PERCEPTUAL RIGIDITY: AN EXPERIMENT WITH THE RORSCHACH TEST AND THE AUTOKINETIC EFFECT

By

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CHAPTER I

INTRODUCTION

The purpose of this study is to examine the relationship between two measures of rigidity: (1) a measure which may be derived from the perceptual responses to the Rorschach test, and (2) a measure based on the perceptual responses to the autokinetic phenomenon.

The definition and measurement of "rigidity" have been handled in a number of different ways as evidenced by a review of the literature (3, 6, 11). One definition is that it is a reduction and/or loss of perceptions and ideas as a result of the organism's attempt to control overwhelming feelings of anxiety. Rigidity, therefore, can be measured by a person's responses to various perceptual tasks. Fisher (7) has developed such a measure for the Rorschach test. This measure will be used in this study.

It is a technique whereby the perceptual responses to the Rorschach test can be described along a continuum of rigidity such that the lower the score the less the manifestation of the trait. This in turn can be related to the autokinetic effect when it is measured by the movement traced by the observer in reporting his autokinetic experience. A limited expression, i.e., low score, of perceived movement reflects a greater degree of rigidity than an extensive perception of movement or high score.

The specific hypotheses proposed to examine the relationship between these specific expressions of rigidity are:

1. Those subjects who express a greater amount of rigidity on the Rorschach test will perceive a correspondingly smaller amount of autokinetic movement.
2. Those subjects who express a greater amount of rigidity on the Rorschach test will show a correspondingly greater reaction time between the presentation of the autokinetic stimulus and the perception of movement.
3. Those subjects who express a greater amount of autokinetic movement will have a correspondingly shorter reaction time between the perception of the autokinetic stimulus and their perception of movement.

A review of the literature provides limited evidence which supports the conceptualization and feasibility, although not the validity, of these hypotheses. And, although the contents of the investigations are somewhat related to one another, three main areas or purposes may be highlighted as they pertain to this study. Thus, the first type of study provides evidence that there is consistency in an individual's behavior such that we expect a rigid subject to respond to similar situations in rigid ways. The second kind of investigation provides evidence that the Rorschach test is a suitable measure of rigidity; and the third area of experimentation supplies evidence that the autokinetic phenomenon is a sensitive effect such that it can be expected to reflect differences and variations in rigidity.

Klein and Schlesinger (10) conducted a study to determine the consistency of behavior by investigating the difference in the ability of two groups to perceive apparent movement. One group was characterized as being stimulus bound and the second as completely opposite in nature, i.e., flexible. Both groups were selected on the basis of the individuals' Rorschach protocols; the analysis of the data indicated that both groups exhibited consistent behavior. The constricted stimulus bound members were unable to perceive apparent movement over as wide a range of frequencies or stimulus configurations as were the members of the flexible group.

Johnson and Stern (9) also oriented their research directly at the concept: ". . . a contribution to the validation of one of the basic tenets of such theories of personality, namely, that a person will respond in a relatively constant manner to different perceptual situations." The procedure they followed was to select a rigid and a labile group on the basis of Fisher's rigidity scale for the Rorschach test. They then compared the two groups' responses to intermittent photic stimulation. The conclusion reached was: ". . . individuals who respond in a perceptually rigid manner in one task will respond in a like manner to a different perceptual situation. The one factor that both have in common is that they are ambiguous perceptual situations."

The development of Fisher's technique for measuring rigidity on the Rorschach test follows from clinical usage and various investigations by others in the field (5, 8, 12, 14). The scale includes a number of ratios and "signs" which have been weighted to provide an overall score reflecting the degree of rigidity expressed. Since his publication of the scale it has been used in a variety of investigations which demonstrate its acceptance as a valid instrument. DeVos (4), for example, used it in his study of the acculturation of the Japanese American. In the study he selected various levels of acculturation and found that he was able to distinguish these on the basis of their Fisher rigidity scores.

Becker (2) also used Fisher's rigidity scoring method in a study directed at showing the relationship between the perception of distortion from aniseikonic lenses and the degree of rigidity manifested by normal male and female subjects. He hypothesized that individuals who take a longer time to see the effect and/or report less distortion will reveal a greater amount of rigidity. The hypothesis was supported by the results of the investigation.

The sensitivity of the autokinetic phenomenon to various personality characteristics has been established by many investigations. Young and Gaier (18), for example, conducted an investigation concerned with the autokinetic phenomenon as a means of predicting the difference between suggestible and non-suggestible subjects. The two groups of ten subjects each were selected on the basis of their answers to the Bernreuter Personality Inventory, scales B3-I, B2-S, B4-D, and the Hysteria scale of the MMPI. The results of the investigation indicated that there was a statistically significant difference in the amount of autokinetic effect perceived by the two groups. The suggestible group experienced more movement.

A related study was carried out by Rechtschaffen and Mednick (13). Although they were concerned with the application of the phenomenon as a projective technique for personality testing, they did demonstrate the influence of suggestion or set. Nine subjects were told that the experiment was concerned with the perception of words being written by the light. All of the subjects reported the perception of words, many of which were emotionally toned and relevant to the individual's personality characteristics.

The most extensive investigation of the sensitivity of the phenomenon to personality characteristics was carried out by Voth (17). Some 845 psychiatric patients were tested and the results indicated that the phenomenon is more pronounced in schizophrenia, epilepsy, psychasthenia and anxiety states. As a general rule it was absent or greatly reduced in hysteria, manic-depressive psychosis, and involutional psychosis. A retest of fifty-four of the subjects showed a high degree of reliability for the phenomenon.

The purpose of this study is to examine the relationship between a measure of rigidity derived from the perceptual responses to the Rorschach test and a measure of rigidity based on the perceptual responses to the autokinetic effect.

CHAPTER II

PROCEDURE AND APPARATUS

Procedure

The procedure was to test each subject on the autokinetic phenomenon first; secondly, to administer the Rorschach test; and then to repeat the autokinetic situation. When first introduced to the experimental situation each subject was asked for some general information such as his name, age, and educational background, and encouraged to feel comfortable and to express any doubts or fears he might have about being a subject. He was then shown the chair in front of the apparatus and given the following instructions:

> Here is a sheet of paper. It is to provide a record of your observations. Sit in this chair (the experimenter adjusts the clip board in the subject's lap) and when directed place your face here (experimenter points to the viewer). Then look ahead of you and you will see a point of light. If . . . and when the light begins to move I want you first to operate the switch at your left (experimenter points out switch and how to operate it). Do nothing more with the switch. Devote your attention then to tracing (experimenter gives the subject a pencil) the movements of the light on the paper. You should start tracing from the center of the paper. There is a large "X" placed there for that purpose. Get ready. The room lights will be turned out when we begin.

If a subject indicated that he did not understand the instructions or if there were any questions they were reread with explanation. When the subject was ready the experimenter extinguished the room lights from the back of the apparatus, turned on the autokinetic light source and recorded the reaction time of the subject. He was then allowed two minutes of viewing from the moment he signaled that he had perceived the movement of the light. In those cases where no movement was seen the subject was permitted to observe for a total period of five minutes.

The subject was then allowed a short rest period before the Rorschach test was administered. The procedure here was according to the method outlined by Beck (1). After another short rest period the subject was retested in the autokinetic situation.

The instructions for the second trial in the autokinetic situation were abbreviated in that there was no reference to the chair, clip board, etc. He was simply told:

> Look ahead of you and you will see a point of light. If . . . and when the light begins to move I want you first to operate the switch at your left. Do nothing more with the switch. Devote your attention to tracing the movements of the light on the paper. You should start tracing from the center of the paper. Get ready. The room lights will be turned out when we begin.

The raw data consisted of a Rorschach protocol from each subject as well as his reaction time (RT), and graphic recordings of the autokinetic movement perceived in two trials.

In order to transform the Rorschach data to rigidity scores (RS) capable of statistical analysis each protocol was scored by Beck's (1) method. These in turn were scored for rigidity according to Fisher's outline. The essential factors in the rigidity scoring are: F%, F+%, W%, Dd%, A%, sum M, sum FC, sum FY, T/IR, total number of responses, content, and card turning. Appendix A provides an outline of the important variables and the weighting assigned to them in order to arrive at a total rigidity score.

The amount of movement, i.e., total distance the light was seen to travel during the two minute period, expressed by the subjects' graphic recordings was measured to the nearest tenth of an inch to give a single score for the autokinetic effect. To measure the distance of the recordings from the starting point proved to be difficult since many of them were very erratic and not subject to accurate measurement by a graduated wheel. Consequently the lines were "straightened" for each subject by tracing them on another sheet of paper while manipulating the recording so that each part of it was covered while directing the tracing pencil in a vertical line. The resultant line was measured to the nearest tenth of an inch.

Reaction time was the third variable measured and consisted of the time lapse in seconds between the presentation of the light and the subject's perception of movement. The score here was taken to the nearest second as measured by a stop watch.

Subjects

In deciding on the sample to be used in the investigation it was felt that much information could be gained by including subjects from an abnormal population. Therefore, since a hospital population was available to the experimenter, the study was repeated with a sample of brain damaged patients.

The normal sample consisted of fifty white male students drawn from the population enrolled at the time at the University of Florida. They were students who for the most part were taking introductory courses in psychology, but were näive concerning the autokinetic phenomenon and the interpretation of the Rorschach test. The method of selection was voluntary in that sheets of paper announcing the scheduled times for participation in the experiment were submitted to the various classes and the students were allowed to participate as they pleased; their cooperation in the experiment was thus obtained. In some cases friends of the students also volunteered and were allowed to participate if they were enrolled in any college. In all cases the subjects had to be physically able to participate in the experiment as outlined as well as be mentally alert and show no signs of mental disturbance.

The brain damaged sample was collected from the patients at the General Medical and Surgical Veterans Hospital at Coral Gables, Florida. This sample consisted of thirty-one subjects. The selection was based on the records of the patients available to the experimenter and included patients who had a medical diagnosis indicative of brain damage of some nature. Thus, such medical diagnoses as brain tumor, cerebral vascular accident, multiple sclerosis, brain encephalopathy, cancer of the brain, i.e., metastases, brain syndrome associated with cerebral arteriosclerosis, and traumatic head injury were included. Lobotomy and chronic brain syndrome associated with alcohol were not included.

All of the patients were screened for physical ailments which would prevent their cooperation. Thus a hemiplegic patient who had brain damage but could not hold a pencil or operate a switch was excluded from the sample when his name came up in the records. The same was true of patients who had a record of mental illness, and others who had displayed negativism and uncooperative behavior on the ward. Thus, the final sample consisted of only those patients who were physically able to cooperate, whose attitude was cooperative, who had no history of mental illness, and who were white males with diagnoses indicative of brain pathology.

In the two samples age and intelligence were not matched since Thurstone (15) has shown that the relationship between the autokinetic effect and intelligence is negligible; and Voth (17) has shown that there is no significant relationship between the autokinetic effect and age. However, there were factors inherent in the selection of the subjects which had a limited matching effect. For example, the selection of brain damaged subjects from a group of veterans assures a standard of intellectual endowment and literacy not too different from that of the normal sample. The average age and educational level for the brain damaged sample was 45 years and 10.1 grades. The average age and educational level for the normal sample was 21.6 years and 14.4 grades. The range of ages was from 24 to 66 for the brain damaged sample and 17 to 27 for the normal sample.

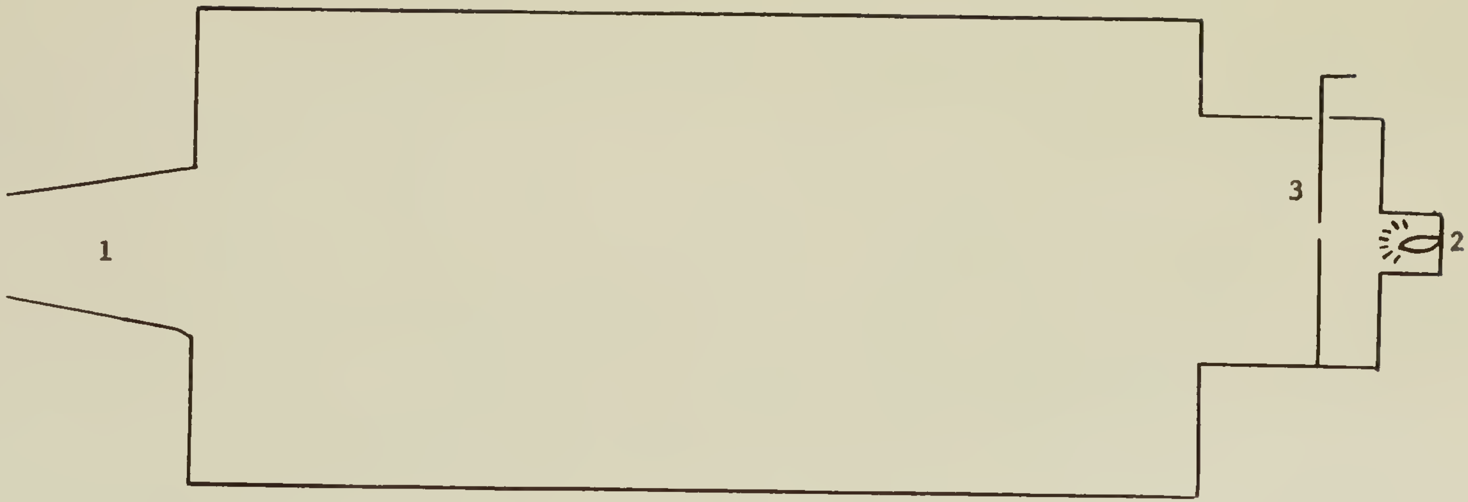
Apparatus

The apparatus used to elicit the autokinetic phenomenon consisted of a large black box 18 3/4" x 18 3/4" x 52 1/2" with an external viewer at one end and a light source at the other. See Figure 1. The source itself, a milk white 7W G. E. screw base candle bulb, was fixed behind a removable black opaque metal plate. All illumination to the subject was screened out except for a circle of light of a 1 mm. radius.

Large black curtains suspended from the ceiling screened off an area large enough to shield the apparatus and the experimenter, who operated the light from the back of it. Consequently, the subject saw only the viewer with a small toggle switch to the left which was used to signal the beginning of the autokinetic effect to the experimenter.

The tunnel was supported behind the curtains on a table approximately three feet above the floor and the viewing apparatus adjusted to eye level for the subject when in a sitting position. Thus the subject's face was kept in a position which provided a direct line between his eyes and the light source.

A clip board, to be held in the lap, held an eighteen inch square piece of paper on which the subject was to record any perceived movement of the light. A large red "X" to help guide the subject had been placed in the center of each sheet of paper. Each subject was provided with a sharp combination red and blue pencil.



1 - External viewer
2 - Light source
3 - Opaque filter

Fig. 1.--Autokinetic Apparatus

CHAPTER III

RESULTS

The statistical methods used to analyze the data consisted of the Pearson product-moment correlation technique and the *t*- test of significance of a difference. The correlation technique was used to determine the relationship between: autokinetic movement scores and rigidity scores, rigidity scores and reaction time, and reaction time and autokinetic movement scores. It was also used to determine the relationship between: age and rigidity scores, age and autokinetic movement scores, as well as the reliability of the autokinetic movement scores. The *t*- test was used to determine the significance of the difference between the two samples' means for autokinetic movement scores and rigidity scores.

The results for the normal sample have been tabulated in Table 1. As can be seen, the relationship between rigidity scores and the autokinetic movement scores was not significant, $r = -.06$ ($p > .05$). In addition, the relationship between reaction time and rigidity scores failed to reach a 5 per cent level, $r = .11$ ($p > .05$). However, the correlation between reaction time and autokinetic movement scores was significant, $r = -.29$ ($p < .05$).

As shown in Table 2, the correlations between the three variables were all significant for the brain damaged sample. The correlation coefficient between rigidity scores and autokinetic

TABLE 1

INTERCORRELATIONS AMONG RIGIDITY SCORES, AUTOKINETIC MOVEMENT SCORES, AND REACTION TIMES FOR THE NORMAL SAMPLE

Variables Correlated	Coefficient of Correlation	Fiducial Limits (5%)
RS and AKM	-.06	0.00 - .39
RS and RT	.11	0.00 - .37
RT and AKM	-.29#	0.02 - .57

#Significant at .05 level.

TABLE 2

INTERCORRELATIONS AMONG RIGIDITY SCORES, AUTOKINETIC MOVEMENT SCORES, AND REACTION TIMES FOR THE BRAIN DAMAGED SAMPLE

Variables Correlated	Coefficient of Correlation	Fiducial Limits (5%)
RS and AKM	-.58*	.28 - .77
RS and RT	.37#	.01 - .63
RT and AKM	-.53*	.21 - .74

*Significant at .01 level.
#Significant at .05 level.

movement scores was -.58, between rigidity scores and reaction time was .37, and -.53 between reaction time and autokinetic movement scores.

Table 3 summarizes the relationships between age and rigidity scores for the normal and brain damaged samples. Neither the correlation of -.25 ($p > .05$) for the normal sample nor the correlation of .14 ($p > .05$) for the brain damaged sample was significant.

The relationship between age and autokinetic movement scores, as shown in Table 4, was not significant, $r = .09$ ($p > .05$), for the normal sample. The correlation coefficient of the two variables was significant, $r = .50$ ($p < .01$), however, for the brain damaged sample. Consequently a partial correlation coefficient was computed for this sample between rigidity scores and autokinetic movement scores with age held constant. The resultant coefficient of -.76 ($p < .01$) was significant.

The results summarized in Table 5 show the mean rigidity scores and mean autokinetic movement scores, as well as the significance of the difference, for the two groups. As can be seen, the difference between the mean rigidity scores is significant at the .01 level of confidence, whereas the difference between mean autokinetic movement scores is significant at the .05 confidence level.

The Pearson product moment correlation between Trial I and Trial II in the autokinetic situation was .70 for the normal sample, 36 subjects taking the test twice, and .78 for the brain damaged sample.

TABLE 3

CORRELATIONS BETWEEN AGES AND RIGIDITY SCORES FOR THE NORMAL AND BRAIN DAMAGED SAMPLES

Sample	Coefficient of Correlation	Fiducial Limits (5%)
Normal	-.25	0.00 - .49
Brain Damaged	.14	0.00 - .46

TABLE 4

CORRELATIONS BETWEEN AGES AND AUTOKINETIC MOVEMENT SCORES FOR THE NORMAL AND BRAIN DAMAGED SAMPLES

Sample	Coefficient of Correlation	Fiducial Limits (5%)
Normal	.09	0.00 - .27
Brain Damaged	.50*	0.16 - .72

*Significant at .01 level.

TABLE 5

MEAN DIFFERENCES BETWEEN SAMPLES FOR RIGIDITY SCORES, AND AUTOKINETIC MOVEMENT SCORES

	Rigidity Scores		Autokinetic Movement Scores	
Sample	Normal	Brain Damaged	Normal	Brain Damaged
Mean	23.7	49.2	7.7	5.9
t- test	6.3*		2.1#	

*Significant at .01 level.
#Significant at .05 level.

CHAPTER IV

CONCLUSIONS AND SUMMARY

The hypothesis that subjects who display higher rigidity scores would perceive correspondingly smaller amounts of autokinetic movement was accepted for the brain damaged sample on the basis of a correlation coefficient equal to -.58. For the normal group the correlation coefficient of -.06 was not significant.

The second hypothesis, which stated that subjects with greater rigidity scores will have longer reaction times, was also accepted for the brain damaged sample, but rejected for the normal sample. The correlation coefficient between the two variables was .37 for the brain damaged sample and .11 for the normal sample.

The third hypothesis, that subjects who perceive greater amounts of autokinetic movement would have shorter reaction times, was considered to be tenable for both samples. The correlation coefficient for the brain damaged sample was -.53, whereas that for the normal sample was -.29.

The reliability of the autokinetic effect was examined by the test-retest method and the results showed the correlation coefficient was .70 for the normal group and .78 for the brain damaged group. An acceptable degree of reliability was demonstrated for measurement of the phenomenon.

The influence of age on rigidity scores was examined by computing a correlation between the two variables for both of the samples. The correlation coefficient was .14 for the brain damaged sample, and -.25 for the normal sample. Since neither correlation is significant it is concluded that age is not an important variable contributing to the rigidity of perception shown by the subjects on the Rorschach test.

In addition the influence of age on autokinetic movement scores was examined by computing a correlation between the two variables for both of the samples. The correlation was significant, $r = .50$ for the brain damaged sample, but not for the normal sample, $r = .09$. Moreover, a partial correlation coefficient of -.76 between rigidity scores and autokinetic movement scores with age held constant indicated that age was not contributing to this degree of relationship between them. In this study age is not the important variable contributing to the subjects' perception of autokinetic movement.

From the results it can also be concluded that for the brain damaged and normal subjects the quicker autokinetic movement is perceived the greater the distance it is likely to travel in a restricted period of time. In this instance the brain damaged sample showed a significant relationship between rigidity scores and amount of autokinetic movement perceived, and between rigidity scores and reaction time, but the normal sample did not; thus there may be a certain critical minimum degree of rigidity necessary for this relationship to manifest itself on these particular tests. There was a significant difference between the degree of rigidity manifested by the two groups on the Rorschach test. The brain damaged group had a mean rigidity score of 49.2, more than twice that of the normal group who showed a mean rigidity score of 23.7. Consequently it appears that a critical minimum rigidity score must be reached.

In summary, a normal sample composed of fifty white, male college students, and a second sample of thirty-one brain damaged hospital patients were administered a Rorschach test and also placed in an autokinetic situation in an effort to determine the relationship between the two when each is used as an instrument to measure rigid behavior.

The Rorschach test protocols were scored for rigidity according to Fisher and the recordings of the amount of movement perceived were measured to the nearest tenth of an inch. These data represented the degree of rigidity manifested by the subject in each situation and a Pearson product-moment correlation was used to establish the relationship. A _t_- test was also used to determine whether a significant difference existed between the samples' rigidity scores, and the amount of autokinetic movement recorded.

The results failed to show a significant relationship between age and rigidity scores for either group, and between age and autokinetic movement scores for the normal group. However, a significant relationship between age and autokinetic movement scores for the brain damaged sample was shown. A partial correlation, between their rigidity scores and autokinetic movement scores with age held constant, was significant, indicating age was not the significant variable. The results also indicated a significant relationship between rigidity score and autokinetic movement, reaction time and rigidity score, and amount of autokinetic movement and reaction time, for the brain damaged sample, but only between reaction time and autokinetic movement for the normal sample. The difference between rigidity scores and autokinetic movement was also significant for the two groups. Thus, it was concluded that quicker perception of movement is positively related to the amount of movement perceived, but that there is probably a critical minimum degree of rigidity necessary before there is a relationship shown between rigidity score and autokinetic movement, and between reaction time and rigidity score.

APPENDIX A

SCORING FOR RORSCHACH RIGIDITY

Each of the weights below is a penalty for what is considered to be excess rigidity or restrictiveness. The larger the final summation of weights, the greater is the implied rigidity.

I. F per cent (F %)

1. If the number of responses is 22 or fewer -
   a. An F % of 55-60 gives a score of 3
   b. An F % of 61-70 gives a score of 4
   c. An F % of 71-80 gives a score of 6
   d. An F % of 81-90 gives a score of 8
   e. An F % of 91-100 gives a score of 11

2. If the number of responses is over 22 -
   a. An F % of 55-60 gives a score of 4
   b. An F % of 61-70 gives a score of 5
   c. An F % of 71-80 gives a score of 7
   d. An F % of 81-90 gives a score of 9
   e. An F % of 91-100 gives a score of 12

II. Number of responses (R)

1. If the number of responses lies between 9 and 15, inclusive, the score is 9.

2. If the number of responses lies between 16 and 20, inclusive, the score is 6.

III. Percentage of Animal Responses (A)

1. If the percentage of "animal" responses is 60-70, the score is 6.

2. If the percentage of "animal" responses is 71-80, the score is 8.

3. If the percentage of "animal" responses is 81-90, the score is 10.

IV. Form Accuracy (F +)

1. If the number of responses lies between 15 and 22, inclusive -
   a. and if the F % is at least 40 and not higher than 50 -
      an F + % of 85-90 gives a score of 5
      an F + % of 90-91 gives a score of 8

b. Or if the F % is 51 or higher -
an F + % of 85-90 gives a score of 6
an F + % of 91-100 gives a score of 9

If a record contains fewer than fifteen responses only 1/2 of any given weight applies.

2. If the number of responses exceeds 22 -
a. and if the F % is at 35 and not higher than 50 -
an F + % of 85-90 gives a score of 6
an F + % of 91-100 gives a score of 10

b. Or if the F % is 51 or higher -
An F + % of 85-90 gives a score of 6
An F + % of 91-100 gives a score of 12

V. Card Turning

Less than two responses in which the card is viewed other than in the upright position gives a score of 4.

VI. Color

Less than two FC is scored 6.
(M.FC is not counted as an FC)

VII. Whole Responses (W)

1. If the percentage of W. responses is 40-50 -
a. The score is 5 in records where the number of responses is 22 or under.

b. The score is 6 in records where the number of responses exceed 22.

2. If the W % is 51-60 -
a. The score is 7 where the number of responses is 22 or less.

b. The score is 9 where the number of responses is over 22.

3. If the W % is 61 or over
a. The score is 10 where the number of responses is 22 or less.

b. The score is 12 where the number of responses is over 22.

VIII. Small Detail Responses (Dd)

1. If the Dd % is 18-23
   a. The score is 3 where the number of responses is under 22.
   b. The score is 4 where the number of responses is over 22.

2. If the Dd % is 24-30
   a. The score is 5 where the number of responses is 22 or under.
   b. The score is 6 where the number of responses is over 22.

3. If the Dd % is 31-40 -
   a. The score is 8 where the number of responses is 22 or under.
   b. The score is 8 where the number of responses is over 22.

4. If the D d % is 41 or over -
   a. The score is 10 where the number of responses is 22 or under.
   b. The score is 11 where the number of responses is over 22.

IX. Movement Responses (M)

1. If the number of movement responses is less than two, the score is 15.

2. If the number of movement responses is less than one, the score is 20.

X. Content

1. If four or more responses fall into the same content category (aside from "human" and "animal" responses) -
   a. and if the number of responses is 1 through 25, the score is 7.
   b. and if the number of responses is 26 through 40, the score is 6.
   c. and if the number of responses is 41 or over, the score is 5.

XI. Average Time of Initial Response (T/HR)

1. If the average reaction time per initial response is
   a. 25 through 29 seconds, the score is 2.
   b. 30 through 40 seconds, the score is 5.
   c. Over 40 seconds, the score is 7.

XII. Shading Responses (FY)

Less than two FY responses gives a score of 3.

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BIOGRAPHICAL ITEMS

The author was born on September 5, 1927, in Bay City, Michigan. He attended Bay City Junior College following army service and received an Associate of Science degree before transferring to Michigan State University. While at Michigan State University he majored in psychology and received a Bachelor of Arts degree in June, 1951.

In September, 1951, he entered the graduate school of the University of Florida and in June, 1953, he received a Master of Arts degree with a psychology major The following year was devoted to internship with the V. A. Clinical Psychology Training Program and then study for the doctoral degree was resumed at the University of Florida. During that period he was a graduate assistant and later half-time clinician with the Psychological Clinic at the University. He was also elected to membership in Alpha Kappa Delta, sociology honorary society, and served as chairman of the Graduate Seminar Committee.

He is a member of the American Psychological Association and the Florida Psychological Association. He is currently finishing his V. A. clinical training in the V. A. G. M. & S. Hospital at Coral Gables, Florida.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of the committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June 9, 1958

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