action are scored as additional populars. This policy scarcely seems consistent with the practice that is followed in Card VIII of assigning an additional popular if the animal is not seen in motion.

The average well-adjusted person is supposed to be able to see at least four P responses. Their presence indicates that he perceptually organizes the cards or analogously his world, as the majority of other people do. The presence of populars in children is significant not only from this angle but also because they appear to be quite important as an index to general mental maturity as it is reflected by perceptual maturity.

In reporting the incidence of populars, Swift assigned populars given in the main a numerical value of one and those given additionally, a value of 1/2. We have merely indicated the incidence of each.

O, originals. Although authors have varied in their practice as to the designation of popular responses, most have agreed that an original response is one that occurs not more often than once in a hundred responses, although Rapaport states that an original can occur once or twice in a hundred responses. Evaluating a response as an original even on an adult level is difficult and is done sometimes without any objective verification. Considering our almost complete lack of norms in children's Rorschachs, it seems spurious to attempt to evaluate originals, especially if one adheres to such an exclusive statistical definition of an original response as that it occurs only once in a hundred protocols. In spite of the indefinite basis for judgment, the number and quality of O have been considered among the chief

criteria for evaluating intelligence by many investigators. This practice seems rather questionable under the circumstances.

As has been mentioned previously, we have scored the protocols in general on the basis of the performance of adults. We have, however, deviated from this practice in the matter of scoring originals. We have assigned the tentative status of originals to responses in which a given concept is attached to a given area not more than once in this group of 116 protocols. However, we have evaluated the quality of the original on the basis of adult standards. Although this is not an entirely satisfactory method of assigning originals, it seems to be the most adequate one to follow in view of the present state of our knowledge. It does indicate the general type of responses that would be originals at these age levels if statistical frequency were used as the sole basis for assigning originals. One would expect naturally with this procedure that some responses common to adults might be considered as originals for children.

The originality of a response must always be judged on the basis of the relationship of the concept to the blot area; a rather usual concept may be applied to an unusual area, an unusual concept may be applied to an unusual area, an unusual concept may be applied to a usual detail area or concepts not uncommonly assigned to different blot area may be combined in original ways. Most of the responses tentatively designated as originals in this study belong to the

last two classifications. In appendix A we have listed the concepts given for each card and have placed O after the concepts we have considered as tentative originals for this age group. We have indicated the quality of the original by the signs O-, O, and O+. At the end of the list of single concepts given for each card, we have listed the responses in which the combination of concepts seemed to be original, and also some which are unusual but in which the basic organization is repeated more frequently than once in the 116 protocols. We have indicated the unusual responses by the use of U.

In an attempt to clarify our criteria for judging originals, we decided on the following points.

1. We have excluded perseverated concepts regardless of the main determinant. It has seemed to us, because of the very nature of perseveration, that such concepts could not be considered as original in relation to the card in question.

2. We have not included those concepts as original which are either so indefinite or primitive in form that they could be applied to almost any area. Such concepts include worms, mountains, clouds, trees, bushes, masses of flowers, rocks, sticks, designs, etc.

3. We have not considered the names of individual animals or birds as original merely because an unusual name has been given to an area that is ordinarily perceived as some kind of animal or bird as the case may be. However, if a child has responded to some unusual aspect of the card and has attached a concept on the basis of that differentiated part we have not excluded the concept from

consideration as an original. For example, one highly superior five-year-old gave the responses of "weasel" to Card VI, "Because it is so long." We scored this as an add. 0-.

We have not considered slight variations of names of objects as sufficient for considering a concept as original if the basic organization for both objects is similar. For example, although necklace and collar were each given only once for Card VII we considered neither to be original.

The Scoring of Two or More Responses to the Same Location Area

Many problems in scoring arise as the child changes his mind about various aspects of his responses. A child generally responds quickly, giving perhaps the first idea that comes to him. He seems sometimes "to think out loud" as he criticizes, rejects and changes aspects of his responses along with the maturation of his perceptions. For example, one child responded to Card VIII with "Oh that's pretty. You know superman can see right through that but I don't know what it is in that," and in inquiry added, "I can see mice, one foot and another and another. Oh no! This is a bear. You see we are getting somewhere now!" A superior five-year-old child responded to Card IV with (1) "fire" and (2) "tree" and in the inquiry said, "The tree caught on fire because it's black all over. I mean a flower caught on fire. How it looks like a tree not on fire. (Examiner, "You say that it is black all over?") Smoke. It's been turned black."

We shall mention some of the common patterns of response that raise questions about scoring.

1. A child may give two concepts in the performance of which he appears to reject one, yet on inquiry he may be able to see both, in which case each response would be scored as a main response. For example, a child might say in response to the outer red area on Card III (1) "It's a little girl." (2) "No, I mean it's a rooster." If in the inquiry it becomes evident that the child still accepts both concepts, each is scored as a main response.

2. He may give two concepts, such as in the above-mentioned example, and in the inquiry reject the one in favor of the other, in which case the rejected response is scored as an additional, as is also, of course, the one given in the inquiry.

3. A slightly different problem arises when the child gives several names to one location all of which would be subsumed under a single category, as frequently happens when a child is trying to decide at what kind of an animal he is looking. If in the performance a child says, "a sheep, no, it's a dog," we have scored but one response if the child has definitely rejected the idea of the sheep in favor of the dog. If, however, the area still continues to look a little like each, we score two responses. If the concepts, although belonging to the same category, are quite different in appearance, such as cats and turtles, we follow the same principles as indicated under heading (1) and (2).

E. Findings

1. General Findings

We will show the general trends that have occurred in the groups as a whole before we make more specific comparisons of the individual groups. We shall discuss these findings under the headings indicated:

Number of Responses.

The following table shows the average number and the range of responses, both main and additional, for each of the groups.

Table III

Number of Responses

Group	Main		Additional	
	Average	Range	Average	Range
V-A	12.6	9-23	2.3	1-5
V-S	13.2	10-20	3.3	1-9
V-VS	12.3	8-20	2.9	0-9
VI	12.4	5-21	2.5	0-10
VII	13.00	7-22	2.8	0-9

It is evident that there is a negligible difference in the number of responses given by the different groups. These averages compare favorably with the findings of Stavrianos (126) who reported an average of 11.6 responses for her five- to seven-year-old group and 13.4 responses for her seven- to nine-year-old group. It will be recalled that she, too, was testing children of about

average intelligence. Paulsen (103) reports an average of fifteen responses for her six-year-old children.

Reaction Time

Table IV on this page shows that the average reaction time of the average groups becomes appreciably longer with increased age. The increased time may reflect greater criticalness that accompanies maturation or may be due possibly to other factors which will be discussed later in the chapter. There is a tendency for the superior five-year-old children to be slightly more deliberate in their reaction time than the average five-year-old children.

Table IV

Average Reaction Time to Each Card in Seconds

	Group V-A	Group V-S	Group V-VS	Group VI	Group VII
Card	N = 12	N = 12	N = 12	N = 40	N = 40
I	6.83	12.75	8.00	10.81	12.58
II	5.75	8.75	6.70	8.49	10.14
III	5.17	5.33	5.73	6.24	11.03
IV	4.50	4.50	5.83	6.11	10.78
V	4.17	4.08	5.83	6.28	5.96
VI	5.42	6.90	8.45	8.19	14.69
VII	5.57	9.00	5.08	7.23	16.88
VIII	5.75	6.33	4.45	5.59	7.97
IX	5.08	5.55	6.64	9.49	11.11
X	5.25	7.09	6.75	10.79	12.32

Rejections.

The percentage of initial and complete rejections for each card separately and for all the cards together is shown for each group in Table V. It should be pointed out that the table does not show the number of responses originally given which were subsequently rejected. For example, although Group V-A shows no rejections in this table, two children each rejected in inquiry a very poor response to Card VI that had been given in the performance. This type of rejection is not shown in the table.

Table V

Percent of Rejections

Card	Group V-A		Group V-S		Group V-VS		Group VI		Group VII	
	N = 12		N = 12		N = 12		N = 40		N = 40	
	I	C	I	C	I	C	I	C	I	C
I	0	0	0	0	8	8	7.5	2.5	5	2.5
II	0	0	0	0	17	17	2.5	2.5	10	7.5
III	0	0	0	0	8	0	5	2.5	0	0
IV	0	0	0	0	0	0	5	2.5	10	5
V	0	0	0	0	0	0	0	0	0	0
VI	0	0	17	8	8	8	10	7.5	10	7.5
VII	0	0	8	0	0	0	0	0	15	15
VIII	0	0	0	0	8	0	5	0	12.5	5
IX	0	0	8	8	8	0	12.5	5	10	5
X	0	0	0	0	0	0	2.5	2.5	7.5	5
Total*	0	0	3.3	1.7	5.8	3.3	5	2.5	8	5.3

I = Initial rejection. C = Complete rejection

*Total is the percent of the total number of rejected cards in relation to the total number of presentations of the cards in the performance proper and in the inquiry.

The number of rejections compares favorably with the number reported by Kay and Vorhaus (74, p. 72) who found that their five- to seven-year-old groups rejected 5.3% of the cards. Our results confirm the statement of Swift, (131) that rejections increase with age on the early levels, which is in contrast to the findings of Kay and Vorhaus who noted opposite trends.

The possible reasons for both the increased reaction time and the increased number of rejections will be discussed later in this section.

Location.

The distribution of the location categories that have been scored as main responses are shown in Table VI, both in terms of the average number of responses and in terms of the per cent of the total number of responses.

Table VI

Distribution of Location Categories

Group	V-A	V-S	V-VS	VI	VII
N	12.0	12.0	12.0	40.0	40.0
R Average	12.6	13.2	12.3	13.0	12.4
W Average	8.3	7.7	7.7	7.4	7.3
D + d Average	4.0	5.3	4.4	5.0	4.8
Dd + S Average	.3	.3	.2	.7	.4
W%	66.2	58.2	63.5	57.0	58.3
D + d%	31.8	39.8	35.1	37.7	38.6
Dd + S%	2.0	1.9	1.4	4.9	3.0

It becomes apparent upon examination of this table that the intellectual levels could not be differentiated on the basis of location categories even though there is a very slight general trend toward the use of more differentiated parts with increasing mental age. The decrease in the average number of W and the percent of W may be due in part to our method of scoring combinatory wholes with the details scored in the main and the wholes scored additionally. Other authors report a similar decrease in percent of W.

The D and d categories were placed together since comparatively few d were given; only one child in Group V-A responded to a d area, two children in Group V-S each used one d area as did also two children in Group V-VS. Six children in Group VI gave a total of thirteen main and fourteen additional d responses. Eight children in Group VII gave a total of sixteen main and four additional d responses.

Almost all of the Dd responses fell into the dr category, a few fell into the dd category and none into the de or di categories. Including both main and additional responses, only two dd responses were given by Group V-A, three by Group VI, and six by Group VII. Of the S responses given in the main only one was given by Group V-VS, three by Group VI, and four by Group VII although many additional space responses were given to Card I by different groups.

For the distribution of the detail responses in relation to the different cards, see Appendix A, pages 202 to 234, where the

contents are listed in relation to the different location areas. Many of the usual detail areas, both large and small, were not responded to by any of these children, and some that were used were responded to so infrequently that on the basis of statistical frequency they might be considered originals at this age.

The one large area not listed among the large usual details is that which is located between the two orange areas on Card IX. The small area, not listed among the usual details that was rather frequently used by these children is the "little white house" area at the bottom of Card VII.

Table VII

Quality of Whole Responses

Indicated by W-, W, W+ and *W (F.N.D.) in Terms of Percent of the Total Number of Whole Responses and the Average Number of Responses in Each of These Categories

	Group V-A	Group V-S	Group V-VS	Group VI	Group VII
	N = 12	N = 12	N = 12	N = 40	N = 40
W-%	36.3	30.4	22.8	23.9	27.6
W%	42.0	44.6	53.3	51.0	51.8
W+%	1.0	1.0	4.3	2.2	.3
*W (F.N.D.)%	20.6	23.9	19.6	23.8	20.2
W- Average	3.08	2.33	1.75	1.85	2.08
W Average	3.58	3.41	4.08	4.0	3.83
W+ Average	.08	.08	.33	.18	.02
*W (F.N.D.)	1.75	1.83	1.50	1.88	1.5

*Wholes in which form is not dominant

The Quality of Wholes.

The quality of whole responses show greater differences from group to group than does the number of wholes. Table VII shows the per cent of and also the average number of W responses that fall in the categories of W-, plain W, and W+ and F. N. D (form not the dominant determinant). The number of W- tend to decrease with increasing mental maturity and plain W tend to increase. However, the number of W responses in which form is not dominant remains about the same.

The very superior five-year-old children in Group V-VS show not only the lowest per cent of W- but also decidedly the highest per cent of W+ responses.

We have shown not only the comparative quality in the total number of W responses but also the comparative quality of the W responses to each of the cards. We have presented the actual number of W-, W (F. N. D.), plain W and W+ given by each group to each card as well as the per cent of the total number of W responses for each card that fall into each of the above mentioned W categories. Table VIII shows these relationships for groups V-A, V-S and V-VS and Table IX shows the relationship for Groups V-A, VI and VII. These tables show that the first five cards elicited good form responses much more frequently than the last five cards. Cards VI, VII, IX, and X were comparatively difficult for all the groups to perceive as wholes with good form.

Table VIII shows that quality of the wholes did not differ much from group to group on Cards I, II, IV, and VIII for the

TABLE VIII

THE NUMBER OF W-, W (FND)*, W AND W+ AND THE TOTAL NUMBER OF W FOR
EACH CARD FOR GROUPS V-A, V-S AND V-VS
AND THE PER CENT OF W-, W (FND)*, W AND W+ IN RELATION TO THE TOTAL NUMBER OF W

CARD	Group V-A N = 12					Group V-S N = 12					Group V-VS N = 12				
	W-	W (FND)*	W	W+	TOTAL	W-	W (FND)*	W	W+	TOTAL	W-	W (FND)*	W	W+	TOTAL
I			7	1	8	1	1	9		11	1	1	8		10
			88%	12%		9%	9%	81%			10%	10%	80%		
II	6	1	5	1	13	6	1	5		12	3	2	2	2	9
	46%	8%	39%	8%		50%	8%	42%			33%	22%	22%	22%	
III	3		9		12	2	2	3		7			11		11
	25%		75%			28%	28%	57%					100%		
IV	5	1	4		10	5	2	6		13	4		8	1	13
	50%	10%	40%			39%	15%	46%			31%		61%	8%	
V	3		8		11	3	1	8		12	1		10		11
	27%		73%			25%	8%	67%			9%		91%		
VI	6		3		9	3		3		6	5	1	2		8
	67%		33%			50%		50%			63%	12%	25%		
VII	3	5	2		10	4	2	1		7	2	2	1	1	6
	30%	50%	20%			57%	28%	14%			33%	33%	16%	16%	
VIII	4	4	3		11	3	4	3	1	11	2	5	4		11
	36%	36%	27%			27%	36%	27%	9		18%	45%	36%		
IX	4	7			11	3	3	2		8	3	5	2		10
	36%	64%				37%	37%	25%			30%	50%	20%		
X	2	4	1		7		4	2		6		3		1	4
	29%	57%	14%				66%	33%				75%		25%	

*FND means that form is not the dominant determinant.

TABLE IX

THE NUMBER OF W-, W (FND)*, W AND W+ AND TOTAL NUMBER OF W FOR
EACH CARD FOR GROUPS VA, VI AND VII
AND THE PER CENT OF W-, W (FND)* W AND W IN RELATION TO THE TOTAL NUMBER OF W

CARD	Group V-A N = 12					Group VI N = 40					Group VII N = 40				
	W-	W (FND)*	W	W+	TOTAL	W-	W (FND)*	W	W+	TOTAL	W-	W (FND)*	W	W+	TOTAL
I			7	1	8	5	10	21		36	4	6	28		38
			88%	12%		14%	28%	58%			11%	16%	74%		
II	6	1	5	1	13	7	7	22		36	7	3	21		31
	46%	8%	39%	8%		19%	19%	61%			23%	10%	68%**		
III	3		9		12	5	3	27	2	37	12	4	18		34
	25%		75%			14%	8%	73%	5%		35%	12%	53%		
IV	5	1	4		10	8	5	22	3	38	9	2	20	1	32
	50%	10%	40%			21%	13%	58%	8%		28%	6%	63%**	3%	
V	3		8		11	4	2	28	1	35	3		35		38**
	27%		73%			11%	6%	80%	3%		8%		92%**		
VI	6		3		9	15	2	12		29	19	2	7		28
	67%		33%			52%	7%	41%			68%	7%	25%		
VII	3	5	2		10	11	13	7		31	9	8	7		24
	30%	50%	20%			35%	42%	23%			38%	33%	29%**		
VIII	4	4	3		11	7	9	16		32	6	11	12		29
	36%	36%	27%			22%	28%	50%			21%	38%	41%		
IX	4	7			11	6	13	4	1	24	9	12	4		25
	36%	64%				25%	54%	17%	4%		36%	48%	16%**		
X	2	4	1		7	3	10	3		16	3	12	2		17
	29%	57%	14%			17%	56%	17%			18%	71%	12%		

*FND means that form is not the dominant determinant.

**Cards not significant in different rating levels of intelligence.

five-year-old children. The highly superior group, Group V-VS showed marked improvement in form over the other groups on Cards III, IV, and V. No child in the average five-year-old group gave a good form response to the whole of Card IX while two emerged in each of the other five-year-old groups.

Table IX shows a consistent increase in the use of good form from group to group among the average children on Cards II, IV, V, and VII. That the seven-year-old group gave a comparatively higher per cent of poor form perceptions to Card III, than did the six-year-old group, may be accounted for in part by the rather frequent organization of Card III as a face by the former group.

Determinant

The per cent of the total number of responses in the different determinant categories is shown in the upper part of Table X and in the lower part of the table the average number of responses in the more important of the determinant categories is given.

There were only two categories in which there were entirely consistent trends; K showed a decrease with mental age and Fc showed an increase with mental age. See both parts of Table IX.

There was a slight tendency for M and FM to increase with mental maturation but the trend is not consistent. The F% tended to decrease slightly as other determinants became more frequent. The FC and CP categories reflected variability in the use of color without a pronounced trend being manifest.

TABLE X
DETERMINANTS

Per Cent of Total Responses in Different Determinant Categories

Determinants	Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
M	2.	1.3	7.5	5.9	2.6
FM	9.3	5.7	13.6	12.1	13.7
m			2.0	.2	.8
K + KF	4.6	4.4	2.0	4.4	1.2
FK					.2
F	56.9	67.7	47.6	53.2	53.5
Fc		.6	2.0	1.0	2.2
cE + c	.7	1.9	.7		.8
FC'	5.3	.6	2.7	3.8	2.4
CF' + C'		2.5	2.	2.7	.8
FC	7.3	5.1	8.2	5.4	9.5
CF	13.9	10.1	9.5	10.7	12.3
C			2.	.6	
Total Movement	11.3	7.	23.1	18.2	17.1
Total Color	21.2	15.2	19.7	16.7	21.8

Average Number of Responses in Different Determinant Categories

M	.25	.17	.92	.78	.33
FM	1.17	.75	1.67	1.58	1.70
K + KF	.58	.42	.25	.58	.18
F	7.17	8.92	5.83	6.95	6.65
FC	.25	.27	1.0	.7	1.18
CF	1.75	1.33	1.17	1.4	1.53

TABLE XI

PER CENT OF CHILDREN WHO GAVE RESPONSES IN THE DIFFERENT DETERMINANT CATEGORIES

Group Determinant	V-A N = 12			V-S N = 12			V-VS N = 12			VI N = 40			VII N = 40		
	M	A	T	M	A	T	M	A	T	M	A	T	M	A	T
M	17	0	17	17	25	42	58	25	83	45	13	58	30	13	48
MA	58	8	67	42	0	42	67	8	75	78	3	80	68	5	73
m	0	8	8	0	8	8	17	17	33	3	10	13	10	18	28
K + KF	42	0	42	42	0	42	25	0	25	33	0	33	15	3	18
FK	0	0	0	0	0	0	0	0	0	0	3	3	3	0	3
F	92	0	92	100	0	100	100	0	100	100	0	100	100	0	100
Fc	0	0	0	8	0	8	17	0	17	10	8	18	18	8	25
cF + c	8	0	8	8	0	8	8	0	8	0	5	5	13	3	15
FC'	17	17	33	33	0	33	42	25	67	33	10	43	25	25	50
FC	50	8	58	42	8	50	17	0	17	45	20	65	58	25	83
CF	67	0	67	58	8	67	58	11	75	58	8	65	68	13	80
C	0	0	0	0	0	0	17	0	17	5	3	8	0	3	3

The M column represents the per cent who gave the determinants in main responses.

The A column represents the per cent who gave the determinants additionally but not as main responses.

The T column represents the total number of children using the determinant either in a main response or additionally.

The incidence of the use of color is higher in the groups in the present study than in other studies that have been reported. This higher incidence may be explained in part by possible differences in scoring, but the difference also might be an outgrowth of the unusual emphasis that is placed on art in the city schools. The children are unusually aware of color and designs.

The determinant categories in general evidence slight change from group to group. The changes are surely not pronounced enough to serve as a basis for judging that an individual protocol belongs to one group rather than another.

Table XI shows the per cent of children in each group who gave responses in the different determinant categories.

The number of children giving M responses in groups VI and VII is especially interesting in the light of Klopfer's remark that "the average per child never reaches 1 M, and it is most likely that M's are to be found almost exclusively in superior children below the eight-year level." (85, p. 21) According to this study one would expect to obtain M responses from at least fifty per cent of average children at ages six and seven. However, the very superior five-year-old children do give the highest percentage of M responses.

The large per cent of children giving K and KF responses should be noted. Apparently at these age levels the use of diffuse, undifferentiated K responses may represent a lack of perceptual differentiation rather than anxiety unless one assumes a widespread anxiety in average children at these age levels. In evaluating

the significance of K responses, it should be kept in mind that the symbol K is used in the Klopfer system, for smoke and cloud responses even though the subject says in inquiry that response occurred "because the card was black."

There is also a high usage of FC' which should be kept in mind when an examiner is tempted to use the presence of the FC' as a sign of disturbance or depressive tendencies. In many incidences black seemed to be used much as any other color would be used.

The increase in the number of children in the average groups giving responses in the FC category is noteworthy. The fact that the use of FC in the highly superior five-year-old group does not increase in like manner may be due in part to smallness of the sample. It may also be due in part to the fact that the emotional development of children does not necessarily parallel their mental development, a point made by Gair in her study of highly superior seven-year-old children.

Whereas the percentage of children giving FC responses increases with age, the use of the CF category, as shown in the average number of responses, remains about the same.

Contents

The per cent of the total responses in the different content categories and the average number of responses in the most important of the content categories is shown in Table XII.

The combined H and Hd contents tend to increase with age although the trend is not consistent in relation to Group VII. Although the combined A and Ad per cent decreases with the

TABLE XII

CONTENT

Per Cent of Total Responses in Different Content Categories

Content Category	Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
H	5.3	3.8	10.2	12.5	6.0
Hd	.6	4.4	.7	3.1	3.0
A	46.4	34.8	41.5	44.5	46.8
Ad	1.3	3.2	4.1	4.4	4.2
Aobj		.6		.2	.8
Obj	10.6	12.0	15.0	7.7	9.7
Pl	16.6	17.7	10.2	5.9	7.6
N	2.0	6.5	3.4	5.6	5.0
Geo		5.7		.8	1.8
Art	1.3	1.3	2.0	3.8	5.0
Color			2.0	.4	
Arch	4.0	3.8	3.4	1.9	1.0
Clouds	1.3			2.9	.8
Smoke	3.3	1.3	2.0	1.3	.6
Fire	4.0	4.4	4.1	2.9	2.0
At		.6	.7	.2	
AAt				.4	1.0
Blood				.6	.4
Bones	3.3		.7		2.0
Misc.				.8	2.0

Combined Categories

H + Hd	5.9	8.2	10.9	15.6	9.0
A - Ad	47.7	38.0	45.6	48.9	51.0

Average Number of Responses in Different Categories

H	.67	.50	1.25	1.63	.75
Hd	.08	.58	.08	.43	.38
A	5.83	4.58	5.08	5.80	5.83
Ad	.16	.42	.50	.58	.53
Obj	1.33	1.58	1.83	1.00	1.20
Pl	2.08	2.33	1.25	.78	.95
N	.25	.83	.42	.73	.58
Art	.16	.17	.25	.50	.63
Arch	.50	.50	.42	.25	.13
Smoke	.42	.17	.25	.18	.08
Fire	.50	.58	.50	.38	.25

TABLE XIII

PER CENT OF CHILDREN WHO GAVE RESPONSES IN THE DIFFERENT CONTENT CATEGORIES

Group Content	V-A		V-S		V-VS		VI		VII						
	N = 12		N = 12		N = 12		N = 40		N = 40						
H	42	8	50	42	17	58	67	17	83	78	3	80	53	8	60
Hd	8		8	25		25	8	8	17	20		20	25	3	28
A	92	8	100	100		100	100		100	100		100	100		100
Ad	17	8	25	25	8	33	25	8	33	35		35	35	3	38
AObj		8	8	8		8				3	5	8	5		5
Obj	50		50	67	8	75	75	8	83	58	13	70	68	5	73
Pl	67		67	83		83	67		67	48	3	50	43	15	58
N	25		25	42		42	25	17	42	30	10	40	35	5	40
Geo	8		8		33	33				5		5	13		13
Art	8		8	17		17	17		17	15	3	18	35	5	40
Color							17		17	3		3			
Arch	25		25	42		42	17	8	25	23	8	30	8	10	18
Clouds	17		17							23	3	25	8		8
Smoke	25		25	17	17	33	25		25	13	3	15			
Fire	25		25	25		25	25	8	33	25		25	15	3	18
AtadaAt				8		8	8		8	8		8	8		8
Blood		8	8					17	17	5	5	10	5	5	10
Bones	17		17		17	17	8	17	25				13	5	18
Food											3	3	8		8

Per cents are given in terms of nearest whole number.

five-year-old children as mental age increases, there is but little difference in the percentages for the groups of average mental ability.

The plant, architecture and smoke categories show a decrease with mental age and also with chronological age. In contrast to the decline in the diffuse smoke responses fire responses remain relatively high for all the five-year-old groups but show a slight decrease for the six- and seven-year-old groups. Theoretically the consistent use of fire by the five-year-old groups might indicate that emotional lability may occur at this chronological age level regardless of the mental age level.

The per cent of children who gave responses in the different content categories is shown in Table XIII.

Populars

The criterion according to Klopfer for designating a response as a popular response is that one adult subject out of three gives the response.

In this study we have been interested not only in finding out with what frequency children give the regular adult popular responses but also in finding out what responses, not popular on the adult level, approach or reach the frequency of populars with children.

Table XIV shows the percentage, in round numbers, of the children who gave popular responses as main responses, as additional responses and as either main or additional responses. The children's responses in relation to the responses that are popular for adults could be grouped as follows:

TABLE XIV

PERCENTAGE OF CHILDREN GIVING POPULAR RESPONSES AS DEFINED BY KLOPFER AND KELLEY

Card No.	Popular Responses	Group V N = 12			Group V-S N = 12			Group V-VS N = 12			Group VI N = 40			Group VII N = 40		
		M	A	E	M	A	E	M	A	E	M	A	E	M	A	E
I	Winged Creature	25	--	25	8	--	8	42	17	58	23	3	25	33	--	33
II	Animals or Animal's Heads	42	8	50	8	--	8	--	--	--	23	--	23	25	3	28
III	People	8	8	17	--	8	8	33	8	42	40	8	48	20	10	30
III	Bow or Butterfly	17	8	25	25	33	58	17	33	50	15	23	38	15	20	35
V	Winged Creature	58	--	58	67	--	67	75	8	83	63	5	68	85	3	88
VI	Animal Skin	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VIII	Animals	17	42	58	17	33	50	33	25	58	55	28	83	55	13	68
X	Spiders	17	8	25	42	8	50	42	--	42	23	8	30	28	3	30
X	Rabbit's Head	8	--	8	--	--	--	25	8	33	20	8	28	8	3	10
X	Green Worms	--	--	--	8	8	17	--	--	--	3	5	8	10	5	15
Average Number Per Person		1.9		2.7	1.8		2.7	2.7		3.7	2.7		3.5	2.8		3.4

M = Main Response; A = Additional Response; E = Either Main or Additional Response
 These Percentages are given in terms of the nearest whole number.

*One child gave both a main and an additional popular response to the same area.

A. Responses popular for adults which are also popular for all the groups in the present study.

B. Responses popular for adults that do not reach the popular level of frequency for any of the present children's groups.

C. Responses popular for adults that reach the popular level of frequency in some groups but not in others.

A. The only adult popular response that all of the groups gave with the frequency of a popular was to Card V, for which the popular concept is any winged creature with the body in the center. It will be noted in Table XIV that 58% or more of all the groups and 88% of Group VII gave such a concept. Since almost all of the average seven-year-old children were able to see the popular concept, it would seem especially significant diagnostically if a child does not make an adequate response to this card.

B. The responses, popular for adults, but which were not given by any of the present groups with the frequency of popular are:

1. The response of an animal skin or fur rug to the whole or lower D area of Card VI. This response was not given by a single child in the study, nor would most of the children accept the concept when it was suggested to them. Many of the children gave the response of some kind of animal to the card as a whole without using shading as a determinant.

2. The response of green worms or green snakes, etc., to the center dark green D on Card X. Very few children in any group perceived these.

C. The responses which are popular for adults but which reached the popular level in only some of the groups are listed according to the sequence of the cards in the series.

Card I. The popular response to this card is any winged creature with a body in the center. Groups V-A and V-S did not give this response frequently enough for it to attain a status of popular; both Groups V-VS and VI approached the popular frequency and Group VII attained it.

Card II. Fifty percent of the average five-year-old children used the response of animals or animal heads to this card whereas only one of Group V-S and none of Group V-VS used the concept. This may be explained in part by the fact that these mentally more mature children used the same general organization of the blot but they tended to assign human contact, indicating a more mature level of interest. The same tendency was followed also by Groups VI and VII who approached but did not reach the standard of frequency required for a popular.

Card III. The Entire Black Area. Younger children tend to see the main black figure as animals rather than human beings in motion, hence in Groups V-A and V-S there were scarcely any popular responses whereas Group V-VS and VI went well above the popular level of frequency and Group VII approached it closely.

The Center Red D. The popular response to this area is either a bow or a butterfly in which color may or may not be used. Group V-A approached the popular level; all the other groups reached it.

Card VIII. A popular is scored in the main if the side pink figures are seen as some kind of animals in motion in the performance proper. An additional popular is scored if (1) an animal in motion is given for the first time in the inquiry, (2) an animal without motion is seen in the performance or inquiry or (3) if a response of birds or fish is given instead of animals. Only two children in each of the Groups V-A and V-S gave main popular responses. However, so many of the children gave additional FM responses that animals in motion could be considered as a popular response for all the groups if the performance and the inquiry are considered together. The appearance of animals in motion in the inquiry seemed to be the result of a longer period for perceptual maturation.

Card X. The Light Green D in the Center Green Area of the Card.

The usual popular response of rabbits' head was given by only one child in either group V-A or V-S, the area apparently being a little small or difficult for them to differentiate. Many of the children did not even accept the concept when the area was specifically pointed out to them. The concept was given by a third of Group V₇VS. Group VI approached the popular level of frequency, whereas Group VII fell below the level.

The Outer Blue Area. For this area the popular concept is any many-legged creature such as a spider, crab or octopus. Groups V-A, VI and VII approached closely the popular level. Groups V-S and V-VS reached it.

The average five-year-old group achieved the frequency level required of adult populars on Cards II, V and VIII; the average

six-year-old group on Cards III (on both the entire black and inner red areas), V and VIII, and the average seven-year-old group on Cards I, the inner red on III, V, and VIII, and approached the popular level on Card II, the black area of Card III and the outer blue area of Card X.

To the writer, one of the most interesting findings of this study is the apparent relative inability of the five-year-old children, regardless of their mental age to see popular concepts that they did not see spontaneously when they looked at the card before the period of testing the limits for populars. This procedure was carried out on seven of the children of Group V-A, six of Group V-S and six of Group V-VS. Of these children only six responses were made that had not been given originally. Many of the children irrespective of the mental age could not see the popular concepts even when they were named and pointed out. Perhaps others felt as did the little girl who when asked what the outer blue area on Card X was, replied, "I can't quite tell. I'm not quite old enough to know what it is."

The inability of the five-year-old children, during the testing of the limits, to see particularly the populars on Card X is in contrast to Group VII. The testing of the limits was done on twenty-eight of the children of this group. Of the twenty who had not seen the outer blue as a spider previously, eleven saw it immediately when the area was pointed out to them without its being named. Some, however, could still not see it even when it was

named. In a like manner eleven out of the twenty-six who had not seen the rabbit's head named it immediately as soon as it was pointed out.

The procedure of testing the limits for populars was not a part of the original plan and hence was not carried out as uniformly or systematically as we wish it had been.

We shall now mention responses other than the adult populars which the children give often enough so that they approach or reach the level of frequency of populars in at least one of the groups. The percentage of children is given in terms of the number who saw the response either as a main or additional response.

TABLE XV

THE PERCENTAGE OF CHILDREN GIVING RESPONSES THAT APPROACH OR REACH THE FREQUENCY OF POPULAR RESPONSES BUT WHICH ARE NOT FOUND IN THE REGULAR ADULT POPULAR RESPONSES

Cards	Response	Group V-A	Group V-S	Group V-VS	Group VI	Group VII
I	Face (W) (Entire Black Area)		42	42	10	23
III	Animals	33	7	25	18	10
	Birds	25		25	15	10
IV	Winged Creature (W)	25				
	Trees		25			
	Human			25	28	15
	Animal			25	28	25
VII	Smoke or (W or W)	42	25	17	28	13
	Clouds					
VIII	Trees (W)	42	25	25	20	5

The single most interesting finding here is that diffuse responses (smoke or clouds) are given frequently in the five- and six-year-old groups but that they tend to diminish on the seven-year level.

It is also interesting that Card IV which Rorschach said was more difficult to organize as a whole than in parts is responded to by over 50% of the six-year-old children as either a man or an animal, the response of man, gorilla or bear being considered an acceptable answer even on an adult level.

Originals

It will be recalled that we assigned a status of original to the responses that have occurred only once in the 116 protocols. The responses gaining the tentative status of originals at these age levels are listed in Appendix A, where it will be noted that many of the responses designated as originals would be considered very usual responses for adults.

TABLE XVI

AVERAGE NUMBER OF ORIGINAL RESPONSES

Quality of Original	Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
0-		.42	.50	.30	.35
0	.08	.75	.25	.60	.33
0-	.08		.25	.18	.03
Total 0	.17	1.17	1.00	1.08	.70

The above table shows scarcely any originals among the average five-year-old children. There is a slight increase in the giving of originals with the increase in mental age with the exception of the seven-year-old group. The increase is not pronounced enough to be used as a criterion for discriminating levels of intelligence especially considering the variation in the number of originals given by different individuals within the groups.

The superior and very superior five-year-old groups give a fairly high proportion of poor original responses along with their good originals.

Although certain trends show an increase with mental age, it is apparent from the several tables that the trends are very gradual and slight. The difference in the use of location areas, determinants, content categories and populars as reflected by the average for the different groups is not great enough to differentiate one mental age level from another, within the age range covered by the present study.

It will become apparent from the protocols presented in Appendix B, pp. that the individual differences in the total protocols is great. It is so great, in fact, that many protocols in each group are very similar to protocols in each of the other groups.

One of the interesting incidental findings of this study is that in the performance on the Terman-Merrill Revision of the Stanford Binet Test, Form L, there was greater variability of performance on the predominantly perceptual items or items stressing perceptual differentiation than on other types of items. Thirty-one of the forty average six-year-old children took their Form L tests within thirty days of their Rorschach test, the range being from 0 to 30 days and the average number of days between the two tests being 5.5 days. On the VI-year level of Form L, twenty-eight of the thirty-one children obtained credit for the vocabulary item, twenty-two on the memory for the bead pattern, twenty-two on the

mutilated picture, twenty-seven on number concepts, twenty-five on pictorial likenesses and differences and only twenty on the maze tracing. Vocabulary and number concepts, areas where there might be a greatest uniformity of training reflect the least variability of performance. One might suppose, theoretically, that the children would also show greater variability in their perceptual experiences on the Rorschach cards than on vocabulary and number concepts.

2. Comparison of the Three Five-Year-Old Groups

The average five-year-old group, Group V-A, will be discussed in some detail and will be used as a basis of comparison with the other five-year-old groups which will be discussed somewhat more briefly.

This group of five-year-old children with high average intelligence had an average reaction time for all the cards of 5.35, there being no appreciable difference between the reaction time to colored and achromatic cards.

The average number of responses was 12.6 with a range from 9 to 23. Four of the children gave only one response to each card. Card X was the most provocative card with Cards III, VIII and IX following closely after. Card VIII called forth four popular responses in addition to the ones which had been given in the performance. This is interesting to bear in mind when considering the interpretive significance attached to additional responses. Of the

(2) The Position of the Card. Some investigators permit a turning of the cards at will while others, such as Ford, do not permit the card to be turned at all.

(3) The Amount of Urging of the Subject to Respond to the Cards.

(4) The Inquiry. Some investigators give the inquiry immediately after each card, while others leave the inquiry until the end of the main performance on all the cards.

(5) Testing the Limits. This phase of Rorschach testing is usually omitted with very young children because of the unproductiveness of the procedure. However, the present study would indicate that the procedure of testing the limits for popular responses might prove to be very rewarding.

(b) In the scoring of the test the following problems are among those that need clarification:

(1) Definition of Scoring Symbols. The lack of uniformity in the standards for scoring is particularly evident in the scoring of usual details, movement, shading and color responses, popular responses and original responses.

(2) Evaluation of the Quality of a Response. The quality of a response is generally evaluated in relation to form accuracy, degree of differentiation and organization. This tri-partite standard is applied to evaluation of W responses, F responses and all responses in which form plays a dominant role, and to O responses. At present

2. The five-year-old children are in the kindergarten, where they are encouraged to communicate their ideas freely. Emphasis is placed on communication rather than on criticalness of what is communicated.

Manner of Approach.

About two-thirds, or 66.2%, of the main responses were to cards as a whole. Of the D and d responses (31.8%) only one response was to a d area. There were no space responses given either in the main or additionally.

Quality of the Whole

The percentage of wholes falling into the W-, W, W+ and W (FND) where form is not the chief determinant, will be seen in Table VII, and the analysis of form according to cards in Table VIII. The content of these W responses to different cards will be seen in the appendix on pages 202 to 233.

Cards IV, V, VI, and X elicited no whole responses in which there was interaction or interrelation among the parts. Cards IV, VI, and X were difficult to organize as wholes with interrelated parts. Rorschach said of Card IV that "Form and movement answers both (are) comparatively difficult. More difficult to interpret as a whole than are details;" of Card VI that it was "generally considered the most difficult figure," and of Card X that "whole answers (are) almost impossible." (116, p. 52) It is not surprising that the form on these cards was comparatively poor and loosely organized. Card V, in contrast to these three cards, is so easily organized as a winged creature that one would not expect at this age

level a more complicated organization for this card. Card VIII called forth only three responses in which the side animals were seen in relation to the center area.

Determinants

The per cent of and the average number of responses that fall into the different determinant categories is shown in Table X; and the number of children using each determinant category in Table XI.

Five out of the twelve children used K responses, these being given to Cards II and III, where the black was seen as smoke in conjunction to the red which was seen as fire. Since K appears so commonly at this mental age level, it may be an indication of diffusion in perception accompanying the level of mental development, rather than an indication of anxiety as it is theoretically supposed to be at the adult level. There were no k or FK responses. Only one child gave a rather diffuse surface texture (CF) response.

Two children gave M responses, and seven gave FM responses in the performance proper. Only one child gave no color response. Two children gave achromatic responses.

The F category had the highest per cent of the responses, there being a F% of 56.9. The category having the next highest per cent of responses was CF (13.9%) which was almost double the FC% of 7.3.

Content

The per cent of and the average number of responses given within the different content categories is shown on Table XII. The per cent

of children who gave responses in the different content categories is shown on Table XIII. The animal per cent was 47.7% whereas the human per cent was only 6.9%. Rorschach found with adults that the animal per cent varied between 25 and 50%, the higher animal per cent being associated with stereotypy and being conversely related to intelligence. The plant per cent is 16.6, higher than that for any other category except the animal category. Three of the children gave fire responses to the red on Cards II and/or III. Two children gave responses of bone.

Populars

The percentage of Populars and the average number of popular responses, both main and additional, to the various cards is shown in Table XIV. These children showed less ability to attach the usual concept to the popular areas than any other group. They also showed much less ability in perceiving the popular concepts when the popular areas were specifically pointed out to them. To seven children in this group all the popular areas to which they had not responded were pointed out. Of the possible fifty-five responses only three popular responses were given. Most of the children persisted in the original response given to the whole card or the part of the card, as the case might be. In this they showed a certain rigidity of thinking mentioned in Chapter II. Generally, even though the popular concept was named for the child and pointed out to him, he still could not see it. When the children did change their concepts, the change was to some other concept equally far removed

from the popular. For example, when the blue (spider) top side area was pointed out, different children gave the response of fire, bones, and flower.

The behavior of this average group of five-year-olds in relation to testing the limits on the popular areas is in enough contrast to the other groups so that it would seem that it might be a profitable routine practice since it seems to help differentiate the average five-year-old child from more advanced mental age levels.

Perseveration and Repetition

The term perseveration is used to denote the pattern wherein the subject, having once given a response applies that same response inappropriately to subsequent consecutive whole cards. The term repetition of ideas is used to denote the repetition of an idea in response to different cards or parts of cards the idea or concept being more or less appropriate to the card in question. The amount of perseveration and repetition is most pronounced in Group V-A as one might suppose.

The most frequently repeated or perseverated concept is trees repeated by four children. The next most frequently repeated concept is fire, given by three children. The same kind of animal was perseverated by only two children. The most interesting single finding from analyzing this material is that eight of the twelve children gave the same response to Cards VIII and IX, seven of the children giving perseverated color responses. According to Klopfer, Card IX is the most frequently rejected of any of the

cards. Within the present age group, it apparently proved to be the most difficult card as far as establishing an appropriate individual response. The patterns of perseveration are shown below. The individual in the series is represented by the arabic number.

Subject	Concept	Cards
1	Butterfly	I and IV to X Inc.
2	Tree Fire	I, IV, VI, VIII, IX, and X II, III, VII, and IX
3	Birds Bones Bloody Bones	I to IV and VII VI VIII to X Inc.
4.	Bear Grasshopper Tree	I and II VI and VII VIII and IX
5	Tree Colored Trees Fire	IV, VI VIII and X III, VII, IX
6	Tree Animals Climbing Houses Fire	I, II and XIII (W) VIII, IX, X II, III
7	Decorations	VIII and IX
8	Flowers	VIII to X Inc.
9	Flower	VIII and IX
10 to 12	None	
	Inc.	

Perseveration and repetition of ideas is evident in all the other groups to a somewhat less degree than in the average five-year-old children. Klopfer and Margulies reported that only one

five-year-old child and none of the six-year-old children gave perseverated responses to over three cards.

General Attitude

The children for the most part gave their answers in a rather matter-of fact way as if they felt that their comparatively undifferentiated answers were quite adequate. A few children voiced some uncertainty about their perceptions as did the little girl who said, "These are what I say they are, aren't they?" There was scarcely any real criticism expressed either toward the cards or toward themselves as is frequently found in the older children. Only two of the children in this group expressed the idea that one of their responses had been "silly." Only two children changed a response that had once been given. Both of these responses had been given to Card VI.

When a child was asked what about the card made him respond with the particular concept given, he was likely to say, "It just does," to repeat the original response, or to give some general answer as for example, to the question "What about the card makes it look like a butterfly, the child was likely to answer, "It has wings" or "It has a head and tail." The pictures that the children drew of the concepts which are frequently given as popular responses showed such lack of differentiation that it was often difficult to discern anything that differentiated one drawing from another.

These children did not seem to be particularly disturbed by illogical aspects of their responses. There seemed to be four general patterns dealing with what the adult would consider discrepancies:

1. Being apparently unaware of the lack of logic as was, for example, the little boy who having given the response tree to Card IV explained in the inquiry that it was a tree "cause I can see the two hands and legs and the arms and the mouth." When the examiner asked him what the arms and mouth belonged to, he responded decisively, "The tree!"

2. Leaving the concept as it is, but voicing a question about it. For example, a little girl responded with bird to Card V and then asked, "Do birds have ears?" Another child who had responded to Card IV with bears added that the upper side d were "ears or hands. Bears surely don't have hands, do they?"

3. Thinking up some logical solution to explain a discrepancy between the blot area and the concept mentioned as did the child who having given the response of cat to Card VI, exclaimed, "No tail! Oh well, play like these are its tails (lower side D). No, its tail is back (of it) play like."

4. Deciding between two concepts suggested by different aspects of the card as did the boy who to Card III responded, "Some men, two men. They have shoes like women," and in the inquiry he pointed to collars and the tie thinking that they made them look more like men. The fact that the boy noticed of a sudden that the men were "playing football" seemed to be the deciding factor in the decision that the figures were men.

As a whole, however, these children were much less disturbed by illogical aspects of their concepts than were children who were somewhat more mature mentally.

The quantitative differences between these two groups, as indicated by the average number of responses, have been shown on the several tables which demonstrate that there is a slight general increase in the degree of differentiation in all areas: Location, determinants, contents, and original responses.

Greater differentiation is reflected not only within the categories but also within the responses themselves. The superior children have more highly differentiated perceptions and concepts. They tend, more than do the children of the less able group, to point out one or many parts of the card in order to explain their responses. The evidenced awareness of details leads to a greater number of DW responses and may lead to poor form responses. However, the poor form may, in many instances, reflect greater intellectual maturity than vague undifferentiated, though not necessarily inaccurate, responses. In the superior group one child responded to the whole of Card V with "dog" and another child responded with "rabbit" on the basis of the head and feet; these two children had differentiated aspects of their concepts without being able critically to exclude the "wings" in their perceptual experience, as a slightly more mature child would do.

The greater differentiation of the superior children is also evidenced in the widened interest in faces. No face responses were given by Group V-A but five children of Group V-S responded to Card I alone with some type of face response. The idea of the face was carried over to Card II by one of the children.

Only five of these twelve superior children gave perseverated responses to Card IX in contrast to eight of the twelve average five-year-old children. The former group also gave better form to the more difficult cards, Cards VI, VII and IX.

Increased mental maturation was accompanied by greater criticalness as was evidenced by one child who, having given the response of "a two-eyed wolf" to Card I said in inquiry, "It doesn't really look like a wolf. It just makes me think of one." The greater criticalness may be one of the reasons for the slight increase in rejections of cards.

The same trends shown by Group V-S were carried still further by Group V-VS as is evident in the several tables. The very superior group gave a lower per cent of W- and higher per cent of W and W+ than did the average group of superior group. Eighty-three per cent of Group V-VS gave M responses either in the performance proper or in the inquiry in contrast to 17 per cent of the average five-year-old children. The superior group also gave more popular responses. For comparison of content see Appendix A.

As a group the very superior five-year-old children seemed the most self-assured of any of the groups. In spite of the differences in the averages of the categories given by the three groups of five-year-old children, individual records in each group were similar enough so that one could not differentiate them as belonging to one group rather than another.

3. Comparison of the Average Five-, Six-, and Seven-Year-Old Groups

We have shown in several tables the quantitative data pertinent to these three groups. We have also discussed at some length the protocols of the average five-year-old children. We shall limit our discussion here to the material not already covered.

Of the average six-year-old children, thirty-five were in kindergarten and only five were in the first grade. The group as a whole showed a spontaneity of expression characteristic of kindergarten. They were for the most part less restrained than the average seven-year-old children, who were in the first grade.

In comparing the perceptual experiences of the average six-year-old children with the average five-year-old children two factors should be kept in mind: (1) that the older children can perceptually differentiate more details from and within the whole, and (2) that their concepts also are more highly differentiated. The increased maturation which enhances the potential ability to give responses also enlarges for the child the problem of reconciling the differentiated parts of the card with concepts that arise.

Apparently, with increased differentiation, the reality demands of the stimulus itself are accentuated, making the cards more problematical for the child of six than for the child of five. The increased difficulty is reflected in the increase of expressions of doubt and criticalness of the children directed both toward themselves for not being able to respond to their satisfaction and toward the card.

This enhanced perceptual complexity of the cards is apparent in several areas, which are not mutually exclusive, such as the following:

- a. Increased number of rejections of the whole card in the performance or in inquiry and the rejection of parts of responses.
- b. Expressions of uncertainty which might be divided into:
 1. Remarks about the cards. The records are full of such remarks as, "I don't know. It looks like a . . ."; "That looks more like a . . ."; "I'll call this a . . ."; "Goodnight! A butterfly sort of"; "I don't know what. Nothing is on here. Probably it's some kind of an eagle"; "This is a long guess, I'll call it dirt," and "I don't know what the red is. (Center red on Card II.) I can't even guess this red."
 2. Responses. In analyzing the responses the uncertainty seems to accompany:
 - (1) Difficulty in clearly differentiating a sub-whole or sub-Gestalt, centering attention on that area and excluding the rest of the card. This type of difficulty is frequently seen on Card V. The rabbit figure in the center of the card transiently emerges or partly emerges from the whole and presents a problem. The difficulty six-year-old children had with their perceptual experiences on this particular card is shown in such responses as the following:

"It looks like a rabbit but it doesn't look like one to me because it has wings. It looks like a bat."

"It looks like a rabbit between it," and in the inquiry there was added, "These ears and feet are like a rabbit. I don't know what it's in between""(referring to the wing areas of the card).

"It's a bunny with great big long feet, three pairs of feet," and in the inquiry the comment was made, "It's a rabbit because his ears are like a rabbit--funny rabbit."

"A big bunny and there is something over there (usual wings), I don't know what he is carrying."

One of the least able children of this group gave two responses in the main, "Rabbit and butterfly," but in the inquiry added in a syncretic manner saying, "It's a rabbit-butterfly. The rabbit has got two wings. It's just one rabbit with wings."

- (2) Changes in concept. Various details of the blot area suggest different concepts so that it is difficult for a child to choose which concept is to him the most appropriate. Different details frequently cause a child at this mental age level to change his response from:
- (a) One animal concept to another. An example of this first type of change is shown by a little girl who responded to Card VI with "Some kind of bug crawling," and in the inquiry added "The legs go down just like a turtle and it has these things (whiskers) almost

like a cat." This same child when drawing various animals frequently given as popular responses drew a spider. When the spider was completed she said, "It's almost like a turtle." Another child when presented with Card IX said, "A piece of a dress or a piece of a head or something. I guess it's a tiger or an elephant." In the inquiry the child said, "It doesn't look like a dress; I got it mixed up with that other one (Card VIII). It's a giraffe but it's not the right color. They have spots on them. This one doesn't. It's just one giraffe, part of its head," and to the question of what about the card makes it look like a giraffe, the child said, "Well, this part there (orange) is sort of the right color.

- (b) An animal concept to a human or humanoid concept, or vice versa. Two children were not sure whether the figures on Card III were birds or humans; the first child said, "Is this little chickens or men?" and in inquiry decided that they were men because "they ain't got no more leg. They have wings, funny head and a mouth like a chicken. That's their little tiny birds they're carrying with them." (lower center black) and a second child responded to the same card with "Two

women looking at each other," and in the inquiry decided that they were not women but "birds looking at each other. Got long mouth. They are carrying pocketbooks."

- (c) One sex to another. Four of the children gave responses to Card III indicating that they perceived the black figures, commonly seen as men, as a male and female figure. One of the children was puzzled because they "look so much alike you can't tell who is mamma and who is papa." The same child who gave this response said of Card IV, "It's a big mamma bear or a papa bear sitting on a log" and finally decided it was a mamma bear because of the high heels.

- (3) Criticalness toward the cards. In the six-year-old children there is also an increased criticalness of the cards, as is shown by these remarks given by different children: To Card IV "These look like wings. I can draw better than that"; to Card I "A black window, a silly window" with the explanation in inquiry that the window was silly because "It isn't square." and to Card VII "You should have made another ear. Who made that silly thing without an ear?"

Proportionately less criticalness and uncertainty was expressed by the lower third of this average six-year-old group than by the more able children.

Although there was much repetition of ideas within the individual protocols, there was not nearly so much perseveration. Only 13% of these children gave the same perseverated response to Card IX that they had given to Card VIII, whereas 67% of the average five-year-old group gave a perseverated response to Card IX. Only one child out of the forty showed no repetition of ideas. The most frequently repeated idea was that of butterfly given in a repetitive manner by fifteen children. (One child perseverated with the idea of butterfly to nine cards and another child to eight cards). The next most frequently repeated idea was that of tree, repeated by eight children, which was followed closely by the idea of fire, which was repeated by seven children.

The protocols of the average seven-year-old children seem to represent a comparatively less able group than the protocols of the average six-year-old children as is evidenced by the longer reaction time, the greater number of rejections, the smaller number of M responses, the higher W-%, and the less highly differentiated responses. The protocols of the seven-year-old children show greater uniformity and less resourcefulness than the average six-year-old responses. The greater uniformity of responses may reflect the greater uniformity of educational experience and possibly that the average group selected on the basis of the Terman-Merrill Test shows less variation in ability than do groups at the younger age levels.

4. A Comparison of Group V-S with Group VI and of Group V-VS with Group VII

Group V-S gave on the average only about a fourth as many M responses and a half as many FM responses as did Group VI. The younger group also gave fewer human and animal responses and many more object and plant responses and somewhat more architecture and fire responses. The younger group gave only 2.7 popular responses on the average (main and additional) as against 3.5 for the older group.

A comparison of Group V-VS with Group VII shows that the former group has a much shorter reaction time, fewer rejections, lower W-% and much higher W+%. The average number of M responses is .92 for Group V-VS while for Group VII it is only .33. The human content is higher. Object, plant, architecture, smoke, and fire responses are more frequent.

5. Signs of Emotional Adjustment

Although it was not the purpose of this present study to investigate the validity of the Rorschach Test as an instrument for discriminating the degrees of personality adjustment, it nevertheless seems appropriate to point out that, according to our normative data, the signs of adjustment used by Davidson for differentiating the degree of adjustment in adults are not particularly applicable for children five, six, and seven years of age.

A list of these signs with explanation follows:

Adjustment Signs Used by Davidson

1. M FM or M + FM means that the number of M responses (human movement) is at least equal to or greater than the FM responses (animal movement). Normal, intelligent, well-adjusted individuals usually have more M than FM responses.
2. M, 3 or more (including additional M responses) means that the number of M responses including those given additionally should be at least three. Three or more M responses are expected from a normal intelligent adult.
3. Sum C Fc+c+C' means that the value of the responses to the bright colors ($\frac{1}{2}$ number of FC + number of CF + $1\frac{1}{2}$ number of C) is larger than the number of responses to the achromatic colors (gray, black, and white) plus responses using shading as texture. An individual adjusted to his surroundings will have more bright color responses than texture and achromatic color responses; those fearful of external situations, will want to play safe and retreat to the achromatic colors and shading. These people may as a result, appear outwardly adjusted but have inner conflicts.
4. F%, 50 or less means that the number of responses in which only the outline of the blot is used comprises half the entire number of responses or less. An individual with a satisfactory degree of rational control and, at the same time, a sufficient degree of spontaneity gives about 20 to 50% F responses of the total number of responses.

5. Dd + S, 10% or less means that the number of responses in which a rare detail or white space is used is less than 10% of the total number of responses. More than 10% rare detail answers may represent anxiety or an inability to see the things most people attend to.
6. P, 4 or more (and less than 30%). It is expected that normal, healthy individuals give at least four popular responses but not more than 30% of his total responses. P responses indicate the ability to think along the lines of other people which is essential even of very intelligent individuals if they are to be considered adjusted.
7. R, more than 20 means that the total number of responses is more than twenty. Normal, intelligent adults rarely give fewer than 20 responses.
8. FC CF or FC + CF means that the number of FC responses (form with bright color) is either equal to or greater than the number of CF responses (bright color with indefinite form). A well-adjusted individual usually has more FC than CF responses.
9. FC, 2 or more indicates some capacity to make adequate social adjustments. From a normal individual at least two FC responses are expected.
10. No pure C means that a normal adjusted individual does not usually give color responses which disregard form and content completely.
11. %age to last three cards, 40% or over means that the number of responses to the last three cards is approximately 40% or more

(up to 60% the total number of responses. A socially well-adjusted individual is stimulated as much by the three colored cards as he is by the other cards and, therefore, should give approximately one-third of his responses to these cards. However, 40% instead of 30% is used because the possibility of seeing details in the last three cards is greater.

12. FK + Fc, 2 or more means that a healthy, intelligent individual gives at least two responses involving the use of shading in a controlled manner. These answers represent tact and ability to introspect.
13. W:M = 2:1 means that the optimum relation between whole responses and human movement responses is two to one. This is an index of productivity in relation to creative ability.
14. A% less than 50 means that the number of animal responses (A + Ad) does not exceed 50% of the total number of responses. Too many animal responses indicate stereotypy in thinking.
15. No color shock means that there are no signs in the Rorschach of color shock which may indicate a neurotic make-up.
16. No shading shock means that there are no signs of shading shock.
17. No refusals means that at least one response is given to each of the ten cards during the performance. Normal individuals are expected to see something on each of the cards. (40, 36-36)

For the signs of adjustment used by Gair in her study of superior seven-year-old children, see page 72 for the signs of adjustment used by Swift in her investigation of preschool children see pages 76-77 and for the signs that Ford found to be significant see page 78.

TABLE XVII

INCIDENCE OF SIGNS OF ADJUSTMENT USED BY DAVIDSON

Signs of Adjustment	In Terms of Averages of Groups					Per Cent of Children Showing Signs				
	V-A	V-S	V-VS	VI	VII	V-A	V-S	V-VS	VI	VII
1. M FM or M + FM							8	42	28	8
2. M, 3 or more								8	5	
3. Sum C Fc + c + C' (or = to)	+	+	+	+	+	83	67	67	75	88
4. F%, 50 or less				+	+	25	17	50	48	53
5. Dd + S, 10% or less	+	+	+	+	+	100	92	92	88	90
6. P, 4 or more (and less than 30%)							8			
7. R, more than 20						8			3	3
8. FC CF or FC + CF						33	33	25	28	48
9. FC, 2 or more						33	25	33	18	35
10. No pure C	+	+	+	+	+	100	100	84	95	100
11. % age of last three cards, 40% or over						17	17	33	38	38
12. FK+Fc, 2 or more									3	
13. W:M = 2:1										
14. A% less than 50						42	8	50	50	55
15. No color shock*	+	+	+	+	+	92	83	83	80	90
16. No shading shock	?	?	?	?	?	?	?	?	?	?
17. No refusals	+	+	+	+	+	100	84			

*Number who used color in the main responses.

+ Sign is used in column to indicate when the sign of adjustment is shown in terms of the averages of categories.

There is little agreement among the various authors as to the signs of adjustment in children. Take, for example, the number of P responses. Paulsen says that the complete absence of any P responses seems to be more significant than any other indication of pathological condition (and adds that as judged from the criteria appropriate to an older group about half of the six-year-old protocols seemed to some extent pathological. Gair found the number of P to be one of the most useful criteria in differentiating levels of adjustment. Ford, to the contrary, wrote that "Rorschach's claim that P responses are indicative of the individual's tendency to conform to group standards is not supported," (27, p. 93) by her study. The greatest agreement about criteria seems to be in the area of color responses although there is not a uniformity of opinion about what one should expect at different age levels in regard to the relative proportion of FC, CF and C within the color responses.

Table XVII shows which of the adjustment signs used by Davidson appeared in each group in this study in terms of the averages of the groups and also in terms of the percentages of the children in each group in whose protocols these signs appeared. An inspection of this table makes it apparent that comparatively few of the signs of adjustment are shown in the averages for each group. That so few signs of adjustment appear seems to be due largely to the fact that these signs of adjustment in adults require a higher level of differentiation than these children have yet reached. The signs which do not appear because of developmental immaturity are

(1) $M > FM$ or $M = FM$, (2) M , 3 or more, (6) P , 4 or more and less than 30%, (8) $FC > CF$ or $FC = CF$, (9) FC , 2 or more, (12) $FK + Fc$, 2 or more and (13) $W:M = 2:1$. Sign number 7 R , more than 20, may be lacking for similar reasons.

One of the signs that does appear in all the groups, namely number 5, $Dd + S$, 10% or less, is rather meaningless because these children have not yet reached the stage where they are differentiating many unusual areas, the predominance of the responses being W and D responses.

It is interesting to note that at even these young age levels, the $F\%$ and $A\%$ are below 50% for the averages of the five-year-old groups and that the $A\%$ is below 50% for the groups VI and VII.

The criteria used for judging color shock in adults seems scarcely applicable for children, so we have indicated on the chart merely the children who have not given color responses in the main performance. The criteria used for judging shading shock in adults seems also inappropriate to children, first because such a comparatively large number of young children apparently respond to diffuse shading and such a comparatively small number respond to surface or texture shading. Hence we have placed question marks opposite the "no shading" category. With the high use of color one would naturally expect the sum of color to be higher than the sum of $Fc + c + C'$ responses, as it is shown to be. One would also expect scarcely any pure C responses at these age levels.

On Table XVII under the heading Per cent of children showing signs, the reader will note that (1) approximately 50% of groups V-VS, VI and VII have F% and A% of 50% or less (2) that 25% of Group V-A and only 17% of group V-S have F% of 50 or less, (3) the increase of responses on the last three cards with increasing mental age, and (4) that scarcely any children reached the criteria of P, 4 or more (and less than 30%). Although a number of children reached 4 P responses, the P per cent generally exceeded 30% because of the comparatively low number of total responses.

Although the areas of relationship mentioned in Davidson's signs of adjustment may be very significant for these age levels, the absolute number and the percentages are for the most part not appropriate.

The defining of criteria for judging the adjustment of children by the Rorschach Test logically should be arrived at by (1) a study of genetic levels as reflected in the Rorschach Test, (2) a setting up of criteria for judging degrees of adjustment at the different genetic levels by other means than by the Rorschach and (3) a discovering of the signs in the individual Rorschach protocols that reflect the degree of adjustment of the individual children. This type of investigation is at present most urgently needed.

F. Conclusions

The conclusions of this study are presented under the following headings:

1. Administration and Scoring.

(1) The use of an additional introductory card before the regular set of cards, as is the practice of some examiners, does not seem at all necessary, since the responses to Card I have not been marked by significantly longer reaction times, more rejections, or poorer form. Card I was placed first in the series by Rorschach apparently because it was a good introductory card. He wrote of it, "Failure is almost never encountered. It stimulates form and movement equally. Easy to interpret as a Whole and in Details." (116, p. 52)

(2) The urging of the child to give as many responses to each card as he can seems to be a practice preferable to the one we followed in which we suggested at the beginning of the test that the child could turn the card over as soon as he was through. The former method encourages the giving of fuller and hence probably more revealing protocols than the latter method. The former method also tends to increase the number of main responses and to decrease the number of additional responses.

(3) There would seem to be decided advantages when testing children of having the inquiry for each card follow immediately the main performance on each card rather than waiting for the inquiry until after the main performance on all the cards as we have done

in the present study. Immediate inquiry would eliminate difficulties that arise from the fluidity of a child's memory of his earlier perceptual experiences.

(4) Differentiating rigidly as we have done between responses given in the performance and those given in the inquiry seems to us to create an artificial division in the child's perceptual experiences. That he gives a response in the inquiry rather than in the performance seems often to be due merely to the fact that a child had had a longer period during which his perceptual experiences could mature.

(5) Although testing of the limits is generally omitted with children, the present study indicates that it is of value, especially in respect to finding out about the child's ability to respond to popular areas to which he did not respond spontaneously during the performance, when these areas subsequently are pointed out to him.

2. The Use of the Rorschach Test as a Test of Intelligence.

(1) Although there are certain trends apparent with the increase of mental age, the differences in the averages of the different categories at the different mental age levels of five, six, and seven years are so slight that they do not serve to differentiate at all decisively one level from another.

(2) The present study shows that the following categories tend to increase with increased mental age, ~~WF~~, FM, M, FC, H, and P. The categories that decrease with mental age are as follows; in

location area the W-%, among the determinants K and CF, and among the contents, A, Pl, Fire, Smoke, and Bones.

(3) The individual total protocols within each comparatively homogeneous group show great individual differences when judged by the usual criteria of judging mental ability on the Rorschach Test. Moreover there is close similarity of many total protocols taken from different groups.

(4) The performance of thirty-one six-year-old children who were tested on the Terman-Merrill Revision of the Stanford-Binet Test, Form L within an average of 5.5 days of their Rorschach tests, indicates that there is greater individual variation on the performance items in which perceptual experience plays a dominant role than in items such as vocabulary and number concepts that may reflect a greater uniformity of training.

(5) Because of the great differences in individual protocols at the different mental age levels and because, according to the usual criteria for judging intelligence by Rorschach, some protocols indicate much more intelligence and some much less intelligence than is evidenced in other tests, we feel that one should be exceedingly cautious about making judgments that an individual Rorschach protocol indicates more intelligence than is indicated by other intelligence tests.

3. General Observations of the Different Age Groups

(1) All the children of the average five-year-old group, without being particularly critical either of themselves or of the

cards, gave some response to each card. However, they showed a great deal of perseveration particularly on the last three cards.

(2) Some of the protocols of the very superior five-year-old children show more differentiation, organization, and interaction of parts within the whole of the card than did the average five-year, six-year, or seven-year-old children. The superior children for the most part showed quite a bit of self-assurance.

(3) The average six-year-old group, the members of which were for the most part still in kindergarten, showed greater resourcefulness and differentiation than the average five-year-old child and also expressed many more doubts about their perceptual experiences than did the younger or older children.

(4) The average seven-year-old group seemed more critical of their responses and at the same time less resourceful than the other groups. This criticalness is reflected probably in the increased reaction time to the cards, in the greater number of rejections and rather obviously in the critical remarks directed toward the cards. This group of protocols as a whole were more uniform and less imaginative than the other groups. This may reflect (1) greater uniformity of educational experience and also (2) the possibility that the average group selected on the basis of the Terman-Merrill Test shows fewer differences at this age than at the younger age levels.

4. Several Specific Findings.

(1) Klopfer assumed that M occurred under the age of eight years generally only in the protocols of superior children.

We have found that M responses were given either in the main or additionally by 17% of the average five-year-old, 58% of the average six-year-old, and 48% of the average seven-year-old children.

(2) Among the average five-year-old children (a) the ability to give independent responses to Card IX, and (b) the inability to pick out or respond to populars in the testing of the limits, seemed as significant as any specific responses that were given as indications of the general level of their development.

(3) Much the most difficult cards to organize as a whole were Cards VI, VII, IX, and X. Hence good organization on these cards deserves especial attention in the evaluation of intelligence.

5. Signs of Emotional Adjustment.

An analysis of the average number of responses falling within each category and of the per cent of children responding in each category show that most of the adjustment signs listed by Davidson are quite inappropriate for application to the average five-, six-, or seven-year-old children. The following signs are inappropriate because the children have not yet reached the level of maturation where the relationship indicated in the signs appears:

M>FM or M = FM; M, 3 or more; P, 4 or more and less than 30%;

FC>CF or FC = CF; FC, 2 or more; FK and Fc, 2 or more and W:M =

2:1. The sign R, more than 20, may be lacking for similar reasons.

One sign the children did show, namely that Dd and S is equal to or is less than 10%, is meaningless because these children have not yet reached the stage of development where they use many Dd responses.

The usual criteria for color shock and shading in adults do not seem to be appropriate for children.

Even children as young as six years of age have F% and A% of less than 50%. The low F% is partly due to the higher number of color responses.

6. Normative Data

(1) One of the main contributions of this study is the listing of all the main responses as to location and content for each card. These lists will be found in Appendix A.

(2) We have also presented sample protocols which show (a) the method of scoring used in the present study, (b) and the contrast of a protocol of one of the most able children with a protocol of one of the least able children in each group as judged by the usual criteria for judging mental ability.

G. Suggestions for Future Studies of The Rorschach Test with Children

I. Among the major problems for research in this area are those of developing uniformity (a) in the administration of the test, (b) in the scoring of the test, and (c) in the interpretation of the test so that data from different workers can be compared more meaningfully than it is possible to do at present.

In the administering of the test it would be fortunate if there could be uniformity of practice in the following respects:

(1) The Use of an Introductory Ink-blot.

(2) The Position of the Card. Some investigators permit a turning of the cards at will while others, such as Ford, do not permit the card to be turned at all.

(3) The Amount of Urging of the Subject to Respond to the Cards.

(4) The Inquiry. Some investigators give the inquiry immediately after each card, while others leave the inquiry until the end of the main performance on all the cards.

(5) Testing the Limits. This phase of Rorschach testing is usually omitted with very young children because of the unproductiveness of the procedure. However, the present study would indicate that the procedure of testing the limits for popular responses might prove to be very rewarding.

(b) In the scoring of the test the following problems are among those that need clarification:

(1) Definition of Scoring Symbols. The lack of uniformity in the standards for scoring is particularly evident in the scoring of usual details, movement, shading and color responses, popular responses and original responses.

(2) Evaluation of the Quality of a Response. The quality of a response is generally evaluated in relation to form accuracy, degree of differentiation and organization. This tri-partite standard is applied to evaluation of W responses, F responses and all responses in which form plays a dominant role, and to O responses. At present

there is almost no standard by which the quality of a response can be evaluated objectively on the lower age levels.

(3) Akin to the foregoing problem is that of evaluating in some quantitative way the relative amount of accuracy, differentiation and organization in the whole protocol. Different systems of quantifying results have been developed by Beck, Hertz, Klopfer and Davidson and Ford. They are difficult to apply because of a lack of definite criteria for evaluation and because of a lack of scoring samples.

c. Interpretation. We need more substantiation of the theoretical assumptions used in interpretation of single categories and of the inter-relationships existing among the categories.

II. A second outstanding need in this field is for large normative studies at the different age levels. These studies should be accompanied by studies of criteria of adjustment at the different age levels aside from the Rorschach. Also study should be made of how the Rorschach protocols reflect the degrees of adjustment of the individual children as judged by other criteria of adjustment. Rorschach himself suggested that a normative study should include at least 100 children at each level. It seems to the writer that using children of average mental ability at the different age levels would be preferable to using inferior, average and superior children at each of the chronological age levels.

III. A third need is for the development of longitudinal studies of children perhaps at half-year intervals under five years of age

and at yearly intervals thereafter. Ideally such studies should be accompanied by (1) studies of the child's emotional adjustment in order to ascertain the extent to which the Rorschach reflects any changes in adjustment, and (2) by tests of intelligence to ascertain (a) how increased mental maturation is reflected by the protocols and (b) what differences there are in the protocols of well-adjusted children of the same mental age level. These longitudinal studies are important also in finding out the validity of clinical judgments of the level of intelligence as estimated from the Rorschach protocols as compared with the level of intelligence indicated by the Terman-Merrill Tests or some other valid test of intelligence.

IV. A fourth area of investigation would be an extension of the type of study presented in this thesis, that is, comparing the average children with children of the same mental age level but of different chronological age.

V. Studies of retests administered within a few days after the original test would seem to be a very desirable procedure not only from the standpoint of an evaluation of the reliability and validity of the test as a whole, but also as a basis for deciding whether or not such a practice should be followed routinely wherever possible in order to enhance the value of the tests in giving an accurate picture of the individual. The obtaining of a second Rorschach Test theoretically seems analogous to obtaining the second sample of a child's drawing.

VI. It would seem that further study of the form accuracy, degree of differentiation and organization of young children's drawings of animals and of concepts frequently appearing in children's Rorschachs might be quite illuminating, especially in relation to DW responses and to the fluidity with which children change and vacillate between concepts.

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APPENDIX A

It is our purpose in this appendix to give the contents, of all the responses for each card that have been scored as main responses and also all the concepts scored additionally that have not appeared in the main responses.

We list the concepts not only to show those which the cards commonly elicit from children, but also to give some idea of the responses which appear so infrequently that one would be justified in considering them, tentatively at least, as originals.

We have arranged the concepts for the five groups of children in parallel columns and in many instances have placed the same concept, appearing in more than one group, on the same horizontal line to facilitate comparisons. The concepts have been arranged also according to location categories, which have been identified by a brief verbal description. When the large and small detail areas have been mentioned, we have also given a number to each D and dd location that accords with the place assigned to that particular detail in the lists prepared by Klopfer and Kelly. (84, pp. 95-99) We generally have not noted the position of the cards; however, when it has seemed important to call attention to the fact that the response was made to the card in inverted position we have done so by using the usual symbol V, the direction in which the lines come together indicating the top of the card.

We have marked the responses which we have considered as tentative originals at the five-, six-, and seven-year-old levels, on the basis of their appearing but once in 116 protocols (See discussion on pages

124 to 127). We have indicated the quality of the originals by the symbols O+, O and O-. We have listed the combinatory whole responses that are either original or that have some original element, the latter being indicated by an additional original (Add O).

We have also marked some responses with a U indicating that they are unusual but are not so infrequent as to warrant a designation of original.

Card I

Summary of Content and Originals

Card I

Summary of Contents and Originals

Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
W	W	W	W	W
	Jack-o'-lantern 2 Wolf's head Animal's head Owl's head	Jack-o'-lantern Man's face Pumpkin face	Man's face Cat's face Sheep's face Dog's face	Jack-o'-lantern 2 Face Cat's face Goat's face Bull dog's head Fox's head Mask Coyote's head Bird 3 Eagle 4 Owl Butterfly 4 Jayhawker Witch Dress Lizard or alligator 0-
Birds 3		Birds Eagle flying Fledermaus (bat) Bat Bat's bones Two crocodiles	Bird 2 Eagle 2 Butterfly 5 Angel Fairy dress with wings 0 Two birds together Two ghosts together Pinching bug Airplane 2 River because black 0- Silly black window Mountains with snow Mountains	
Spiderweb	Hand grenade 0-			Airplane Bone
Tree 2	Maps 2 Christmas tree Flower	Black design	Black design	Map 3 Christmas tree Design Leaf
Leaf 2				

Paint

Paint 2

Black paint

Fire and smoke

Dirt

Rock 2

Scribbling

Sky 2

(Add) W

(Add) W

Skeleton face

Mask

Fox's face

Two wolves carrying off another

Butterfly

D, Entire Center No. 1

Dress

Man

D, Entire Center No. 1

Squirrel (--W in tree)

Man hanging (--W on rock)

Lady

Skirt (Dress)

D, Entire Side No. 2

Bear

Bird

People

D, Entire Side No. 2

Two foxes

Island

Two wolves

Men 2

Bears

(Add) d, Upper Outer

Projections Wings No. 1

(Add) d, Upper Inner Clawlike

Extensions No. 3

Mittens

dr, Whole Top Cut Off Beneath

Wings

Bird's wings

dr, Lower Center Thigh and

Legs, D, No. 3 and Part of

Upper Third of Center D, No. 6

Man (very primitive) O-

S, Four Spaces

Butterflies

(Add) dd, Small Spots

at Lower Side of Main

Blot

Ports in snow

Unusual and original responses:

The following responses were given in which the Center D area was differentiated and the rest of the card interpreted in relationship to the central area.

Type of Response	Position of Card	Group	Performance	Inquiry
0	^	V	(1) A dress	It looks like some people carrying a dress.
		VI	(2) Some people	
0	^	VI	A squirrel sitting in a tree	It's got squirrel ears. (Tree?)
				It's a tree because the squirrel is sitting in it.
0	^		Looks like wolves	They are carrying another wolf between them.
0	^	VII	(1) Looks like a rock.	It has the shape of a rock.
			(2) A man is hanging on it.	His head is down looking at the rock.

Card II

Summary of Contents and Originals

Card II

Group V-A
N = 12

Group V-S
N = 12

Group V-VS
N = 12

Group VI
N = 40

Group VII
N = 40

W

W

W

W

W

Boys

Witches

Clowns 2
Witches

Clowns
Witches
Firemen
Men

Firemen 2

Person's face

Rabbit's face
Dog's face

Santa Claus
Funny face
Pussy face 2
Elephants 2
Butterfly 3

Mask
Clown's face
Cat's face
Elephants 2
Butterfly 3
Bird

Elephants
Butterfly
Bird 2
Tree
Bears 2
Dogs (V)

Bird
Flower

Butterfly
Eagle (Bones of)

Christmas tree
Wolves
Goats
Cow

Bears 2
Dogs
State

Bug
Where stuff goes down
(garbage?) 0-

Cave with fire

Frog 0-
Explosion
Black and red paint 2

Finger painting
Paint
Design
Bone
Inside and outside of cat 0-

Black and red
design

W

W

W Black and Upper Red

W Black Only

Children

W Black Only

Dogs
Pigs
Wood

Puppies
Pigs
Burning house
Elephants 2

Bears

Dogs
Airplane 0-
Tree

Island
Fireplace

Hill
Dirt

Smoke

Smoke
(Add) Girl dancing (V) 0-

Smoke 2
Black paper

N Black and Lower Red

Elephants
Mountain
Witch's face (V)

Elephants
Bear's head
Men without heads
Eagle

Elephant
Cow's head
Turtle 0
Apron (Same front and
back) 0
Bears
(Add) W Part of alliga-
tor. Attached to end I

D, Lower Red, No. 1

Fire 2 Fire 2

Red candles

Fire
Fire (with upper red D) 3
Sunshine
Blood 2

Explosion
Fire
(Add) Gunfire
(Add) Blood

D, Upper Red, No. 2

Shoes Red boots
(Add) Red stockings
Hat
Birds, wings spread

Red stockings
Red hat
Red candles 0-
Sky

Feet
Christmas stockings
Fire (with lower red) 3
Cats
(Add) Rabbits

Feet
(Add) Christmas stockings
Hips, opened 0-
Milk bottles 0
Witches
Girls kneeling

d, Upper Center, No. 1

Castle

Castle (Add)

dr, Lower Third Inverted
Ocean
dr, Lower Red and Sur-
rounding Black
Machine gun nest

S, Center Space

Tree

Road

Part of heart 0-

Unusual and original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U	^	V-S	(1) Two birds He'll like the mountains.	The tail of two birds are in the mountain. They are getting up close to each other. (Demonstrated. What kind of birds?) Peacock robin.
O-	v	V-VS (Add)		Now it looks like a girl dancing. The sun is going down. Here are her feet (top red) and here is her dress (entire black). She doesn't have any face.
O-	^	VII	Looks like another tree with peaches	There is fire on it burning the tree up. It's going to get them peaches hot. You can see the branches through the leaves. (Pointed to shaded portion) (Peaches?) 'Cause when they get hot, they get red like that and burst apart like that. Fire is red.
Add O	^	III	Looks like dogs reaching after bottles of milk	(Milk bottles are upper red areas)

Card III

Summary of Contents and Originals

Card III

Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
<u>W</u>	<u>W</u>	<u>W</u>	<u>W</u>	<u>W</u>
Pigeon	Flower Map		Men with decorations Jack-in-the-box with box lining Cloud in sky, black and red 2 Black and red paint Dog's face (Add) Frog (V)	Girl V (outer red legs) 0- Man (V) Ducks (with red ear muffs)
<u>N Black Only</u> Men 3	Men 2	Men 3 Skeleton (Add) Witches	Men 11 Boys Man and woman 3 Women Twins	Men 6 Boys Mother and father
Monkeys Horses 2		Monkeys Horses	Monkeys Horses 2 Ponies	Monkeys 2
Turkeys Ducks		Birds 2 Ostrich bones (birds)	Birds 2 Ducks Chickens Roosters	Birds Turkeys Chickens
Animals	Dinosaur	Rabbits	Lions Sheep Animals	Dogs Bones
Furnace Wood	Black from fire Burnt wood	Fireplace	Statues Wood	Tree 2

W Entire Black with Inner Red

Lion's face
Dog's face
Butterfly

Face (V)
Frog (V)

W Black with Outer Red

Birds (outer red tails)

D, Inner Red No. 1

Bow 2 Bow 3

Glasses
Moustache

Bow 2
(Add) Butterfly

Ribbon 3
Butterfly 2
Glasses
Blood
Fire

Ribbon 3
Butterfly 3
Pair of glasses
Blood 2
Lips 0-

D, Outer Red No. 2

Brushes 0 Flower 2

Fire 2 Fire 2

(Add) Poplar trees

Rooster (Heads
of top)
(Add) Drop of
red water
(Add) Birds

Horses
Banjos 0
Girls 0
Snakes
(Add) Monkeys
Squirrel

Lions
Geese
Candles
Explosion
Broken ear muffs
(Add) Cane
Paint

D, Entire Lower Center No. 3

Lady without stomach or
head 0-

Black butterfly

D, Entire Center Black No. 3

Baskets
Mouth

D, Lower Side Black No. 5

Snake

Snake

D, Upper Side Black No. 6

Ducks

Animals

Birds2
Lamb's body

D, Lower Center Light Gray No. 9

Bones

d, Bottom Side Portion, No. 1

Foot

Ladies shoes

S, Center Space in Lower Center Light Gray No. 9

Part of heart

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U	^	VI	Somebody throwing down paint	Whole bucket of paint thrown down on the water (The small white area in lower light gray is the water)
Add O+	^	VI	Looks more like a piece of a Jack-in-the-box	It should have a box down below and a cover over it. (Red area?) This is stuffing. Those don't look like feet; they are hands. I can tell they are Jack-in-the-box by this head and this head. Maybe they are stooping over.
O-	^	VII	Back of the head	It has a ribbon on. It's all the back of <u>the</u> head. It looks soft. (Subject points to light lower gray area)

Card IV

Summary of Contents and Originals

Card IV

Group V-A
N = 12

Group V-S
N = 12

Group V-VS
N = 12

Group VI
N = 40

Group VII
N = 40

W
Old man

W
Man without head

W
Man
Man without head
Man sitting on
stove
Giant

W
Man 2
Man without head 2
Black man
Man with big shoes
King
Clown
Jack-Be-Nimble (Add) 0
Mamma bear with high heels
Angel 0

W
Man
Man without head 2
Lower part of man on
stake
(Add) Cuckoo man
(Add) Giant

Tree 2
Butterfly 2
Bird

Tree 3
Peacock

Tree
Butterfly
Fledermaus

Christmas tree
Butterfly 2
Black Eagle
Apes 2
Bumblebee on fire
Animal
Bear
Gorilla

Tree 2
Butterfly 3
Bat
Owl
Bee
Animal
Bear
Polar bear
Hippopotamus
Cat
Buffalo
Bull
Fox
Elephant
Bug 2
Shark

Bear

Animal
Deer

Bee
Animal
Bear

Dog 3
horse 2
Bull
Possum down chimney 0

Dog
Snake

Dog

Bug
Crawdad
Piano 0

Cat's face

Spider
Crawdad
Man's face

Smoke Island
 Dark
 Smoke

Castle 0

W Whole Right Side and Central Portion

W Busts Excluded (V)

D Lower Center Animal's Head No. 1

D Lower Side Black and Gray, No. 2
Shoes

d, Upper Side Extension (snake) No. 1
Duck's head 0 Wings 0

dr Upper Part of Vertical Dark Center

d Uppermost Portion (Flower) No. 2

dd Slight Projections on D, No. 3

d Outermost Lower Side Extensions No. 3

dr Upper Half of Card

Dirt
Clouds
Black paint

Alligator on tree 0

Man's head and arms

Shoes
Man's legs

Road

Worms

Rock
Clouds
Insignia 0
Nest

Frog
(Add) Lion

Funny dog

Goat

Shoes 2
Man's feet

Horns
Ears

Butterfly

Twin dogs 0

Butterfly

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U	^	VS	(1) Fire (2) Tree	Tree caught on fire (What about the card makes it look like fire?) Because it's black all over. I mean a flower caught on fire. Now it looks like a tree not on fire. It has been burned and it is black.

Note: The idea of a tree burning has been used by several different children and a number of different cards.

U	^	VI	They look like wings.	The wings are on an angel and he has the great big feet.
U	^	VI	A big mamma bear or papa bear sitting on a log.	It's a mamma bear! Look at its high heels. It's a lady like you with arms, hands and fingers of a bear.
O	^	VI	Jack-be-nimble	He is jumping over the candlestick.

Card V

Summary of Contents and Originals

Card V

Group V-1 N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
W Butterfly 5	W Butterfly 5	W Butterfly 6	W Butterfly 18	W Butterfly 24
Bird 2	Bat Bird	Bat Bird	Bat 2 Bird eating snakes Owl Bird with horns	Bat 4 Bird
Rabbit	Rabbit		Eagle Rabbit 2 Rabbit with three pairs of feet Two rabbits (Heads in center) Cradle with baby falling out O+	Eagle Rabbit (4 feet) Two rabbits (Heads in center)
Mouse	Grasshopper Dog Dark puddle of water	Grasshopper Dog's head & (From above)	Bumblebee Deer Black water	Bee 3
Tree Necklace O			Man O- Spider O- Snake O- Black paint	Tree Gate (with rabbit (D) peeking over) Red Cross O-
<u>D, Entire Side No. 1</u>				Alligator's mouth O
<u>D, Center Vertical (rabbit) No. 2</u> Two snakes running O Long Face O-			Rabbits 2 Rabbit (--W) carrying something Rabbit (--W) in paint	Rabbits 2
<u>d, Bottom Tweezers No. 1</u> Bones			People's legs	

d, Side Extensions No. 2

dr, Half of Blot Including Top No. 3

d, Top (rabbit's head) No. 3

Man 0

People's legs

Turkey leg

People's legs
Snakes

Bird's nest (--W in
tree) 0

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U	^	V-A	Tree	Cause I can see two limbs and legs and arms and mouth (What do the arms and mouth belong to?) The tree.
U	^	VI	Bunny with three pairs of feet	He is a rabbit because his ears are like a rabbit.
U	^	VI	A big bunny. I don't know what he is carrying.	The rabbit is carrying something on both sides.
O	✓	VI	When the wind blows	'Cause there's the cradle, cause it's round like this, and the baby is falling out. Here's its hands and feet.
U	^	VII	Looks like a rabbit peeking over the gate	His great big long ears. Some gates are kind of round on top like that.

Card VI

Summary of Contents and Originals

Card VI

Group V-A
N = 12

Group V-S
N = 12

Group V-VS
N = 12

Group VI
N = 40

Group VII
N = 40

W
Butterfly 2
Bug
Turtle
Cat 2

W
Butterfly
Bug 2
Snail with shell O-

Grasshopper
Tree 2
Bone

Christmas tree
Tree

(Add) W given
in main but
rejected in
inquiry
House O-
Man O-

W
Butterfly
Bug
Cat with whis-
kers 2
Bones out of cat
with whiskers
Weasel Add O-
Snake
Dog's head
(From above)
Castle O
Fire

(Add) W
Snake with
wings O-
Flying girl O-
Turtle

W
Butterfly 6
Bug 5
Turtle 2
Cat standing on hind legs

Fig
Kangaroo
Chicken
Spider
Fish
Fish bone
Fish cut in two
Scarecrow O

Guitar
Clouds
Country

W
Butterfly 3
Bug 2
Somebody dressed up O-
Cat

Honey bee 2
Bumblebee
Seal
Cow
Wolf
Wild cat
Shark
Half a ham O-
Fan O
Violin
Stop sign O
Airplane O
Tree
Flowers
Honey in the comb O
Fire

W Man on turned over table O (Add) W and W
Pony
Elephant
Bones

D Entire Lower Portion No. 1

Walk Rocks

V Georgie Porgie running O* Jap Island
Lions hanging on a rock Butterfly
 (--W)O
Gray paint Rug O
Fire
Water
Dirt

D Entire Upper Portion No. 2

Butterfly Butterfly

Butterfly 2 Bug
Bird Water sprinkler with
Eagle water (--W) O*
Telephone pole on ground Nest O
 (--W)O Bee

Bee

D Entire Vertical Center No. 4

Thermometer (--W) O

Snake with whiskers O-
Rack

d, Uppermost Detail, No. 1

Kitten with whiskers

d, Lower Lateral Extensions, No. 2

Big mice
Legs

Dog's face
Shoes

dr, Entire Top D No. 2 and Entire Vertical Center No. 4

Eagle on post O Stick with leaves

Card VI (Continued)

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
0	^	V-VS	Looks like a snake with wings	Little wings at top (top D) and big wings at bottom (bottom D)
U	^	VI	Butterfly coming out of water	It (top D) has been in the water.
U	^	VI	Table turned over with a man	I think I said it was a man (top D) standing on a turned over table. You're looking at the bottom of the table. He is looking down at the table.
0	^	VI	A telephone pole	Because here's the ground with the pole on top of it. (Why a telephone pole?) It's shaped like a telephone pole across the top. It's the ground because it's really dark.
0-	^	VI	A rack and lions	A rack for horses or cows to hang on when people put them on them. (The lions?) Might be a cow or a lion or a sheep or anything. Just the body of the animal is over the rack.
0	v	VI	Georgie Porgie	Because he is getting ready to run away
0	^	VII	Looks like a thing water's coming out of	(Traces outline) 'Cause that's what we have at home. It looks like a little pole and that's the thing that cradles it. This is the water running down 'cause it's running out in funny shapes.

Card VII

Summary of Contents and Originals

Card VII

Group V-A
N = 12

Group V-S
N = 12

Group V-VS
N = 12

Group VI
N = 40

Group VII
N = 40

W
Smoke 2
Clouds 2
Snow
Dogs (Entire side)
Butterfly 2

W
Smoke 1
Clouds

House

Playhouse
Bug
Fireplace 0

W
Smoke 2

Necklace
Elephants on stage
Table 0-
Round square 0-

W
Smoke 4
Clouds 4
Sky 2
Dogs heads) Entire side)
Cows heads) Entire side)
Butterfly
Collar
Pants

Road
Dam and water 0-
Design
Paint
Scribbling

W
Smoke 3
Clouds
Sky
Dogs (Entire side)

Butterfly
Necklace
Shirt

Birds
Grasshopper

Bony face

(Add) W
Indians 0
Given in performance but rejected
Bones of eagle
Butterfly

Card inverted
Boy's face (V)
Dog's face (V)
Dog (with center space) (V)
Hairdo (V) 0
Spider (V) 0-
Butterfly (V)
Frog (with center space) (V)

Rabbit (with space)
Frog lower half
Frog
Snake 0-
Horseshoe 0-
Sheepskin
Bug
Tree
Card inverted
Fat man (V) 0-
Cave (V) 0

(Add) Given in main but rejected
Bridge 0-

D, Entire Bottom Portion No. 1
Butterfly

Butterfly 2
Tree
Fire

Tree
Piece of wood
Bricks

Butterfly 2
Bench
Fire
Bricks

(Add) W Snow
(Add) W Dogs

Butterfly 2
Gate
Pan
Uncle Sam's hat 0

Walk

	Rock	Nest	Rocks
		Blanket	
		(Add) Gumdrops 0	
<u>D, Upper Third No. 3</u>		Playhouse	
		Chickens 0	
<u>D, Upper Two Thirds No. 4</u>			
	Dogs 3	Dogs 4	Dogs 4
Rabbits 3	Rabbits 3		Girls (v)
		Birds	Girls ()
Bird		People	Coyote's head
Smoke		Pigs	Cats
		Sheep (5 with -- W)	
		Clouds	
<u>d, Dark Center Bottom No. 1</u>			
	(Add) Candle 0	Stick	Tree
<u>d, Top Projection No. 2</u>			
		Legs	Horns
<u>dd, Small White Center Bottom</u>			
Door		House	
<u>dd, Side Extension to Middle Third</u>			
		Legs	House 0
<u>dr, Small White Center Bottom with d No. 1</u>			
Funny house	House	House 3	House
	House	Building	
		Statue of a man 0	
<u>S, Space Between Top Two Thirds</u>			
			Face 0
			Dish 0
			State

Card VII (Continued)

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U	V	V-S	Something like a playhouse	Little lambs sitting down. This is their feet. This is a house for the lambs. They are still making their house.
U	V	V-VS	Two elephants dancing around stage	They (top two thirds) have such little eyes that they can scarcely see. The top is a stage.
O-	^	VI	Two little birds	They're (top two thirds) up in the air and got wings and a nest (lower third).
O-	^	VI	Water in a dam	It's just drawed like a dam. The stick (dark lower center) is floating in the water. It's straight like a stick.
U	V	VII	Two little girls running	Only one leg on them and one arm. They've got dresses.
U	^	VII	Looks like two little dogs with just one ear or one is looking in the mirror	(Dogs, top two thirds) Little tail is sticking out. You can't see his feet. (What about the card made it seem like a mirror?) 'Cause they are just alike.

Card VIII

Summary of Contents and Originals

Card VIII

Group V-A
N = 12

Group V-S
N = 12

Group V-VS
N = 12

Group VI
N = 40

Group VII
N = 40

W
Butterfly 2
Tree 3
House
Bloody bones

H
Inside of scalp

Decorations
Flowers and
leaves 2

Flowers
Map 2

Bug

Add W given in main but rejected

Man
Map

IX
Mountain 1
House

Tree 3
Church

W
Tree
Bones

Decorations
Flowers 2
Colors
Fire and smoke
Dog's head

(Add)
Christmas tree
Mountain
Leaves

W
Butterfly 2
Design
Paint
Colors
Clouds
Alligator's head
Ship 0
Sugar bowl 0
Torn dress (V) 0

River
Airplane 0-

Tree 6
Mountains 5
House
Leaves
Dead man (bones)
Clock 0

(All seen with animals)

W
Butterfly 2
House
Bones on poison
Bones
Design 3
Finger painting
Colors

Tree 7
Mountains 2
House
Flowers
Bones
Rainbow
Design
Colors
(Add) Cobweb 0-
(All seen with animals)

D, Side Pink Animals No. 1

Bears 2
Mice
Sparrows Animals
 Birds

(Add) Crick- Lambs
 ets Possums
(Add) Bees

Bears 4

(Add) Squirrels
(Add) Frog
(Add) Dog

Bears 11
Mice 2
Animals 3
Parrots
Squirrels 2
Frog
Dog
Tigers
Rats 2
Monkey
Lions 2

Bears 10
Mice
Animals 3
Sheep
Cats
Ants

Rats

Lions 4
(Add) Candy wolves

D, Lower Pink and Orange No. 2

House Men sticking out
 tongues 0

Butterfly 3
Hawk
(Add) Candy

Butterfly 4
Rock 3
Fire
Airplane 0-

D, Top Gray Portion No. 3

Tree

Trees 3
Butterfly 2
Man
Grass
(Add) Leaves
(All seen with animals)

Tree
Butterfly
House
Hill

(All seen with animals)

(Add) Bazooka bullet 0

dr, Center of Card, Full Length

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
O	^	V-S	(Lower pink and orange) Red faces on the side and a split bump and its tongue there and a mouth	This looks like the same thing as people. The tongue is sticking out.
O	^	VI	A man	A man trying to get the candies (bottom orange-pink). They are the color of candies. Two candy wolves trying to climb up and get him. (Why candy wolves?) They are colored like candy.
U	<	VI	Bear. It's a good picture whoever painted it. The bear is climbing on the hill and you can see the shadow in the water.	You can see the hill, water (blue) and sunshine on the water (lower orange-pink area). I don't see how he painted these on this cardboard.
U	^	VI	Rats walking up a dead man	Them are the insides of him. Got them little bones.
U	^	VI	Mouse ran up the clock	Got a head like a mouse. (What about the card makes this look like a clock?) Because that's the way it looks in the book.
		VIII	Skull and crossbones on a poison bottle	These little bones in the middle are kind of like a skull and sometimes bones are real thin like that.

Card IX

Summary of Contents, and Originals

Card IX

Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
W Tree 3 Flowers 2 Bloody bones Butterfly Caterpillar	W Tree 2 Flowers Map 2 Bug Face Monkey	W Tree 2 Flowers 2 Bloody bones Different colors (Add) Cat's head Peckerwood O- Fire House	W Tree 2 Flowers Guts, bones and body Body, head, and hands (V) Butterfly 3 Design 3 Different colors Paint Map Tiger Hand Sun Dress Hill (Add) Dress Fire	W Tree 2 Flowers 3 Backbone Butterfly 2 Design 4 Different colors Two elephants (trunks top) 0 Bug Frog Frog (V) House Hill Design Trees 2 Butterfly Decorations Men's heads Hearts Lions Bone (Add) Horse's head 0 (Add) Green leaves
W Colored pa- per House Tree <u>D, Green Portion No. 1</u>	Fence Face	Car Grass Monkey Men	Trees 2 Grass Mountain goat Old Mother Goose 0 Peckerwood O- (Add) Frog	

D, Orange Portion No. 2

Animals (Add) Witches
Locusts
(Add) Reindeer
Butterfly

Robbers
Men
Reindeer

Witches 2
Men
Girl
Fire
(Add) Animal with pinchers

Clowns
Firechiefs
Dead deer
Butterflies
Heart
(Add) Bears

D, Lateral Pink No. 4

D, Entire Pink with Center Line No. 5

Clothes Line 0

(Add) Pig's head

Candle
Airplane

D, Entire Pink or Either Half No. 6

Tree
Rock

Red balls

Tomatoes
Dogs
Men (half)
Men (whole)
Girls
(Add) Babies
Candy burning

Butterfly 2
Worm
Man's head

Ladies' heads
Fire

Bones
Fire

D, Center Gray Portion No. 8

Candle 0

d, Upper Inner Projection No. 1

Hound dogs 0

d, Eye-Like Portion No. 2

Eyes

d, Upper Arch-Like Orange No. 3

Sun

Moon
(Add) Bridge

dd, Hand Between Pink and Green

Hands

dr, Portion Between Upper Orange

(Add) Easter egg

0

Card IX (Continued)

dr, Upper Arch, d, No. 3 and Area Between Orange

Mountain

dr, Upper Arch, d, No. 3, Area Between Orange, d, No. 2, and Extending into Pink (V)

Guitar O+

dr, Orange, Area Between Orange and d, No. 2

Lion's face O+

dr, Orange and Area Between

Back of cat's head
Hill and moon

dr, Area Between Orange and d, No. 2

Horse's face O+
Snow
(Add) Easter egg

dr, Upper Inner Part of D No. 1

Face with eyes
(Spaces) O-

dr, Center Gray Portion, D, No. 8, to Bottom

Snake

Unusual and original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
O	^	V-S	Somebody hiding	See his eyes (middle d areas). He is just peeking through this (rest of card).
U	^	V-S	Great big mountain with a great big sun-up	Where the sun lives
O	^	V-VS	This looks like the sun is going down and big robbers are coming along in a car with funny noses.	The robbers (upper orange) are standing still just coming slowly. They are moving quietly, slowly like mice. They don't make noise (whispers). The sun is going down.

U	^	V-VS	Kind of like a round thing at bottom and monkeys (orange and green) standing on top	They are climbing up a big Easter egg. The balls are down here, red balls.
U	^	V-VS	Two scarey people like reindeer and a man holding them, or I guess he's dreaming about them	The reindeer have points like reindeer. (What about the card makes it look like a man?) 'Cause it is a man, isn't it?
O+	^	VI	This is a horse's face peeking through the fence.	He has a nose (center d area). His eyes are closed. He's just looking through.
U	^	VI	Two big funny men jumping on a cloud	I said two big fires, red and green stuff. (Where are the men?) I didn't say that.
O	<	VI	Old Mother Goose	Because she is on a goose. It has a face and mouth like a goose, and you can see her face too. (Woman, green figure)
O-	^	VII	Looks like an elephant but maybe not	(It's like an elephant) 'cause there's his trunk starting. Two elephants. (Trunks upper archlike extensions)
U	^	VII	Can't understand this one. Some kind of animal (lower pink). Some kind of worms or snakes. This must be a bush.	I never could understand this. It's a caterpillar, a two-headed caterpillar on a bush. It's round and it's got two heads. One's looking one way and one's looking the other way. The bush is green and has got yellow on it.
O	<	VII	Looks something like a man's head (Lower pink) doesn't it? Looks like a moustache hanging down.	This looks like his horse (green). Looks like a man that rode the horse.

Card X

Summary of Contents and Originals

Card X

Group V-A N = 12	Group V-S N = 12	Group V-VS N = 12	Group VI N = 40	Group VII N = 40
<u>W</u>	<u>W</u>	<u>W</u>	<u>W</u>	<u>W</u>
Butterfly	Butterflies		Funny man	Woman
Tree	Grass	Christmas tree	Butterfly	Butterfly
Flowers and leaves	Flowers	Flowers	Tree 2	Christmas tree
Bugs	Clouds	Tree with flowers	Flowers 2	Flower
Decorations		All colors	Trees and flowers	Finger painting
Bloody bones			Bugs	Map
			Map	Design 6
			Design 2	Mixed colors
			Paint	Rainbow
			Color naming	Shark
			River	
<u>W</u>				
Tree	Tree 2			Tree almost burned up
				Flowers
<u>W Pink with Entire Top Gray and Intervening Areas Except No. 3</u>				
<u>D, Outer Bloc No. 1</u>				
Spider 2	Spider 4	Spider 5	Spider 9	Spider 9
Animal	Bugs	Eagle 0-	Roots	Crawdad
Moon	Ball		(Add) Water	Butterfly
	Mosquito		Garbage can and garbage 0-	Inside of bug
			Bugs	(Add) Flowers
			Horas with three legs in front and three behind 0-	Water
				Frog
				Bucket on fire 0-
				Crawdad
<u>D, Inner Green, Dark Only, No. 2</u>				
	Snakes 2		Green worms	Green snakes
				Squirrels 0-
				Bones

D, Entire Gray at Top, No. 3

Guns pointed Flag pole
at sky Tree 2

Guns
Grasshopper
Bell 0-

Fish pole with fish
Spider
Sleigh 0-
Animals by post
Rabbits tied to something
Sign 0
(Add) Elephants
Bones

Stem with limbs
Spider with stove pipe

Animals
Chickens on pole
Rock

D, Gray Animals at Top No. 4

Bears

Birds 0-
(Add) Mice

Spiders
Bugs

Rat
Bugs

D, Entire Inner Green No. 5

House Scratcher? Animal
Mouth 0-

Bunny
Knocker 0

Rabbits 2
Butterfly
Tunnel 0
(Add) House
Jesus coming down from
Heaven 0

Pliers 0
Wishbone
(Add) Butterfly

D, Outer Gray Brown No. 6

Bees Turtle
Mouse

Frog

Bugs 2
Mouse
Toad
Grasshopper
Reindeer
(Add) Deer
Reindeer

Bugs
Mouse
Frog
(Add) Crawdad
Branch of tree

D, Rabbit's Head No. 7

Rabbit's head

Rabbit's head

Rabbit's heads 6
(Plus 2 more in No. 5)

Rabbits' heads 3

D, Inner Blue No. 8

Birds

Blue bow 0

Butterfly
(Add) Butterfly

Butterfly
Birds

Card X (Continued)

D, Pink Portion No.9

(Add) Snakes Little boys with caps
Paint

Miss Muffet (V) 0+
Blood
Clouds
Rocks

Snakes
(Add) Flowers

D, Inner Yellow No. 10

Lions

Dogs
(Add) Butterflies

Dogs
Tigers
Lions
Flowers 2
Egg with egg yolk 0

D, Outer Orange No. 11

Whistle 0

(Add) Caterpil-
lars

Rabbits 2
Worm
(Add) River

Bug
Worm
Meat
Spider
(Add) Dog
Sheep

D, Inner Orange No. 12

Human face (V) Wishbone
0-

(Add) Soldier 0-

Bee
Wishbone
Glasses
(Add) Bee
Tears 0

Wishbone
Lights in house 0
(Add) Leaves
Pinchers

D, Outer Upper Green No. 13

(Add) Leaf

(Add) Animals

Tree limb
(Add) Leaves 2

D, Gray Column at Top No. 14

Gun

Stick
(Add) Smoke stack

D, Outer Yellow No. 15

(Add) Yellow birds

Birds
Sky
Pitcher 0
(Add) Birds
Moon 0-

D, Pink with Top Grey No. 16

Eridge

Tree

(Add) Smoke and
fire

(Add) House burning with
smoke stack

D, Pink with Inner Blue No. 17

dd, Heads of Yellow Dogs

Bridge

Hill and bridge

dd, Top of Gray Column No. 14

Duck's heads O+

dr, Rtside Pink, Blue, Green, Yellow and Orange

Whistle

(Add) dr. Rt Pink and Outer Blue and Green Card Inverted

Monster O-

Little Miss Muffet with
spider and curd

dr, Pink No. 9, Blue No. 8 and Top No. 4

Two men, blue is hand,
gray at top is face

dd, Brown on Outer Yellow

Mouse O

dd, Brown Spot on Inner Yellow

Sun

(Add) dr, Outer Green and Top Brown

Goat jumping over rock

(Add) dr, Outer Yellow and Outer Brown

Birds going over nest O

Unusual or original responses:

Type of Response	Position of Card	Group	Performance	Inquiry
U O O O	^ ^ ^ ^	V-VS	(1) A Christmas tree with (2) bell on it and a (3) Knocker and (4) A blue bow on it	
U	^	VI	(1) Fish pole with some fish on it (2) Little dogs	These two little boys looking at the black thing up there. The dogs see the fishing pole.
O+	√	VI	Little Miss Muffet	(Miss Muffet side pink figure) Here is the spider. (outer blue) Here is her hand and her hair and her face. This (green by outer blue) is the curds she dropped.
U	^	VII	Two snakes (entire lower green) jumping up on a bunny's face	
U	^	VII	Spiders with a stove pipe (top gray)	Spiders are on a fence (pink part) and they have a stove pipe between them.
O-	^	VII	Squirrels are licking the rabbit's eyes. (Lower inner green)	

APPENDIX B

These sample protocols are presented for the purpose (1) of demonstrating the kinds of protocols produced by the children in the present study and (2) of furnishing samples of scoring.

We have selected two records for each group in order (1) to demonstrate the similarities and differences of protocols for the different groups and (2) to show the great differences in protocols within a single group of children who are of about the same level of mental ability. To accentuate the differences within a group, we have chosen from each group two records; the first record, according to the usual criteria for judging intelligence in Rorschachs, would represent ones of the most able children in the group; the second record would represent one of the least able children. We have omitted the protocols with marked perseveration.

The subject is identified by the group number and his individual number within the group. The chronological age is given, and the two Intelligence Quotients which were obtained on the Terman-Merrill Revision of the Stanford Binet Test, Forms L and M. The method of scoring needs no explanation other than to point out that the additional determinants to the main responses are shown on the line immediately below the main determinant. The scoring for additional responses, that is responses that are given for the first time in inquiry or that are given in the main performance and rejected in the inquiry, are enclosed within parentheses.

The usual question used in the inquiry was "What about the card makes it look like?" We have indicated this inquiry simply by a question enclosed within a parenthesis. Other such question marks appear when the type of inquiry is fairly obvious from the context.

Attention is called particularly to the degree of differentiation in the first protocol of group V-VS which was produced by the child with the highest Intelligence Quotient of any child in the study, and also to the protocol in Group VI of subject Number 34. This protocol, according to the usual criteria for judging intelligence, would indicate that it was produced by an unusually well endowed child, yet the child had an Intelligence Quotient of 96.

SAMPLE RECORDS OF AVERAGE FIVE-YEAR-OLD CHILDREN

Subject V-A, No. 7 C.A. 5 Yrs. I.Q. Form L 105; Form M 108
(Girl)

Score	T	P	Performance	Inquiry
I				
D) F Obj)	3"	^	(1) A dress	(1) It looks like some people
D) W M H)	0		(2) Some people	(Side D) carrying a dress (Center D) to some people.
II				
W M H	4"	^	(1) Two boys? Two girls? Play- ing possum, aren't they? What do they have their hands together for?	(1) They have black hands just like niggers. (E: You said, "playing possum?") With their hands. (E: What are these? (Upper Red) Hats (E: Kind of hats?) Red.
FC'				
FC				
III				
D F C Obj P	6"	^	(1) A necktie	(1) (E: Kind?) Put on your neck and tie. I don't think this (Location Chart) looks as good as this one (E: Why?) This is red, my favorite.
D F Obj	0		(2) Two brushes	(2) Sink brushes with handles (Upper Outer Red)
W F H			(3) Some men. Look like two womans. They have shoes like womans, so they are womans.	(3) These are men. They have collars and ties. I didn't notice that before. Oh, I know they are playing foot- ball. (E: More like men or women?) Shoes like womans not like men. I think they are both men. They are too the things I say, aren't they?
M P				
D F A		^	(4) Must be snakes of some kind.	(4) (Usual leg of man)
IV				
W F A	6"		(1) Big old bear. Is that a big old bear? (E: Whatever it looks like to you.) Yep it is a big old bear. What is this? (E: What do you think?) Well ears or hands (side d). Bears surely don't have hands, do they?	(1) Just looks like an old bear.

Score	T P	Performance	Inquiry
V			
D FM A O	7" ^	(1) Two snakes running across the grass and the feet.	(1) Two heads and two tails (E: Where is the grass?) There isn't any.
W F Obj		(2) I try to figure out this all the time. Beads, a necklace.	
VI			
W FA	2"	(1) Cat	(1) No tail! Oh well, play like these (Side lower extensions) are its tails. No, its tail is in back, play like!
VII			
D) W FM A	3" 	(1) Three little rabbits. Must be three little rabbits, stepping on a walk.	(1) You see he is looking back this way (demonstrated.) (E: Where is the tail?) Well you see they sat down on the walk and got their tails pasted down. (Two rabbits)
D) F Obj			
VIII			
W CF Art	3" ^	(1) Decorations. I guess I can't figure out what it is.	
D F A		(2) A sparrow or snow (Side Pink Animal)	
(D FM A P)			(a) A bear and this is the bears. I just jabber all the time about my sisters, not my doll but just my play sisters. What do you think this
(* FC N)			(b) is a mountain or
(W CF Geo)			(c) a map? Oh I know what this here is! Which does it look like to you a mountain or a map? The bear is on the mountain.
IX			
W FC Pl	10" ^	(1) I found out this is a tree and this is limbs.	(1) These are trees, (Pointed to mid line for trunk) Leaves (green).
(D FM A)			(a) Looks like butterflies on the tree.
(D F A)			(b) Looks like reindeer to me.

Score	T	P	Performance	Inquiry
X				
W CF Art	5"	Λ	(1) Decorations	
D FM A			(2) A bear in the decoration.	(2) A real bear looking at the sky. (Top gray animals)
D F- N			(3) Moons. Are you writing down everything I say?	(3) (Side blue, usual crabs)
D F Obj	0	⊙	Oh-hum!	
			(4) Whistle	(4) Outer orange)

SAMPLE RECORD OF AVERAGE FIVE-YEAR-OLD CHILDREN

Subject V-A, No. 12 C.A. 5 Yrs. I. Q. Form L 100; Form M 100
(Boy)

Score	T	P	Performance	Inquiry
I				
D F A	10"	^	(1) Bird	(1) Usual Side D area) Pointed out head, nose (lateral d) and wings (lower portion)
II				
W F A P	4"	^	(1) Dog	(1) Two dogs (No movement elicited)
III				
W F A	2"	^	(1) Two little ducks	(1) They have heads and wings and feet (usual legs of men) Ducks don't fly; they swim.
IV				
W- F- A	2"	^	(1) Snake	(1) (Whole is the snake. Head at top)
V				
W F A P	3"	^	(1) Butterfly	
VI				
(W -F -H)	3"	^	(1) Man	(1) I didn't say it looked like a man. (E: What is it?) I don't know.
VII				
W F M A	5"	^	(1) Bow-wow-wow dog	(1) Two dogs; they bow-wow. (E: What about the card makes it look like dogs?) They just do.
VIII				
(W- F- H)	4"	^	(1) Man	(1) It's not a man.
W- FC- A		^	(2) Pink and white and blue butterfly	(2) That's a butterfly again.
S				(a) A mouse running up a
(D FM A P)				(b) house
(W F Arch)				
IX				
W- CF- A	10"	V	(1) Caterpillar	(1) The whole thing. (E: What about the card makes it look like a caterpillar?) Cause it's orange and green. (Pointed out head and tail)
X				
W CF A	6"	^	(1) Bugs	(1) All bugs (?) All the colors.
(D F- A)		V		(a) A snake (?) It's just a snake. (Side pink area)

SAMPLE RECORDS OF SUPERIOR FIVE-YEAR-CHILDREN

Subject V-S, No. 3, C.A. 5 Yrs. I.Q. Form L 123, Form M 120
(Girl)

Score	T	P	Performance	Inquiry
I				
D F A	20"	^	(1) Looks like nothing. Oh it looks like two wolves.	(1) (Side D Area) Course these are out here (nose) and these are up here (ears) (Pointed out when asked, tail, foot, ear, nose, and eye in logical positions.)
II				
W F A P (D F H) FC	3"	^	(1) Elephants	(1) Just elephants (a) Well, what are these things? Santa Clauses! (Pointed out when asked, the head and back.) Can't see the feet. E. Why Santa Claus? S. The red hat and boots. (b) No, they are stockings now. (Upper Red) E. (?) S. Cause they are up like this. E. Does it look as much like stockings here (location chart)? S. Yes. E. Kind of stockings? S. Red
(D FC Obj)				
III				
D CF Fire W CF Obj	3"	^	(1) Fire red and black	(1) Pointed out position at bottom marked 1. Looks like fire because this is all black. (Pointed to usual body of man) Then pointed to top red area and said, "This is fire too!" E. Is this fire too? (Pointing to usual butterfly)
((D FC Obj P)				(a) S. Oh no, that is like a ribbon. E. What kind of a ribbon? S. An orange ribbon.
((M (A) P)				(b) Chickens! (Usual men) (Pointed out heads, feet and wings upon request)
D F Obj	13"		(2) Baskets	(2) S. Pointed out basket (Usual baskets.) E. What is this? (Pointing to adjoining part to the basket.) S. That is the chicken's hand holding the basket.

Score	T P	Performance	Inquiry
IV			
W K Fire m	4" ^ (1)	Fire	(1) Tree caught on fire. E. What about the card looks like fire? S. Because it is black all over. I mean a flower that caught on fire. Now it looks like a tree not on fire. E. You say it's black all over. S. It has been burned and it's black.
W FC' Pl	(0-) ^ (2)	Tree	
V			
W F A P	3" ^ (1)	Butterfly	(1) It sure does have long wings. When various parts were pointed out, she responded with "head, tails, two tails, and feet.
VI			
W F A	5" ^ (1)	Don't know. Bug! Just a great big bug.	(1) She pointed to head, put her finger on it, then drew away energetically and shuddered. "He sure is a big bug."
VII			
D F A	4" ^ (1)	Two doggies and	(1) Pointed out heads and ears. (Upper two-thirds.)
D K Smoke C'F Fire	(2)	Fire	(2) S. Fire (Lower Third) E. What makes it like fire? S. Because that is black there and a little bit black there. E. What is this? S. Smoke
VIII			
W CF Pl	1" ^ (1)	Flowers	(1) E. Why flowers? S. They are pretty.
IX			
	3"	Rejected I just don't know.	
X			
W CF Pl	2" ^ (1)	Flower	(1) Flowers. Lots of flowers. (Pointed to large pink area and blue areas) All flowers. (and counted various areas up to 12--as far as she can count)

SAMPLE RECORDS OF SUPERIOR FIVE-YEAR-OLD CHILDREN

Subject V-S; No. 6; C.A. 5 Yrs. I. Q. Form L 120; Form M 123
(Boy)

Score	T	P	Performance	Inquiry
I				
W F Obj	10"	^	(1) Jack O'Lantern	(1) Heads of Jack O'Lantern
S				
(d F Ad)				(a) E. Kind of heads? S. Like a dog.
(d F Ad)				(b) Wings on the Jack O'Lantern
(Confab)				E. Kind of wings S. Wings like a bird
II				
W- F- A	10"	^	(1) Bug	(1) Bug's head. Head is like a bug (upper red) and tail (lower red)
III				
W F H	2"	^	(1) Two men	(1) Two boys or girls (No movement elicited)
(F A P)				(a) Butterfly because it has wings like a butterfly.
(D F A)				(b) Rabbits (upper red) Pointed out head, tail (bottom) and ear (long upper projection)
IV				
W F A	3"	^	(1) Bug	(1) Head, wings (outer lower d) wings (upper outer d) and tails. (3 tails--side d and top of card)
V				
W F A P	5"	^	(1) Grasshopper	(1) Pointed out head, tail and wings.
VI				
W F A	3"	>	(1) A bug	
VII				
W F A	7"	^	(1) A bug	
VIII				
W- F- A	3"	^	(1) A bug	
D F A (P)			(2) A lamb	(2) No movement elicited.
IX				
W- F- A	6"	^	(1) Bug	(1) Pointed to head and tail.
X				
D F Pl	10"	√	(1) Tree	(1) It has limbs like a tree. (E: Anything else?) No.
D F A P		^	(2) Spiders	(2) Spiders because they have so many legs.
(D F Pl)		^		(a) Another tree. It has limbs like this. (Entire lower inner green.)

SAMPLE RECORDS OF VERY SUPERIOR FIVE-YEAR-OLD CHILDREN

Subject V-VS; No. 1 C.A. 5 Yrs. I.Q. Form M 143; Form M 147
(Girl)

Score	T	P	Performance	Inquiry
I				
W F Obj	4"	^	(1) Jack O'Lantern, ears and horns and a funny pointed nose.	(1) He has two mouths and two eyes.
(W F (Hd))		✓		(a) I'll turn it over and see what happens. Now it looks like a skeleton's face.
II				
S F N	7"		(1) A cave with	(1) (?) Cave is the white place where you walk in it and the fire is coming out of it. All the black stuff is coming out of it. I'll turn it over. It still looks like it.
D CF Fire			(2) A fire in it.	
W K Smoke				
(W M- H O-)		✓		(a) Now it looks like a girl dancing.
(D CF N)				(b) The sun is going down (lower red inverted). Here are her feet, her dress. It doesn't show her face. (Feet upper red inverted and entire black is the girl)
mF				
III				
W M H P	4"	^	(1) Funny face. It looks like a man picking up some bones or something and fire comes out of their mouths (given very slowly)	(1) Two men picking up a skeleton bone and they are picking up a skeleton face. They have fire coming out of their mouths. They pretend it's their legs because they have ladies' shoes on.
IV				
W FM A	7"		(1) A big scary thing coming to a man. There is his face, and there is his horns.	(1) Don't see eyes. He is coming toward the man. He is walking.
V				
W FM A P	2"	^	(1) Grasshopper there is his wings and feet and little horns and he is hopping around.	(1) That's all. I can't see anything else.

Score	T	P	Performance	Inquiry
VI				
W F A	5"	^	(1) That looks like a cat; two legs, two legs. His tail is cut off. I guess that is all.	(1) No tail. It does look like a cat, doesn't it? It does look like a cat with those whiskers.
VII				
W F M A Arch	7"	✓	(1) Two elephants dancing around on the stage.	(1) Elephants dancing on one leg. He has such little eyes he can scarcely see. The top is the stage.
VIII				
W C F Art	3"		(1) That just looks like decorations to me.	
D F M A P W F C N			(2) Bears climbing up (3) the mountains. Pink bears climbing up a pink, orange, and blue mountain.	
IX				
(d F m N	4"		(1) Looks like the sun is going down and	(1) The robbers are standing still, just slowly coming. They are
(D M H	0		(2) big robbers are coming in the	moving quietly, slowly like mice. They don't make a
(W F m Obj			(3) car with funny noses.	noise (whispered this last) (E: The sun?) It's going down.
X				
D F A P	3"		Oh that is pretty.	
D F A P			(1) Spiders	(1) Just spiders.
			(2) Bunnies	(2) That really looks like a bunny. (Entire inner green) A green rabbit, ugh!
D F Obj (D F M A)			(3) Guns	(3) Gun pointed up.
D F C A			(4) Two lions	(a) Two mice shooting this gun. (4) They are yellow like lions and looks like them.
(D F C A)				(b) Caterpillars. They are different colors.

SAMPLE RECORDS OF VERY SUPERIOR FIVE-YEAR-OLD CHILDREN

Subject V-VS; No. 2; C.A. 5 Yrs. I.Q. Form L 140; Form M 138
(Girl)

Score	T	P	Performance	Inquiry
I				
W F A P	10"	^	(1) Looks like a fledermaus	(1) (?) 'Cause of wings and his body (E: What is a fledermaus?) Don't know. Has wings like that.
II				
W F H	14"	^	(1) Witches	(1) 'Cause of their heads. Pointed out hands, dress, feet and heads.
III				
(W M H P)	15"	^	I don't know	(a) Witches (?) The shoes. They're making a
(D F Obj P)				(b) bow like that one. (E: Why a bow?) 'Cause it's made like that, big here and little here.
IV				
W F A	3"	^	(1) Another fledermaus	(1) 'Cause he has wings.
V				
(W F A P)	8"	^	(1) Can't think what to call it.	(1) A fledermaus. There are all different kinds on these cards. (?) Wings.
VI				
W- FC'- A	9"	⊙	(1) Butterfly-- black	(1) Wings (E: Why not a fledermaus?) Because this up here is the other part of its wing (upper D area)
VII				
D F A	4"	^	(1) Rabbits	(1) Ears and paws (E: What is this (lower third) Rocks (E: Why rocks) Because rocks are sometimes broken.
D cF N				
VIII				
W FC Pl	3"	^	(1) A tree	(1) (?) All the branches and the leaves and this is green.
IX				
W CF Pl	5"	^	(1) A tree	(1) (?) All the green.
X				
W CF Pl	8"	^	(1) A tree	(1) Those are the flowers on the tree. (?) 'Cause they have pretty colors on them.

SAMPLE RECORDS OF AVERAGE SIX-YEAR-OLD CHILDREN

Subject VI, No. 38, C.A. 6 Yrs. I.Q. Form L 96; Form M 96
(Girl)

Score	T P	Performance	Inquiry
I			
W F Ad	10" ^ (1)	Dog	(1) Just dog's china face
S			
II			
W F A P	10" ^ (1)	Bear	(1) They ain't got no feet (?) Just the head of the bears.
III			
W M H P	3" ^ (1)	A man and a woman	(1) Pointed out head, hand, feet. E. Pointed out lower outer black. S. That is a basket. They are holding on to basket. (a) It's a bow
(D FC Obj P)			
IV			
D F Hd	12" ^ (1)	A man's legs	(1) (?) A red bow, it belongs to man. The man wears a necktie.
V			
W F A P	4" ^ (1)	Butterfly	(1) E. Kind of a butterfly?
D F A	(2)	Rabbit	S. A rabbit butterfly E. What do you mean by a rabbit butterfly? S. Just one rabbit with wings.
VI			
W F A	7" ^ (1)	Turtle	(1) Pointed out head and feet.
VII			
W F A	6" ^ (1)	Two little doggies	(1) Pointed out heads.
VIII			
D) M A P	8" ^ (1)	Two little bears	
D) F N		going up	
D) C F	(2)	a hill	(2) E. Why a hill? S. Got a point. (3) Pink and orange rock at bottom E. Why a rock? S. Because it is round.
IX			
D F (H)	13" ^ (1)	Two witches up here	(1) Two old witches E. Why witches? S. Because they have hats like witches.
D F H	(2)	And two little girls at bottom	(2) Little girl comes half way down. Pointed out hands go down to waist--demonstrated (lower pink)

Score	T	P	Performance	Inquiry
X				
D FC A P	6"	^	(1) Two little worms	(1) Green worm
D F Arch			(2) Bridge	(2) S. Bridge and hill E. Why hills? S. Because they stand up high like a hill (apparently linear perspective) Pink and upper grey.

SAMPLE RECORDS OF AVERAGE SIX-YEAR-OLD CHILDREN

Subject VI, No. 34, C.A. 6 Yrs. I.Q. Form L 97; Form M 96
(Boy)

Score	T	P	Performance	Inquiry
I				
W M H	19"	^ (1)	Looks like somebody hitting at each other.	(1) (?) Got their hands out. (Two side figures hitting across at each other)
II				
W+M+H FC	4"	^ (1)	Patty-cake	(2) People (1) Got their hands up. Got hats on. E. Kind of hat? S. Red hats.
III				
W M H P	33"	^ (1)	Teeter-totter	(1) (?) 'Cause they're going up and down. E. Where's the teeter-totter? S. Can't see it, just the people.
IV				
W-M-H	4"	^ (1)	Jack-Be-Nimble	(1) He's jumping over the candlestick.
V				
W+M+H O+	23"	V (1)	When the wind blows	(1) (?) 'Cause there's the cradle. (?) 'Cause it's made round like this and here's the baby falling out. Here are his hands and feet.
VI				
D M+ H O+	16"	V (1)	Georgie Porgie	(1) (?) 'Cause he's getting ready to run away.
VII				
D) FM- A D) F Obj	39"	^ (1)	Two little birds	(1) (?) They're up in the air (upper two-thirds) and they got wings and a nest (lower third) (Nest?) Made like one.
VIII				
D) F M A P W) F Obj	4"	^ (1)	Mouse Ran	(1) (?) Got a head like a mouse. E. Clock?
		(2)	Up the clock	(2) 'Cause that's the way it looked in the book.
IX				
dr M+H O 1'17" FM (A)		< (1)	Old Mother Goose	(1) (?) Because she's on a goose. (Goose?) It has a face and mouth like a goose and you can see her face too (green area)
X				
D) M+H O+ D) FM A P	22"	V (1)	Little Miss Muffet	(1) (?) Here's the spider (side blue) (?) Got all them claws. (Miss Muffet?) Here's her hand and her hair and her face (entire pink). This is the curds she dropped. (upper outer green.

SAMPLE RECORDS FROM AVERAGE SEVEN-YEAR-OLD CHILDREN

Subject VII, No. 12, C.A. 7 Yrs. I.Q. Form L 107; Form M 100.
(Boy)

Score	T	P	Performance	Inquiry
I				
W FC' A P	7"	^ (1)	Bird	(1) (?) Blackbird 'cause it's black. It has wings and a tail like a bird.
II				
W FM A P FC	4"	^ (1)	Elephant--two of them. They have hats. They're hangin' their tongues together.	(1) (?) They're bangin' their trunks together. Here are the hats. Bang their feet together. Bangin' their trunks made big old red spots up there--comes from there (points to pinkish part below upper red). I don't think it's blood. I don't know what it is.
III				
W F Pl	18"	^ (1)	A tree of some kind. Like some-thing	(1) A tree can't fight and a chicken can--it must be a chicken. Don't know what that is (Bottom D)--must be a block they're standing on. (All of black area)
W FM A	48"	(2)	I can't figure out what. It must be a tree or a chicken.	
IV				
W Fc A FC'	8"	^ (1)	Don't know. A bear or a cat. I think it's a cat.	(1) I think it's a cat. It's got hair and ears like a cat. The hair is black. (Pointed out usual feet, tail, and head at top)
V				
W F A P	1"	^ (1)	Bat (Turns cards over immediately)	(1) Tail like a bat and wings and head.
VI				
W Fc A	20"	^	(Laughs)	
		(1)	I've never seen that. It's a wolf or a fox. I've seen foxes and wolfs that way.	(1) (?) A fox. These are whiskers. The ears are sloppy kind of that old sloppy hair of his. I think his tail's cut off. He has a long nose and hair (traces outline with his fingers.)
	22"			
VII				
W- F- A	28"	^ (1)	I can't understand that. It must be a frog because a frog has legs like that.	(1) (?) A big old bull frog. Half of his body and half of his legs. It's wide like a frog--big up there through his body.

Score	T	P	Performance	Inquiry
VIII				
(D FM A P (W F N	2"	^	(1) A bear and a tree. A mountain, I think. I know it's a bear. How'd they get that ink on there?	(1) (?) A bear on a tree or a mountain--I think it's a mountain. The shape of the bears--the nose(?) Mountain has a sharp point. The bears are climbin' the mountain.
	33"			
IX				
D) FM A O W) CF Pl	30"	>	(1) Can't understand this one. Some kind of a worm or a snake.	(1) (?) I never understood this. It's a caterpillar (lower pink D) a two-headed cater- pillar on a bush. It's round and it's got two heads, one's lookin' one way and one's lookin' the other way. The bush is green and it's got yellow on it.
	48"			
X				
D F Obj	18"	^	(1) What is that! A pair of pliers	(1) (?) It's round shapish.
D F A			(2) Some kind of animal I never seen.	(2) It's got eyes and feet-- three feet.
D F A P			(3) Crawdads. I don't know what these are (Pink D)	(3) Pinchers

SAMPLE RECORDS FROM AVERAGE SEVEN-YEAR-OLD CHILDREN

Subject VII, No. 21, C.A. 7 Yrs. I.Q. Form L 101; Form M 101
(Girl)

Score	T	P	Performance	Inquiry
I				
W FC' A P	5"	^	(1) Bird	(1) (?) It's black (Pointed at tail and wings) (Pointed at tail (lower red) wings (side black) and head (upper red))
II				
W FC' A	8"	^	(1) Bird	
III				
W F A	3"	^	(1) Toad. I mean a frog.	(1) It's got hands like a toad and a ribbon on its back and big eyes. (Ribbon?) It's pretty colors and has bumps.
(D FC Obj P)				
IV				
W-FC' A	12"	^	(1) Butterfly	(1) It's black and the head looks like a butterfly head.
V				
W- F- A	3"	^	(1) Rabbit	(1) (Pointed out ears and four feet (side d areas at end of wings))
VI				
W- F- Obj	13"	^	(1) Which way does it go? Violin	(1) Looks like one
VII				
W- F- H O-11" S'		v	(1) Fat man	(1) Arms like a fat man and feet and legs (Face, lower third; arms, side projection on middle third; and legs, upper third)
VIII				
W- FC- A	8"	^	(1) Butterfly	(1) It's all different colors. (Pointed at head and wings)
IX				
W- F- A O- 4"		v	(1) Toad	(1) Has a big head. Head at top of card.
X				
	10"	^	(1) Ok	(1) Ok.