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The Use of the Rorschach with Young Children: Special Considerations in Administration, Scoring, and Interpretation and in the Measurement of Cognitive Functioning

Patricia Parry Barber
University of Central Florida

THE USE OF THE RORSCHACH WITH YOUNG CHILDREN: SPECIAL CONSIDERATIONS IN ADMINISTRATION, SCORING, AND INTERPRETATION AND IN THE MEASUREMENT OF COGNITIVE FUNCTIONING

BY

PATRICIA PARRY BARBER
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Abstract

A discussion of the Rorschach's validity as a diagnostic tool seems most manageable when validity is addressed not in terms of global personality descriptions, but rather in terms of specific subquestions. This paper investigates the Rorschach's usefulness as an indicator of cognitive functioning in preadolescent children. Within a developmental framework and focusing primarily upon the cognitive theories of Jean Piaget, predictable stages of the child's intellective growth are described with an emphasis on Rorschach response patterns which seem to best chronicle that growth. Empirical data from both clinical and educational spheres are offered as supportive evidence for the Rorschach as a cognitive correlate. An additional area of focus involves special administrative, scoring, and interpretive considerations of the Rorschach with young children. Though less documented by empirical data, these three areas have been extensively addressed by clinicians via theoretical assumptions and clinical observation. Halpern's theoretical assumptions regarding the development of the child's cognitive skills as well as the traditional scoring systems of Klopfer and Beck will be

reviewed. Ledwith's longitudinal study of children's Rorschach responses provides substantial normative data regarding specific scoring categories, and the relationship of certain response patterns to age. In a composite sense, then, the Rorschach emerges as an effective correlate of cognitive functioning in children, and may in fact tap certain cognitive processes in limited populations even more adequately than traditional standardized measures of I.Q.

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INTRODUCTION

Hermann Rorschach's publication of the 1921 monograph, Psychodiagnostik, introduced ten assymetrical ink blots accompanied by his clinical findings and theoretical bases for his research. The insights advanced by this volume proved so penetrating and innovative as to render the Rorschach Test one of the most universally implemented and heavily researched psychological instruments. The acceptance of the Rorschach among clinicians stimulated the development of the field of projective techniques which subsequently generated other instruments designed to specify personality structure and character organization. Goldfried, Stricker, and Weiner (1971) estimate that with the advent of the 1970's, publications on the Rorschach had surpassed 3,000.

Accompanying the prolific research, perhaps spurred by it, is a host of contradictory opinions among professionals regarding the validity of the Rorschach for clinical use. Demands for further research are countered by those who either reject the test based on prior validation studies or maintain that current research does not accurately approach the Rorschach in

its clinical capacity.

In delimiting the Rorschach debate, it seems crucial to examine the orientation of the investigator as well as specific uses for which the test is deemed most appropriate. Practicing clinicians emphasize the diagnostic and predictive capacity of the Rorschach while academicians stress its applicability to the pursuance of basic research problems.

Levy and Orr (1959) researched Rorschach literature to determine the interrelationship of three distinct variables: (a) the type of institutional setting in which the study was conducted (academic vs. nonacademic), (b) the type of validity study (construct vs. criterion), (c) the outcome of the study.

Their results, tested for significance by chi-square analysis, suggest that academic studies are more frequently of the construct validity type than criterion type. This may be partially due to the greater need for predictability in nonacademic settings (Goldfried et al., 1971). For example, the construct validity approach attempts to confirm an hypothesis derived from theory such as "People with good ego strength tend to function better under stress than people with poor ego strength" (Goldfried et al., 1971, p. 12). The, by using a test like the Rorschach to

assess ego strength, the hypothesis would be tested in an actual experiment. Criterion validity, in contrast, attempts to provide measures of concurrent or predictive validity (Pervin, 1970). In concurrent validity, test scores are related to other data already known about the subject (Pervin, 1970). The goal in predictive validity is the prediction of future performance, and the validity of a test is the degree to which scores relate to criteria obtained at a later date (Pervin, 1970). This disparity in orientation may influence research results. Levy and Orr (1959) found that research conducted in academic milieus was more than twice as likely to yield positive results when of a construct type, and almost twice as likely to yield unfavorable validity results when the study was of a criterion type. Thus, the likelihood of obtaining positive or negative results of Rorschach validity depended upon both the type of study and the affiliation of the researchers (Levy & Orr, 1959).

Confusion seems generated by the largely unsystematic approach of Rorschach validation studies. Lack of direction and cohesiveness plaguing the research, as well as reviews of that literature, may be in part attributable to the elusiveness of the global question: "Is the Rorschach valid?"

Historically, projective tests have been viewed as "psychological X-rays which bypass a person's defenses and inhibitions and thus reveal the true self" (Goldfried et al., 1971, p. 4). This unsophisticated analogy precedes the tacit assumption that the Rorschach must provide a measure of total psychological functioning. It is this paper's contention, in part, that the Rorschach will never be proven valid as a comprehensive, exhaustive measure of the global construct, personality. Rather, reasonable inquiries into its validity originate from manageable subquestions. Thus, a focus on specific personality characteristics may provide a more feasible point of departure. For example, Elizur's (1949) two Rorschach scoring systems appear to provide a reliable and valid measure of a subject's degree of hostility and anxiety. Such a characterological approach seems more useful to the author than measures of comprehensive constructs, e.g., personality, or isolated single scores such as whole response percentage.

Harris (1960) suggests such an orientation:

> The search for validity of personality description from Rorschach data seems, then, to require not so much the splitting apart of primary traits as a conservative retention of larger traits and an empirical specification of the major environmental situations in which these traits usually express themselves. (p. 381)

Therefore, the question seems not "Is the

Rorschach valid?" but for the purpose of this paper, "Is the Rorschach a reasonably good correlate of cognitive functioning in children?" When Rorschach validity is addressed in terms of specific notions, the elusiveness of what is being measured is minimized but in no way eliminated.

Despite some practical limitations which can discourage use of the Rorschach, it also boasts assets which warrant attention. Its scope of applicability is wide. Armed with a response set to ten ink blots, the clinician holds numerous interpretive possibilities. The tedious task of specifying "validity for what" questions, then, appears justified to this author in light of the inherent potential of the Rorschach as a psychodiagnostic tool.

STATEMENT OF PROPOSAL

The framework for this research paper is based on the guidelines suggested by the American Psychological Association Standards for Educational and Psychological Tests and Manuals (1966). Although the Rorschach, like other projective techniques, poses basic problems to systematic evaluation, aspects of the test are amenable to quantitative evaluation. ". . . a Rorschach determinant tends to correlate with a specified internal factor. There is no justification for failure to apply the usual standards in connection with premises of this kind" (APA Standards, 1966, p. 4).

The research studies offered for discussion throughout this paper were consciously chosen because of their adherence to these guidelines. Where deviations and/or weaknesses exist, this paper will attempt to delineate them as well as any and all limitations posed by the research which is relevant to this paper's proposal.

Drawing upon both psychodynamic and cognitive theories, this paper will describe differential patterns of response in the Rorschach protocols of children versus adults. The author proposes that certain

variations may be functions of a self-concept and world view, for example, which seem unique to the child. Also, differing cognitive capacities may account for some disparities between the two groups.

Theorists like Freud, Piaget and Kohlberg will be cited as the author builds upon a developmental premise which emphasizes predictable stages in the child's growth as reflected in the Rorschach. An understanding of certain developmental concepts may facilitate the use of the test. Simultaneously, the Rorschach itself may offer valuable insights into the child's developmental level and cognitive style.

Cognitive theories will be explained extensively throughout this paper as they relate to the child's Rorschach functioning in terms of developmental stages and available intellective skills. Therefore, a special section will not be devoted to these theories at this time.

However, more dynamically oriented theories may also aid one's understanding of child Rorschach responses. In hopes of creating an interdisciplinary manner of approach which allows for multiple sources of explanation, the author will present a brief dynamic model of development and how it relates to children's Rorschachs.

It is the author's plan to move from an analysis of administrative, scoring and interpretive concerns toward a focus on the Rorschach's effectiveness as a measure of the child's level of cognitive functioning. Specifically, the following questions will be addressed:

(1) What are the unique administrative concerns of the Rorschach with preadolescent children?

(2) What are the special scoring and interpretive concerns of the Rorschach with preadolescent children?

(3) Is the Rorschach an effective correlate of cognitive functioning in preadolescent children?

Further, this paper proposes to demonstrate through the use of available research, that the Rorschach does in fact provide a good measure of the child's developmental level in terms of cognitive functioning.

REVIEW OF THE LITERATURE

A Dynamic Model of Development in Understanding Children's Rorschach Records

The Rorschach records of children portray developing personality characteristics influenced by dynamic and cognitive forces. Freud (1946) assumed that the infant is born with nothing more than irrational, instinctual appetites or the id. According to this view, the infant indulges almost exclusively in reflexive behaviors and primitive wish fulfillment fantasy characterized by primary process thinking (Pervin, 1970). The primary process is considered the language of the unconscious in which reality and fantasy are indistinguishable (Pervin, 1970). The aim of the infant's instincts is immediate pleasure or tension reduction that comes about with the real or fantasized gratification of needs (Freud, 1946). Halpern (1953) adds support to this model based upon both controlled investigation and empirical findings from thousands of child Rorschach protocols. For example, the very young child, two years old, responds subjectively, projecting into the blot current concerns which consist primarily of security needs as met by family relationships (Halpern, 1953).

When the child's needs are not met, two consequences become possible: (a) a state of tension persists or, (b) unresolved tension somehow causes part of the id to be transformed into a structure which can cope with external reality as well as the needs that conflict with reality (Freud, 1920).

A rational structure thus emerges which substitutes for the pleasure principle as the main determinant of the child's behavior (Freud, 1946). Rorschach responses can indicate the extent of the child's understanding of reality, and the nature of resources developed to cope with it (Halpern, 1953). The struggle between internal and external demands is visible in Halpern's (1953) presentation of a protocol from a well-adjusted four-year old girl. Multiple aggressive themes in response to reality demands blend with color responses alluding to a fantasy involvement. Halpern perceived these responses as indicative of a satisfactory adjustment. Specifically, an abundance of pure color responses in a child's protocol may signal a reliance on fantasy (Halpern, 1953). Fantasy involvement reflects primary process thinking, in which the image of an object is the same as the actual object (Pervin, 1970). This type of cognition, characterized by magical thinking and unclear delineations between

reality and fantasy, predominates during the id stage of development when the pleasure-principle largely directs behavior (Pervin, 1970). Conversely, with ego development, the child becomes more differentiated, as a self, from the environment (Pervin, 1970). The reality-principle emerges along with secondary process thinking which is described as the language of consciousness and reality testing (Pervin, 1970). Thus, returning to Halpern's example, the child's aggressive themes toward reality demonstrate secondary process thinking while pure color responses indicate primary process thinking. The child has achieved a well-adjusted blend of id and ego.

The third structure of the child's personality, the superego, "perpetuates culture by identifying with its ideals" (Cohen, 1971, p. 7). According to Freud (1920), the superego acts as a conscience. Children's Rorschachs may signal the presence of overcontrol, a superego function, as in the case of a nine-year old emotionally disturbed girl whose protocol contained severe emotional inhibition (no color responses) and significant avoidance techniques which point to overcontrol (Halpern, 1953). In such a protocol, the author perceives a dominant superego inhibiting the expression of needs and distorting the child's

perception of reality.

Therefore, Halpern (1953) hypothesizes that absence of color responses, for example, reflects the presence of overcontrol in this child. Further, the Rorschach appears capable of tapping qualitative dimensions of superego functioning in children clinically observed by Halpern.

Developmental Characteristics of Children Versus Adults which Necessitate Variations in Rorschach Interpretation

Because the child operates within a perceptual, cognitive, and motivational framework fundamentally different from the adult's, it follows that Rorschach records generated by the two groups will reflect basic differences. For example, the child between three and nine undergoes more rapid perceptual changes than the adult and he/she pays increasing amounts of attention to sights and sounds, and proportionately less attention to the sense of touch (Fein, 1978). Piaget (1968) claims that, while the adult's learning may be enhanced by extraneous cues, the child is hampered by a distractability to stimuli, almost all of which are novel.

Flavell (1963) cites four major cognitive developments that occur between six and eleven: (a) reliance on inferred reality, (b) decentration, (c) transformational thought and, (d) reversible operations.

Based on cognitive theories of Piaget, we can assume that the majority of adults have mastered far more cognitive processes than the child and, consequently, adult Rorschach records should reflect these more advanced skills.

Even when the child's responses overtly resemble an adult's, moral development theorists like Kohlberg (1963) suggest that motivating precipitants in the two groups will vary. Based on extensive two-hour interviews conducted with boys aged 10 to 16, Kohlberg (1963) postulates that, for the child, morality involves role conformity for the personal approval of significant others in terms of reward and/or the avoidance of recrimination. In contrast, the adult operates within an expanded concept of morality which stresses abstract, internal norms and maintenance of the societal order for its own sake (Kohlberg, 1963).

A familiarity with these three developmental areas of perception, cognition, and motivation seems valuable to the author as part of the theoretical framework for investigating variations among child and adult Rorschach response patterns.

Goals of the Rorschach Test with Children

Along with the previously discussed developmental notions, it seems appropriate to suggest specific

purposes for which the clinician may utilize the Rorschach. Based upon years of experience in child guidance clinics and in private practice, Halpern (1953) established a set of goals for the Rorschach which seems to fit well with the scheme of this paper: (a) to assess the child's pressing needs and conflicts, (b) to assess predominant methods for meeting conflict, and (c) to assess to what extent the child's reactions fall within normal age limits.

Halpern (1953) also delineates three clear stages in the child's development based on developmental theory and clinical observations of over 2,000 protocols. While this approach lacks experimental rigor, it receives statistical support from Ledwith's (1959) normative study of Rorschach responses of elementary school children. Ledwith (1959) carried out a well-controlled, six-year longitudinal investigation of 160 subjects' Rorschach responses in an attempt to describe how the average normally functioning child responds to Rorschach cards at each age level. A more thorough discussion of Ledwith's (1959) findings will follow in subsequent sections of this paper. In the first developmental period suggested by Halpern (1953), the two and one-half-year to four-year old exhibits an inability to discriminate and objectify along with responses primarily to

external appearances. For example, Halpern (1953) discerned certain predictable patterns in the young child's Rorschach record based upon clinical observation. A predominance of W responses seems to reflect limited discriminatory acuity while a low F+ % points to the child's limited objective control of reality-based concepts. Multiple responses of "flowers" and "trees" in the protocol of a two-year old boy suggest minimal fine discriminative capacities (Halpern, 1953). In the second stage, four and one-half to six, differentiation, discrimination, and development of objective concepts are emphasized as the child begins to internalize concepts first perceived as part of the external environment (Piaget, 1952). Halpern (1953) draws upon psychodynamic theory to explain that, with the development of the ego, the child's personality assumes a more definite structure which allows for some intrusion of detail in Rorschach responses over the prior amorphous records. For example, in response to Card , a two-year old may report "tree," while the six-year old can distinguish "Two mice crawling up a little tree" (Halpern, 1953, p. 92).

The six- to ten-year old acquires complex cognitive capacities which facilitate more independent functioning in a broader environment (Piaget, 1952). This

maturational process may be reflected in Rorschach responses. For example, Ledwith (1959) reports that changes in location percentages, ages 6 through 11, indicate a trend toward percentages expected from adults with whole responses comprising 10-30% and large detail responses 45-55% of the oldest group's total responses.

Administrative Concerns with Children

The administration of the Rorschach to a child may require examiner flexibility in terms of allowing for variations upon Klopfer and Davidson's (1962) basic suggestions for giving the test. Ledwith's (1959) study will be cited critically here since her administration of the test to an experimental and two control groups for six consecutive years resulted in valuable empirically-based guidelines.

The following suggestions are derived from clinical experience in the administration of the Rorschach with children. While the author presents them as valuable recommendations, these conclusions are not experimentally validated. The child should be seated with his/her back to a window if one is available in the testing room, in order to get the best light on the cards (Ledwith, 1959). The seating arrangement of examiner across from subject was found to be more satisfactory than the traditional testing position of

examiner in back of the subject (Klopfer & Davidson, 1962) since the child may benefit from the reassurance of an attentive, visible adult (Ledwith, 1959).

Halpern (1953) suggests that Rorschach presentation follow the completion of a standardized intelligence test. The Stanford-Binet seems a good instrument with which to transfer the school-aged child from a formal classroom setting to that of friendly cooperation and rapport with the examiner. The author feels that the game-like activities in the Binet may generally create a nonthreatening atmosphere which may then facilitate more expansive Rorschach responding.

Longitudinal investigation has generated the following verbal guides for Rorschach administration: "Now, I have some cards with pictures on them. I want you to look at these cards one at a time and tell me what they look like to you. Tell me everything you see on the cards" (Ledwith, 1959, p. 3). If the child makes a singular response to the first card, the examiner should encourage further exploration. However, the author believes that continued efforts to encourage the child to give multiple responses might be construed as a negative judgement since the child may feel the response he/she has already given was inadequate. Further, the author suggests that, when the child

demonstrates apprehension about the correctness of a response, the examiner should explain that there are no right or wrong answers, and whatever the child sees is as acceptable as what anyone else sees. Aside from a personal viewpoint, this attitude is also held by Halpern (1953) and other clinicians queried by the author.

Klopfer and Davidson's (1962) testing of the limits technique was used by Ledwith (1959) with six-year olds with good success. She found, however, through clinical application, that it seems more practical when instituted after each card rather than after the entire protocol. Drawing upon developmental factors such as limited attention span and fatiguability of the child, the author views this as a credible adjustment from the administration to adults.

The time factors, Response Time and Total Time per card and per protocol, should be handled discretely as the presence of a stop watch may unnerve the child. Ledwith (1959) suggests the use of a wristwatch with a second hand as an unobtrusive method of supplying necessary time data.

The recording of children's responses should follow traditional methods proposed by Klopfer and Davidson (1962) so that exact location, determinants and content scores can be verified. Halpern (1953) suggests

that, when children exhibit annoyance over the examiner's writing, they can be assured that their answers are very good and the examiner wants to remember them all. However, Ledwith (1959) met with minimal resistance from two control and one experimental group throughout six years of Rorschach administration. Her testing time averaged one and one-half hours with the majority of children giving evidence of a pleasurable experience even as they grew older. The author suggests that factors like prestige attached to those children chosen for Ledwith's (1959) experiment, as well as the opportunity to get away from school for brief periods contributed to an enthusiasm which may not be consistent among more clinical populations.

Rorschach Scoring and Interpretive Concerns with Children

Many experienced clinicians, in the repeated use of the Rorschach with children, have arrived at clinical opinions or impressions regarding the test's scoring and interpretation. Although these impressions are helpful to those involved in Rorschach testing, a more objectified and quantified approach was sought by this author in trying to adhere to the American Psychological Association Standards (1966) for empirical support for psychological instruments.

As mentioned previously, Ledwith (1959) provided

such a quantified investigation into the Rorschach protocols of Indiana elementary school children. Therefore, this paper will draw heavily upon her work in an attempt to establish scoring and interpretive child norms.

The individuality of the child no doubt gains expression in the Rorschach protocol. One of the most effective aids in the interpretation of individual records, however, is the knowledge wherein and how much each child's protocol differs from Rorschach norms applicable to his/her age, sex and intelligence. Ledwith's (1959) research culminated in the presentation of just such norms for children 6 through 12. She cautions, however, that despite the detailed way in which these normative results are reported, the actual interpretation of individual records must be appraised with one child in mind, rather than in a category-by-category normative manner (Ledwith, 1959).

Location

For each response given to a Rorschach card, the subject chooses one of the following locations or areas of the blot: the whole blot, W; a large usual detail, D; a small usual detail, d; an unusual detail, Dd; or a white space, S. Klopfer and Davidson (1962) assert the theoretical assumption that location scores, in general, relate to the intellectual manner of approach,

reflecting the way in which the subject customarily handles any set of data. For example, a high percentage of DW responses may indicate a tendency to overgeneralize without paying adequate attention to details (Klopfer & Davidson, 1962).

Based almost entirely on clinical observation, Halpern (1953) found that developmentally, the undifferentiated whole response appears first, comprising a major portion of the very young child's protocol.

Data collected by Ledwith (1959) support the trend that whole response percentages are highest, 44%, at the six-year level, with the proportion decreasing with age, and levelling off at 26% for 11-year olds. Whole responses appeared in all but three records; there were four children who gave 100% whole responses at one or more age levels (Ledwith, 1959).

These percentages witness a marked contrast to adult norms for location scores proposed by Klopfer and Davidson (1962) based largely on clinical observation. They suggested a 10-30% range of expectation of whole responses for adults.

Based on data gathered in the formation of a Developmental Level Scoring System of the Rorschach, Friedman (1953) suggests that reliance on whole responses reflects the lack of selectivity and

discrimination processes available to the young child. Adults typically allocate attention and consideration to several aspects of a situation with relative ease because they have mastered the cognitive skill of decentration, that is, the ability to shift from a concentrated to a more diverse attentional sphere (Piaget, 1952).

The young child, conversely, focuses attention on solitary features while children in transition to the cognitive style of middle childhood pay attention to two or more important features although with difficulty in shifting attention (Fein, 1978).

Theories of cognitive functioning in children, then, seem to support Ledwith's (1959) normative data on whole percentages. In addition, they provide developmental explanations for specific Rorschach trends.

Large detail responses reflect practical reasoning, interest in the concrete, and a common-sense application of intelligence according to Klopfer and Davidson's (1962) theoretical assumptions. Halpern (1953) matched children's Rorschach records to broad personality profiles to conclude that an overemphasis on large detail answers may mean that the child feels insecure and seeks safety in structured, concrete details.

Percentages of large detail responses described by

Ledwith (1959) range from a low of 50% for six-year olds to 62% for the nine-year olds. The 11-year old group averaged 52% detail responses which is comparable to the adult norms of 45-55% suggested by Klopfer and Davidson (1962). Such similarities suggest to the author that, by age six, the child's cognitive reasoning capacities, at least in terms of this dimension, begin to resemble an adult's. Fein (1978) states that between six and eleven, the child's new and complex ways of thinking do, in fact, approach adult qualities. For example, the five-year old can learn to walk four blocks from his/her home to a store, but cannot retrace on paper the route taken (Piaget, 1968). The child does not have a mental representation of sequential actions (Piaget, 1968). The seven-year old, in contrast, who has entered the stage of concrete operations, is better able to produce a mental image of a series of events (Piaget, 1968).

The small usual detail, unusual detail responses emerged from Ledwith's (1959) study in consistently increasing percentages with age. Clinical observation led Halpern (1953) to conclude that the use of the small detail and unusual response is most rare in the very young child. With the development of Piagetian concrete operations cognitive skills which allow for

selectivity and discrimination, these type responses usually begin to appear around age seven (Halptern, 1953).

Ledwith's (1959) figures for the detail responses represent age-related increases. The percentages remain somewhat lower than adult norms suggested by Klopfer and Davidson (1962). The child norms, i.e., ages six to eleven, range from 1-8% while the adult norms resemble a range from 5-15%.

Space responses appeared relatively frequently in the protocols of preschoolers reviewed by Halpern (1953). She provides the theoretical assumption that the child of this age is unduly aware of open spaces which seems to reflect a sense of inadequacy and insecurity. Equipped with preoperational cognitive skills, the preschool-aged child cannot mentally represent categories of objects, nor define characteristics that unite members of a class of objects (Piaget, 1952). Thus, it seems logical to the author that, faced with novel and complex "blot" stimuli, the young child's sense of security may be threatened, leading to a retreat to cognitively less demanding white spaces.

Consistent for all age groups, six through eleven, Ledwith (1959) found only 1% of space responses which conforms to Klopfer and Davidson's (1962)

expectations of less than 10% for adult protocols.

Determinants

In making a response to the Rorschach card, subjects are generally influenced in the choice of blot area by specific characteristics which they see or project in the area (Goldfried et al., 1971). These specific factors, called determinants, consist of form, movement, shading, and color.

Responses determined exclusively by shape are scored as form responses and have been hypothesized to refer to the degree of intellectual control available to the individual (Beck, S., Beck, A., Levitt, & Molish, 1961). That is, a high as opposed to a low frequency of form responses is hypothesized to reflect accuracy of perception and the general tendency of the subject to fit cognitive concepts to the blot material (Klopfer and Davidson, 1962). The higher the form accuracy, the more the individual seems to be concerned with exactness and with reality situations (Klopfer & Davidson, 1962). Clinical observations have led Klopfer and Davidson (1962) to arrive at an expectancy of 20-50% form responses for normal adults.

Likewise, form responses constituted the greatest percentage among the determinants used by children at age levels six through eleven (Ledwith, 1959). Only

two children failed to include one form response while overall stability of the form response is reflected in a 45% at the six-year level and a 47% at the 11-year level (Ledwith, 1959). In her collection of protocols, Halpern (1953) witnessed a distinct rise in the child's form percentage between ages four and six. The meaning of this rise in the child's use of form responses may be understood from Piaget's notion that during the pre-operational stage, ages two through seven, the child begins to clearly distinguish between symbolic functions and objectified reality (Elkind, 1968). Kohlberg (1964), on the basis of research, concluded that the school-aged child's rigid right and wrong concepts result in a clear formulation of self and recognition of responsibility which the author feels may increase the frequency of good form quality responses.

The movement response according to some authors requires an investment of creative energy and reflects "wish-fulfilling activities. The more original and deviating movement associations are representative of very deep wishes, innermost psychologic activity" (Beck et al., 1961, p. 72). Citing her theoretical assumption that movement responses must be preceded by an awareness of self apart from the world, Halpern (1953) notes an emergence of such responses between ages

four and six. Normative results indicate an increase in movement responses with age, as well as an approximate 2:1 ratio in the percentages of animal movement to human movement responses in children's records (Ledwith, 1959). Representing the less mature, often the less acceptable part of one's nature according to Klopfer and Davidson (1962), animal movement responses in children's Rorschachs may reflect a kinship with simpler life forms similar to Piaget's (1968) view of an implicit animism in the child.

The 11-year olds in Ledwith's (1959) study demonstrated the highest percentage, 10%, of human movement responses, and begin to approach adult expectations described by Klopfer and Davidson (1962). However, human movement is interpretively the most complex single determinant, explained by numerous hypotheses. Klopfer and Davidson (1962) do not attempt to provide strict normative boundaries to this determinant.

Fisher, S. and Fisher, R. (1976) report that parental attitudes of introversiveness and aesthetic interest are positively correlated with the amount of movement responses in Rorschach records of their children, both boys and girls. Although the selection of subjects from only upper-middle class white families in upstate New York may limit the generalizability of these

findings, the results do seem to add support to Hermann Rorschach's (1921) original emphasis on the introversive and artistic significance of the movement response.

In responding to the color contained in the Rorschach blots, Beck et al. (1961) theorized that subjects provide an indication of the extent and nature of their responsiveness to environmental stimuli and emotional impacts of relationships with others. A further theoretical assumption is offered by Halpern (1953) which points to the emergence of color as the child's awareness of self. Following this assumption, and based on her own uncontrolled clinical observation of children's records, Halpern (1953) describes crude color responses from the very young child which are gradually replaced by the school-aged child's impulsive, egocentric color responses. She suggests a possible correlation between increased intellectual control and well-controlled color responses.

Kerr's (1934) statistical data on color responses from 100 normal and 100 mentally defective children, seven to fourteen, support Halpern's assumptions. The most intellectually defective groups generated the highest mean number of color responses, while the intellectually superior group demonstrated not the lowest percentage, but a median number of such responses

which may suggest balanced emotional control comparable to expected adult levels (Kerr, 1934). The differences in mean number of color responses were statistically significant ($p < .01$) for the intellectually defective and intellectually superior groups (Kerr, 1934).

Ledwith (1959) also found a consistent decrease in the overall number of color responses with increasing age which may point to a developmental pattern in such responses.

Content

Another aspect of the Rorschach responses to be considered is content; that is, the essential picture stimulated by the blot or parts of the blot. Each response is classified according to the kind of content such as animal, A; human, H; object, Obj; nature, N; etc. Only the two content categories which Ledwith (1959) found most frequently used by children, animal and human, will be treated here.

Klopfer and Davidson (1962) advanced the theoretical assumption that a wide range of content usually correlates with good intelligence, while a concentration of scores with animal content and few other categories may indicate mediocre intelligence. Since Klopfer and Davidson (1962) based these assumptions on adult records, they do not take into account

developmental patterns of the child. Halpern (1953) hypothesizes that the very young child actually has only a few concepts to which he/she can relate immediate events. These limitations seem to result from a number of factors including the child's inability to make fine discriminations, excessive concreteness, and narrow range of experience (Halpern, 1953). Thus, from clinical observation, Halpern suggests that for the very young child, two and one-half to four, one or two content categories are the rule. The nature of the content seems to follow a predictable pattern, according to Halpern's clinical data, characterized by animal responses followed by nature, plant, and architectural themes as the breadth of content expands. With an increase in the child's discriminatory powers, broader experience sphere, and more acute reality perception, the number of content areas would be expected to grow. The acquisition of discriminative ability, in some ways comparable to the adult's, occurs during the period of formal operations, ages 12-15, which is the final stage in Piaget's (1968) developmental scheme. The younger child's reliance on animal content may reflect basic animism (Piaget, 1968).

Consistently, the six-through eleven-year old children in Ledwith's (1959) longitudinal study gave a

mean of 47-57% animal content responses while human content was contained in a mean of only 12-16% of total responses. There was a trend for duller children to give more animal content than the more intelligent children (Ledwith, 1959). A few of the older, brighter children had as high as 50% human content in their records while the average percentage was only 14-16% with the majority of all children within the ten-point range of average scores for their age group (Ledwith, 1959).

From a careful consideration of developmental theory and available data, the author suggests that a relationship exists between age, intelligence and production of human content responses by children. That relationship seems to result in a higher pecentage of human content responses by older children and/or brighter children who function cognitively at a stage closer to the adult's.

Popularity

A final consideration in the scoring and interpretation of child Rorschach records is the description of a response as popular or original. In Klopfer and Davidson's (1962) scoring system, only ten responses are seen as popular with three of the cards, IV, VII, and IX, having no designated universally popular responses.

Interpretively, the popularity or originality of responses reveals the subject's ability to view the world in the same way as most other people do (Klopfer & Davidson, 1962). Further, it is expected according to Klopfer and Davidson's (1962) system, that most subjects will see three of the ten popular responses. Two theoretical assumptions are presented which suggest (a) that the occurrence of eight or more popular responses indicates a strong need of the subject to think as other people do, and (b) the inability to see popular responses during the testing-of-the-limits phase indicates serious weakening of reality ties (Klopfer & Davidson, 1962).

Vorhaus (1944) analyzed the records of 138 children from two to six who scored in the bright normal range on the Stanford-Binet, and arrived at specific popular responses which comply quite closely with Klopfer and Davidson's (1962) list gathered from statistical evaluation of adult records. Vorhaus (1944) arrived at the following whole response populars for children:

Card	I	Bird, bat, and butterfly
Card	II	Animals, shoe, foot, stocking
Card	III	People, birds, four-legged animal, butterfly
Card	IV	Human figure, four-legged animal
Card	V	Bird, bat, butterfly
Card	VI	Tree
Card	VII	Clouds and smoke
Card	VIII	Four-legged animals, tree

Again, the awareness that developmental effects may be evident in Vorhaus's (1944) results suggests to the author that the superior cognitive functioning of the subjects may have partially influenced the amount of human content.

With progressive age levels, Ledwith (1959) found slight increases in the mean number of popular responses. Means at every age level, six through eleven, fulfilled Klopfer and Davidson's (1962) requirement that at least 30% of the protocol be popular responses, ranging from 34% to 62%.

Going beyond the statistical frequency of popular responses, Halpern (1953) offered several theoretical assumptions regarding the interpretation of such responses. She states that the child who gives many adult populars is usually following adult reactions in a stereotyped manner, with a lack of fantasy and emotional spontaneity (Halpern, 1953). On the other hand, the school-aged child who shows little or no ability to produce adult populars may not be developing in expected fashion and may suffer from cognitive and/or emotional difficulties (Halpern, 1953). This conclusion is not data based, but proceeds from Halpern's (1953) clinical observation. It seems to the author, then, that popularity of child Rorschach responses may be expected to

increase with age. This scoring category appears to be most valuable when approached broadly as a possible index of markedly atypical functioning in children.

The Rorschach as a Correlate of Cognitive Functioning in Children

Initially, the issue of the Rorschach as a cognitive correlate in children may appear to depart abruptly from the previous discussion of test administration and interpretative scoring concerns characteristic of pre-adolescent versus adult populations. However, after careful review of the available literature, it became evident to the author that the Rorschach as a measure of developmental level comprises a most promising and useful area of its application. A brief discussion of Piaget's (1968) notion of development may clarify this paper's position that the Rorschach provides a multi-faceted description of the child's level of development.

Development is not, for Piaget, the culmination of a series of specific events. Instead, development is the essential process and each element of learning occurs as a function of total development, rather than being an element which explains development (Piaget, 1968).

For example, during one of Piaget's extensive conservation experiments, a child learned to elicit a conserving response. He indicated that a given amount

of clay remains the same regardless of whether it is formed into a ball or broken into pieces. Later, however, he chose to break up his sandwich in order to have "more" to eat (Piaget, 1968). Obvisouly, the child's verbal accommodation to the task had no lasting or generalized effects. In Piaget's terms, the child had not assimilated this experience nor had he acquired a new learning set.

Rorschach protocols may provide insight into the child's structuring capacities, like conservation, in terms of the balance between accommodation (fitting behavior to demands of the outer world) and assimilation (achieving a balance between internal and external demands) (Almy, 1966).

Piaget (1968) asserts that the ease with which a child acquires a logical structure such as conservation depends on the child's level of development. Piaget (1968) describes fixed stages characterized by behavioral, e.g., thumb-sucking, or intellectual, e.g., classification of objects, schemes (Fein, 1978). Piaget's (1968) four major developmental periods, sensorimotor, preoperational, concrete operations, and formal operations, will be treated more fully throughout this paper as they pertain to Rorschach cognitive studies at different age levels.

The assessment of cognitive functioning from Rorschach responses received strong impetus from Friedman (1953) with his development of a system for scoring the Rorschach in terms of predictable levels of cognitive capacities.

As employed by Friedman (1953), developmental level is viewed as a means of evaluating the adequacy of an individual's cognitive functioning. Specifically, Cohen (1971) refers to cognition as the higher mental processes characteristically unique to the human organism. Falling within this province are processes involved in language, concept formation, problem solving, intelligence, thinking, and creativity (Cohen, 1971).

Friedman (1953) bases his system on Werner's theory of cognitive development which employs an orthogenetic principle. This principle states that development precedes from a state of relative globality to a state of differentiation, articulation, and hierarchic integration" (Werner, 1957, p. 126). More simply, the author implies from this model that, in comparison with adult thought, cognition in the young child initially appears random, diffuse, and disorganized. The adult, equipped with a wider experiential history, can more finely attend to stimuli, discriminate among stimuli, and

represent stimuli symbolically. The child begins with reflexes and sensations, lacking clear cut distinction between self and environment (Werner, 1948). By the term hierarchic integration, Werner (1948) explained that through the process of development, certain functions become subordinated by more highly developed abilities, with a greater stress on conceptualization.

In addition, he characterized individuals as having a range of abilities rather than occupying a point on a continuum (Werner, 1948).

This theory seems to provide an effective framework for this paper's review of Rorschach scoring systems since it implies that response differentials found in adult versus child populations may be linked to basic variations in cognitive capacities.

Armed with Werner's construct of developmental level, Friedman (1953) designed a Rorschach scoring system which stresses the structural and organizational aspects of the percept. Location scores alone are analyzed and classified according to level of diffuseness, articulation, and integration (Goldfried et al., 1971). There are six developmentally high (mature) categories which begin with a Dm response, "an F+ response to a single D area, where the content has definite form requirements, but where the blot is not broken down and reintegrated" (Goldfried et al., 1971, p. 23). The

highest score is W++ in which the blot is "perceptually articulated and then reintegrated into a well-differentiated whole" (Goldfried et al., 1971, p. 22). The remaining four criteria reflect gradations of the well-integrated response.

Friedman (1953) cites ten categories for developmentally low (immature) scores. They range from a ConR, contaminated response, in which two separate responses are fused, to Wv, a vague response in which there is a diffuse general impression of the blot (Goldfried et al., 1971). Developmentally, low scores describe vague, amorphous responses, often confabulatory or preceding from a stimulus not provided by the blot (Goldfried et al., 1971).

For example, "A monkey, because of his ear" constitutes a confabulatory response where the reaction to the blot is generalized from a specific detail. This would be scored DdD and considered developmentally low (Goldfried et al., 1971).

Based on 1953 research studies with normal adult, normal child, hebephrenic and catatonic schizophrenics, Friedman formulated certain expectancy levels regarding high and low scores. His studies are useful for this paper in distinguishing between expected adult versus child Rorschach responses.

Normal adults obtained significantly more W++ scores, qualitatively the highest score, than children (Friedman, 1953). The greater frequency of W+ scores in adult protocols approached significance with p between .05 and 1.0 (Friedman, 1953). The frequency of both W+ and W++ scores among children matched similar production among schizophrenics (Friedman, 1953).

The remaining lower end scores of the developmentally high continuum reflect clear differentiation among experimental groups. Normal adults produced D+, Wm, and Dm scores more often than schizophrenics who then produced more such scores than children (Friedman, 1953). Friedman interprets this as consistent with Werner's contention that regressed individuals, like schizophrenics, retain some remnants of their higher levels of development (Friedman, 1953). Even Piaget (1968) allowed for the possibility of regression to earlier stages.

Validity research on Friedman's Developmental Level Scoring System has been widespread as the system gained broader acceptance as a novel approach to understanding cognitive growth in children. Hemmindinger (1953) used the system to investigate developmental levels of 160 male subjects between three and ten. He computed the median percent of developmentally high and

low W and D scores for eight groups (N = 20) of male subjects. He found that developmentally high W and D scores increased and developmentally low W and D scores decreased with age (Hemmindinger, 1953). These results would seem to support Piaget's (1952) notion that with age, the child's cognitive style reflects greater flexibility, independence, and integrative capacity. Hemmindinger's (1953) findings which illustrate a sharp increase in developmentally high W and D scores among eight-year olds may support Piaget's cognitive theories regarding the seven- and eight-year old's heightened selectivity, increased control over sensory receptors, and more acute attentional patterns (Fein, 1978).

One of the most obvious restrictions of Hemmindinger's sample is that the group consisted of white males. The question as to the applicability of these normative data in interpreting protocols of female subjects is uncertain. Another limitation in the sample includes the size of each group. Goldfried et al. (1971) assert that N = 20 is somewhat small to allow for confident generalization to larger populations.

Since developmental level, for the purpose of this paper, refers to the level of cognitive functioning at which an individual operates, we might expect developmental scoring of the Rorschach to have some relationship to intellectual functioning. Kissel (1965)

investigated the relationship between I.Q. and developmental level among patients, 11 through 16, in a child guidance clinic. Subjects' I.Q. scores ranged from 80 to 124. Kissel (1965) found a significant correlation of .42 ($p < .01$) between Friedman's Developmental Level Scoring System and I.Q. His results should be considered with an awareness of the sample which was clinical in nature and, which therefore might not adequately represent broader-based populations.

Kissel's (1965) study points to some relation between Rorschach developmental level and I.Q. However, it is the author's impression that specific investigation into the relationship between aspects of intellectual functioning tapped by intelligence tests,(e.g., visual-motor coordination, abstract reasoning, social judgement),and Rorschach developmental level might provide necessary clarification of the exact nature of this relationship.

Nonetheless, Friedman's (1953) scoring system emerged quite successfully from the scores of validity studies. It appears to provide an accurate assessment of developmental level based upon Rorschach scores.

Correlation between I.Q. scores and Rorschach responses was also the object of Gerstein, Brodzinsky, and Reiskind's (1976) study of perceptual integration on

the Rorschach. These data seem to support the conclusion that many black children with less than average I.Q. scores appear brighter on Rorschach protocols than would be expected (Gerstein et al., 1976). A total of 173 subjects, 87 white and 86 black, were placed into three age groups: 7-8.11, 10-11.11, and 13-14.00. All subjects were participants in child guidance clinic services. Full Scale Wechsler Intelligence Scale for Children-Revised scores served as the intellectual measure, ranging from a low of 70 to a high of 109 (Gerstein et al., 1976). Gerstein et al. (1976) constructed a continuum of perceptual organization from Rorschach responses parallel to Werner's (1948) states of cognitive development. The response categories range from "amorphous" defined as "a vague response in which there is a diffuse general impression of the blot with unspecific form" (Goldfried et al., 1971) to "well-integrated" defined as "a response in which a unitary blot is perceptually articulated and then reintegrated into a well-differentiated whole" (Goldfried et al., 1971, p. 22). From this scale, Gerstein et al. (1976) derived a Perceptual-Integration score for each subject.

Gerstein's et al. (1976) results indicate that elementary school-aged blacks, who tested at a borderline-dull intellectual level, showed high level percepts

on the Rorschach, although this was not the case with comparable white subjects. Further, Gerstein et al. (1976) outlined four statistically significant main effects:

(a) with increasing age, performance on the Rorschach was characterized by more perceptually integrated responses,

(b) overall, a greater number of blacks in the low I.Q. groups produced high level whole responses at each age level than their white counterparts,

(c) no differences appeared between blacks and whites within the average I.Q. group, and

(d) the average I.Q. group yielded a greater number of whole responses by white subjects.

From their findings, Gerstein et al. (1976) suggest that low I.Q. blacks do not function as do low I.Q. whites at the same level. The former group, when judged on perceptual integration on the Rorschach, appeared similar to subjects who showed no intellectual deficits on standard intelligence tests (Gerstein et al., 1976). Before considering the reasons for these results, the author will elaborate on one of the variables chosen by Gerstein et al. (1976). A more detailed critical analysis of the entire study will follow. Focusing briefly on Gerstein's et al. (1976) choice of the racial variable, it seems timely to touch on the debate surrounding

the heritability of intelligence. Jensen (1969) states that in accounting for the differences among persons in I.Q., the genes outweigh the effects of environment by a 2 to 1 ratio. Other theorists tend to minimize genetic variance in explaining aptitude differences among black and white subjects, citing social disadvantage in prenatal and postnatal development as a stronger impact upon intellectual functioning (Scarr-Salapatek, 1972). Hunt (1969) calls the idea of a predetermined rate of development a fallacy. Although he supports Piaget's sequential order of development, Hunt (1969) resists attempts to label intellectual capacity as predetermined and unchangeable.

Upon careful consideration of Gerstein's et al. (1976) study, the author recognizes certain variables which may not have been adequately controlled for. For example, the differences in perceptual integration scores may reflect a complicated interaction of variables related to seeking help at a guidance clinic. In other words, psychopathology may play a role in relation to integrative capacities as shown by the WISC-R, and thus generalizability of Gerstein's et al. (1976) findings may be questionable. Thus, for children experiencing emotional difficulties, cognitive functioning as measured by I.Q. scores may be susceptible to subtle negative influences which do not affect well-adjusted children.

Also, by choosing the WISC-R as the measure of intellectual functioning, Gerstein et al. (1976) chose a test whose norms were standardized on a white population. Consequently, a certain bias may have intruded, even initially, into this design. Therefore, the author suggests that some of the "low I.Q." blacks as tested by the WISC-R may be testing low but may not in fact be intellectually inferior to white counterparts. Consequently, the author feels that Gerstein's et al. (1976) research does seem to raise serious questions about the validity of using standardized intelligence tests as the sole measure of cognitive functioning for black children, and as a basis for making important future life decisions. Furthermore, the possibility is presented that the Rorschach may tap latent capacities not ordinarily tapped by traditional tests (e.g., WISC-R). Gerstein's et al. (1976) data support further use of the Rorschach as an additional way of viewing intellective capacities.

In a more recent study, Smith (1978) investigated the relationship between the child's level of cognitive functioning and production of whole responses on the Rorschach. Smith (1978) chose 30 second graders and 30 sixth graders from among three elementary schools. She divided the subjects into four groups: (a) second grade

preoperational, (b) second grade concrete, (c) sixth grade preoperational, and (d) sixth grade concrete. A brief review of these Piagetian periods indicates that the preoperational period is characterized by a transition from "thinking with the body to thinking with the mind" (Fein, 1978, p. 226). This stage, from two to seven, witnesses the elaboration of symbolic function, that is the ability to represent things (Elkind, 1968). The presence of these abilities is shown in the acquisition of language and attempts at drawing (Elkind, 1968). Concrete operations, from seven to eleven, involve the child's acquisition of abilities which allow him/her to intuit what previously required real actions (Elkind, 1968). In other words, concrete operations allow the child to "think" about things (Elkind, 1968).

Within this Piagetian framework, Smith (1978) hypothesized that the progression to more advanced levels of cognitive functioning would be accompanied by significant increases in both the number and complexity of whole responses on the Rorschach. Qualitative variations among whole responses across seven categories were examined using Friedman's Developmental Level Scoring System. Smith's (1978) two null hypotheses were rejected at the .05 level of significance which led her to conclude that a positive and significant relationship

exists between the child's stage of cognitive development and the number and complexity of whole responses. Furthermore, the strength of the relationship is significantly influenced by stimulus complexity of the blots (Smith, 1978). A shortcoming of this study appears to be that the exact nature of the interaction between stimulus complexity of the blot and production of integrative whole responses remains unclear.

In addition, Smith (1978) found a significant difference in whole response production between the two concrete groups. The whole responses of the "concrete" second graders were greater in both number and complexity than those of the "concrete" sixth graders. This suggests to the author that the sixth graders characterized at a concrete level may be functioning at a somewhat regressed cognitive level compared to second graders operating at a concrete level.

Several cautions may be indicated before accepting Smith's (1978) results. Her sample size per group, N = 15, was relatively small. Secondly, she fails to state black/white or male/female ratios. Certainly scorer subjectivity may have contaminated her results since she fails to clarify the relationship of examiner to subject in terms of objectivity. Realizing the limitations evident in Smith's (1978) study, as well as in preceding

data, it seems advisable at this time to consider certain experimental variables which have been ignored or, at best, minimally explored by preceding research studies.

In her investigation of cognitive functioning on the Rorschach, Glixman (1977) examined a wide range of clinical and demographic variables as they intervene on developmental level. Specifically, she sought to determine the effects of diagnosis, ethnicity, sex, and age on developmental levels of functioning as measured by Friedman's Rorschach Developmental Level Scoring System.

Glixman (1977) reviewed 321 protocols of five- to eight-year olds. Each record had been scored by an independent clinician according to Friedman's qualitative categories. Variables were designed to provide a contrast in cognitive functioning between minimally brain damaged versus emotionally disturbed subjects; male versus female subjects; and black versus white subjects. With regard to different cognitive levels between black and white subjects, Glixman (1977) found that white subjects tended to produce more high level Rorschach responses with age in a linear manner, while black subjects appeared to peak at age seven. In fact seven-year old black subjects functioned at a higher developmental level than all other groups, black and white

(Glixman, 1977). This finding closely resembles Friedman's original data wherein he obtained optimal scores from eight-year olds (Goldfried et al., 1971). From a theoretical basis which does not attempt to explain racial variations, the author suggests that peak performance at age seven or eight may be partially explained as a predictable function of increasing age occurring at the natural ceiling level. Children at this age become more capable of complex tasks both cognitively and socially, while placing more emphasis on abstract reinforcement of having correct information rather than praise and punishment (Fein, 1978).

Additionally, Glixman (1977) found minimally brain damaged subjects consistently scored at a developmentally lower level than emotionally disturbed subjects. Organicity seemed to have significantly disrupted cognitive processes particularly in terms of perception of discrete details (measured by D+ responses) and reintegration of percepts with good form level (W++ responses) (Glixman,1977). Developmental variations between sexes were minimal (Glixman, 1977).

Although Glixman's (1977) study seems to support the Rorschach's effectiveness as a cognitive index, her data appear weak in the specification of scores which point to differential effects of diagnosis and ethnicity. She offers rather broad conclusions which, in the

author's opinion, need more detailed supportive data.

The final study which this paper will consider investigates the Rorschach as a predictor of mental age. Weisz, Quinlan, O'Neill, P., and O'Neill, P. (1978) call into question the Rorschach's usefulness in generating broad personality descriptions, asking instead what characteristics of the person can be reliably and validly measured by the test. Of particular interest to developmental psychologists have been efforts to predict level of intellectual development from Rorschach responses (Weisz et al., 1978).

Citing the absence of conclusive validity data as to the Rorschach's correlation with mental age, and whether certain aspects of cognitive development can be accounted for by simpler structured perception tests, Weisz et al. (1978) attempted to provide such evidence. Using chronological age (CA) and mental age (MA) as separate factors across five groups within a population of children, six to twelve, Weisz et al. (1978) employed the Form Accuracy and Response Complexity scoring scales. Form accuracy and response complexity comprise two aspects from the Rorschach which appear to improve with maturity (Hemmindinger, 1953).

Children from six through twelve function primarily within the concrete operations stage described by Piaget

(1968). In this period, the child becomes aware of patterned relationships as well as concepts of identity and reversibility (Piaget, 1968). The structure of the child's operations is essentially logical, even though the available implications of that logic are still rather limited (Piaget, 1968). A characteristic of this stage which may carry implications for Rorschach responding is as follows: Children can reason about the whole as long as it is not broken up into parts or, if forced to break it up, they can reason about the parts, but they cannot reason simultaneously about the whole and the parts (Piaget, 1968). Thus, in terms of Rorschach responses, a preconcrete as opposed to a concrete operational child would be expected to produce either whole or detail responses containing little if any evidence of fine discrimination and/or reintegrational capacities.

In Weisz's et al. (1978) study, a male and female experimenter, both unaware of the purpose of the investigation, administered the Rorschach and four tests of perception four weeks later. Weisz et al. (1978) found the following correlations from two objective scorers working independently: (a) .93 between MA and Rorschach Form Accuracy, (b) .96 between MA and Rorschach Complexity, and (c) .90 between MA and Rorschach Developmental Level. These data suggest that certain Rorschach measures provide a picture of cognitive

development which is closely matched by the MA index.

The subsequent portions of Weisz's et al. (1978) study, while not as pertinent to this paper, suggest that four perceptual tests, the Children's Embedded Figure Test, The Gestalt Completion Test, The Closure Speed Test, and the Recognition of Incomplete Objects Test serve as effective predictors of MA as well as the previously discussed Rorschach scores.

Weisz's et al. (1978) investigation seems to be well controlled for extraneous variables such as sex of examiner, examiner subjectivity, and scorer subjectivity. Since this population was not clinical in nature, their results may offer wide generalization possibilities. The choice of the Peabody Picture Vocabulary Test to assess mental age was deliberate. Weisz et al. (1978) felt that the perceptual components of the WISC-R might contaminate the findings with regard to the mental age predictive value of the four perceptual tests chosen. In summary, the author considers Weisz's et al. (1978) results as supportive of this paper's proposal that Rorschach variables serve as effective correlates of cognitive functioning in children.

After careful review of the available literature on children's Rorschach, the potential value of the test as a correlate of cognitive functioning seems clear. In terms of future research designs, the author plans

to administer the Rorschach and either the Wechsler Preschool Primary Scale of Intelligence, WPPSI, or the WISC-R to children at a community mental health center in the central Florida area. Intended as an extensive, perhaps year-long, research project, a statistical analysis will be made to determine the correlation between Rorschach measures of cognitive function, derived from Friedman's Developmental Level Scoring System, with standaridized I.Q. scores. Variables such as race will be specified in order to investigate the Rorschach's ability to tap cognitive capacities in certain ethnic groups more adequately than intellectual measures which may be inherently biased.

SUMMARY AND CONCLUSIONS

Recognizing the overwhelming complexity and very real limitations inherent in the task of determining "Is the Rorschach valid?" this paper chose instead to narrow its focus to three specific areas which, essentially, presuppose the Rorschach's value as a clinical tool. Specifically, the paper asks, when applied to populations of preadolescent children, what are the administrative aspects of the Rorschach which necessitate variations from similar administration with adults? In addition, when scoring and interpreting Rorschach protocols of children, what theoretical adjustments seem indicated in terms of understanding the child's fundamental developmental differences from adults?

In addressing a most promising and heavily researched segment of Rorschach application (Goldfried et al., 1971), this paper attempts to provide a well-documented presentation of the Rorschach's effectiveness as a cognitive correlate in children.

Supported by both dynamic and cognitive theories, a developmental approach to children's functioning seems most useful since it provides a systematic, orderly sequence as well as implying a direction in children's

behavior. Werner (1948) describes organic development as increasing differentiation and centralization which, when applied to Rorschach functioning, suggests to the author an age-related tendency in the child toward accurate perception of detail combined with stable integration of wholes.

A balance between detailed and global perceptions is further achieved as the child proceeds through four distinct cognitive stages (Piaget, 1968) involving the acquisition of skills in language, perception, concept formation and memory.

Familiarity with these periods, in terms of age boundaries and specific cognitive capacities, seems of significant value in both predicting and qualitatively understanding children's Rorschach responding.

Based on comprehensive children's Rorschach norms which were carefully compared to pre-existing adult norms, definite patterns appear in children's records. These patterns imply that children operate within a perceptual, cognitive and motivational framework not only different from adults, but also significantly variant among their own age groups. Research investigations (Ledwith, 1959; Weisz et al., 1978) statistically support

age-related differences in performance on the Rorschach, while developmental theories (Freud, 1928; Kohlberg, 1963; Piaget, 1968) provide bases for understanding reasons why these differentials occur at all.

While clinical observation serves to illustrate the need for differential Rorschach procedures between children and adults, the intrusion of empirically-based children's Rorschach norms supports even more cogently that unique administrative, scoring, and interpretive considerations with children are warranted.

The probability of accurate Rorschach interpretation would appear to be heightened when the clinician relies on normative data replete with expectations of Rorschach functioning based on age, sex, and level of intellectual development (Ledwith, 1959).

Comprehensive review of selected research on the use of the Rorschach as an index of cognitive functioning in children clearly suggests to the author that the test contains certain variables which correlate significantly with cognitive levels (Friedman, 1953, Weisz et al., 1978). In fact, the Rorschach may tap latent intellective capacities in special child populations more accurately than traditional standardized measures like the WISC-R (Gerstein et al., 1976).

Rorschach variables of form accuracy and response

complexity, which seem to improve as a function of maturity (Hemmdinger, 1953), correlate well with mental age suggesting that the Rorschach does provide an accurate measure of intellectual development (Weisz et al., 1978).

Friedman's Developmental Level Scoring System (1953) supplies further normative data as well as practical scoring criteria for determining level of cognitive functioning according to quality of Rorschach responses.

Preceding from theoretical assumptions and empirical data, this paper concludes that the Rorschach generates a multi-faceted systematic representation of the child's personality adjustment with specific indications of cognition, perception and conflictual precipitants. These aspects of functioning can optimally be viewed developmentally in terms of expected differences between adults and children as well as among children of different age levels.

Furthermore, the Rorschach provides specific information related to the child's level of cognitive learning. Especially when scored according to Developmental Level Scoring Systems which utilize data-based performance variables, the Rorschach emerges successfully as a correlate of cognitive functioning in children.

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