

AN EVALUATION OF THE WHITE SPACE
RESPONSE ON THE RORSCHACH
AS FIGURE-GROUND REVERSAL AND
INTELLECTUAL OPPOSITION

Thesis for the Degree of Ph. D.

MICHIGAN STATE COLLEGE

William D. Nelson

1954

This is to certify that the

thesis entitled

AN EVALUATION OF THE WHITE SPACE RESPONSE
ON THE RONSCHECH AS FIGURE-GROUND REVERSAL
AND INTELLECTUAL OPPOSITION

presented by

William D. Nelson

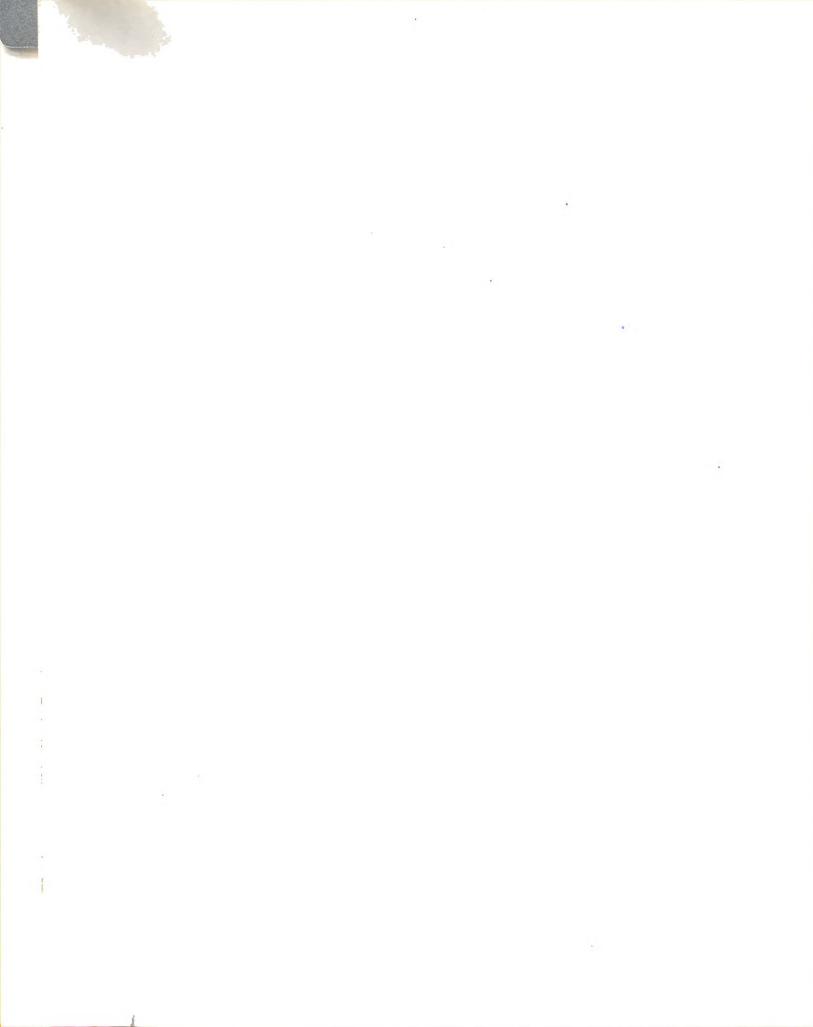
has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology



Major professor

October 28, 1954
Date _____





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on the Rorschach as Figure-Ground Reversal
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By
William D. Nelson

A THESIS

Submitted to the School of Graduate Studies of Michigan
State College of Agriculture and Applied Science
in partial fulfillment of the requirements
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Department of Psychology

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This study was designed to test the validity of two major hypotheses concerning the Rorschach white space response.

One hypothesis was based on a common assumption that the white space represents a reversal of figure and ground and therefore has face validity on the basis of its being the "opposite" of the usual percept.

The second major hypothesis stemmed from a recent interpretation of the white space response made by Klopfer, et. al. This interpretation placed the opposition associated with S by most authors in the intellectual sphere as opposed to purely emotional aggression.

The following hypotheses were submitted to experimental test:

- I. The perception of white space on the Rorschach test is related to a tendency to reverse figure and ground.
- II. The perception of Primary S in the Rorschach is qualitatively different from the perception of Secondary S.
- III. The use of white space in the Rorschach test reflects an intellectual opposition.

Sixty open ward patients of a neuropsychiatric hospital were used as subjects for this investigation.

One group was composed of 20 individuals who produced Primary S in the Rorschach. The second group of 20 produced no S in the Rorschach and were matched individually with the Primary S group on the basis of age, intelligence and diagnosis. The third group of 20 was composed of individuals who produced Secondary but no Primary S in the Rorschach.

The Rosenzweig Picture-Frustration Study, on the basis of certain characteristics of the test as well as the results of research with it, was used as a measure of intellectual opposition. A series of cards on the order of Rubin's vase-face reversal of figure and ground were used to measure the tendency to reverse figure and ground. The subjects were tested individually with the Rorschach, P-F Study and figure-ground cards, in that order. The results of the investigation failed to support the hypothesis that S reflects an intellectual type of opposition as measured by the P-F Study. However, the hypothesis that S is related to a tendency to reverse figure and ground was supported. The results failed to demonstrate that Primary S and Secondary S are qualitatively different although there was found a trend in the direction of a closer relation between the tendency to reverse figure and ground and Primary S.

In discussing the results of the investigation the basic interpretation of the white space was questioned and an alternative hypothesis suggested. That is, the perception of white space is indicative of flexibility. The need for further research in this area was pointed out and one possible means of approach was outlined. Some of the possible implications of such an investigation were also mentioned.

ACKNOWLEDGEMENTS

The author is deeply indebted to a great number of people. Without them this project would not have been possible. Primary debts of gratitude are to Drs. G. M. Gilbert and Paul Greenberg.

As Chairman of the Guidance Committee, Dr. Gilbert provided continuous encouragement and constructive criticism and repeatedly demonstrated a great deal of understanding.

As Director of Psychological Research at the Veterans Administration Hospital in Battle Creek, Michigan, Dr. Greenberg generously contributed his time in discussion of many aspects of the project.

Others serving on the Guidance Committee who contributed constructive criticisms were Drs. Albert I. Rabin, Alfred G. Dietze and Chester A. Lawson. Drs. J. D. Birch and David Pearl were very helpful in the development of the statistical analyses of the data. Dr. S. G. Marino contributed much to the translation of foreign articles.

The author is indebted to Amedeo Dalla Volta for the use of several figure-ground reversals and to Mrs. Edward Lovinger and Joseph Grace for their contributions in the construction of other figure-ground reversals.

Finally, there is the authors wife, Arlene, whose contributions were innumerable.

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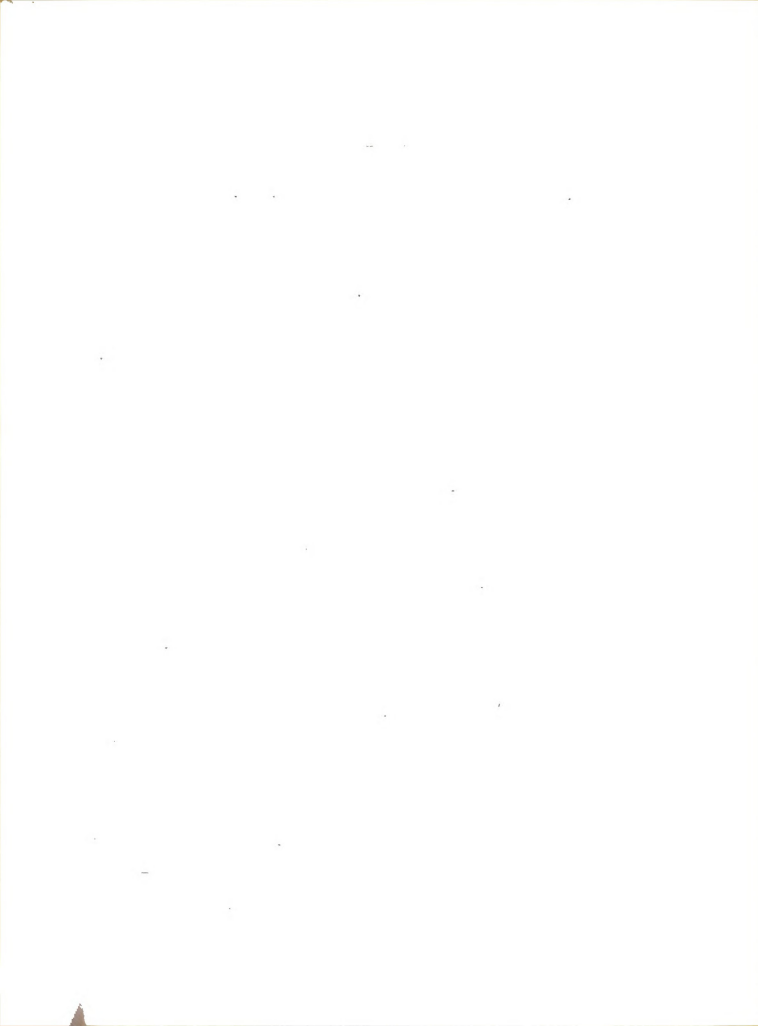
Introduction

The Rorschach test has emerged as one of the most popular projective techniques in contemporary psychology. Along with its rise in popularity as a clinical tool it has served as the stimulus for an increasing amount of research. However, most of this research has been of a clinical and normative nature. Only recently, as Williams points out (52), have experimental investigations appeared which critically examine the assumptions underlying the Rorschach stimulus variables as well as the relation between response and personality. Critical examinations of the many premises and assumptions upon which the Rorschach is based should serve to clarify its scientific status. In addition, they may more clearly identify the basic psychological processes which underlie the personality structure as it is projected in a Rorschach protocol.

A common experimental approach in Rorschach investigation involves the systematic manipulation of stimulus variables such as color, form, shading, etc. By this means more precise information is gained concerning the relationship between the stimulus variables and the various types of responses they provoke. For example, Balloch (2) investigated various determinants involving shading by varying the degrees of shading contrast in a group of

inkblots. Lazarus (31) and Siipola, et. al. (46) studied the influence of color in the Rorschach by comparing responses to color cards with responses to achromatic reproductions of the same card. Rabin and Sanderson (39) subjected some of the assumptions underlying "color shock" to test by varying the order of presentation of the cards.

The present investigation is directed toward a study of the stimulus and interpretive aspects of a type of response about which relatively little is known - the white space response. Although the white space response has been accorded considerable theoretical discussion there appears to be a surprising lack of studies dealing primarily with it. One apparent reason for the lack of studies is the fact that this type of response does not occur as frequently as other responses in the test. This should not, however, detract from its importance nor the need to learn more about it. The need to subject this area to experimental investigation is felt to be particularly vital since the assumptions underlying its stimulus value and the type of behavior it is believed to represent have been clearly specified (6, 9, 25). Thus, the assumption that the white space response represents figure-ground reversal and denotes oppositional qualities, rather



uncritically accepted heretofore, would seem to demand experimental validation. It is with this problem that the present investigation is concerned.

Rorschach (41; p.39) originally defined the white space response as "those answers in which the white spaces are interpreted rather than the black or colored parts of the figure which surround them." Since Rorschach's original formulation, the definition of the "S" (Space) response has been considerably expanded. Beck (5), for example, describes four varieties of the S response viz. major and minor white spaces perceived as units and major and minor white spaces perceived in conjunction with an adjacent inked area. Hereinafter the first two varieties (white space perceived as a unit) will be termed "Primary S" while the last two varieties will be termed "Secondary S."

There is considerable disagreement regarding the significance of the two major types of S response. Beck (5) does not distinguish between Primary and Secondary S, with respect to interpretation, but holds to the view that both types reflect the same psychological process. Buhler, Buhler and Lefever (10) and Munroe (35) give a weight of one-half to Secondary S responses while Klopfer

and Kelly (25) discourage the use of Secondary S in the scoring summary entirely. Hertz (20) scores both normal "S" and rare "s" details and adds an O (oligophrenic) when space is associated with a rare detail. Phillips and Smith (37) use two symbols to indicate use of white space, S, when space is the dominant content or figure and s when space plays a minor role in the percept.

Rorschach (41) held that S always reflects an oppositional trend of some sort. This basic opposition may be expressed behaviorally in a variety of ways. For Rorschach, the mode of expression of opposition is contingent upon the ratio of movement responses to color responses (Experience Balance). If color (C) outweighs movement (M) the opposition is said to be directed outward against the environment in the form of stubbornness, defiance, etc. If C and M are equal, the opposition may be directed against the subjects' own consciousness and find expression in doubt, indecision, vacillation, etc. When M is greater than C the opposition is directed against the subjects' inner life and results in feelings of insufficiency, self-distrust, self-criticism, etc.

Beck adheres very closely to Rorschach's interpretations of S and adds that "generically it consists

fundamentally of self will" (6; p.47). Other authors also accept Rorschach's "opposition" hypothesis (7, 9, 10, 33, 38, 40). Some writers, however, emphasize the importance of analyzing the response with reference to such factors as location, position in association, content and associative elaborations when making this interpretation (9, 33, 37). The manner in which opposition trends are expressed is also said to vary with the different personality structures in which S is found. Beck (6; p.47) gives one of the most concise and complete descriptions of the various interpretations of S. In the normal, intelligent individual S stands for "resolution" and "perseverance" while in the less intelligent or less educated it means "contumacy" and "obstinacy." In psychopaths the opposition is directed against society in the form of "destructive behavior." A feeble-minded person with S "will be hard to manage." When associated with schizophrenia S indicates extreme negativism, while in the paranoid patient it represents rigid adherence to delusions.

Klopfer, et. al., in a recent publication (26), offer a unique interpretation of the white space response. These authors hold that S represents opposition in the

intellectual sphere. It involves "a putting of the self across; it is the competitive or self-assertive aspect of intellectuality" (26; p.309).

In summary, the literature concerning the meaning of the white space response provides a basis for two general statements. First, there is general agreement that S represents some type of oppositional tendency. Second, there is little agreement concerning the significance of one type of S response as opposed to another.

Validation Studies of the White Space Response

Attempts to validate the clinical hunches and intuitions concerning white space response have met with varying degrees of success. Several Rorschach investigations have included an analysis of the S response. In Rapaport's study (40) S was highest in the Paranoid Condition group, but was also relatively frequent in the Over-Ideational Preschizophrenic and Mixed Neurotics - groups who show the greatest wealth and intensity of associative processes. Buhler, Buhler and Lefever (10) found a larger number of S responses in the normal group and the lowest number in the psychotic group. The authors attempt to explain these contradictory findings by stating that many S responses were given by normals who were over-

compliant and wanted to be accepted. In these cases, therefore, the opposition and independence is concealed. Thetford, Molish, and Beck (47) found significantly fewer Secondary S, but not Primary S, in children in the latency period when compared with children in the prepubescent and adolescent periods. They consider these findings as support for the view that S is related to self-will. Ford (15) also found that S responses increase gradually with age. In a careful study of subjects producing S responses, Vernon (48) found no preponderance of contra-suggestibility. However, the author states that these subjects might be considered more emotional and erratic than those not producing S. Rosen (42) studied the records of psychiatric patients and found significantly fewer Primary S in the case of patients diagnosed as psychopaths than in non-psychopaths. Rosen points out that Boss's study,¹ in which a close relationship between S and degree of antisocial psychopathy is reported, was contaminated by the use of the Rorschach as one of the instruments to rate the degree of psychopathy. Along the same line, Schachtel (44) found a significantly greater

¹Boss's article was not read for the purpose of this study.

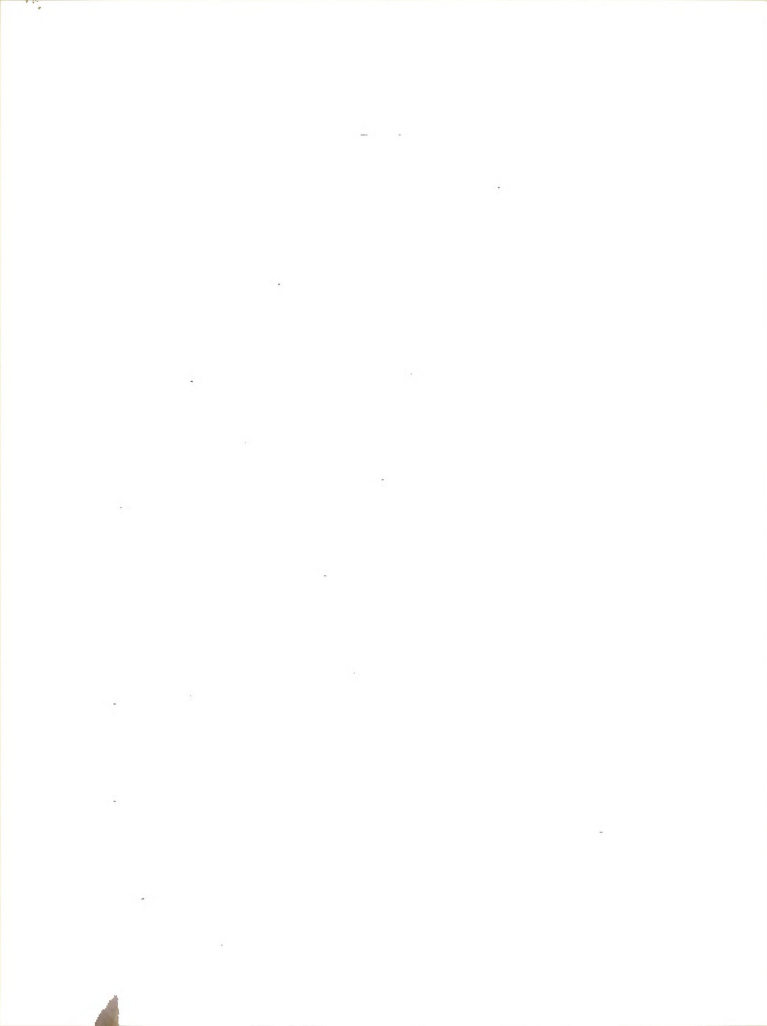
number of S responses among a group of 500 non-delinquent adolescents than among a group of 500 delinquent adolescents.

Pattie (36; p.164) was unable to find any support for the theory "that white space responses and color responses are indicators of outwardly directed hostility" in the Rorschach responses in a group of subjects in which hostility was hypnotically induced.

There have been three major studies which have dealt exclusively with the white space response (3, 14, 23, 24). In Fonda's study (14) the standard group Rorschach and Harrower's parallel series were administered to a group of 150 college students. The subjects were also required to complete two questionnaires; the Guilford-Martin Personnel Inventory and Inventory of Factors GAMIN. Both questionnaires require an answer of "yes", "no" or "?". The author assumed that a generalized opposition tendency would be reflected in a consistent tendency to use the "?" answer. In this case the subject is either unable (indecisive) or unwilling (contrary) to give a definite answer. Fonda also was interested in the relation between S response and Factors I (inferiority feelings), Co (cooperativeness) and Ag

(agreeableness). While none of the correlations between these factors and S were significant the author found a highly significant relation between S and a tendency to give "?" answers on the questionnaires. Fonda offers these findings as partial confirmation of the opposition hypothesis to the extent that the tendency to give "?" answers reflects indecisiveness or contrariness.

In a study by Ingram (23, 24) it was assumed that the various ways in which S is expressed reflects some kind of aggressive behavior. It was hypothesized that subjects with S in their Rorschach protocols should respond with more aggressive behavior in a frustrating situation than subjects without S. Eight college students who produced two or more Primary S and eight students who produced no S were subjected to two frustrating situations, intellectual and interpersonal. The first was a problem-solving situation and the second an interview situation. After taking the Rorschach, performing with the puzzle and completing a questionnaire the students were told that there was not much hope for them to make the grade. Five-point scales of aggression (assertion, initiative, persistence, resistance and hostility) and the assumed opposites (cooperation and rapport) were constructed.



A group of experts rated the subjects on these scales on the basis of the Rorschach protocols. The subjects were also rated on the scales in each of the frustrating situations by independent judges. The results were somewhat inconsistent. In the interview situation the S group was rated as exhibiting more hostility but less resistance, more initiative and more cooperation and rapport. The author concludes that the S group was more aggressive in an interactive, participatory manner. In the puzzle situation the S group exhibited less hostility and less assertion. The Rorschach judges were in close agreement in rating the subjects on the various scales. However, there was little agreement between the ratings of the Rorschach judges and the ratings of subjects in the two frustrating situations.

In a study by Bandura (3), teachers ratings were the independent criteria used to test the validity of the oppositional interpretation of the white space response. Fifty-nine high school students were rated by several teachers on 5 point scales of negativism, assertiveness, inadequacy feelings and self-distrust. The scales were made up of simple descriptions of observable behavior. The subjects were administered the Rorschach individually

and were required to view each card for a four minute period. Primary S responses were given a weight of 1 and Secondary S responses a weight of .5. Bandura subjected the following hypotheses to test:

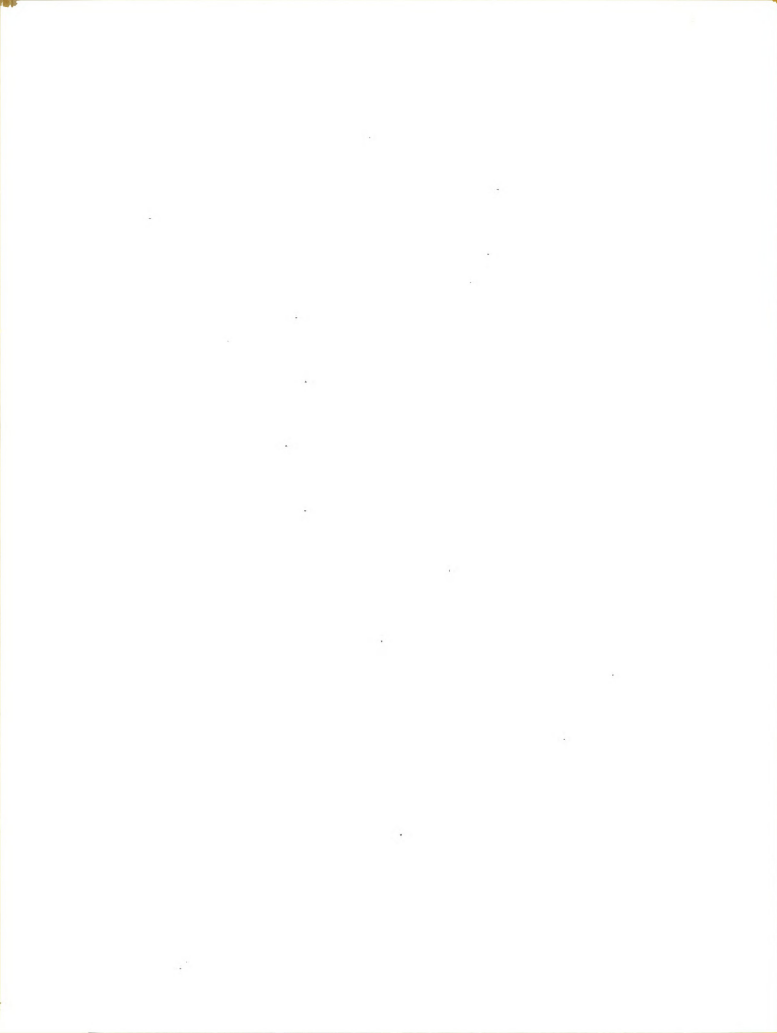
- a. A significant and positive relationship exists between the number of S responses and ratings of "negativism" in extratensive subjects.
- b. A significant and positive relationship exists between the number of S responses and ratings of "inadequacy" in introversive subjects.
- c. There is no systematic relationship between ratings of "inadequacy" and the number of S responses in extratensive subjects and, similarly, there is no systematic relationship between ratings of "negativism" and the number of S responses in introversive subjects.
(3; pps. 17, 18)

The author correlated the number of S with the averages of the ratings on each of the four behavioral scales for each subject. No significant differences existed between the two types of Experience Balance and the correlations with the rating scales. When the data for the extratensive and introversive subjects were combined, the author found a small but significant correlation of $r = .35$ between number of S responses and ratings on the

negativism scale. Bandura concludes that his results offer partial corroboration of the "oppositional tendency" hypothesis. He suggests that the inference that inadequacy and self-distrust feelings are reflected in the S response should be discontinued. He also questions the usefulness of the experience type classification in the interpretation of the S response.

Bandura (4) was also interested in the relation of white space to perceptual processes. Using the Necker Cube, he found a positive relation between S and the rate of alternation of visual perspective. Since he also found a high correlation between rate of alternation on the Necker Cube and Rubin's vase-face reversal, he assumed that the Necker Cube offered a measure of the tendency to reverse figure and ground. However, this is not the case. Once the subject is informed of the vase and face aspects of the card, the alternating effect becomes involuntary. Bandura, therefore, only demonstrated that the Necker Cube and Rubin's vase-face reversal were both adequate instruments for the investigation of the rate of alternation of perspective.

It can be seen that investigations into the meaning of the white space response have resulted in a number



of inconsistencies and contradictions. This variability can, in part, be explained on the basis of the limitations of the studies. Some of these investigations involved as few as four subjects. Some used no control group for comparison purposes. Others, in attempting to validate theory, failed to show cognizance of the fact that a variety of specific types of behavior would be predicted according to theory. Still others failed to discriminate between Primary and Secondary S or combined them in an arbitrary fashion.

For the most part, studies concerned with the white space response have produced negative results as far as confirmation of theory is concerned. A few studies have concluded that the results offered partial corroboration of the theory but in general it appears that there has been no adequate substantiation of the Rorschach hypotheses relating to the white space response.

The White Space Response and Intellectual Opposition

Investigations directed toward the validation of the white space response have, to date, dealt primarily with overt emotional aggression or hostility. Such an approach has stemmed from Rorschach's original interpretation concerning the white space response.

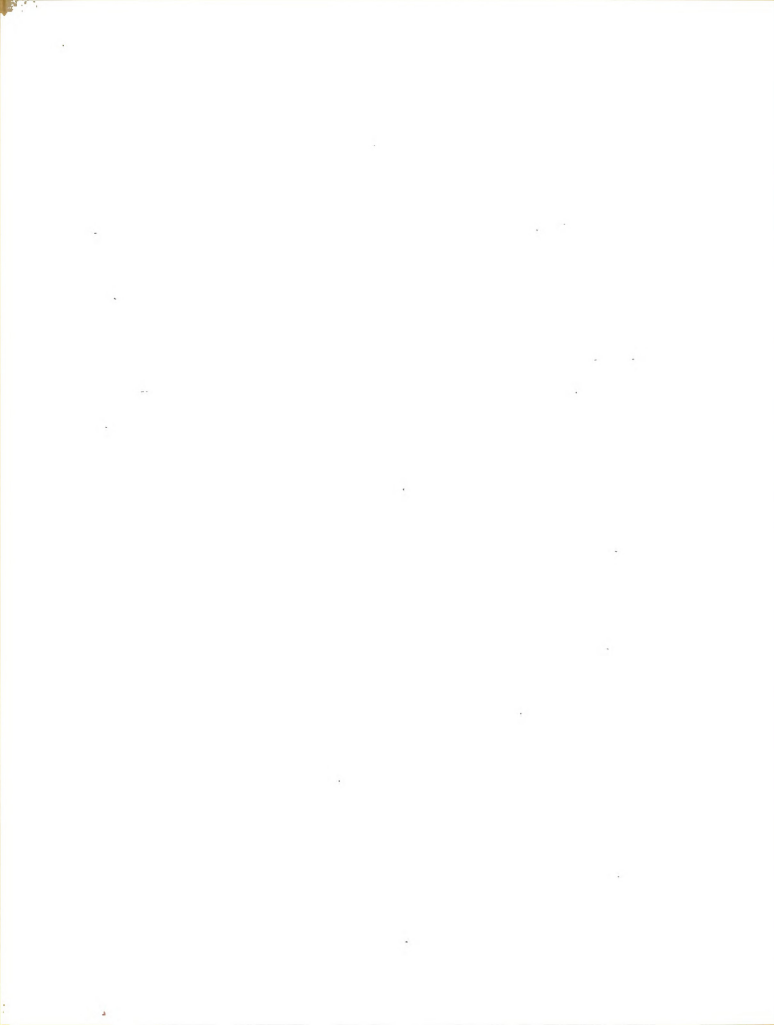
In contrast to Rorschach's formulation, Klopfer and Kelly suggest that "purely emotional aggression is more likely to be represented by a predominance of CF over FC and FM over M responses." (25; p. 266) This hypothesis is further expanded in a more recent publication (26). Klopfer, et. al. hypothesize that S reflects an intellectual type of opposition involving competition and self-assertiveness.

The interpretation of intellectual opposition is further elaborated on the basis of the type of Experience Balance associated with S. When associated with an extratensive Experience Balance it is hypothesized that S implies opposition directed outward toward the environment. This opposition may be expressed in the form of argumentativeness and self-assertion. When S is associated with an introversive Experience Balance it is believed that opposition is directed toward the self. The person expects too much of himself. It might be said that the discrepancy between his level of aspiration and his ability is too great. As a consequence, the individual feels inadequate and self-critical. The authors believe that these feelings of inadequacy differ "... from the vague, diffuse kind of inadequacy which is

more likely to be represented by K and k responses than by S" (26; p. 310) in that they are consciously recognized. Finally, if S is associated with an ambiequal Experience Balance it is believed to indicate ambivalence and doubt.

The term "opposition", as it is used by Klopfer, et. al., is not descriptive of one particular type of behavior. Rather, as indicated above, the term encompasses a number of comparatively unique types of behavior.

The distinction between emotional and intellectual opposition is not clearcut. It is difficult to conceive of any type of opposition as devoid of emotional components. Rather, intellectual opposition might be viewed as a type of behavior in which the threat to the ego, and consequently the emotional accompaniments, are minimized. Severe frustration or threat to the ego is likely to stimulate some type of global, emotion-laden reaction in most people. Intellectual opposition, on the other hand, may find expression in situations in which the ego is not subjected to severe threat. Thus an individual may be able to identify with expressions of aggression in others and not be able to express that aggression himself. Or he may be able to express his opposition in situations in which the repercussions of his behavior are not threatening to him.



Given such a situation, it would be expected that individuals who perceived S in the Rorschach would react in a consistent and exaggerated manner following the formulation outlined above. That is, one individual may react with expressions of aggression such as argumentativeness, blaming others, sarcasm, self-assertiveness, etc. Another may consistently reflect his feelings of inadequacy by blaming himself for extenuating circumstances, being apologetic, etc. A third may express his ambivalence and doubt by passive reactions in which blame is avoided, no solution offered, etc.

For the purpose of validating the meaning of the white space response, the particular formulation of S as intellectual opposition, made by Klopfer, et. al., was selected because it was the most recent formulation and lent itself to definitive predictions.

The White Space Response
and Reversal of Figure and Ground

Piotrowski (38) states that Rorschach based his method on a number of observations regarding perception, particularly visual perception. In fact, his method is termed "a diagnostic test based on perception" or "the form interpretation test" (41). Not the least of these

observations is the fact that perception is selective in nature. That is, it involves psychological as well as anatomical and physiological aspects of the perceiver. According to Piotrowski, the basic assumption of Rorschach's method is that there is a close correspondence between an individual's percepts and the manner in which he deals with his environment.

If this basic assumption is accepted, it may then be asked how opposition trends might be reflected in the perception of white space. It is generally assumed that an individual who utilizes the white space, at least the Primary S, is reversing the "figure" and "ground" (5, 6, 9, 25, 26, 33, 40). That is, the individual uses the white or non-inked area as a stimulus for a percept while the inked area serves as a background. The oppositional quality of this type of percept is said to lie in the fact that it represents an unusual approach in the sense that the instructions which direct attention to the blot are ignored and the white background (the "opposite") is employed in the development of the percept (25, 26, 40, 48).

If S reflects a consistent manner in which an individual deals with his environment, it must also

reflect a consistent mode of perceiving that environment. Therefore, it must be demonstrated that the perceptual process involved in the utilization of S is not unique to the Rorschach before any interpretive significance can be attributed to it. The perceptual process involved in the perception of S is assumed to be a reversal of figure and ground. If a reversal of figure and ground is associated with the use of white space in the Rorschach, it may be expected that individuals who use the S response, in contrast to those who do not, would also perceive more reversals in a pure figure-ground experiment. Such a hypothesis has been suggested by Rapaport (40) and Dalla Volta (11).

The figure-ground phenomenon has been accorded primary significance in Gestalt psychology. In Gestalt theory it is considered a fundamental type of mental structure (27, 50). The phenomenon gained impetus through the pioneer work of Rubin. Since Rubin's original work, the figure-ground structure has been subjected to varied analyses by a number of investigations (16, 17, 18, 19, 21, 27, 28, 29, 49, 50, 51). The majority of these investigations are concerned with the perception of one part of the stimulus as figure as opposed to the other. Summarizing the findings of various

investigations, the following conditions have been found to influence the perception of a figure:

1. Size comparison. (Generally the smaller area will be perceived as figure.)
2. Enclosure or partial enclosure. (Aids figure and is more influential than size of area.)
3. Articulation.
4. Simplicity of shape.
5. Symmetry.
6. Brightness gradient. (The least bright area has a greater tendency to be perceived as figure.)
7. Previous percepts. (In a series of ambiguous figures, the aspect first seen will influence the next.)

In most of these investigations the subjects were trained observers who were directed to attend to certain aspects of the stimulus. The results were based on subjective reports and conclusions were drawn on the basis of a majority of judgments in one direction. Little attention, until recently was paid to the individual differences in the perception of figure and ground.

In relatively recent studies of the figure-ground relationship there has been noted a tendency for some

individuals to invert the figure and ground more readily than others. Lapi (30) found that most subjects require some kind of set, such as to use their imagination, before they could perceive a reversal. However, he was unable to explain the fact that about five percent of his subjects were able to distinguish a white figure on a black ground (the most difficult) more readily than vice-versa. Dalla Volta (11) considers the reversal tendency as a definite symptom and suggests that it may be diagnostic of schizoid personality and certain types of schizophrenia. However, Loeb (32) was unable to find any significant differences in the tendency to reverse figure and ground between a large group of mental patients and a group of normals. He concluded that such a tendency can not be accorded pathological significance. Scharmann (45) attempts to explain this tendency on the basis of flexibility of intellectual and apperceptive processes.

The results of investigations into figure-ground perception suggest that the various types of S response may differ in the degree to which they approximate a pure inversion of figure and ground. The so-called "true reversal of figure and ground" such as the "top"

in Card II of the Rorschach actually contains elements which contribute to the perception of a figure. It is enclosed and smaller than the "ground" which surrounds it. It might then be more accurately termed a figure within a figure. Dalla Volta (11) contends, however, that this type of percept is "phenomenologically" equivalent to an inversion of figure and ground. There is a second type of Primary S which may accurately be described as a reversal of figure and ground. In this case the contour of the inked area serves as a partial but not complete contour for the white space percept. An example would be a profile perceived in the white space adjacent to an inked area. In the case of the Secondary S response there does not exist a percept distinct from that which is usually perceived. The inked area is incorporated as part of the figure. In fact, it is often the most dominant part of the figure, rather than the ground. The Secondary S response approximates an inversion of figure and ground only by the fact that part of the usual ground is incorporated in the percept. The Secondary S response, therefore, appears to be a distinctly different type of percept.

Hypotheses

On the basis of the above discussion the following hypotheses may be made:

- I. The perception of white space on the Rorschach test is related to a tendency to reverse figure and ground.
 - A. Individuals who perceive Primary S in the Rorschach will produce a significantly greater number of reversals in a figure-ground task than will individuals who do not perceive S in the Rorschach.
- II. The perception of Primary S in the Rorschach is qualitatively different from the perception of Secondary S.
 - A. Individuals who perceive Primary S in the Rorschach will produce a significantly greater number of reversals in a figure-ground task than will individuals who produce only Secondary S.
- III. The use of white space in the Rorschach test reflects an intellectual opposition.
 - A. Individuals who perceive Primary S in the Rorschach will express a significantly greater amount of opposition in a situation

involving a minimum of threat than will individuals who do not perceive S in the Rorschach.

- B. The kind of opposition expressed in a situation involving a minimum of threat is related to the type of Experience Balance in the Rorschach.

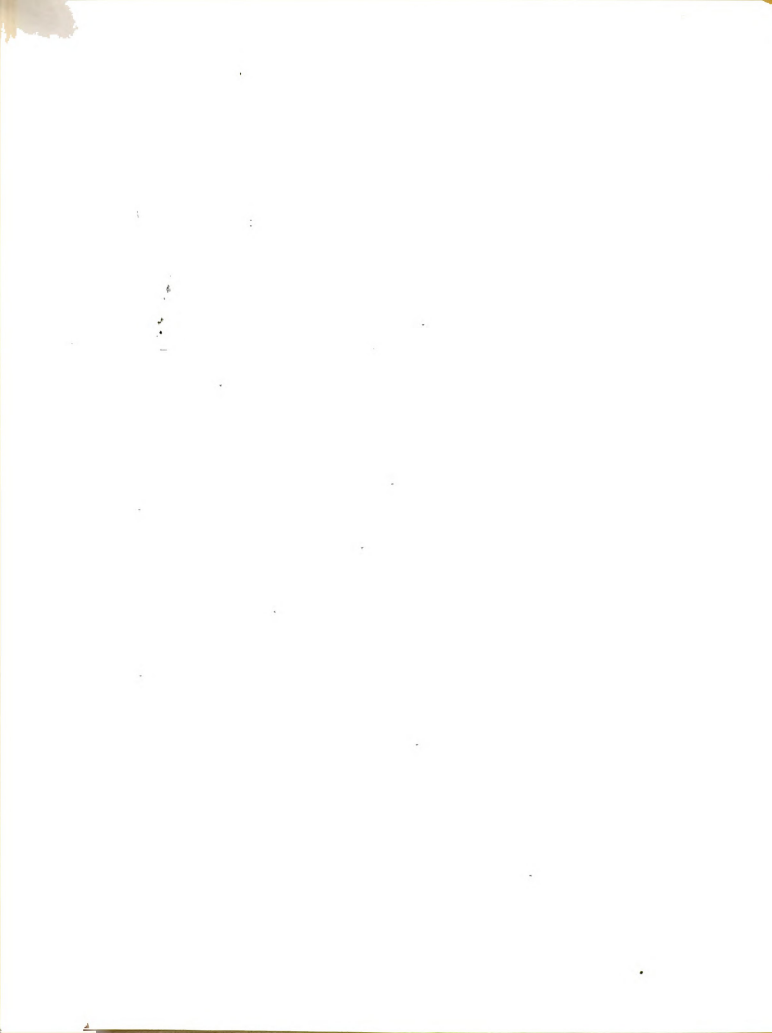


Methodology

Subjects

There were three groups of subjects: Twenty individuals who produced Primary S in the Rorschach, twenty who produced Secondary S but no Primary S and twenty who produced no S. All of the subjects were male veteran, open ward patients at the Veterans Administration Hospital, Battle Creek, Michigan. At this hospital, the Rorschach is commonly administered to those patients referred to the Psychology Department as part of the test battery. The testing is usually done by a clinical psychology trainee under the supervision of a staff psychologist. The subjects for this study were chosen on the basis of the presence or absence of S in their Rorschach protocols. The two S groups were chosen on the basis of having produced S responses on these previously administered Rorschachs. The Primary S and No S groups were matched individually for intelligence and age. Each individual who perceived Primary S in the Rorschach was matched with an individual who perceived no S and did not differ by more than 10 points on the Wechsler-Bellevue Scale and more than 10 years in age. The t tests (for related measures) indicated that there was no significant inter-group

.



variability between the Primary S and No S groups with respect to age and intelligence. The Secondary S group was randomly selected on the basis of having shown Secondary S but no Primary S on the Rorschach. The tests indicated that the Secondary S group did not differ significantly from either the Primary S or No S groups with respect to age and intelligence. A comparison of the groups on the basis of these factors is presented in Table 1. The Primary S and No S groups were also matched individually on the basis of the final diagnosis made by a board of psychiatrists. The distribution of diagnoses among the three groups is presented in Table 2.

Materials

1. Gerbrands modification of the Dodge tachistoscope with a grey pre-exposure field.
2. Stop-watch.
3. Standard individual Rorschach test.
4. 16 reversible figure-ground cards.
5. Rosenzweig Picture-Frustration test.

The figure-ground cards are presented in Appendix I. Card 1 was designed to facilitate a set to attend to both black and white aspects of the card. If attention

TABLE 1

Comparison of Groups on Intelligence
(Wechsler-Bellevue) and Age

Groups	N	I.Q.		Age	
		Mean	SD	Mean	SD
Primary S	20	109.8	12.9	34.9	6.8
No S	20	108.9	13.5	33.4	6.4
Secondary S	20	108.4	14.5	35.6	7.9

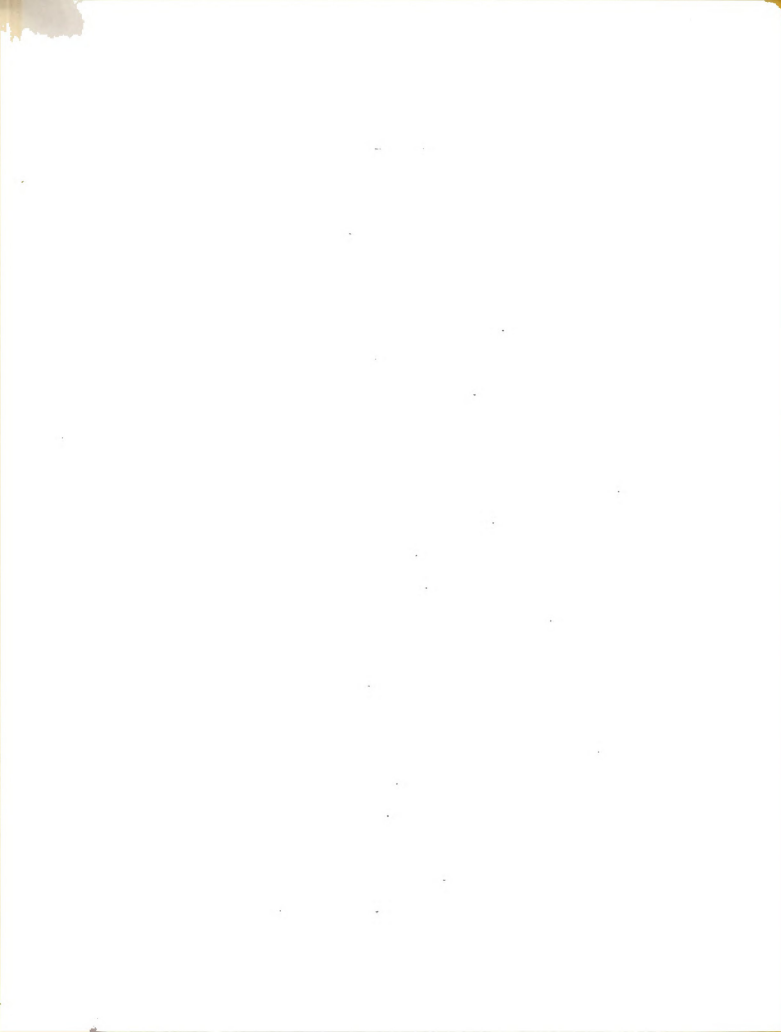
TABLE 2

Diagnostic Characteristics of the Groups

Diagnosis	Group		
	Primary S	No S	Secondary S
Schizophrenia			
Undifferentiated type	9	9	9
Paranoid type	3	3	2
Simple type	2	2	1
Schizo-Affective type			1
Manic-Depressive reaction	1	1	
Chronic Brain Syndrome	2	2	1
Anxiety reaction	3	3	4
Conversion reaction			2
Total subjects	20	20	20

is focused on the center of this card the perspective will often reverse involuntarily. Three "Internal Figures", cards 6, 11 and 16, were designed to approximate the types of percepts which represent Primary S on the Rorschach. The remainder of the cards constitute the 12 reversible figure-ground cards used to test hypotheses I and II. Of these 12 cards, all but two are composed of a centrally located black figure and two approximately identical figures in white, one on each side. Cards 13 and 15 differ in that the white figures are not identical. Card 13 represents an E on the left and a 3 on the right side. Card 15 can only be reversed as a 7 on the right side. Card 2 is the common vase-face figure. Card 5 is a figure used in a study by Dalla Volta (12) and cards 6, 11, 12 are modifications of figures used by Dalla Volta.

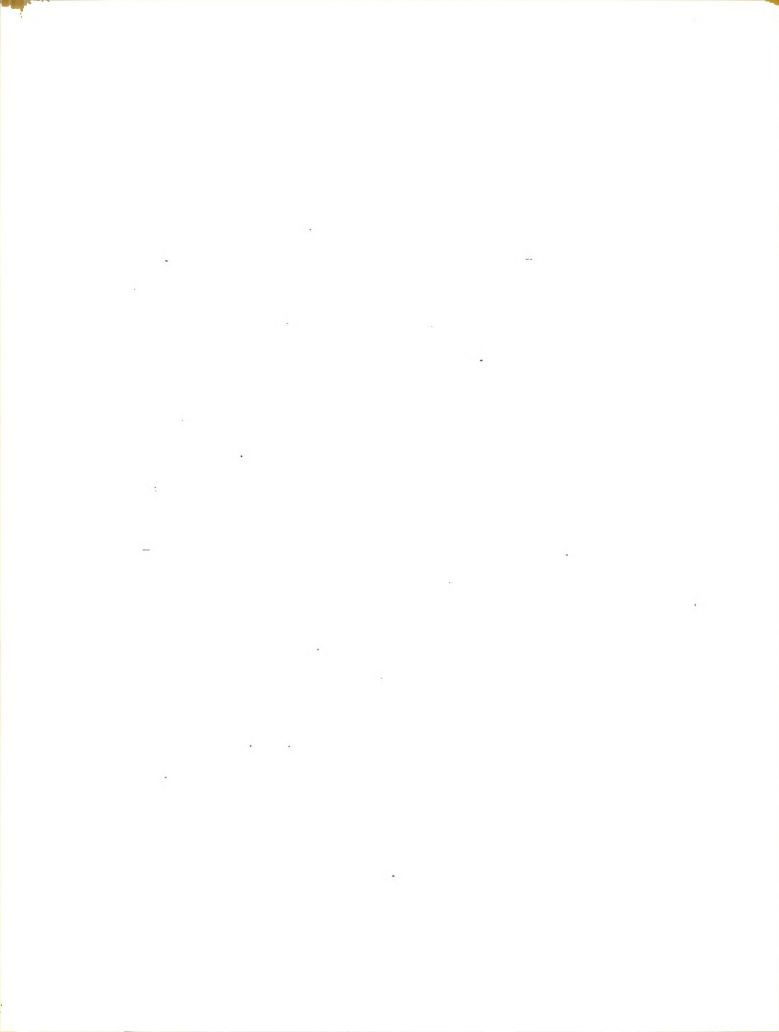
The cards were constructed in the following manner: The central figures were drawn on paper, folded in half, and cut out. This was done to assure as much symmetry as possible. The designs were then traced on black construction paper, cut out again, and mounted on white cards. The cards were then photographed to eliminate any depth effect. Finally, the photographs



were mounted on mounting board of a size and thickness suitable for use in the tachistoscope. The cards were eleven and one-half inches long and nine inches wide. However, when the cards were placed in the tachistoscope only the central portion, seven and one-half inches square, was visible.

The tachistoscope was used in an initial study to determine the range of time involved in the perception of these particular reversible cards. Once the time limit of exposure of one minute was decided upon, the timing mechanism was no longer necessary to the experiment. However, the tachistoscope was still utilized because it prevented the subject from turning the cards and also maximized the differences between the figure-ground task and the Rorschach.

The Rosenzweig Picture-Frustration Study (43) was utilized in this investigation to test the validity of the hypotheses offered by Klopfer et. al. concerning the white space responses as intellectual opposition. The P-F Study is composed of a group of 24 cartoons which are purported to represent some of the most common frustrations of daily living. Of the two captions above each cartoon, one contains the words said by one of the



persons in the cartoon. The other caption is blank and provides a space for the subject to fill in what he believes the other person might say in that particular situation. The subject is encouraged to express the first idea which comes to his mind. Emphasis is placed on speed of response and the avoidance of considered thought before making a response.

It is felt that the P-F Study is particularly suited as a stimulus for the expression of intellectual opposition. In the first place, the test does not represent a severe threat to the individual and consequently is not likely to evoke strong reactions of emotional aggression. In fact, it has been described as a non-ego invoking intellectual task (1). Secondly, the P-F Study is scored in terms which represent, quite directly, the varied types of behavior assumed to be represented by the white space response.

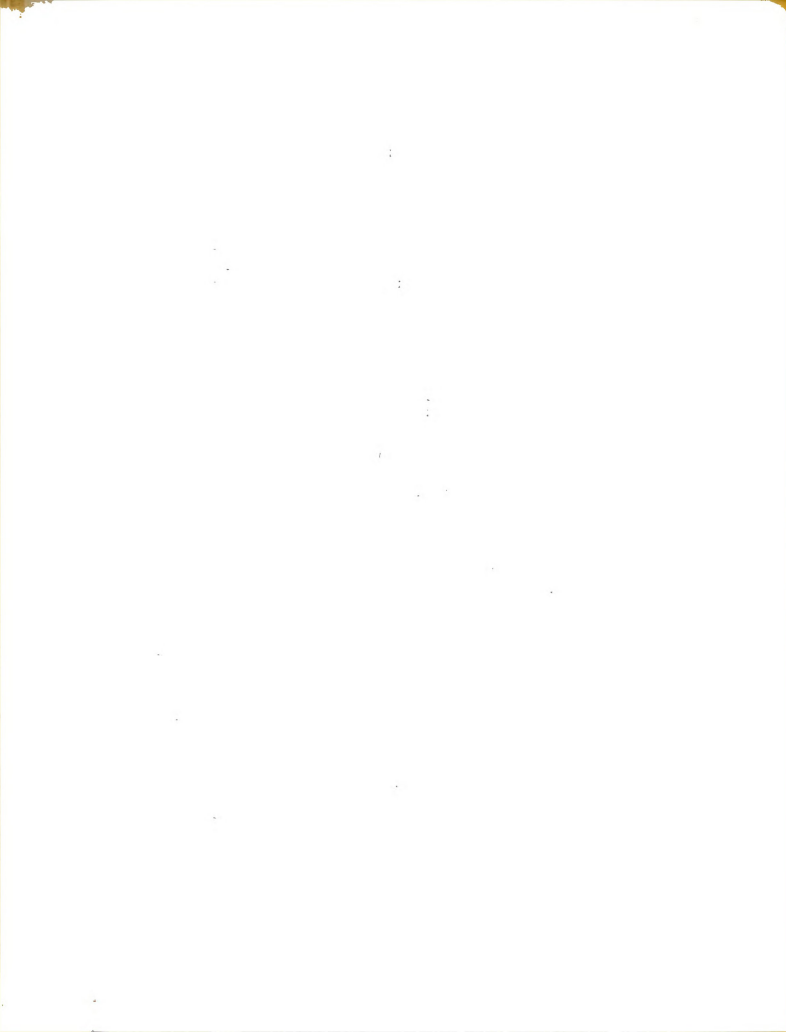
As noted above, the white space response is assumed to represent opposition directed outward, opposition directed toward the self or ambivalence and doubt. Rosenzweig provides a description of the scoring categories of the P-F Study as follows:

"Extrapunitiveness: Aggression is employed overtly and directed toward the personal or impersonal environment in the form of emphasizing the extent of the frustrating situation, blaming an outside agency for the frustration, or placing some other person under obligation to solve the problem in hand.

Intropunitiveness: Aggression is employed overtly, but directed by the subject against himself in the form of a martyr-like acceptance of the frustration as beneficial, acknowledgement of guilt of shame, or an assumption of responsibility for correcting the frustrating situation.

Impunitiveness: Aggression is evaded or avoided in any overt form, and the frustrating situation is described as insignificant, as no one's fault, or as likely to be ameliorated by just waiting or conforming" (43; p. 8)

Further support for the use of this instrument in the present context is given by a study by Holzberg and Posner (22). In this study individuals who scored high on extrapunitiveness also scored high on a measure of assertiveness derived from a modification of the TAT. The subjects were required to choose between two descriptions of the content of a number of TAT cards. These descriptions emphasized assertiveness, argumentativeness, independence, etc. in one choice and the opposite type of behavior in the second choice. Subjects who scored high on intropunitiveness on the P-F Study tended to score low on assertiveness on the TAT



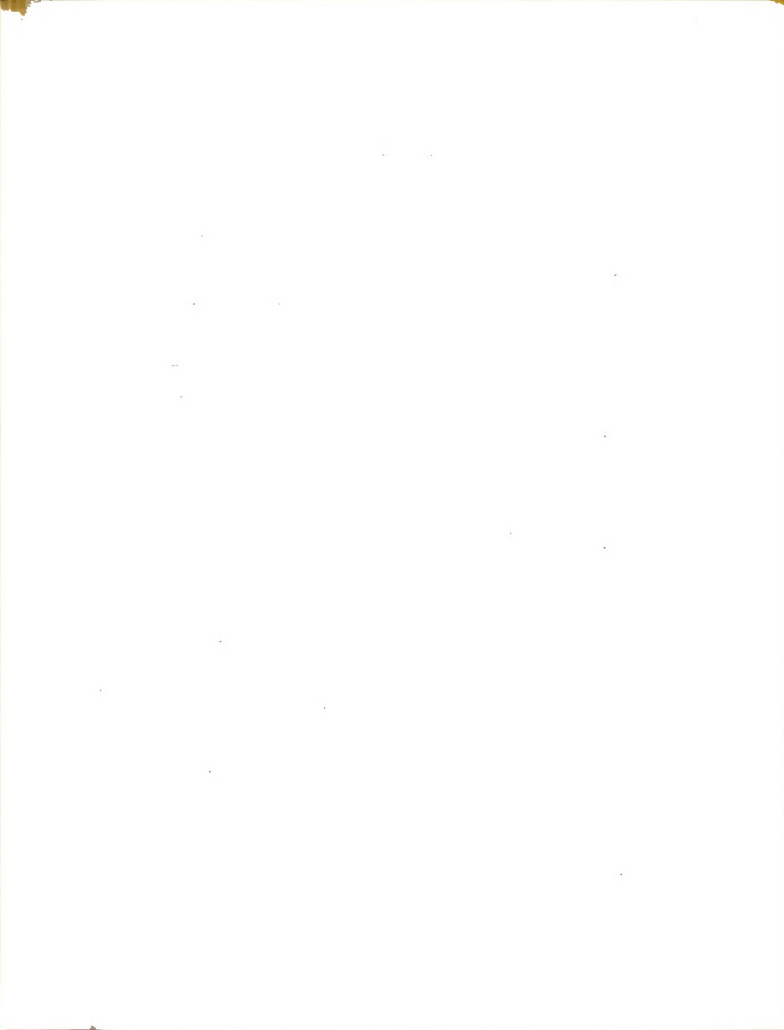
while the extremes on the TAT failed to discriminate those who scored high on impunitiveness on the P-F Study. The scores on the P-F Study failed to correlate with measures of overt aggression, however. The results of the study suggest that the Rosenzweig P-F Study is a measure of verbal, intellectual opposition but not necessarily a measure of overt opposition.

Procedure

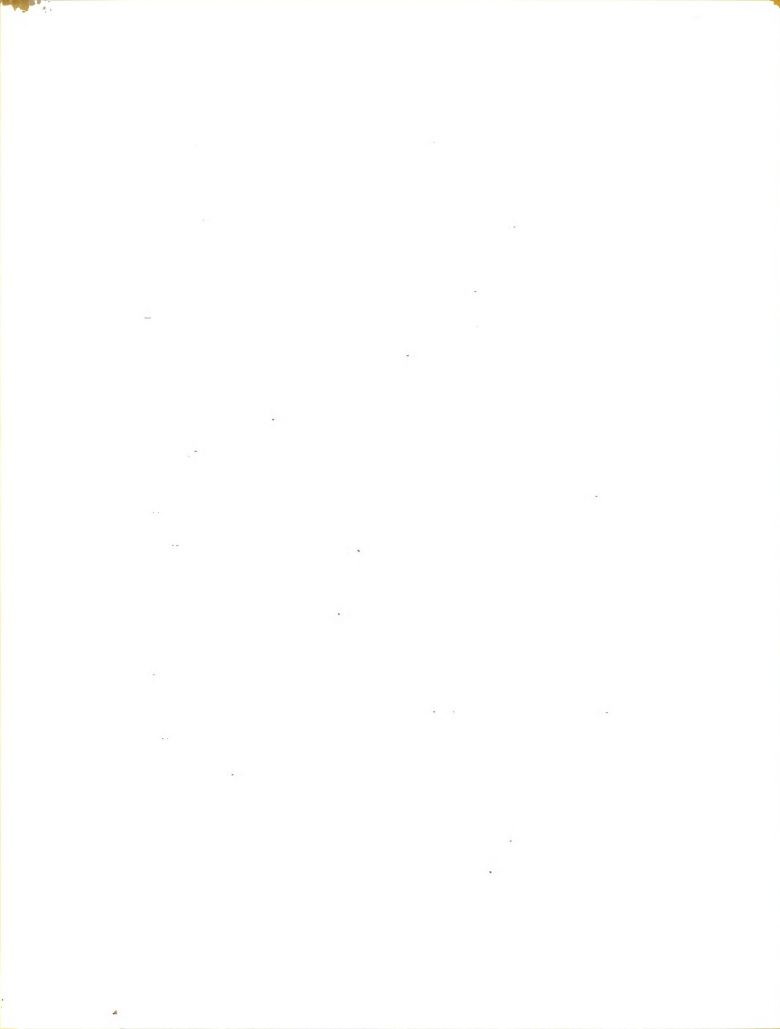
All subjects were tested individually by the author. The task was presented as research being carried out by the Psychology Department in an effort to improve on some of the instruments the department used as well as to devise some new instruments.

Of approximately 80 patients approached in this manner, only 3 refused to cooperate. Two of these refused because they were afraid the testing would upset them and one because he just "wasn't interested."

The entire testing procedure was carried out in the same room and involved one sitting for each subject. It will be recalled that the groups had been tentatively selected on the basis of their production



or lack of production of S on the original administration of the Rorschach. The Rorschach was readministered as a part of the test battery, as a check on the stability of their performance. In order to be included in the S groups, the subject must have produced S in both administrations of the Rorschach. Similarly, to be included in the No S group, the subject must not have produced S in either administration of the Rorschach. Thus, those whose performance was inconsistent were discarded. The second administration of the Rorschach indicated that the tendency to produce or not to produce S was a comparatively stable characteristic. In only a few instances (about 4 or 5) were subjects discarded because their performance was inconsistent. It should be noted that there is some evidence to suggest that examiner variance may influence the production of S on the Rorschach. Berger (8), e.g., found a positive relationship between the production of S by a subject and the production of S on the Rorschach of the examiner. For this reason, the readministrations were all done by one examiner, the author. This was done in the standard manner following Beck (5).



Following the administration of the Rorschach, the Rosenzweig P-F Study was administered. The subject was given a copy of the standard P-F Study Booklet (Appendix B) and the following instructions; a slight modification of the standard instructions:

"In each of the pictures in this leaflet two people are shown talking to each other. The words said by one person are always given. Imagine what the other person in the picture would answer and tell me the very first reply that comes into your mind. Now read the words in the first picture out loud to me and tell me the first reply to come to your mind."

As the subject gave his replies the examiner wrote them down in a separate booklet. Throughout the examination the emphasis was on speed of association. Whenever appropriate, the examiner reminded the subject not to think about his answers but to give the first reply to come to his mind.

The last test to be administered involved the figure-ground cards. The nature and manner of operation of the tachistoscope was first explained in simple terms to the subject. The tachistoscope was placed on a table. The subject was seated on one side and the examiner was

seated out of view on the other side. The following instructions were given:

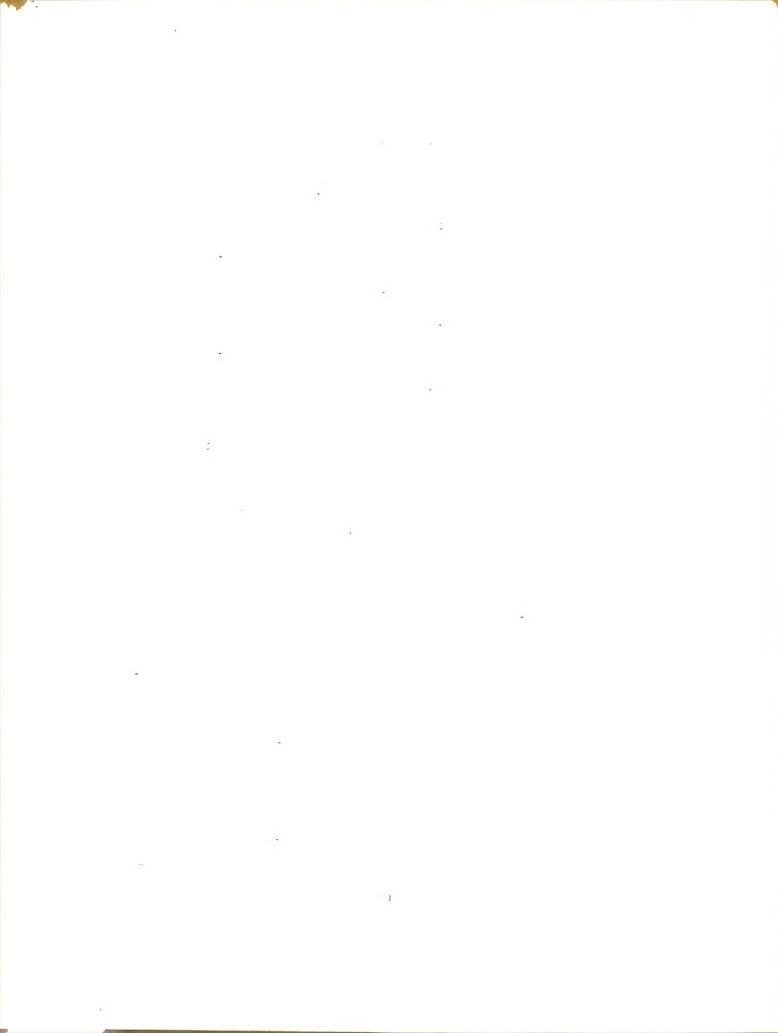
"You will be given a series of cards. I will show them to you one at a time for one minute each. You look at the card and tell me everything you see, as you see it. Try to report as many different things as you can and keep looking at the card until I say stop. Be sure to look at all parts of the card carefully."

After all of the cards had been presented once, they were presented again with the following instructions:

"You did quite well on these but I think you can do even better if you look at all parts of the card, including the white part. Will you look at this one again and tell me if you can see anything else that might be represented there and pay particular attention to the white part."

During the second administration of the cards, attention was called to the white part for the first three cards.

The instructions for the figure-ground task were developed on the basis of a pilot study. In this study it was found that the instructions were not particularly effective in eliciting reversals unless attention was called to the white aspects of the card. As a result, the instructions for the first administration were designed to hold the subjects' attention to the task and



encourage him to look for different percepts. The second administration provides the additional emphasis on the white parts of the card. In the preliminary study it was also found that subjects who were unable to perceive the reversals in one minute were not likely to see them no matter how much time they were allowed.

It was also necessary to develop an order of presentation of the cards. The twelve figure-ground cards were submitted to a group of five judges. The judges were asked to rank the cards in the order of difficulty. The final order of presentation was based on the mean of the judgments for each card.

The figure-ground cards were presented to a group of 12 pilot subjects who had produced S on the Rorschach (range 2 - 21 S). The cards were presented in an order from most to least difficult in this preliminary study. This order was tried in an attempt to develop one indirect measure of the strength of the tendency to produce figure-ground reversals. It was thought that the earlier a subject perceived reversals in a series of descending order of difficulty, the stronger would be his tendency to reverse figure and ground. However, only two of the



subjects were able to perceive any of the reversals and they perceived only a small number. Since this order was too difficult, the reverse order, from least to most difficult, was tried in an attempt to elicit reversals from enough subjects to permit statistical analysis. This order proved to be effective and was adopted as the final order of presentation. The Internal Figures (cards 6, 11, 16) were arbitrarily inserted in those positions.

Results

The statistical techniques utilized in this investigation were primarily what are termed Non-Parametric Methods. These techniques were considered particularly appropriate to this investigation because they do not demand any assumptions concerning the form of the distributions. The techniques used in this study, chi square and the sign test, are two of the best known non-parametric methods. The sign test is particularly applicable in the treatment of matched pairs (34) which was one of the characteristics of this study. Chi square, on the other hand, was appropriate in the analysis of unmatched groups.

Hypothesis I-A predicts that Primary S subjects will produce more figure-ground reversals than will No S subjects. Table 3 compares the Primary S group and the No S group with respect to the perception of reversals on the basis of matched pairs. In the case of 13 pairs, the individual in the Primary S group perceived the most reversals. As can be seen in the table, only 4 members of the No S group perceived more reversals in the figure-ground task than did their match in the Primary S group. An analysis of this data by means of the sign test, in which the ties were disregarded,

TABLE 3

Number of Subjects
in the Primary and No S Groups
whose Reversals Exceed their Match in
the Comparison Group

Primary S greater	No S greater	Matched pairs equal
13	4	3



demonstrated that this difference is significant at the 2.5 percent level of confidence. The results, then, support the hypothesis that there exists a significant and positive relation between the perception of Primary S and a tendency to reverse figure and ground.

The number of S produced on the Rorschach did not prove to be significant with respect to the tendency to reverse figure and ground. An individual who produced one Primary S on the Rorschach was just as likely to perceive reversals as was the individual who produced two or three or more Primary S. (Table 4a)

Hypothesis II-A predicts that Primary S subjects will produce more figure-ground reversals than will Secondary S subjects. Table 4 compares the Primary S group and Secondary S group on the basis of the perception of figure-ground reversals. An analysis of this data was made by means of the chi square test. The obtained chi square of 2.500 fell short of the chi square of 2.706 which is required for significance at the 5 percent level of confidence when predicting in one direction. As this analysis indicates, the difference between the Primary and Secondary S groups in the

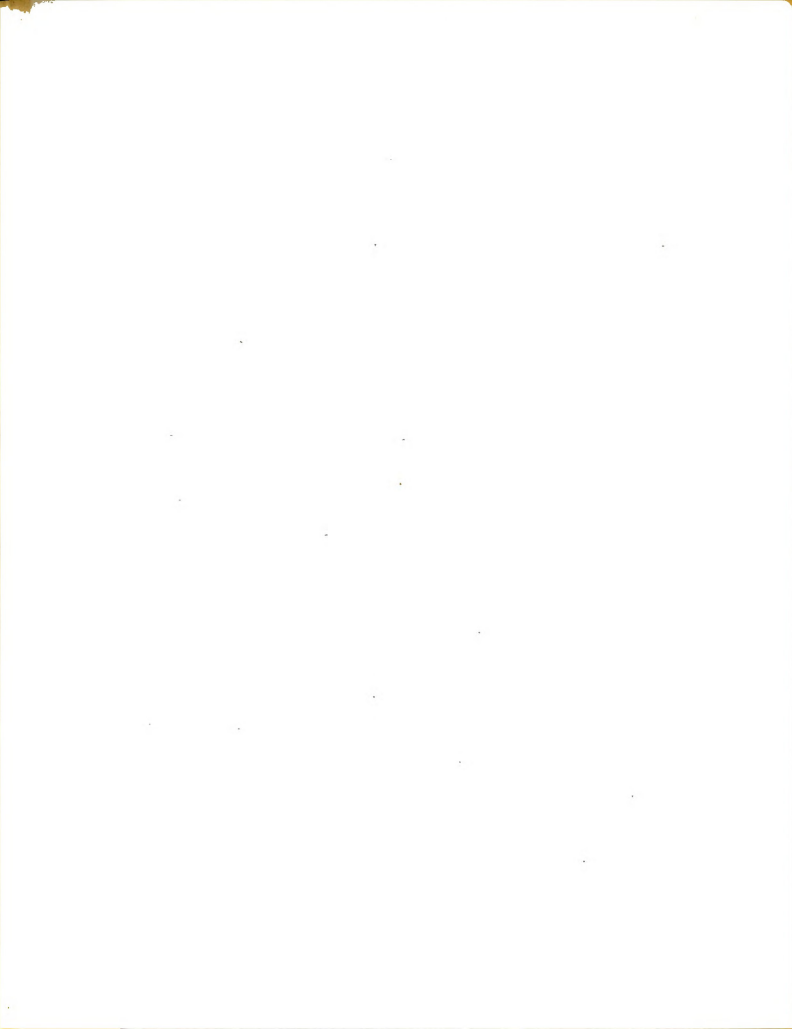


TABLE 4

Number of Subjects
in Primary and Secondary S Groups
Perceiving Figure-Ground Reversals

	Subjects seeing reversals	Subjects seeing no reversals
Primary S	13	7
Secondary S	7	13

TABLE 4a

Comparison of Number of Primary S
and the Perception of Figure-Ground Reversals

Number of Primary S	Reversals	
	Above Mdn	Below Mdn
2 or more	6	6
1	3	5



perception of figure-ground reversals does not meet the usual statistical criteria for significance. However, there is a definite trend in favor of a closer relation between the tendency to reverse figure and ground and Primary S.

Table 5 shows the number of individuals in the Secondary S and No S groups who perceived reversals on the figure-ground task. An analysis by means of chi square reveals no significant differences between these two groups. The chi square in this analysis was .1202.

A comparison was made (Table 6) between the Primary and No S groups on the perception of reversals on the Internal Figure Cards (cards 6,11,16,Appendix A). These figures parallel the type of white space figure usually defined as Primary S in the Rorschach. An analysis by means of the sign test demonstrated that the Primary S and No S groups did not differ significantly in the number of Internal Figures perceived.

It has been demonstrated that there is a tendency for S to be associated with the total number of responses produced in the Rorschach (3,14). This trend was also noted in the present investigation. The mean number of responses for the Primary S group was 30.05, for the Secondary group 28.30, and for the No S group 26.35. However, these differences were not statistically significant.

No clear-cut results were obtained from the second administration of the figure-ground task nor from the measure of

TABLE 5

Number of Subjects
in Secondary and No S Groups
Perceiving Figure-Ground Reversals

	Subjects seeing reversals	Subjects seeing no reversals
Secondary S group	7	13
No S group	6	14

TABLE 6

Number of Subjects
in each Group whose Perception of Internal Figures
Exceed that of their Match in the Comparison Group

Primary S greater	No S greater	Matched pairs equal
11	5	4



latency time of the reversal of figure and ground. These results were contaminated by a number of different factors to be discussed below.

The test of hypothesis III-A involved a comparison of peak scores on the Rosenzweig P-F Study between the Primary S and No S subjects. A high score in one category would indicate that a subject responded in a relatively consistent manner throughout the test. The peak score is simply the highest of the three scores (extrapunitiveness, intro-punitiveness and impunitiveness) obtained by a subject. The hypothesis demanded that the Primary S subjects produce higher peak scores on the P-F Study. An analysis by means of the sign test (13) failed to demonstrate that the peak scores produced by the Primary S group were consistently higher than those produced by the No S group. The same results obtained when the number of Primary S produced by a subject was considered. Subjects who produced two or more Primary S in the Rorschach did not obtain consistently higher peak scores on the P-F Study than did subjects who produced no S in the Rorschach. Although the differences were not statistically significant, high scores occurred more frequently in the No S group. (Table 7a)

Table 7 compares the frequency with which individuals in each group scored higher on extrapunitiveness, intro-punitiveness and impunitiveness than did their matched pair. An analysis made by means of the sign test on the basis of pairs

TABLE 7

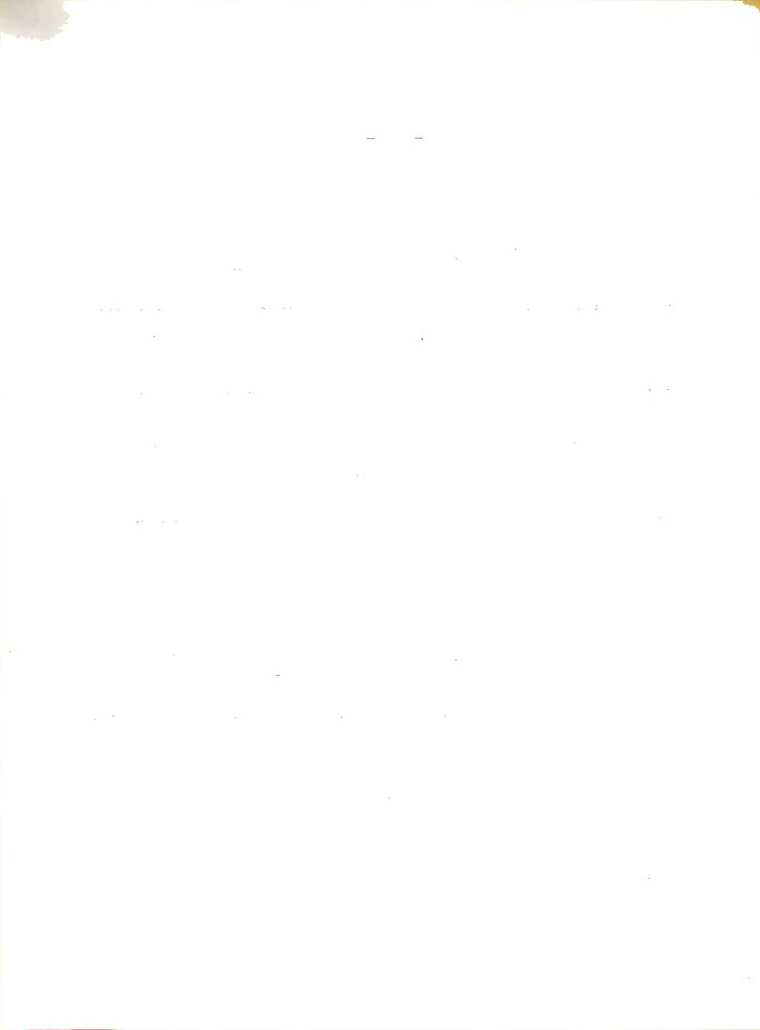
Comparison of Matched Pairs
in Terms of Highest Scores
on the Major Scoring Categories of the P-F Study

	Primary S higher	No S higher	Matched pairs equal
Extrapunitiveness	10	10	0
Intropunitiveness	9	10	1
Impunitiveness	12	5	3

TABLE 7a

Comparison of Individuals
with Two or More Primary S and their Matched Pairs
in Terms of High Scores on the P-F Study

Primary S higher	No S higher
3	9



failed to reveal any significant differences between the groups with respect to peak scores on the separate scoring categories. (Individual scores - Appendix C)

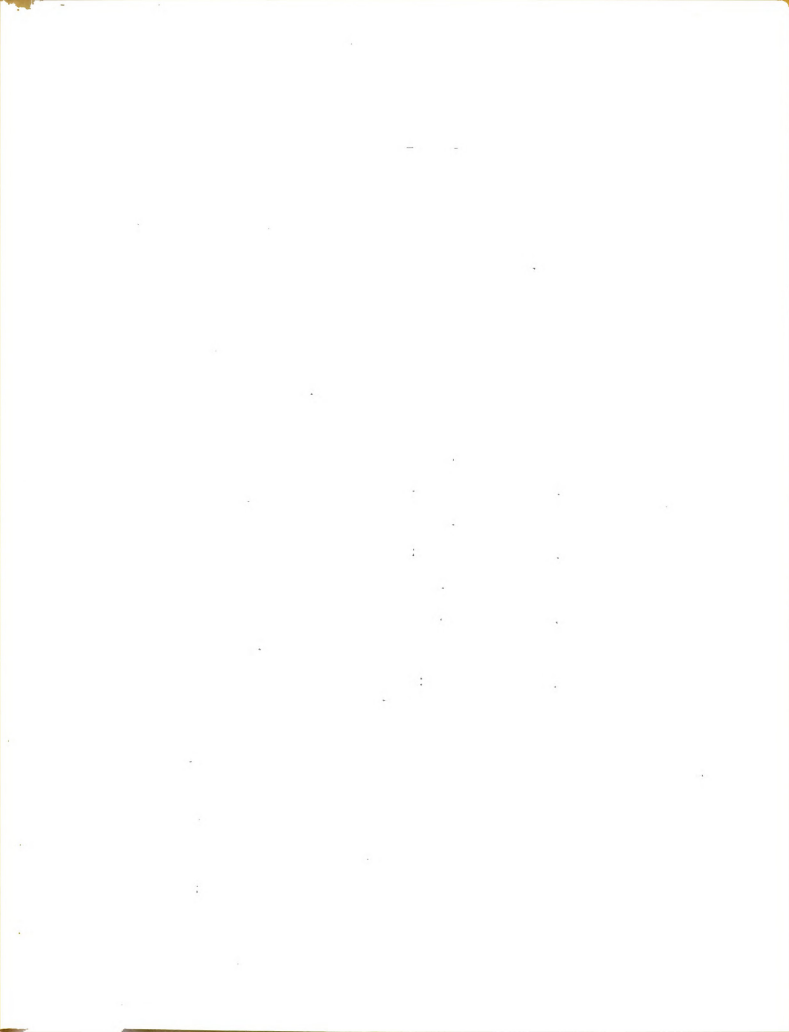
As a test of hypothesis III-B an analysis was made of the relationship between the type of "Experience Balance" on the Rorschach and the kind of opposition as expressed in the Rosenzweig P-F Study.

The type of "Experience Balance" was defined by the following criteria:

1. Extratensive: Sum of color (C) two or more greater than movement (M).
2. Introversive: Movement (M) two or more greater than sum of color (C).
3. Ambiequal: Both M and C greater than two and the difference between them not more than one.
4. Constricted: When both M and C are two or less.

Those records in which both M and C were two or less (Constricted) were not considered in the analysis.

Support of the hypothesis derived from the theoretical discussion above would require that the peak score on the Rosenzweig P-F Study correspond with the "Experience Balance" in the following manner:



1. Individuals with an extra-tensive Experience Balance will attain the highest score on the Rosenzweig P-F Study in the extrapunitive category.
2. Individuals with an intro-versive Experience Balance will attain the highest score on the Rosenzweig P-F Study in the intropunitive category.
3. Individuals with an ambiequal Experience Balance will attain the highest score on the Rosenzweig P-F Study in the impunitive category.

The data was analyzed for the Primary S group.

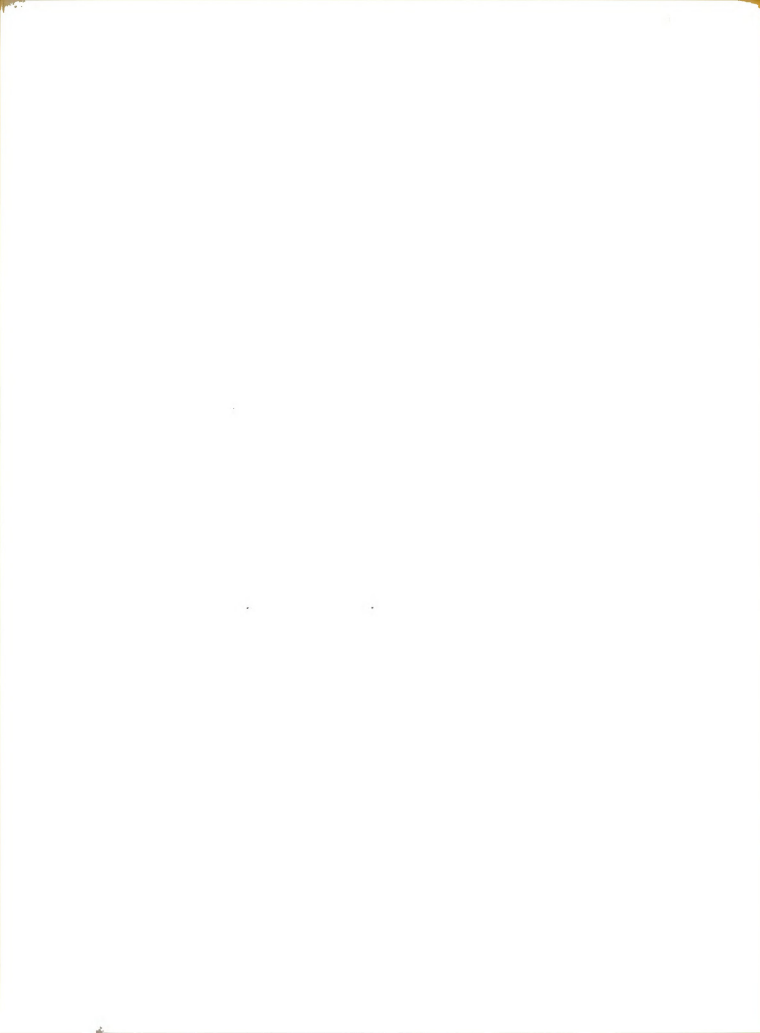
Of this group, 6 subjects obtained constricted Experience Balances and were not included in the analysis. Table 8 demonstrates that the peak scores in the P-F Study failed to agree with the predicted Experience Balance on more than a chance basis.

The results of the investigation, then, fail to support the hypothesis that the perception of S in the Rorschach is related to a tendency to express an intellectual type of opposition, at least insofar as intellectual opposition is measured by the P-F Study. Furthermore, they fail to support the hypothesis that the kind of opposition is related to the Experience Balance.

TABLE 8

Comparison of Obtained and Expected Degree
of Agreement Between Peak Scores in the P-F Study
and Experience Balance in the Rorschach

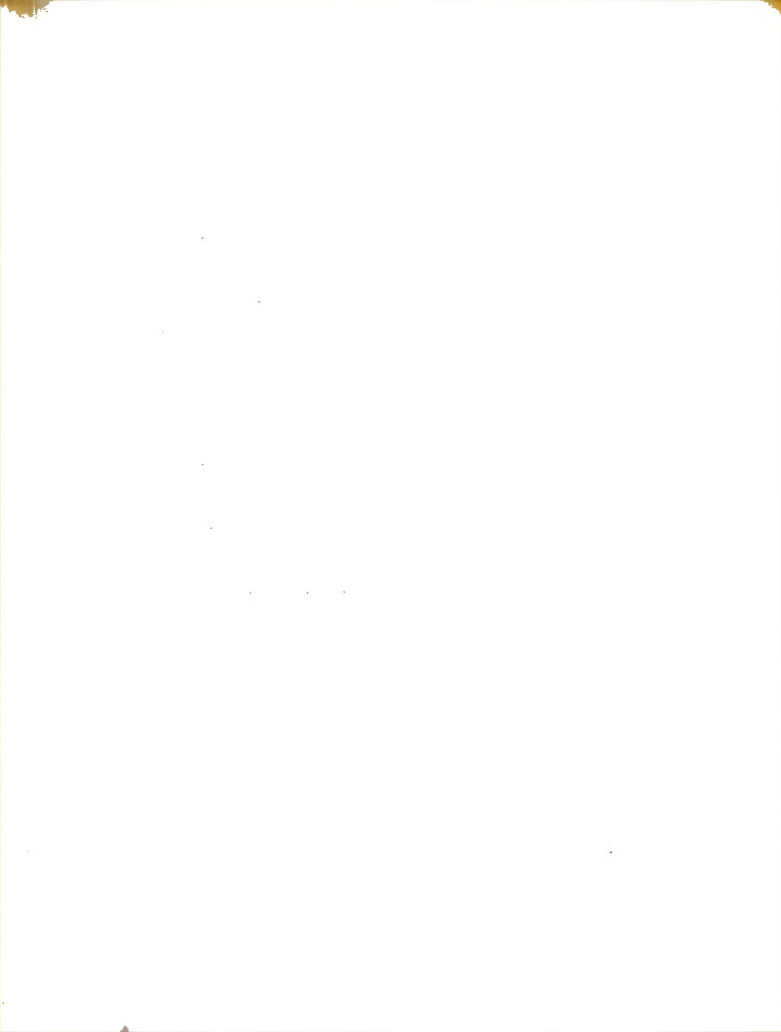
	Agree	Disagree	N
Obtained	4	10	14
Expected	4.6	9.4	



Discussion of Results

Authors who have concerned themselves with the interpretation of the Rorschach white space response appear to have accepted three assumptions as fact. The first assumption is that the white space response reflects some kind of oppositional tendency. The second assumption is that the mode of the expression of opposition depends on the particular type of Experience Balance with which the white space is associated, and the third is that the perception of S represents, in perceptual terms, a reversal of figure and ground.

The present investigation was undertaken in an effort to test the validity of these assumptions. Specifically, it was designed to evaluate a recent interpretation made by Klopfer, et. al. (26). This interpretation (A) suggests that the perception of white space in the Rorschach reflects an intellectual type of opposition (in contrast to the traditional formulation of S as an emotional expression of opposition), (B) relates the mode of expression of opposition to the Experience Balance, and (C) incorporates the assumption that Primary S constitutes a reversal of figure and ground.



Based on these considerations, the following general hypotheses were formulated:

- I. The perception of white space on the Rorschach test is related to a tendency to reverse figure and ground.
- II. The perception of Primary S in the Rorschach is qualitatively different from the perception of Secondary S.
- III. The use of white space in the Rorschach test reflects an intellectual opposition - its mode of expression depending upon the Experience Balance.

The results of this investigation failed to support the hypothesis that the use of white space reflects an intellectual opposition, at least insofar as intellectual opposition is measured by the Rosenzweig P-F Study. Although there were no significant differences between groups, the No S group tended, contrary to the hypothesis, to have higher peak scores in the P-F Study than did the S group. Scores for the members of the S group, correspondingly, tended to be more diversified among the three scoring categories of the P-F Study and their peaks less extreme.

The secondary aspect of this hypothesis held that the mode of expression of opposition reflected by the



white space response is related to the type of Experience Balance in the Rorschach. Three categories of response in the P-F Study, which were utilized as measures of three quite different aspects of intellectual opposition agreed only on a chance basis with the categories which had been predicted on the basis of the type of Experience Balance. The results of this investigation, then, agree with the others concerned primarily with the white space response (3, 14) in failing to offer any support for the practice of basing the interpretation of the white space response on a particular type of Experience Balance.

The fact that experimental investigations have consistently failed to demonstrate a relationship between a particular type of Experience Balance and response dimensions even minimally associated with white space suggests the wisdom of a reevaluation of the interpretation of S. Assuming that a psychological correlate of the white space response exists, perhaps it is more logical to consider white space response as a reflection of a unitary or at least consistent personality dimension. The possible nature of such a dimension is tentatively suggested below.

The results of the investigation support the first general hypothesis. That is, the perception of white space on the Rorschach test is related to a tendency to reverse figure and ground. However, this relationship holds only in the case of Primary S. The Secondary S group demonstrated no more facility in perceiving figure-ground reversals than did the No S group. An analysis in terms of the perception of figure-ground reversals revealed no statistically significant differences between the Primary and Secondary S groups. However, there was a definite trend in the direction of more reversals perceived by the Primary S group. This trend may be the result of chance differences between the groups or it may indicate that the two types of S are qualitatively different, at least in terms of the perceptual processes involved. The results of the present study, then, fail to support the second general hypothesis.

During the preliminary studies with the figure-ground cards, a wide range of individual difference in the ability to perceive reversals was noted. This ability was not noticeably facilitated by such verbal instructions as "look at all parts of the card carefully" and "report

as many different things as you can." Some individuals readily perceived the reversals on the basis of a minimum of instructions. A few could not see them until the reversals were practically pointed out to them. However, when the subject's attention was called to the white part of the card, during the second administration of the cards, all but two of the sixty subjects were able to perceive some and usually most of the reversals quite readily. There were no group differences with respect to the tendency to reverse figure and ground in the second administration of the test.

The latency time involved in the perception of reversals did not prove to be a satisfactory measure of the tendency to reverse figure and ground. In the first administration many subjects failed to perceive any reversals. In the second administration the time of response was contaminated by the set adopted by the subject. If a subject perceived reversals on the first trial, he might perceive the same reversals very readily on the second trail or he might attempt to identify different reversals from those perceived on the first trial and consequently increase the latency time.

After the second administration, many of the subjects made comments to the effect that they thought they were only supposed to look at the black and thus did not see the reversals on the first trial. While such statements suggest that the subjects adopted a set to see black, in reality, in many cases, it appears that this set was to see the central figure regardless of color. Subjects who perceived the reversals, in most instances, also perceived the Internal Figures. However, subjects who were unable to perceive the reversals were just as likely to perceive the Internal Figures. If a subject had adopted a set to see only black, he would not be expected to perceive the Internal Figures which are white.

These facts are more easily explained if the color differences are disregarded. It is suggested that subjects who were unable to perceive the reversals had adopted a set to perceive the centrally located, surrounded figure. Two factors contributed to the ease with which the Internal Figures were perceived. In the first place, these cards followed, temporally, groups of cards in which the figure was consistently located in the

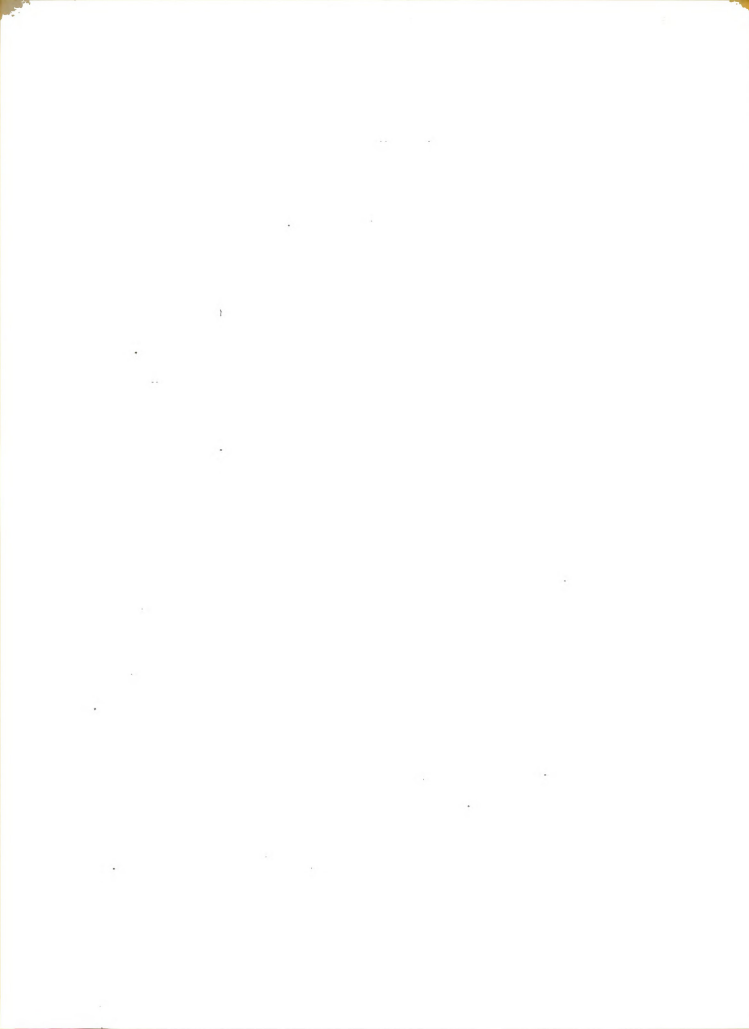
center of the card. Secondly, the Internal Figures were spatially located in a position which had consistently been perceived as a figure. A third possible factor lies in the construction of the Internal Figure cards themselves. The surrounding figures in these cards were considerably more simple and realistic than the reversal cards. Consequently, attention was held to these figures for only a short time. Since the subjects were required to view the card for a full minute, their attention subsequently fixated on the center of the cards - the Internal Figure.

It is suggested, then, that subjects who failed to perceive the reversals did so because they rigidly adhered to one particular set to see the black figure or central figure. These findings suggest a dimension of flexibility related to the perception of figure-ground reversals. Four patterns were discernible along this dimension. One group of subjects only reported the black figures. A second group was able to see the black and the white Internal Figures. A third group was able to perceive reversals but only after the first Internal Figure card was presented. A fourth group

perceived reversals easily and was able to shift readily from Internal Figure to reversal, etc.

Piotrowski asserts that the basic assumption underlying Rorschach interpretation is that there is a close correspondence between an individual's percepts and the manner in which he deals with his environment. On the basis of this assumption, the white space response has traditionally been interpreted as indicative of opposition, negativism, contrariness, etc.

The assumption is that the individual is adopting an unusual approach in perceiving the white space (the "opposite") rather than the common colored aspects of the card. However, on the basis of the demonstrated relationship between the perception of S and the perception of figure-ground reversals and also the suggested relationship between flexibility and figure-ground reversals, an alternative hypothesis seems equally possible. That is, the white space response reflects flexibility in perception. This flexibility extends to other aspects of the personality. Instead of being oppositional, an individual who perceives white space in the Rorschach is capable of seeing a number of aspects to a situation.



His approach to problems is varied. He does not rigidly adhere to one line of thinking and is capable of adapting to a new situation. The basic concept of flexibility may be modified and elaborated in this manner on the basis of the total record without being dependent upon any one particular aspect of the record, such as the Experience Balance. In this manner, specific interpretations are likely to be more consistent and, therefore, more testable.



Implications for Further Research

An alternative hypothesis to the traditional interpretation of the Rorschach white space response as indicative of opposition was made. It was suggested that flexibility may be the psychological correlate of S. Such an interpretation is deserving of investigation. One approach to this problem would be to compare S and No S groups on various measures of flexibility. If flexibility can be contrasted with rigidity, one such measure could be composed of some of the more satisfactory measures of rigidity which have already been developed. Adequate measures of flexibility may provide the means for determining the relationship between Primary S and Secondary S. If S is found to be related to flexibility it may be that the types of S can be distinguished on the basis of degree of flexibility. Some support for the flexibility hypothesis exists in the fact that Scharmann (45) noted a greater degree of flexibility, at least in the intellectual sphere, among those members of a group of brain injured subjects who produced S on the Rorschach.

With further support for this hypothesis it may be found that S has important implications for diagnosis



and prognosis. In the case of brain injuries, for example, it may be that the white space response is related to the severity of the injury. That is, it may be that brain injured individuals who demonstrate a capacity of flexibility are less incapacitated than those who have little such capacity. White space may also prove to be a positive factor in considering a patient for psychotherapy.

The figure-ground cards utilized in this study provide an instrument for further research in the area of figure-ground phenomena. Most of the research in this area is subject to criticism on the basis of methodology. With the addition of these figure-ground cards a more adequate analysis of this area is possible.

Summary and Conclusions

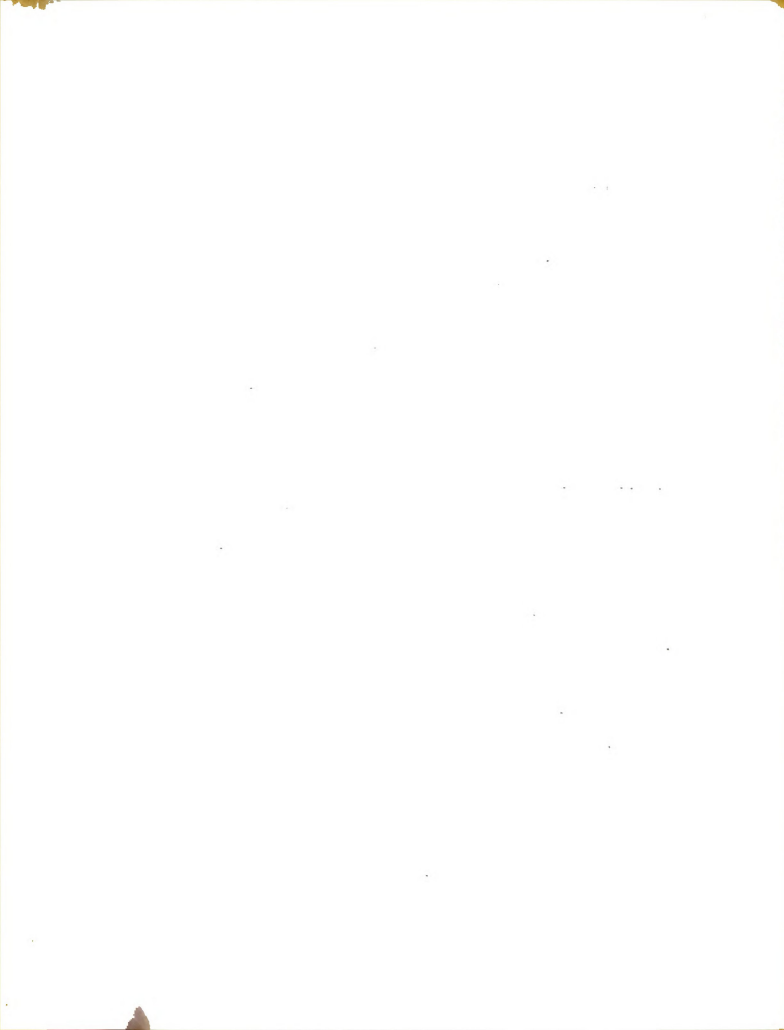
This study was designed to test the validity of two major hypotheses concerning the Rorschach white space response.

One hypothesis was based on a common assumption that the white space represents a reversal of figure and ground and therefore has face validity on the basis of its being the "opposite" of the usual percept.

The second major hypothesis stemmed from a recent interpretation of the white space response made by Klopfer, et. al. (26). This interpretation placed the opposition associated with S by most authors in the intellectual sphere as opposed to purely emotional aggression.

The following hypotheses were submitted to experimental test:

- I. The perception of white space on the Rorschach test is related to a tendency to reverse figure and ground.
 - A. Individuals who perceive Primary S in the Rorschach will produce a significantly greater number of reversals in a figure-ground task than will individuals who do not perceive S in the Rorschach.



II. The perception of Primary S in the Rorschach is qualitatively different from the perception of Secondary S.

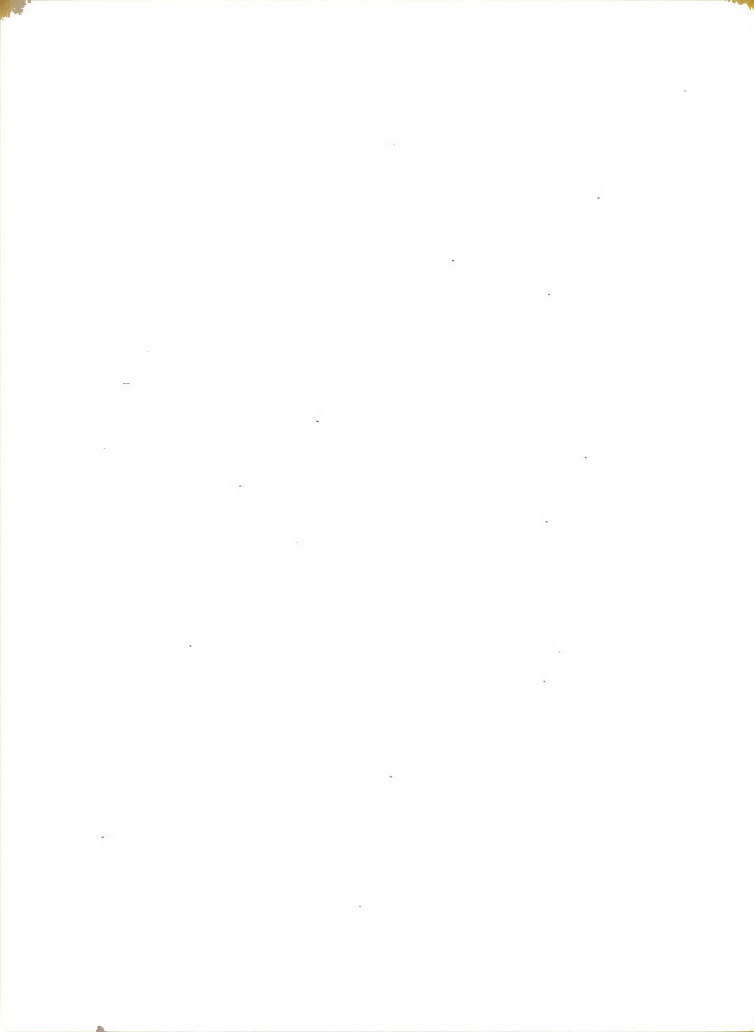
A. Individuals who perceive Primary S in the Rorschach will produce a significantly greater number of reversals in a figure-ground task than will individuals who produce only Secondary S.

III. The use of white space in the Rorschach test reflects an intellectual opposition.

A. Individuals who perceive Primary S in the Rorschach will express a significantly greater amount of opposition in a situation involving a minimum of threat than will individuals who do not perceive S on the Rorschach.

B. The kind of opposition expressed in a situation involving a minimum of threat is related to the type of Experience Balance in the Rorschach.

Sixty open ward patients of a neuropsychiatric hospital were used as subjects for this investigation. One group was composed of 20 individuals who produced Primary S in the Rorschach. The second group of 20



produced no S in the Rorschach and were matched individually with the Primary S group on the basis of age, intelligence and diagnosis. The third group of 20 was composed of individuals who produced Secondary but no Primary S in the Rorschach.

The Rosenzweig Picture-Frustration Study, on the basis of certain characteristics of the test as well as the results of research with it, was used as a measure of intellectual opposition. A series of cards on the order of Rubin's vase-face reversal of figure and ground were used to measure the tendency to reverse figure and ground. The subjects were tested individually with the Rorschach, P-F Study and figure-ground cards, in that order.

The results of the investigation failed to support the hypothesis that S reflects an intellectual type of opposition as measured by the P-F Study. However, the hypothesis that S is related to a tendency to reverse figure and ground was supported. The results failed to demonstrate that Primary S and Secondary S are qualitatively different although there was found a trend in the direction of a closer relation between the tendency to reverse figure and ground and Primary S.



In discussing the results of the investigation the basic interpretation of the white space was questioned and an alternative hypothesis suggested. That is, the perception of white space is indicative of flexibility. The need for further research in this area was pointed out and one possible means of approach was outlined. Some of the possible implications of such an investigation were also mentioned.

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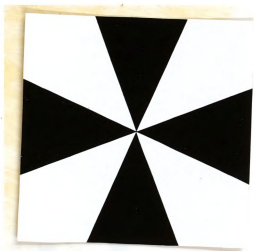
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APPENDICES

Appendix A

Photographs of Figure-Ground Cards



Card 1



Card 2



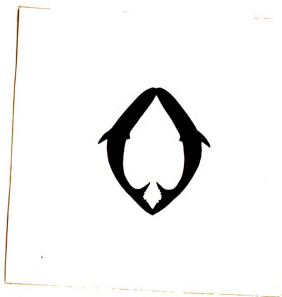
Card 3



Card 4



Card 5



Card 6



Card 7



Card 8

Card 9

Card 10

Card 11

Card 12

Card 13

Card 14

Card 15

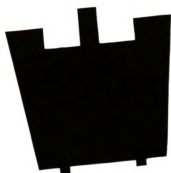
Card 16



Card 13



Card 14



Card 15



Card 16

Appendix B

Rosenzweig Picture-Frustration Study Booklet

Name _____

Age _____ Birthday _____

Address _____

Education _____

Institution _____

Present date _____

ROSENZWEIG P-F STUDY

(Revised Form for Adults)

Instructions

In each of the pictures in this leaflet two people are shown talking to each other. The words said by one person are always given. Imagine what the other person in the picture would answer and ^{tell me} ~~write in the blank box~~ the very first reply that comes into your mind. ~~Write~~ ^{as fast as you can}. Now read the words in the first picture out loud to me and tell me the first reply to come to your mind.

Copyright, 1948, by Saul Rosenzweig

I'm very sorry
we splashed
your clothing
just now
though we tried
hard to avoid
the puddle.



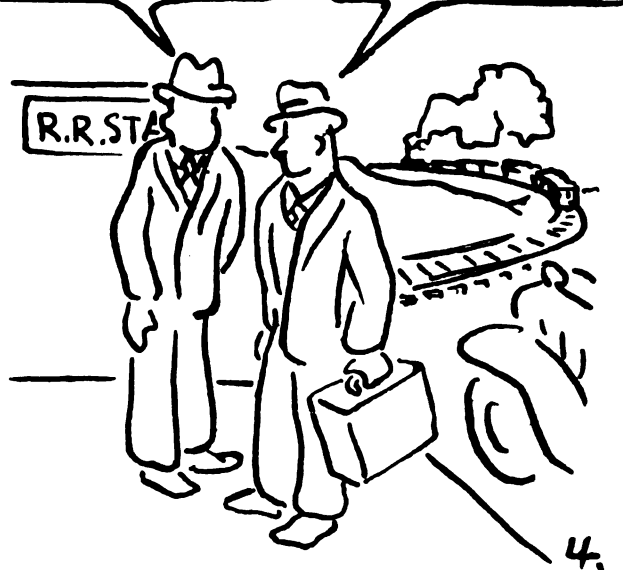
How awful!
That was my
mother's
favorite vase
you just
broke.



You can't
see
a thing.



It's a shame
my car had to
break down and
make you miss
your train.



This is the third time I've had to bring back this brand new watch which I bought only a week ago-- it always stops as soon as I get home.



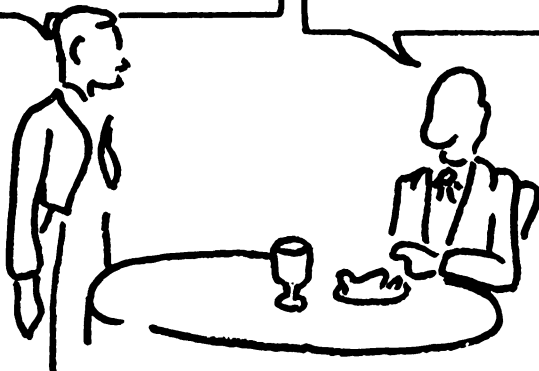
5.

The library rules permit you to take only two books at a time.



6.

Aren't you being a little too fussy?

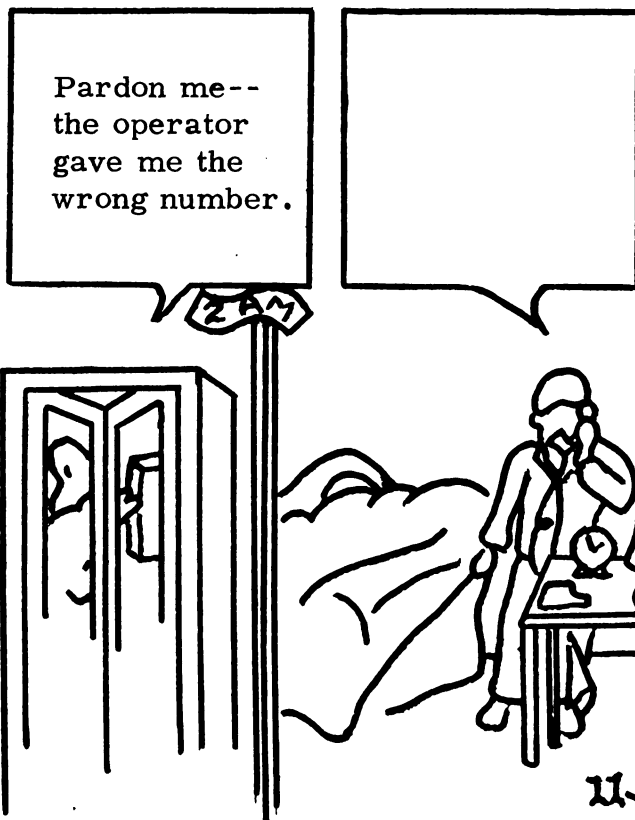
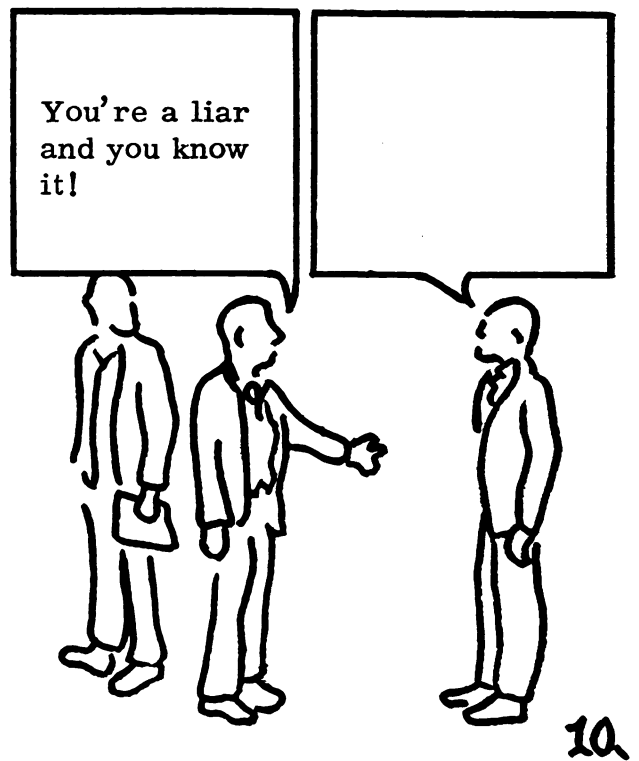


7.

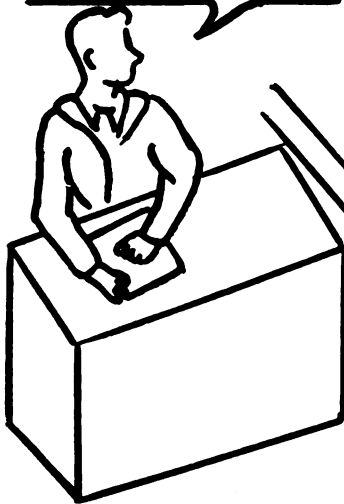
Your girl friend invited me to the dance tonight-- she said you weren't going.



8.



I can't see you
this morning
even though we
made the
arrangement
yesterday.



13.

She should
have been here
10 minutes
ago.



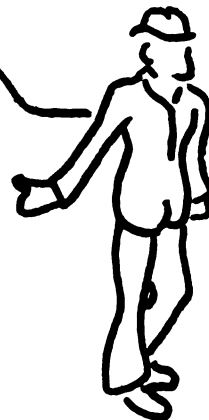
14.

Too bad,
partner. We'd
have won after
your swell
playing if I
hadn't made
that stupid
mistake.



15.

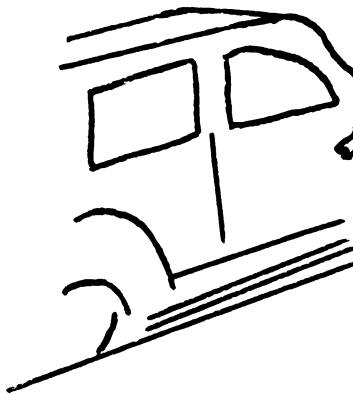
You had no
right to try
and pass me.



16.

This is a fine
time to have
lost the keys!

I'm sorry--
we just sold
the last one.



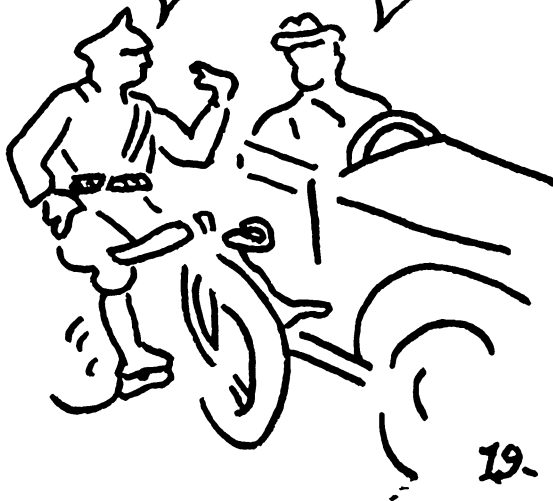
17.



18.

Where do you
think you're
going, passing
that schoolhouse
at 60 miles an
hour!

I wonder why
she didn't
invite us?



19.



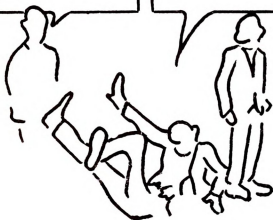
20.

The woman about whom you are saying those mean things was in an accident yesterday and is now in the hospital.



21.

Did you hurt yourself?



22.

It's Auntie. She wants us to wait awhile until she can get here to give us her blessing again.



23.

Here's your newspaper I borrowed-- I'm sorry the baby tore it.



24.

Appendix C

Percentage Scores of Primary S and No S Groups
in the Major Scoring Categories
of the Rosenzweig Picture-Frustration Study

Subjects	Extra-punitive		Intro-punitive		Im-punitive	
	Primary S	No S	Primary S	No S	Primary S	No S
1	38	54	29	29	33	17
2	27	54	40	25	33	21
3	38	27	33	44	29	29
4	52	75	27	17	21	8
5	46	33	25	29	29	38
6	42	15	25	52	33	33
7	58	31	25	46	17	23
8	46	56	25	15	29	29
9	48	29	27	29	25	42
10	27	46	35	31	38	23
11	44	52	35	33	21	15
12	38	35	33	52	29	13
13	33	71	34	12	33	17
14	63	31	21	38	16	31
15	50	38	33	37	17	25
16	29	74	42	13	29	13
17	48	63	33	29	19	8
18	33	73	29	13	38	14
19	25	21	31	37	44	42
20	50	46	27	33	23	21

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