DOCTORAL DISSERTATION SERIES

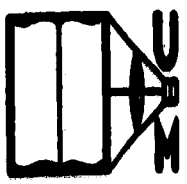
TITLE THE INFLUENCE OF VARIED EXPERIMENTAL SETS UPON CERTAIN RORSCHACH VARIABLES: ...

AUTHOR E. OHMER MILTON, JR.

UNIVERSITY OF MICHIGAN DATE 1949

DEGREE Ph.D. PUBLICATION NO. 1521





UNIVERSITY MICROFILMS
ANN ARBOR · MICHIGAN

COPYRIGHTED

by

E. OHMER MILTON, JR.

1950

The Influence of Varied Experimental Sets Upon Certain Rorschach Variables: II. Stability of the Human Movement Variable

by
E. Ohmer Milton, Jr.

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1949

Committee in charge:

Associate Professor Max L. Hutt, Chairman
Professor Howard Y. McClusky
Assistant Professor Daniel R. Miller
Professor Theodore M. Newcomb
Assistant Professor George A. Satter

Foreward

Research attempts involving personality theory are beset with many difficulties which often are not encounterd in other areas of scientific endeavor. One of the major obstacles is that of sampling, not only because of inter-individual variability but also because of intra-individual variability. Seldom can we be content with measures of a few individuals if we wish to generalize our findings, but rather we are forced to examine large numbers. This barrier becomes very formidable in studies in which projective techniques are utilized, because of the time-consuming nature of such procedures.

Whereas in some scientific investigations biases and prejudices of the experimenter create relatively little havoc in an actual measurement, there is increasing evidence in the personality area that biases and prejudices of the experimenter can, in a variety of subtle and elusive ways, create major errors in almost every phase of a study: from the collection of the data, through its treatment, to the final interpretations. Again such influences are especially prevalent when projective techniques are employed.

The general plan of the present research was conceived as one way of overcoming such obstacles. The data were not collected by the experimenters, but by a number of other individuals; thus larger numbers of subjects could be examined and at the same time biases and prejudices of the

experimenters did not influence collection of the data. Whereas each of the experimenters is primarily responsible for specific portions of analysis and interpretation, all are involved to some extent in all aspects of the study. Consequently, distortions attributable to the peculiar personality prejudices of any one experimenter are minimized in the final interpretations.

This study was undertaken by Robert Gibby, Karl Pottharst, and the writer, as a doctoral dissertation for each at the University of Michigan. It is our belief that the project has been profitable to each of us as individuals. It is our further belief that future similar cooperative projects can do much to overcome many of the obstacles which personality investigators inevitably encounter. We believe that this type of approach is particularly worthwhile for doctoral students. We feel that we have not participated in an "exercise", but that we have made a much needed contribution that would not have been possible had we worked alone upon more narrowly defined problems.

The writer wishes to express his appreciation to Professor Max L. Hutt, Committee Chairman, for all of his help and guidance that came in ways too numerous to mention. He is indebted to the other members of his committee: Dr. George Satter, Dr. Daniel Miller,

Dr. Theodore Newcomb, and Dr. Howard McClusky for their patience, support, fruitful suggestions, and sound criticisms.

He also desires to acknowledge his indebtedness to Mr. Robert Gibby and Mr. Karl Pottharst, fellow students, for their hours of free exchange of thoughts and ideas and their sharing of frustrations.

This particular study would not have been possible had it not been for another group of college sophomores and a group of graduate student examiners who gave so freely of their time to aid in pushing back the frontiers of science - tiny d by tiny d.

Table of Contents

	Page
Foreward	iii
Chapter I. The Problem	1
Chapter II. Other Rorschach Variables and Specific Hypotheses	10
Chapter III. Subjects, Examiners, and Grouping of Subjects	21
Chapter IV. Initial Treatment of Data	31
Chapter V. Group Changes in "M" and other Rorschach Variables	36
Chapter VI. The Erlebnistypus	52
Chapter VII. Rorschach Variables Associated With Change	64
Chapter VIII. Summary and Conclusion	77
Appendix	86
Bibliography	91

List of Tables

Page

Table I. Differences in Mean Gains in Each Relevant Variable Between the Control Group and Experimental Group II 37

Table II. The Mean Changes from the Original to Repeat Test in the M sub-division for Experimental Group II 43

Table III. Differences in Mean Gains in "M" in Experimental Groups I and III as Compared with the Control Group 49

Table IV. The Number of Subjects in Each Group for Both the Original and Repeat Tests With the Specified Directions of the Erlebnistypus 52

Table V. The Relationship Between Membership in a Group and Shift in Direction of the Erlebnistypus 53

Table VI. The Number of Subjects in Each Group for Both the Original and Repeat Tests With the Specified "Type" of Erlebnistypus 54

Table VII. The Relationship Between Membership in a Group and Shift in "Type" of the Erlebnistypus 55

Table VIII. Differences Between "Least" and "Most" Sub-Groups of Experimental Group II in "M" Sub-Scores and Certain Variables . . . 67

Appendix

Table A Comparison of the Original Scores In the Control Group and Experimental GroupII for Each Relevant Variable 86

Table B Individual M:C ratios for All Subjects in Both the Control Group and Experimental Group II 87

Table C Differences Between Experimental Group II and Each Other Group for the "Formulae" Derived from Experimental Group II Dichotomized 88

List of Tables (con't)

Page

Table D Comparison of "M" Change in "Least" and "Most" Sub-groups of Each Total Group 89

Table E Comparison of Differences for Each Variable Between Original and Repeat Tests in the Control Group and Experimental Group II 90

Chapter I

The Problem

The current extensive use of the Rorschach Technique in a great variety of situations and for a multiplicity of purposes makes it imperative that further experimental investigation of factors affecting Rorschach performance be undertaken. It has been emphasized by many that the Rorschach is a very sensitive instrument subject to many influences. Schachtel (20) for example, beleives that unconscious aspects of the personality of both the examiner and subject influence a record. There is both clinical and experimental evidence which reveals that psychotic disturbances, neurotic conflicts, hypnosis, alcohol, drugs, brain trauma, and a host of other rather major forces produce alterations in Rorschach performance. Nevertheless, it is becoming increasingly evident that, in some individuals, behavior is highly variable for a variety of less specific reasons; the discerning Rorschach worker when confronted with a protocol from one of these individuals is frequently at a loss to explain certain inconsistencies which he encounters. Furthermore, the Rorschach is being utilized for evaluation of personality in situations wherein influences and forces are subtle,

vague, and elusive--for example, in attempting to explain personality alterations following various forms or types of psychotherapy. The purpose of the present study then is to examine the stability[1] of certain Rorschach variables, when what might be considered as a subtle force is operating.

Underlying much of our Rorschach work in personality study is the implicit acceptance by many and the explicit acceptance by a few that certain of the personality attributes which Rorschach symbols represent are highly immutable and are not alterable to any significant degree by any but major forces.

This portion of the present study will be concerned primarily with the conscious modifiability of the human

---

1. The term stability is utilized in this study to denote the absence of statistically significant change during a retest in which the conditions under which the test is administered are modified. The assumption is ordinarily made (and which we are testing) that an individual makes the same score on the Rorschach variables regardless of the conditions under which the test is given. If change in Rorschach test performance may be induced consciously and volitionally by the subject upon direction (according to experimental conditions), then the test performance may not be regarded as stable. Such an induced change would differ from the problem of malingering in that the impetus for change in the Rorschach test performance arises from without the subject, while in malingering the the impetus for change would arise from withing the individual. If, however, it is demonstrated that the individual can consciously modify his performance in accordance with the conditions of the experiment, then it can be assumed that the performance may also be changed in accordance with an impetus which would arise from within the individual himself.

movement response; the other two experimenters will deal with the stability of other determinants. What does the literature offer regarding the stability of this aspect of the Rorschach? Much can be gleaned from Rorschach's (19) original publication.

While discussing the effects of volition upon the experimental factors he stated:

> "Those subjects who, in the ordinary experiment, give numerous M's, can increase the number of kinaesthetic responses with relative ease. On the other hand, those who interpret few M's in the usual test, produce few or very poor ones in the control. Kinaesthesias represent, therefore, a function which can be increased in effect by the setting up of a goal only if present as a definite tendency in the personality" (19,68).

When clarifying the relation between intelligence and M he declared: "Subjects who consciously wish to produce movement responses will produce hazy interpretations" (19,64). Again while elaborating certain aspects of mood he pointed out: "Those factors not subject to conscious control, such as M and C, are more accentuated in elation than in hypomanic moods" (19,71). This evidence in regard to stability is conflicting; on the one hand, it is said that the number of M's can be increased by some subjects, while on the other, the generalization is made that kinaesthesias (at least by implication, some types of kinaesthesias) cannot be

produced by conscious effort.

Rorschach was even more explicit about the nature of M when he discussed the Erlebnistypus. He stated:

> "The introversive and extraversive features of a subject comprise independent groups of psychisms, the relation of which determine the experience type of the individual. These features must have an entirely different mental basis from the conscious, disciplined thinking of the subject. Disciplined thinking is an acquired faculty; introversive and extraversive features are not acquired, but are inherent, primary qualities of the constitution" (19,87).

At another point he emphasized:

> "The results of the experiment thus far appear to justify the assumption that the experience type of an individual has a certain stability...The absolute number of M and C responses changes, but the proportion between them changes little or not at all" (19,94).

By no means has it been intended to do injustice to Rorschach's brilliant insights by removing the conceptions cited above from their context; rather the attempt is being made to arrive at the essence of some of his formulations of the human movement response. He apparently conceived of the kinaesthesias as representing an innate constitutional endowment or capacity. They constituted, in part, some sort of primitive equipment which was subject to certain kinds of modification such as those

occurring with increasing age, but generally not readily susceptible to alteration. He made it quite clear, for example, that the essence of M was quite different from that of F when he spoke of disciplined thinking being learned in contrast with the M as being inherent in the constitution. He further made it clear that clarity of form perception could be raised easily (in some subjects) but that the M's were not subject to conscious control. Thus he has implied that human movement responses are rather immutable aspects of personality. Later workers in the field, for the most part, have seemingly accepted the essence of these formulations. We note the implicit acceptance in clinical reports as well as explicit acceptance by statements in the literature. Rapaport (18) believes: "The content of a response can be controlled by the subjects, modified by speculation, or even suppressed; but the formal characteristics are expressions of perceptual-organizing and associative processes which are usually not consciously experienced, and hence not amenable to conscious censorship." Beck has this to say about M; "The content of the response is thus identical with the material of Freud's unconscious and of the psychoanalyst's dreamwork" (3,92). Additional conceptions about the kinaesthesias are seen in his comments about the Erlebnistypus. He conceives of it as being the cornerstone of the test which must serve as the core of

the entire interpretation. Borrowing heavily from Rorschach's original work he states:

> "From this language, Rorschach's Erlebnistypus becomes really a concept of the whole personality. It is truly that. Also, it is a hypothesis, as yet elusive, not representing any psychologic activity concerning which we have knowledge, and leaving much to the imagination in the effort to handle it. Reading Rorschach's pages leaves no doubt that the concept meant something very real to him...The Erlebnistypus appears to be to Rorschach a psychologic medium or essence in which all the mental activities of the individual are suspended. To understand the Erlebnistypus is to him a prerequisite to understanding any aspect of personality, its major forces and finer nuances" (3,61).

Not only does this formulation perpetuate Rorschach's original hypothesis, but it further emphasizes the importance of kinaesthesias in the evaluation of a Rorschach. No doubt it summarizes quite adequately the belief of many workers. But is a given number of M's in a specific record as representative of all these psychologic forces as we believe?

As mentioned earlier, many studies have shown that the kinaesthetic responses are altered rather drastically under certain circumstances. It is well known, for example, that the number of M's is markedly reduced in

some phases of schizophrenia as Beck (1) and others have shown. There is only one study, however, similar to the current one, in which deliberate efforts were made to alter determinants by nothing more than conscious effort. In 1938 Fosberg (5) asked two subjects to give various Rorschach pictures of themselves upon successive repetitions of the test. First, the test was administered under standard conditions and then, in the following order, the subjects were requested to do their "best", their "worst", and finally to increase the number of movement responses. He concluded: "When we split the Rorschach categories into three parts, taking the Erfassungamodi (Mental Approach), the Determinants, and the Contents separately, we find in both cases that the Erfassungsmodi are most easily influenced and the other two least influenced by a change in directions. The probabilities again show that all four tests give the same personality picture." In other words, there were no significant differences between the records for each subject or the specific determinants, such as M, showed little variation from record to record. Although many criticisms could be made of the study, it will suffice to say that the conclusions are consistent with previous and current theoretical formulations.

In this portion of the study, we wish to investigate

the following questions:

(1) Are subjects able to alter the number of human movement responses when they are requested to do so?

(2) Is there any alteration in the number of human movement responses which is related to the type of opportunity for change, that is, experimental conditions?

(3) Are there some subjects who do not alter the number of human movement responses, although in other subjects this determinant is quite unstable? Are there any differentiating Rorschach characteristics between those subjects who change and those who do not?

The remaining chapters are planned to present as clearly, explicitly, and concisely as possible the efforts directed toward answering these questions. The next chapter describes the rationale underlying choice of other Rorschach variables and specific hypotheses. Chapter III is devoted to description of the subjects and examiners as well as the grouping of the subjects. Since certain aspects of projective data require special attention, Chapter IV outlines special treatment of the records in detail.

Chapter V is the first one to deal with results. Therein are contained the changes in M and other variables which occurred in the experimental group. At the same time, certain speculations and hypotheses about such results are enumerated. A discussion of the Erlebnistypus

and how it was effected comprises Chapter VI. Likewise the significance and meaning of the Erlebnistypus in the light of the current findings is explored.

Chapter VII is unique in that those Rorschach aspects associated with change are elaborated; while the summary and conclusions are contained in Chapter VIII.

The reader who seeks an extensive evaluation of Rorschach literature herein will be disappointed. It is felt that such an undertaking is a major project in itself. Whereas the attempt has been made to cite pertinent literature where the writer feels it is most appropriate, no claim is made that all relevant studies are included.

Chapter II

Other Rorschach Variables and Specific Hypotheses

A. Other Rorschach Variables

In order to appraise more fully the general questions which were formulated in Chapter I it will be necessary to examine other Rorschach symbols as well as to inspect certain divisions of the M responses. Ever since the development of the technique, it has been assumed that all aspects of the results obtained with it are closely related. Hence, to do justice to its heritage, it must be examined experimentally in its accepted frame of reference.

Variables chosen for study include the following: W, F+%, A%, number of content categories, M, sum C, sum Y, and S. These particular symbols were chosen chiefly as a matter of expediency; there are literally hundreds of variables and combinations of variables which could accrue from the Rorschach. Those mentioned might be thought of as providing the framework upon which a Rorschach interpretation is ordinarily based.

More specifically, it is to be noted that these symbols fall generally into two areas: intellective and affective. It is commonly agreed that W, F+%, A%, and the number of content categories each represents some aspect of intellective functioning. Whereas a detailed

discussion of the meaning of each of these variables is not appropriate herein because of their complicated nature and because it is assumed that most readers of this study will be familiar with them, a brief statement about each should suffice. More elaborate evaluations of all these variables can be found in any of the better known works: Rorschach (19), Beck (3), Klopfer and Kelly (13), Rapaport (18), and others. W presumably is a measure of the richness of associative activity; F+% denotes clarity of form perception and degree of conscious control; A% signifies stereotypy in thinking; the number of content categories reflects breadth of interests. The reader who desires more detailed discussion of the bases upon which these variables were selected is referred to the portion of this general study which was conducted by Gibby (6).

The remaining four symbols: M, sum C, sum Y, and S comprise the chief interest of this phase of the project; they are thought of by most workers who have published the results of their studies of this technique as being representative of affectivity. No one of them expresses or reveals all the various components of emotionality; hence all have to be considered. The nature of M and why it was chosen has already been discussed to some extent and will be elaborated more fully during later phases of the study. Probably, as has already been intimated, sum C is the variable which is most closely

allied to M; it is considered by all users of the Rorschach to be one of the most vital parts of the technique. It was chosen because it supposedly indicates the total affective energy available to the subject and in an overall way the type and degree of affective reactivity. Furthermore, in the assessment of a Rorschach record sum C rather than its specific components (FC, CF, C) is interpreted in relation to the number of M's. Color responses are likewise discussed more completely during later phases of the study.

Y, or the symbol for a texture response, is a Rorschach phenomenon which is little understood, but generally, it is agreed that it denotes oppressive affect or anxiety. Depending upon one's concept of the effects of the imposed experimental conditions upon the subjects, corresponding changes in Y might be predicted. Again a more complex breakdown of Y was avoided because of the marked confusion which surrounds more minute aspects of it. Sum Y was computed by weighting Y as 1.5, YF as 1.0, and FY as .5.

S, or the white space which it represents, is another Rorschach category which is not well understood; its interpretation is likewise not supported by any rigorous experimental evidence. Clinically, however, it is interpreted by most to reveal oppositional tendencies, hostility, self-will, and so forth, depending upon the

amount and context of the remaining portions of the record. It has been suggested by some that there is an abundant use of white space along with a prevalence of M (18). Since it could be inferred that our subjects (college students) would give many M's and as they might increase them when told to do so, S's were also included for inspection.

Our chief interest is a better understanding of the M responses. The obtained M's will be sub-divided in the following ways: (1) location: W and D or Dd, (2) content: H or Hd, (3) M minus or plus, (4) type: "centripetal", "centrifugal", "ambiguous", (5) type of Hd: profile or non-profile.

The following discussion of the rationale underlying this kind of M sub-division derives largely from clinical data, for there is little experimental evidence to offer guidance. The general problem which must be handled is that of ascertaining the quality of the M's; recall that confused or contradictory evidence was offered by Rorschach as regards the production of additional M's. On the one hand he stated that some subjects could give more of them easily, while on the other, he believed that any conscious effort by the subject would result in "hazy interpretations".

The broad problem is, then, one of distinguishing between good and poor quality M's, so that possibly the

above contradiction can be resolved. There is fairly good agreement among experts (as judged by consistency within the literature) that, at least, gross distinctions can be made. Underneath such a distinction seems to be the assumption that there is a whole variety of activities or processes which these various quality M's represent. Just as each affective determinant represents a different component of emotionality, so do certain "types" of M.

Generally speaking, a form plus M which occurs in a W and D area, and which utilizes a whole human (H) is thought of as being of excellent quality. At the other extreme, one of minus form occurring in a Dd area and composed of only a partial human (Hd) is conceived of as poor quality as Beck (3) emphasizes. These latter ones, along with an inspection of the type of movement and division of the Hd's, will enable some estimation of the way our subjects perceived the imposed tasks.

Most of the classifications of "movement type" center around efforts to clarify the psychologic phenomena of "pasivity" and "aggression". In this original work Rorschach stated: "Subjects who see extension movements are active individuals with strong drive toward self-assertion...Those who see flexion movements are passive, resigned, neurasthenic individuals" (19,29). Beck (3), Piotrowski (17), and others, follow essentially the same reasoning. Thus we find such terms as "extensor",

"flexor", "centripetal", "centrifugal", and so forth. The latter two were chosen for this study and utilized as defined in **Chapter IV.** It was believed that such usage more closely represented the essential elements of "passivity" and "aggression"--that is, "taking in" **versus** "attack or expulsion". The third "movement type"--"ambiguous"--was included because in the experience of the writer there are many M's which do not clearly denote any one type of activity alone. Furthermore, it is believed that the occurrence of such M's has special significance **distinct** from that of the other two types. Briefly, they probably signify conflict as regards expression of either "passivity" or "aggression".

The Hd responses will be scored as "profile" and "non-profile"; the former refers to all "head" and "face" responses, while the latter includes all remaining portions of the body. It has been hypothesized that patients of certain clinical groups feel attacked or persecuted; part of their reaction to the Rorschach includes the perception of many "faces" usually in small portions of the blots. The application of such reasoning to subjects or our experimental group resulted in the inclusion of a means by which their perceptions could be appraised.

Certainly this study will strike at only a small aspect of the total significance of "kinaesthesias" in the Rorschach; the type of inspection to be undertaken is only one of the many which could be done. Whereas in

some respects it is crude; in others it may prove a fruitful way of approaching a very baffling problem. Not only do we wish to know of the stability of M, but we also wish to know the ways in which whatever processes it represents are effected under our imposed conditions.

B. Specific Hypotheses

This writer is concerned primarily with that determinant in the Rorschach which has long been considered to be unconsciously determined and highly resistive to change. Hypotheses to be examined fall into two general categories: those involving mean changes in symbols (especially M) when a "set" is offered to "see all the M's possible", and secondly, any Rorschach differences between those individuals who change most in M versus those who change least.

I. Certain of the personality characteristics or traits which are presumed to be measured by Rorschach variables are more enduring and less manipulable than are others. The affective or unconscious determinants in a Rorschach record, especially the human movement response, are assumed by some to be stable measures of more enduring personality traits and are not subject to conscious attempts at modification. Furthermore, it is commonly assumed that all of the personality traits revealed by Rorschach scores are related dynamically to each other. Hence an alteration in one score will be accompanied by commensurate changes in other areas.

1. The hypothesis is offered that there will be no increment in the mean number of human movement responses when a "set" is offered to "see all the M's possible".

a. There will be no mean increase in M's seen in W and D areas, in those seen in Dd areas, in whole H's, in M minus responses, or in any of those classified as "centripetal", "centrifugal", or "ambiguous".

2. There will be no increment in the mean number of human movement responses when there is no "set" to see more M's.

3. There will be no shifts in the direction of the Erlebnistypus when a "set" is offered to "see all the M's possible".

4. There will be no mean changes in selected variables which are commonly thought of as intellective or affective when a "set" is offered to "see all the M's possible".

II. This phase of the study will be exploratory in nature only. Specific hypotheses could not be formulated very precisely prior to collection of the data because it was problematical whether or not sufficient changes in M would occur to make such an undertaking worthwhile. Furthermore, as already mentioned, Rorschach data are so complicated that the number of possible hypotheses could be almost limitless. Clinical evidence seemed to be too rich and profuse and yet too unsystematized to offer guidance. Thus it was felt that the data of this project might serve as one method for delineating some of the complexities. Whatever evidence is obtained will be

suggestive only.

Although it has been hypothesized that there will be no increment in the mean number of M's, that is, no increments for the groups as a whole, it is further hypothesized that there will be no significant differences in amount or direction of change in M among various subgroups of subjects. Those who change most in M will show no differentiating characteristics in their original Rorschach records from those who change least. This hypothesis is stated in null form merely for ease of testing. There is reason to believe that the reverse of this is true. It has been pointed out by Klopfer and Kelly (11) and others that severely disturbed individuals, that is, psychotics, those suffering from character neuroses, and similarly sick individuals, have difficulty in shifting when requested to do so. By inference, then, we are saying that individuals who are not so disturbed are more flexible and more able to incorporate instructions in an experiment. We are reasoning further that there are varying degrees of flexibility in our subjects; that is, all of them will not be able to shift to the same degree.

Specific hypotheses regarding Rorschach characteristics between those who change least and most in M will be drawn from the actual data of the subjects who

who are requested to "see more M's" and then tested in the other three groups (grouping of subjects is discussed in the next chapter).

Chapter III

Subjects, Examiners, and Grouping of Subjects

A. Subjects and Examiners

All subjects were undergraduate students in an elementary course in psychology at the University of Michigan.[2] Prior to this investigation no time or attention in the course had been alloted to any aspect of projective testing or theory. It can safely be assumed that these subjects were as unsophisticated in this realm as college students who are used so frequently in other studies. In one of the lecture sessions of the one general psychology course that was being given and which contained 413 students, an announcement was made by Professor Max L. Hutt, who had conceived the study, to the effect that an experiment was being undertaken which involved the use of projective tests and that volunteer subjects would be welcomed. In order to motivate students to volunteer, they were told that one way of getting to know something of projective tests was to take them and so experience them from the subject's point of view. It was then indicated that approximately four hours time would be required of each volunteer. It was emphasized that no interpretation of the test results could be made to any subject because the examiners were

---

2. With the exception of 9 subjects who were taking a course entitled the "Psychology of Interpersonal Relations".

graduate students in training. Approximately 200 students offered to serve. Each volunteer subsequently completed a schedule card which listed his or her free hours. Subjects for the study were chosen solely upon the basis of their free time coinciding with free time of an examiner.

All of the 27 examiners who administered the Rorschachs were graduate students in psychology at the University of Michigan working toward the Ph. D. degree; all were registered in the course "Projective Theory and Techniques". Participation in this project was a scheduled requirement of the course; the Rorschach examinations were given near the close of the first semester when the examiners had had adequate training in theory and principles of administration. Earlier in the semester each examiner had administered two Rorschachs for practice. Following the test administration each protocol was scored by the examiner for his own edification only; this scoring was not used as the experimental data. The examiners were not acquainted with the nature of the experiment or of the theory involved, but of course knew that, in general, it was concerned with the administration of the Rorschach under different conditions.

Each examiner gave the Rorschach according to the usual directions slightly modified from those utilized by Beck (2) to each of four subjects:

"I have a number of cards here which have some

ink-blots on them. They are similar to ink-blots which you may have seen. Perhaps you made ink-blots when you were a youngster; you know how to make them--you drop some ink on a piece of paper, fold the paper over on the ink, flattening it out, and then you've made an ink-blot. Well, these blots are something like that. Now I'm going to show these cards to you, one at a time. I want you to take them (hold them), and look at them and tell me <u>everything</u> you see,--what they look like or might be. Sometimes you see many things on a card; other times you may see few things. Just tell me everything you see as soon as you see it. There are no right or wrong answers. We'd simply like to know what you can find in these ink-blots. Understand? Here is the first card."

Following this initial administration, the examiners were given the following mimeographed instructions:

"1. In this phase of the experiment you will re-test each of the four subjects whom you have previously tested with the Rorschach examination.

2. It is essential that you keep all the conditions of the experiment similar to the previous test <u>except</u> for the directions given to the subject. If the subject enquires about his previous test performance, explain that you will be glad to answer this and other questions he may have at the conclusion of the testing.

3. After the free association portion of the test conduct your 'Inquiry' for the test in exactly the same manner as on the previous occasion.

4. Note that you will re-test each of the four subjects with different instructions - with a different experimental set. Number your subjects from 1 to 4, assigning number 1 to the subject you tested first, number 2 to the one you tested second, and etc. Write this number in parentheses after his name on the "Rorschach Response Record"."

Four groups of subjects were formed consequently, membership in a particular group being dependent only upon the order of testing. The first subject was placed in the Control Group; the second subject tested by each experimenter was placed in Experimental Group I, the

third in Experimental Group II, and the fourth in Experimental Group III. No other criterion of group placement of the subjects was employed. It is to be emphasized that order of testing for the various subjects was determined solely by the fact that both the subject and the examiner had free time which coincided. Each subject was re-tested within approximately two weeks after the administration of the first test.

B. The Four Groups

1. Control Group

This group serves as an experimental control, enabling changes due to the mere repetition of the test to be assessed, thus serving as an indicator of the relative stability of the various Rorschach variables under minimal opportunity for change. The following instructions were read by the examiner to the subject:

"About two weeks ago I gave you the Rorschach examination. We are conducting an experiment to determine the effects of examining people with this test a second time. When this test is over, I shall be glad to discuss the test procedures with you. Now, in order to make sure you recall the details of the directions I gave you last time, I shall read the directions to you again. Listen. (Now read the directions from the previous sheet 'Exercise in Rorschach Testing'). If the subject inquires whether he should repeat his old responses or whether he may add new ones, say, 'Just tell me everything you see'."[3]

The N in this group was 21.

2. Experimental Group I

This approach was designed in order to provide within the structure of the experiment a maximum opportunity for change in some of the so-called intellective factors as portrayed in the Rorschach. This maximising effect was attempted through the technique of instructing the subject to give responses to the various areas of the ink-blots. This particular factor was chosen in preference to other intellective factors because it has long

---

3. Original directions for administration of Rorschach are given in preceeding section of this chapter.

been believed by many that these determinants (D and Dd) are subject to conscious (i. e., volitional) control and are least resistive to change. At the same time, minimum opportunity for alteration of other types of variables, for example, M, was provided. Again, two weeks after the administration of the first Rorschach under standard conditions, the test was repeated with the following instructions being read to the subject:

"About two weeks ago I gave you the Rorschach examination. Today, I want to give you this test again as part of an experiment which we are conducting. When this test is over I shall be glad to discuss the test procedures with you. You will remember that last time I asked you to look at each of the ink-blots and tell me everything you saw, everything they could be. No two people respond to this test in exactly the same way. Now today, I would like to see how well you can make use of the parts of each blot as well as of the blots as a whole. I want you to be sure to tell me everything you see today, as you look at these blots, but pay particular attention to the parts of the blots, the way they are broken up, and see how many things you can make of these parts. Remember tell me everything you see, but pay special attention to the separate sections of the blots and give as many answers as you can for these parts or sections. 'If the subject inquires into the meaning of 'part' or 'section', explain that he can break the blots up into any parts he wishes since the blots are only 'ink-blots'. Give no further help. All other questions may be answered, when relevant, with 'That's up to you', 'Do it the way you think is best', or 'Tell me everything you see'."

The N in this group was 21.

3. Experimental Group III

This approach was designed to allow, within the framework of the experiment, maximal opportunity for change of one of the variables beleived to be the resultant of unconscious factors and for a comparative

minimal change as far as the intellective factors were concerned. This was attempted by instructing the subject to give human movement responses. M was chosen because it has long been believed that it reveals deep unconscious aspects of the personality and that it is extremely resistant to change. The following instructions were read to the subject when the second Rorschach was administered two weeks following the first test:

"About two weeks ago I gave you the Rorschach examination. Today, I want to give you this test again as part of an experiment which we are conducting. When this test is over I shall be glad to discuss the test procedures with you. You will remember that last time I asked you to look at each of the ink-blots and tell me everything you saw, everything they could be. No two people respond to this test in exactly the same way. Now today, I want you to take this test with a special objective in mind. I want you to tell me everything you see, but in addition I would like to see how many answers you can give in which you see people doing something. You remember this card (showing card III). Some people see two persons here (pointing quickly to the human areas); some see these persons standing, others see them bending, others see them pulling, and still others see them doing other things. (Put card III away). Sometimes no people at all are seen on that card. Well today I would like you to look for people, especially people in motion. As you examine each card, keep in mind that whatever else you may see and tell me about, try to give as many answers as you can about people you can find. At the end of this test, say 'That was a very fine job. Thanks for your cooperation in this experiment'."

The N in this group was 21.

4. Experimental Group III

The procedure for this final experimental group was designed to provide a conflictful situation for each of the subjects. The variables which were involved are considered

intellective, emotional or affective, and both markedly emotional and intellective. Thus a conflictful situation was provided for the subject. At the same time, minimal opportunity for change in M was afforded as well as in D and Dd. Again two weeks after the original Rorschach, it was repeated with the following instructions to the subject:

"about two weeks ago I gave you the Rorschach examination. Today, I want to give you this test again as part of an experiment which we are conducting. When this test is over I shall be glad to discuss the test procedures with you. You will remember that last time I asked you to look at each of the ink-blots and tell me everything you saw, everything they could be. No two people respond to this test in exactly the same way. Today, I want to tell you a little bit about this test to see how much you can modify your answers after you know something more of the test. One of the things we look for is the accuracy of your perceptions of the blots, that is, how well what you see coincides with the shape of the blot or a portion of it. Therefore, give only those answers today that fit the blot pretty well; don't give those you are not sure of. In addition, we like to see how many persons you can find in the blots. Most people cannot find very many, but we'd like to see whether you can find more persons since this tells us something about how easily you relate to and get along with people. Therefore, try to improve your score in this respect. Finally, I want to tell you something about color in the cards. Color seems to be related to emotionality. While even very healthy people differ considerably in the way they respond to color, we would like you to try to make as much use as you can of the color in these blots. But the best color responses are usually those in which color is tied in with a definite shape, --as for example-- 'a clown because he has a red hat and red shoes'--so try to improve your color score by giving answers about definite things in which color plays a part or contributes to the response you are giving."

"Let me repeat what I've just said: try to give answers only when you are reasonably sure the shape in the blot coincides with the thing you have in mind;

give as many human responses as you can, that is responses about people you see; and try to make use of the color in contributing to the percept or thing that you see. In this way it may be possible to improve your answers even above those you gave you last time. Let's see how much you can better your last week's test. At the end of the test say, 'That was really a fine job. Thanks for your cooperation in the experiment'."

The N in this group was 20.

At the conclusion of the second test for each subject the examiner recorded on the last page of the record the following information:

1. college class level (sophomore, etc)
2. major subject or area (if known)
3. age to nearest birthday
4. occupational objective (if known)
5. courses taken in psychology

Each subject was requested not to discuss the directions for the test with his classmates because of the nature of the experiment. He was then told something of the experiment in a very general sense with no indication of the hypotheses under study, to effect closure.

The overall design which is common to all portions of the combined experiment is summarized at this point:

1. Four groups of college undergraduate students were obtained from an elementary psychology course on a volunteer basis. The total N was 83[4].

2. Each was administered, individually, two Rorschach tests, with approximately a two-week interval between the

4. Total N in that portion of the study conducted by Gibby (8) was 84. One case of Experimental Group I was inadvertently lost during transit of the records.

tests. The examiners were students in a course in "Projective Theory and Techniques". The first test was given according to modified Beck's instructions, while the second test was given with changed instructions depending upon the particular group into which the subject was placed.

3. The second test for the Control Group was given under the same ordinary conditions as was the first test. The second test for Experimental Group I was given under the same conditions, but with changed instructions allowing for a maximum opportunity for change in intellective factors. The second one for Experimental Group II was given under the same conditions, but with instructions allowing for maximum opportunity for change in fantasy factors. The second one for Experimental Group III was given under the same conditions as the first, but with instructions which provided for a conflicting situation.

4. The design offers both maximal opportunities for change in specific variables as well as minimal opportunities for change[5].

5. Since there were 27 examiners and each one examined 4 subjects, there should have been 108 original records. However, only 83 were analyzed. The remaining ones were destroyed by a "summer flash flood" in the office in which the records were stored prior to analysis. It must be assumed that chance factors only entered into the destruction and that the only deleterious effect to accrue was a reduction in the size of N.

Chapter IV

Initial Treatment of Data

It was essential that the data be analyzed in such a manner that any possible biases of the experimenters, either conscious or unconscious, be controlled. Such prejudices had to be avoided in both the gathering and the scoring of the Rorschach protocols. In the treatment of a Rorschach record such highly subjective factors loom as very significant influences, inasmuch as the Inquiry and the scoring are never totally objective matters. Furthermore, there is reason to believe that even the Free Association can be distorted by prejudices of the examiner as has been suggested by Schachtel (20). It might be speculated that well trained Rorschach workers frequently, either consciously or unconsciously, emphasize their own biases and "improvements" when administering the Technique. Students in the Rorschach might be presumed to have less of this type of bias. The first possible distorting influence was dealt with by having the tests administered by persons other than the experimenters, who did not know at the time of the examinations the design of the experiment, or specific purposes of the study. In other words, any possible bias of the experimenters was not likely to affect the actual obtaining of the records.

The second safeguard was to devise a technique

whereby it could be insured that the scoring of the obtained records would not be distorted by the experimenters. This was accomplished through the utilizations of the following procedures:

1. All of the records, regardless of the experimental group or order of the test, were placed in a single group.

2. Each record was then assigned a number from a Table of Random Numbers by a person who was not involved in the experiment.

3. This individual subsequently made out an identification card for each record and placed upon it the random number assigned to the record along with such data as group, original or repeat test, and so forth.

4. The identifying data were then obliterated from the records by him by means of liberal use of India ink.

5. Next records were divided into two piles by an assistant drawing numbers from a hat and alternatley placing the corresponding records into two piles. Each group of records was given to one of the experimenters who scored them according to Beck's (2) technique.

It is believed that the scoring attains the level of objectivity and reliability which a competent examiner may be expected to have. Both experimenters (Gibby and Milton) have had extensive experience with the Rorschach and it can safely be assumed that their scoring accuracy is similar to that of most Rorschach workers. Some of the

main symbols which are utilized in the study can be scored quite objectively, for example, those representing Location. For other symbols (Fi) there are tables to be used as a guide. In other symbols where greater degrees of subjectivity enter, a doubtful determinant was not scored as such; this was particularly true for FC. The kinaesthetic responses represent only humans and apes in human-like activity. But for the purpose of this study the most important point is that if errors in scoring occurred they are randomized. There was no way for a scorer to know the experimental conditions for any record. Of course, prior to analysis of the data, all the records were regrouped into their respective categories.

At this point, the M's in the records of Experimental Group II were scored as to type of movement. This was accomplished by the third experimenter, who was unaware of the hypotheses involved, and who was likewise unaware of the identify of the records he scored. Each human movement response involving a whole human (H) was labeled in one of the following ways:

1. "centripetal": acting or moving with no reference to any object outside the human, but rather action centering around a point within the body, for example, dancing, whirling around, praying, meditating, sitting, standing, sleeping, bending, stooping, and etc.

Illustrations from records of this study:

"human like figure with head drooped down, seems very sad".

"a dancer bending to touch toes".

"a dancer bent back, swirling dress floating around her as though she were spinning".

"a fat man hunched over".

"someone drinking tea, here's the face, and here's the hand holding a cup".

2."centrifugal": acting upon or moving toward or away from a point or object outside the body, for example, running, climbing, pulling, pushing, lifting, carrying, talking, gossiping, fighting, and etc.

Illustrations from this study:

"two witches sort of flying into this thing in the center, hanging onto top and bottom of this thing".

"two butlers wearing tuxedoes possibly roasting something on the fire".

"two little men shaking hands or slapping each other on the back".

"two people might be hitting the wall or maybe about to hit each other".

"an old English judge or school teacher holding a rod behind and threatening a school boy with some sort of punishment".

3. "Ambiguous": motions which cannot be classified under the other two categories. This may be due to:

(a) unclearness of type of kinaesthesias involved, and

(b) inclusion of elements of both "centripetal" and "centrifugal" movement.

Illustrations from records of the present study:

"a couple of people tugging at a fish they've caught, leaning back holding the rod".

"two men bowing to each other or else helping each other pick something up, could be either".

"an Indian or African pulling or pushing or standing on his head".

"a girl with her arms extended toward something, jumping or dancing or could be sitting down".

Chapter V

Group Changes in "M" and Other Rorschach Variables[6]

A. Experimental Group II

The primary focus of attention herein will be upon the changes in "M" which occurred in Experimental Group II as well as upon the various "M" sub-scores which were outlined in Chapter II. Likewise other Rorschach variables which were delineated for study in this group will be examined.

Since mere repetition of a test, despite the fact that efforts are made to keep testing conditions constant, usually results in fluctuations of scores, and since it was desired to take into account these variations when evaluating the effects of the experimental conditions, the formula for differences in mean gains (16) was employed. Although the subjects had been assigned to the Control Group and Experimental Group II in a random fashion, it was desired to test this method of assignment by comparing the relevant original mean scores of the two groups. Table A (Appendix) reveals that the t ratios do not attain statistical significance. Thus it can safely be assumed that the testees, with respect to the

6. "M" as an abbreviation for human movement response has been placed in quotes so as to avoid any possible confusion of M as an abbreviation for mean.

Table I

Differences in Mean Gains in Each Relevant Variable Between the Control Group and Experimental Group II

Variable	Group	Original Test N	Original Test M	Original Test S.D.	Repeat Test M	Repeat Test S.D.	Rho	D[7]	SE	t[8]
M	Control	21	6.76	3.74	7.42	4.53	.66	6.30	1.49	4.22
	Exp. II	21	6.85	4.06	13.61	6.13	.40			
sum C	Control	21	6.54	2.94	4.59	2.67	.38	- .23	.95	.24
	Exp. II	21	6.27	2.82	4.09	2.51	.36			
sum Y	Control	21	3.90	2.53	4.35	4.28	.74	-1.76	1.02	1.72
	Exp. II	21	4.64	4.43	3.33	2.97	.61			
S	Control	21	5.09	5.15	6.33	6.59	.47	-2.76	1.54	1.79
	Exp. II	21	5.33	3.50	3.81	3.26	.57			
W	Control	21	9.86	5.10	7.86	3.68	.62	-1.50	1.30	1.15
	Exp. II	21	8.70	6.06	5.20	3.38	.71			
F/ %	Control	21	88.48	7.76	88.66	9.58	-.16	2.27	3.84	.59
	Exp. II	21	85.55	12.15	88.00	7.65	.42			
A %	Control	21	38.08	9.72	39.37	8.19	.37	-9.24	3.19	2.89
	Exp. II	21	35.70	12.35	27.75	10.60	.60			
# of Content Categories t	Control	21	11.28	2.50	10.90	3.52	-.11	-1.44	1.17	1.23
	Exp. II	21	12.28	3.38	10.46	3.68	.69			
Total R	Control	21	49.90	17.10	50.60	18.65	.83	-4.70	4.69	1.00
	Exp. II	21	55.05	18.15	51.05	18.95	.53			

7. Differences in Mean Gains
8. Levels of confidence 20df: 5%: 2.08: 2%: 2.52: 1%: 2.84

variables shown in Table I, were drawn from the same universe; the formula for differences in mean gains is therefore applicable.

Inspection of the t's in Table I for the differences in mean gains reveals first that the mean number of M responses increased more than one would expect by chance when the opportunity for increment was offered to the subjects. Inspection of the raw data of Experimental Group II revealed that the range of change was from -1 to +17 "M's." Scores for 20 of the 21 subjects varied from +1 to +17; thus only 1 subject did not increase the number of M's. The change occurred despite the fact that the total number of responses decreased slightly.

What is the significance of this finding? According to our definition of stability, the "M" variable is not stable under these experimental conditions. If an externally imposed request induces increments in the "M" score, it is likely that internal or personal motivations may do likewise. Hence the "set" of the subject is very important as one of the factors in determining the number of human movement responses which will be produced. Thus a given number of "M's" in a Rorschach record does not necessarily indicate any static capacity or stable trait; it may be a product of many factors. Interpretation of human movement responses must include consideration of other possible influences, for example, the general milieu in which the examination was conducted.

Another interesting feature of Table I is certain of the relations of the control and experimental retest reliabilities. Whereas in conventional testing (the pencil and paper type, for example) in a similar experimental situation, one would expect to find test-retest reliability higher in the control than in the experimental group, it is to be noted for the variables S, W, F1%, A%, and number of content categories that the reverse is true. Such a discrepancy from what might be expected requires an attempt at explanation despite the fact that the N's upon which they are based are small.

One possible explanation for the paradox lies almost exclusively in personality theory. It rests upon the assumption that each subject arrived for both the original and repeat tests with a "frame of reference" different from that of each other subject. The original Rorschach examination was similarly "unstructured" for all subjects--each one reacted or responded uniquely. In the repeat tests different circumstances are found. For the experimental subjects it was new and highly "structured"--all subjects were told: "improve your M score". On the other hand, the repeat test for the control subjects was not new or unique, and it was similarly "unstructured" in the sense that a common goal was not outlined. Hence individual "frames of reference" operated to a greater degree in the control group than

in the experimental one, and greater fluctuations in scores would be expected in the former group. The goal of the experimental group tended to keep each subject's score on some variables near the mean.

It is also evident from Table I that at least two of the control retest reliabilities (F+% and number of content categories) are quite low. This writer is unable to account for these--it is believed that detailed knowledge of each subject would be necessary for an adequate explanation. That these reliabilities for specific variables are low does not mean, however, that the Rorschach is unreliable. It is well known among Rorschach workers that the entire record must be utilized in an interpretation, and thus allowances made for any discrepant variables. If similar reasoning can be applied to other variables as has been applied to "M" in this study upon the basis of the findings in reference to it ("M" was chosen for experimental manipulation because it has long been believed to be most resistive to change), then any adequate interpretation of other variables must include analysis of factors and events external to the record itself. In other words, the hypothesis is being offered that any evaluation of reliability must include not only internal factors but also external events.[8]

8. Although our control retest reliabilities are not directly comparable to those reported by Hertz (8) and Vernon (22) because they used the split-half method, for the most part, they are similar.

The reliability of the Rorschach has long plagued psychologists, and it has frequently been found to be low, in part because conventional reliability methods are not appropriate for application to it. From one point of view, this study is a unique way of evaluating the "reliability of M" while seeking to identify more precisely "chance factors" which produce low test-retest reliability.

Still another noteworthy feature of Table I is the fact that the increment in the number of movement responses was not accompanied by any significant alterations in other affective determinants. Particularly striking and quite contradictory to previous beliefs is the fact that sum C did not increase along with the increment in the number of "M's". Note, as a matter of fact, that there was a tendency for decrement in sum C. This tendency will be elaborated upon in Chapter VI, "The Erlebnistypus". At the same time, the general tendency was for decrement in other so-called affective determinants (sum Y and S). It is likewise evident from Table I that those variables which are believed to be intellective did not change significantly, with the exception of the A%, which decreased markedly.

Before discussing the possible reasons for the marked increase in "M's" and the context in which it occurred, it might be well to inspect more carefully the quality and nature of the "M's" which were produced in Experimental Group II. The opportunity for such analysis is provided

in Table II; therein are contained the various "M" sub-scores.

Immediately outstanding is the fact that the largest t ratios (those which may be accepted as significant beyond the 1% level) are for those "M's" which occurred in W and D areas and in whole H's. As a group, the subjects responded to the experimental instructions by giving human movement responses which are commonly considered to be rich meaningful ones. Furthermore, these "M's" were those which could be readily classified as either "centripetal" or "centrifugal". Although there was a greater increment in the "centripetal" (the t is significant beyond the 1% level) than in the "centrifugal" ones, such a relation is a relative one only. It is consistent, however, with the notion of "passivity" and conformance with experimental instructions. The important point seems to be, nevertheless, that the "M's" produced in this group in the retest were clear enough to be considered indicative of what Rorschach and others have referred to as basic psychologic activity.

If for purpose of speculation we think now of these mean scores in Experimental Group II as those of an individual, we might raise the question: did the increment in "M" so distort the remainder of the record that the excessive number of "M's" would be recognized as being forced? Current beliefs about the technique would have us believe that peculiarities in any one variable would be reflected in others. Recall from Table I that both

Table II

The Mean Changes from the Original to Repeat Test in the M sub-division for Experimental Group II

M in:	N	Orig. Test M	Orig. Test SD	Repeat Test M	Repeat Test SD	Rho	D	SE	t^9
W and D	21	5.95	4.11	10.86	5.43	.50	4.91	1.09	4.50
Dd	21	.62	1.09	1.86	1.79	.66	1.24	.30	4.13
M- or M	21	.62	1.02	1.48	2.06	.33	.86	.44	1.95
All H's	21	5.33	4.43	10.43	5.30	.73	5.10	.81	6.29
C'petal H	21	1.85	1.55	4.43	3.13	.29	2.58	.69	3.73
C'fugal H	21	2.09	2.46	3.67	2.63	.34	1.58	.65	2.43
'biguous H	21	1.38	2.24	2.33	1.88	.09	.95	.62	1.53
Hd-profile	21	.71	.79	1.09	.94	.19	.38	.26	1.46
Hd- non-profile	21	.57	.74	1.33	1.48	.34	.76	.35	2.17
All Hd's	21	1.28	1.27	2.33	2.08	.23	1.05	.50	2.10

9. Levels of confidence 20 df: 5%: 2.08; 2%: 2.52; 1%: 2.84

affective and intellective variables remained relatively constant. At the same time, not in Table II that poor quality "M's" did not increase and that "profile" Hd's did not change. Translating these Rorschach terms we see that the subjects responded to the imposed task with comparative ease and without major personality disorganization. Anxiety, per se, was not engendered, nor was it expressed via hostility or aggression; but rather, there was simple conformance. At the same time, there was no excessive constriction nor were the subjects "threatened". This interpretation is based solely upon the Rorschach data which have been presented; it is possible that careful scrutiny of individual records or some external criteria would reveal evidence, of disturbance.

What all this seems to mean, however, is that the "M" score can be increased without resulting in major distortion of a record. And for adequate interpretation of a given number of "M's" there must be consideration of factors external to the test itself.

Since these findings about "M" are quite contradictory to what one would expect upon the basis of past hypotheses, certain speculations will be offered in attempts at explanation. One point of departure is to attempt a reconciliation of the discrepancies between findings of this study and Rorschach's hypotheses (as regards M)

which were supported by Fosberg. One question is that of any similarity of the samples employed in the three studies. Rorschach did not make clear the kind of subjects he employed for his suppression experiment nor the number of them involved. We do know, however, that he utilized the technique primarily with psychotics and other individuals who were similarly disturbed. As pointed out previously, Fosberg worked with only two subjects, and therefore no generalizations can be drawn therefrom. Although there may be certain kinds of differences in terms of external criteria between these three samples which possibly account for the disagreements in results, it is believed that such differences are not sufficient to explain entirely the discrepancies; rather there remain other questions.

Perhaps this marked increase in "M" by such a simple procedure as telling the subjects to see more of them, means that human movement responses are highly sensitive to conscious manipulation and thus highly unstable. This seems understandable if it is considered that such responses are probably the most complex ones in an entire record and consequently more susceptible to a greater variety of stimuli. Many elements seemingly enter into their composition. Rorschach considers innate endowment as part of them, as well as "creativity". Beck considers

them as being composed of conscious control and wish activity, while Klopfer states: "We use the term 'inner life' in this simple sense: that it contains all the different promptings from within; whether they are instinctive drives, or the creation of our fantasy and imagination, or simply anxieties" (12,182). Rapaport believes: "The indications are that movement responses reflect a considerable flexibility, versatility, and wealth of both associative and perceptual organizing abilities" (18,213). Doubtless other elements are contained therein.

More specifically, what are some of the reasons for subjects of this study responding as they did? One possible explanation lies in the interpersonal relations which existed between the subjects and examiners. All who were involved in the current experiment were students; the subjects knew from the initial stages of their participation that the examiners were students and novices in the use of the Rorschach. Recall that volunteers for the study were informed that no interpretations could be given and why this could not be done.

Hertzman and Pearce (9) have shown that "M's" frequently reveal very significant personal and interpersonal attitudes. Reasoning by inference, perhaps the simple mechanism of suppression is sometimes involved when few "M's" appear in a record. After all, most subjects who

appear for Rorschach examination in the usual clinic or hospital setting have as a central problem disturbed interpersonal relations. Subjects of this study did not meet this condition, at least not to the same degree. If "M's" are as sensitive as we believe, probably all subjects tend to suppress them. One often finds patients inquiring about what they should see in the plates. Our "normals" probably suppressed "M's" in the original examination (it was given in the standard fashion); in the repeat test, however, they were supported in what should be seen, by being verbally informed to see human movement. Thus it was permissible to reveal themselves, because their anxiety was not ignored completely, and because the examiners had not been presented as either being, or possessing, a powerful psychic instrument (implicitly, reverse "structuring" frequently surrounds a patient examination).

There are other possible explanations for the "M" increment. Gibby (6), in one of the other phases of this project, found that D and Dd responses are increased when subjects are requested to give more of them. Consequently, if one wishes to include only operational events, it might be argued that "M's" are no different psychologically than are the D's and Dd's. Furthermore, it can be speculated that our subjects merely had the ability to focus attention

in keeping with the instructions, and that it was a very simple task. However, it appears to this writer that such explanations do not take into account all of the rich clinical data, as well as the data of this study in reference to "M". The "M's" which were produced in this experimental group were those which are commonly thought of as being rich meaningful ones.

Definite reasons for some of the fluctuations in Rorschach scores have been suggested. In such a context, stability of a variable seems to be more meaningful. Some of the factors which are often attributed to "chance" have been outlined. No doubt there are many others.

B. "M" Changes in Experimental Groups I and III

It has been shown thus far that there was an increment in the mean number of "M" responses when the subjects of Experimental Group II were offered a "set" to "see all the M's possible". A second question which was raised was what happens to the number of "M's" when there is no "set" to see more of them. There are three groups in which "M's" were not the focus of attention: (1) Control: mere repetition of the test, (2) Experimental I: subjects requested to see parts (d and Dd), (3) Experimental III: subjects requested to give F$_1$, FC and H responses.

Table III is provided for pursuit of the general question as to the stability of "M" under what we have

Table III

Differences in Mean Gains in "M" in Experimental Groups I and III

as Compared with the Control Group

Group	N	Orig. Test M	Orig. Test SD	Repeat Test M	Repeat Test SD	Rho	D[10]	SE	t	D[11]	SE	t
Control	21	6.76	3.74	7.42	4.53	.66						
Exp. I	21	5.81	4.15	6.33	4.84	.59	.95	1.23	.77	.14	1.27	.11
Exp. III	20	6.50	4.74	6.95	6.10	.74	.26	1.34	.19	.21	1.23	.17

10. Differences between original tests in both Experimental Groups I and III compared separately to the Control Group.
11. Differences in Mean Gains.

defined as minimal conditions for change. Inspection of the table reveals that the differences in mean gains in Experimental Groups I and III in comparison with the Control Group are very close to zero, and do not approach statistical significance. The amount of change in each group was essentially the same and in the same direction. Recall that the conditions for testing in each of these groups were, operationally at any rate, quite different. In accordance with our definition of stability, the "M" variable is stable in each of these three groups.

Inspection of the raw data for the repeat test in each of the groups again revealed striking similarities. The range of change in "M" in the Control Group was from -7 to +8; in Experimental Group I from -9 to +9; and in Experimental Group III from -8 to +11. Inspection of the distribution of "M" change in the repeat test in each group revealed that approximately one-third of the subjects decreased, approximately one-third showed no change, and the remaining one-third increased.

Conversely, the raw data suggest that the "M" score is not stable for some individuals. Such a finding is consistent with the hypothesis offered earlier to the effect that evaluation of an individual Rorschach record must include an evaluation not only of the score but of the specific milieu in which it is obtained. It was

pointed out while discussing the "M" increment that a given number of them in a Rorschach record does not necessarily indicate any static capacity. This interpretation is supported by the marked variability of "M" in certain individuals in each of these groups. These findings make it all the more inperative to seek some identification of those subjects who change so readily even when testing conditions are supposedly held constant (Control Group), as compared with those who do not change. This problem will be pursued in Chapter VII.

Discussing group changes and accounting for them is quite a different task from assaying influencing forces in a specific examination. This study, however, can only offer suggestions for resolving this latter problem.

Chapter VI

The Erlebnistypus

Since the number of "M" responses and the sum C are seldom interpreted separately but instead, together as the Erlebnistypus, attention must now be directed to the Erlebnistypen of the Control Group and Experimental Group II. Table IV shows the number of subjects in each group who had the specified directions of the M:C ratio in both the original and repeat tests.

Table IV

The Number of Subjects in Each Group for Both the Original and Repeat Tests With the Specified Directions of the Erlebnistypus

	Original			Repeat		
Group	M greater	C greater	equal	M greater	C greater	equal
Con	10	11	0	13	7	1
Exp	9	11	1	19	1	0

It is to be observed in the table that the number of subjects with Erlebnistypen of the specified directions are distributed very similarly in the original tests for both groups. In the repeat tests, however, it is to be noted that the Erlebnistypus shifts in direction for a greater number of subjects in the experimental than in the Control Group. In both groups the predominant direction is "M"

greater than sum C although there are more subjects in the experimental than in the Control Group who are in that category.

Since the primary concern herein is to examine the general stability of the Erlebnistypus rather than its shifts in any specific direction a chi-squared was obtained between the number of subjects who shifted in any direction in each group. Inspection of the individual raw data (Table B, Appendix) revealed that for 13 subjects of the experimental group there was a shift in direction of the M:C ratio from the original to repeat test and that there were shifts in direction for 6 subjects in the control. This is shown in Table V.

Table V

The Relationship Between Membership in a Group and Shift in Direction of the Erlebnistypus

	Shift	No Shift	
Exp II	13	8	21
Con	6	15	21
	19	23	

Chi-Square= 4.59 $.02 > P > .05$

When chi-squared is applied to this table it is possible for one to reject the hypothesis that there is

no relationship between membership in the experimental or Control Group and shift in direction of the Erlebnistypus.

An even more important question than that of any shifts in the direction of the Erlebnistypus is that of alterations in "type". No allowances for "type" were made in the previous computations. Each Erlebnistypus in both groups was therefore "typed" according to the scheme employed by Hertz (7) in her studies of personality in adolescence. One is always interested in the interpretation which would accrue from a given M:C ratio and cursory inspection of the individual raw data suggested that the "types" were altered rather markedly from the original to repeat tests in both groups. The results of this "typing" are presented in Table VI.

Table VI

The Number of Subjects in Each Group for Both the Original and Repeat Tests With the Specified "Type" of Erlebnistypus

Group	Test	Very Extra*	Extra	Very Amb	Intro	Very Intro
Con	Orig	6	4	0	5	6
Con	Repeat	5	2	1	1	12
Exp	Orig	2	9	1	3	6
Exp	Repeat	0	1	1	0	19

* Extra--Extratensive; Amb--Ambiequal; Intro--Introversive

Inspection of the table reveals that there were changes in the "type" from the original to repeat test in both groups but that a larger number of subjects changed in the experimental than in the Control Group. In the former group

it is quite clear that the predominant "type" in the repeat test is "Very Introversive".

The principal interest, however, is not in ascertaining the shifts of specific "types", but rather, in determining if there is a greater number of shifts in the experimental group from one "type" to any other "type" than would be expected by chance. Inspection of the individual raw data revealed that 10 subjects shifted in "type" from the original to repeat test in the Control Group and that 16 shifted in "type" in Experimental Group II. This is shown in Table VII.

Table VII

The Relationship Between Membership in a Group and Shift in "Type" of the Erlebnistypus

	Shift	No Shift	
Exp II	16	5	21
Con	10	11	21
	26	16	

Chi-Square= 3.65 .05 > P > .10

When chi-squared is applied to this table it is possible for one to hold as tenable the hypothesis that there is no relationship between membership in the experimental or Control Group and shift in the "type" of

the Erlebnistypus.

Although it cannot be unequivocally concluded from the above evidence that "M set" alone cause variations in the Erlebnistypus, clinically it is quite apparent from all the data that the Erlebnistypus is variable. When direction and "type" of the Erlebnistypus are considered together, clinical interpretations based upon the original and repeat tests would be markedly different for 6 subjects in the Control Group and for 15 subjects in Experimental Group II. Since these findings are quite contradictory not only to Rorschach's original hypotheses but also to current beliefs, they merit discussion.

Rorschach implied in his discussion of the Erlebnistypus that each aspect of it was an inherited constitutional capacity or propensity for certain kinds of activities. He stated further when discussing its development:

> "It is fairly certain that the experience type of a small child of between two and a half to three years--though the limits of the period are not known--is ambiequal and dilated. The child is markedly kinaesthetic and at the same time markedly egocentric-extratensive in experience type. Learning to read plays an important role in this coartation due to the fact it teaches clear form perception...The development of the experience type is, then, a process of coartation conditioned by the growth of disciplined thinking and taking place within certain optimal limits" (19,119).

In still other discussions of the Erlebnistypus he

emphasized:

> "The results of the experiment thus far appear to justify the assumption that the experience type of an individual has a certain stability...The absolute number of M and C responses changes, but the proportion between them changes little or not at all" (19,94.

He was likewise quite aware, as revealed at other points, that there can be shifts in the Erlebnistypus. He implied that such shifts were the results of major forces such as those coming about with increasing age, those following mental illness, and those following psychoanalytic therapy. Thus he implied that not only do major forces in the life of an individual determine the development of the Erlebnistypus, but also that only major forces cause any shift. Aside from the personality theory involved, these hypotheses of Rorschach have certainly resulted in later workers with the test looking upon the Erlebnistypus as quite immutable and as being quite representative of what might be called an extensive span of a subjects reaction tendencies at the time of testing.

Schachtel and Hartoch (21) summarize quite succinctly a very prevalent attitude toward use of the test when they say:

> "Rorschach's test is based on the assumption that the psychic elements revealed through the use of the test plates and represented by the test formulas operate in the whole life of the individual in the same ratio in which they appear in the test formulas".

It must not be overlooked that Rorschach was aware of even minor influences on the Erlebnistypus, though, perhaps, he did not stress them enough; he stated:

> "The experience type is, however, not an entirely fixed feature of the personality. Under proper conditions, it appears that it can not only be changed in breadth, but completely displaced for a short time. The state of being in a 'good humor', for example, result in a normal ambiequal experience type...The effect of other factors such as physical pain, various affects, mass suggestion, etc., has not, as yet, been examined" (19,95).

During the past few years many studies have been made of the effects of some of these other factors upon the Erlebnistypus which Rorschach mentioned. It appears, however, that practical implications of such experimentation has been overlooked. Kimble (11), for example, found that giving the test in a cafeteria setting increased the C sum significantly; Lane (14) working with one hypnotized subject found very marked changes in the M:C ratio; while one subject studied by Wertham and Bleuler (23) produced a record under the influence of mescaline that corresponded closely to the personality known in life, while the one obtained under the usual circumstances gave a diametrically opposed picture of all important qualities; we must infer that the Erlebnistypus shifted. Luchins (15) found that a series of records obtained from duty soldiers during World War II resulted in a set of norms which were strikingly different from civilian norms. He concluded that the responses of the soldiers had been influenced by the

operation of specific attitudes toward the test and tester, by previous experience, and by the educational, occupational, and cultural background.

Thus, not only is there evidence from this study to suggest the possibility that the direction of the Erlebnistypus for some subjects shifts, but there is also evidence from other sources, and of different influences, which support such a conclusion. As Rorschach suggested, presumably, it can also change as a result of certain internal motivations. This is not to imply that such alterations or reversals persist; upon a later re-test the ratio could well be that of the original one (as Rorschach indicated when discussing the effects of 'good Humor'). But if temporary factors dislocate the Erlebnistypus (and they do very drastically in this study, although we were unable to identify them precisely), then for any accurate interpretation of a given one, we must be aware of conditions which surrounded the procurement of the record and take such factors into account in the interpretation (which is even more difficult to do than identifying group influences). Nevertheless, both the statistical and clinical data offered herein indicate the necessity of such an undertaking.

At this point, in view of the current evidence, it might be well to turn to some theoretical speculations regarding the Erlebnistypus. First, we must examine and

elaborate certain of Rorschach's insights. As mentioned previously, he conceived of the elements of the Erlebnistypus as being innate constitutional capacities or propensities for certain kinds of reactions. Apparently, he thought of them as being entirely affective in nature, for he spoke about coartation beginning to take place at a very early age--possibly around the age of 3--as a result of various forces operating upon the child--for example, learning to read. Indeed, there appear to be some crude analogies between the development of the Erlebnistypus and the Freudian concepts of instincts and certain later developments. Briefly, we know that according to psychoanalytic theory, the child is a bundle of impulses at birth, yet very shortly thereafter these impulses begin to be inhibited as a result of environmental pressures. It is through this delay of impulses that thought arises. That is, the impulses remain within for a period of time, and yet must be handled rather than being expressed immediately, and consequently discharging all the energy involved. Let us hypothesize that the C aspect of the Erlebnistypus represents native impulses and impulsive energy present at birth out of which various elements of M very quickly begin to develop. Ignoring for a moment the technical difficulties encountered in obtaining Rorschach records on young children, we have some evidence that there is a paucity of M, for the most part, among

them. Ford (4) showed in her norms for children that M's were notably lacking, but that FM's were present. Klopfer (12) points out that M's are scarcely found among children up to eight years of age, but hastens to add that we certainly know that they have very active factasies. If we recall, nevertheless, how soon and consistently restrictions are placed upon the most primitive and necessary impulses of the neonate, then it can be hypothesized that there is more delay of impulses and internalizations at these tender ages than ever occur later. Many of these restrictions are inevitable, because no mother is capable of as quick gratification of a neonates needs as occurred 'in utero'. Rorschach's contention that the Erlebnistypus is dilated in the young child is consistent with the views presented herein, but the origin of the M element is at variance. Not only are impulses still rampant in the youngster of two or three years of age, but many of them have already been curbed by the forces which have operated since birth, resulting in some of the elements, at any rate, of M. Thus we can account for the fantasy which is known to be present in very young children--the first two or three years is truly the period of most socialization and inhibition of impulses; the child makes greater proportionate strides in acquiring inpulse delays than ever again. The FM's that are found can be conceived of as forerunners of M and indicate the extent to which

inhibition of impulses has already occurred. Since the first impulses to be inhibited are hostile ones, we could expect the FM's to be of that nature. Turning again to Freudian theory, perhaps M's become evident when the child can cathect to other humans, or at the time when the processes of identification and introjection arise.

Further evidence might be shed upon this formulation by careful study of children who have been reared under entirely different circumstances. For example, the prediction can be offered that a group of markedly over-indulged children (three or four years of age) would show large amounts of pure C and practically no FM and M, while a group who had been reared by strict and dominant parents would show less C and some FM and M. If this thesis is tenable, then cues would be available in a highly imbalanced Erlebnistypus of an adult record which might suggest early parental interpersonal relations of the individual from which valuable insights of his current state could be deduced.

If we return now to Table I we note that the sum C tended to decrease along with the increase in M. Perhaps our additional human movement responses can then be accounted for by at least two factors: freedom for expression (as previously mentioned) and impulse delay. It is interesting to note along this line of thought that in Kimble's study when sum C increased in the

cafeteria situation, M tended to decrease. Conversely, then, when impulses are not delayed there is less inner production.

Our formulations are quite contradictory to Rorschach's original hypotheses about the behavior of M and C. He believed that they were directly related. Perhaps the different kinds of evidence which seems to support each view resulted rom the fact that entirely different types of subjects were utilized. As mentioned previously, we have reason to believe that Rorschach generalized heavily from his work with psychotics, while the present study is concerned with the performance of non-psychotics. Crucial at this point would be another study similar to the present one, with color responses the focus of attention.

Chapter VII

Rorschach Variables Associated With Change

The contents of this chapter are largely suggestive; at best, they indicate certain directions for further research. It is hoped that cues can be offered which will aid in the interpretation of a specific Rorschach record.

Although many of our efforts in the area of clinical psychology involve the implicit goal of changing individuals in certain ways, very little attention has been directed toward the identification of the personality characteristics of those who change and those who do not following various procedures. Since it has been shown in the present study that the number of human movement responses of the Rorschach can be increased markedly by some individuals, it becomes important to identify those who can modify this major feature of a record. It is not sufficient to say merely that the number of human movement responses can be increased under certain experimental conditions. Perhaps, for example, cues can be gleaned from a record which will indicate how vulnerable the individual is to certain external influences. The data of this study offer a unique opportunity for pursuing this latter problem. Not only do we have here, as elaborated upon previously, a group for investigation

in which conditions for change in movement responses were maximized, but we have additional groups in which there were other conditions for change. As a result, it is possible to develop hypotheses concerning Rorschach variables associated with change from the maximized group, and then to test them in the other three groups. Therefore the data of Experimental Group II were examined in a variety of ways.

The problem involved was to find in the original Rorschach records of those who showed the greatest increase in "M" responses characteristics which would distinguish such records from the original records of those who changed least. In general, one might expect to find differences between the two groups either in certain variables in isolation or in configurations. Obviously, the simplest method to employ was an examination of single symbols, especially as there were certain theoretical premises from which to work. Rorschach, for example, suggested that the person who produces "M's" when requested to do so is the person who originally showed quite a few. Likewise, it has been concluded by many that patients who show 'extensor' "M's" are more likely to benefit from therapy than those who show 'flexor' ones.

Since the N was small when each group was to be inspected individually, Experimental Group II was

dichotomized upon the basis of amount of increase in "M" responses, and differences were sought between the "least" and "most" categories in the variables shown in Table VIII. It is to be observed that none of these differences is statistically significant.

Particularly striking, moreover, is the fact that a categorization of the "M" activity into the various components shown, failed to reveal any significant differences. Yet, many persons in the field have utilized this type, or a similar type of "M" evaluation, to make predictions about therapeutic outcome. It is interesting to observe that the difference which most closely approaches statistical significance is that of the "ambiguous M's." In other words, those who changed least had more of these unclear "M's" in their original record than did those who showed the greatest increase in number of "M" responses. Perhaps if the sample had included a more heterogeneous group of subjects, this difference would have clearly differentiated the two groups. Such a finding seems to relate to, or re-enforce, the contention that the undifferentiated individual functions less appropriately than does the more differentiated one. Indeed, this suggests that the presence of these "ambiguous M's" might be more useful prognostically than a mere determination of whether "passive M's"

Table VIII

Differences Between "Least" and "Most" Sub-Groups of Experimental Group II in "M" Sub-Scores and Certain Variables

Variable	"Least" N	"Least" M	"Least" SD	"Most" N	"Most" M	"Most" SD	D	SE	t
Total M	10	8.00	5.33	11	6.00	2.62	2.00	1.85	1.08
C'fugal M	10	2.00	2.98	11	2.40	2.01	.40	1.11	.36
C'petal M	10	2.00	1.80	11	1.80	1.68	.20	.76	.26
'biguous M	10	2.30	2.98	11	.50	.52	1.80	1.08	1.66
M (W & D)	10	6.80	5.73	11	5.30	1.76	1.50	1.98	.76
M in Dd	10	1.00	1.24	11	.30	.94	.70	.51	1.37
M in Hd	10	1.60	1.43	11	1.00	1.15	.60	.61	.98
Profiles	10	.90	.87	11	.50	.70	.40	.34	1.17
Non-Profiles	10	.70	.82	11	.50	.70	.20	.36	.55
M-, M	10	.70	1.25	11	.50	.85	.20	.50	.40
sum C	10	5.65	3.26	11	6.70	2.59	1.05	1.38	.76
sum Y	10	5.20	4.33	11	2.95	3.10	2.25	1.64	1.37
S	10	5.60	4.27	11	4.50	2.46	1.10	1.66	.66
W	10	11.30	13.94	11	9.00	4.13	2.30	4.58	.50
F1%	10	84.30	16.24	11	86.20	10.70	1.90	6.45	.29
A%	10	30.20	11.56	11	36.90	11.91	6.70	5.12	1.30
# Content Categories	10	10.70	2.79	11	11.10	2.51	.40	1.24	.32

predominate over "active" ones, and vice versa, as is frequently done. Such an hypothesis could be easily tested upon a group of subjects who are less well adjusted than those of the present group.

Since investigation of the single symbols of the two groups revealed no significant differences, the next procedure was to utilize patterns of symbols. By inspection of the dichotomized original raw data of Experimental Group II the following combination of symbols was chosen, for it appeared to differentiate between those who showed the greatest increment in "M" and those who changed least: W - M between 11 and 17; S between 3 and 5; M - sum C of zero or negative; CF between 3 and 5; FY of 6 or less. Although other combinations of variables were inspected closely, those mentioned received the closest scrutiny because they appeared to indicate a "balance" of forces. The presence or absence of each of these was determined for each subject who could, as a result, earn a score of from zero to 5.

Table IX

Differences in "Formula" Between "Least" and "Most" Sub-Groups of Experimental Group II

"Formula"	"Least" N	M	SD	"Most" N	M	SD	D	SE	t
All 5 parts	10	1.60	.86	11	3.81	.87	2.21	.39	5.66
W - M only	10	.20	.44	11	.81	.40	.61	.17	3.38

Table IX reveals that the mean score utilizing all five of the combined symbols differentiates clearly between the two sub-groups, and also that the mean W - M score alone will differentiate significantly between those who showed the greatest increase in "M" and those who showed the least. Other separate parts of the "formula" would not distinguish between the "least" and "most" groups.

The question must now be raised whether or not this "formula" is an artifact which might be peculiar to this one group or to the unique method of scoring; it could well be due to chance factors. The best method of testing it would be by cross-validating it with another comparable group of subjects. Since this procedure was not possible the "formula" was tested separately in the Control Group and Experimental Groups I and III. In these groups the subjects had not been told to increase the number of "M" responses (recall that some subjects

changed). Before such testing could be undertaken, however, it was necessary to know that the three groups were equivalent originally in these relevant combinations of symbols. It is shown in Table C (Appendix) that the mean scores based upon the "formula" do not differ significantly in the other three groups from those of Experimental Group II. Also, it was necessary to know that the mean number of "M's" between the "least" and "most" sub-groups in each of the major groups were significantly different. Table D (Appendix) shows t ratios which are significant.

Table X reveals that the "formula" composed of the 5 elements derived from the sub-groups of Experimental Group II or the W - M score alone will not differentiate between the sub-groups of the Control Group or Experimental Groups I and III. Since then the pattern of scores appears to be unique to Experimental Group II, there is further evidence that the shift in "M" was experimentally induced, and also evidence which makes the hypothesis tenable that chance factors alone did not produce the differentiating "formula." Of course, for more conclusive evidence, the "formula" must be tested in another group which is similar to Experimental Group II as to kinds of subjects and experimental conditions.

It can now be speculated as to the meaning of this finding. The W - M score is discussed first because it

Table X

Comparisons of the Differences in the "Formula" Between the "Least" and "Most" Sub-Groups of the Control Group, Experimental Group I, and Experimental Group III.

A. W - M Only

Group	"Least" N	M	SD	"Most" N	M	SD	D	SE	t
Control	11	.45	.55	10	.30	.48	.15	.24	.62
Exp. I	11	.54	.52	10	.40	.51	.14	.22	.63
Exp. III	10	.20	.40	10	.30	.48	.10	.19	.52

B. All 5 Elements

Control	11	2.81	1.07	10	2.00	.81	.81	.42	1.92
Exp. I	11	2.63	1.12	10	2.40	1.50	.23	.57	.40
Exp. III	10	2.30	1.05	10	2.20	1.22	.10	.51	.19

appears to be the most important element. To recapitulate--those who produced the greatest number of additional "M's" were those who originally had a W-- M score which ranges between -1 and -7. On the other hand, those who showed lesser amounts of increase in "M" responses, were those for whom W either far exceeded "M" or for whom "M" was equal to or exceeded W. The following speculations must be limited to the data of this study or to similar data. The problem is by no means as over-simplified as it might appear below.

This state of affairs has some rather marked implications: first, in terms of interpretative significance of the W - M score, and secondly, in terms of enabling some estimate of the reliability of a given Rorschach record. It must be cautioned again that the explanations to be offered will be in the form of hypotheses, which at some future date, must meet both clinical and experimental verification. Furthermore, the groups from which the Rorschach data of this study were derived are quite different from those usually encountered in the clinical area; thus, no doubt, important modifications of this formulation will be necessary.

If we examine briefly the conventional Freudian concept of ego, we find it thought of as that aspect of personality which interprets and deals with reality;

closer scrutiny of this formulation reveals two aspects: first, realistic perception of an external event, and secondly, some action concerning the event which is in accordance with it and also consistent with the individual's own needs. It is in this sense that ego strength will be used; it is only one aspect of the ego. There are others which need not be discussed here, suffice to say that the strength of the ego seems to be one of its most important attributes. It is certainly an aspect which receives close scrutiny in the area of psychopathology. This formulation is highly abstracted and schematic, but is presented only as a frame in which to think of the Rorschach W - M score.

The W - M score has two major components which must first be discussed separately. When a Rorschach card is presented to an individual with instructions to tell us what he sees, certainly the external realistic stimulus which he has before him is a white card upon which there is an inkblot -- a whole inkblot. Realistic evaluation of this stimulation involves, consequently, at least a partial utilization of the whole blot, not just any number of its various parts (D's and Dd's), but in addition combinations of the parts into a whole. Turning again to ego strength, apart from the Rorschach, note that the person with adequate ego strength is the one who can to some extent evaluate a total situation -- not just separate parts of it.

Now we can turn to the other component of the W - M score, the "M." Beck believes that "M" consists, first, of a certain amount of conscious intellectual control and of fitting the percept to the blot, and secondly, that in many instances it reveals fantasy, wish activity, or imagination. There appears to be two bits of evidence to support this view. This study has indicated the presence of conscious control, while the work of Hertzman and Pearce, alluded to earlier, has indicated the degree to which unconscious fantasies are involved in some "M's".

Combining these two components for consideration, on the one hand, we have the external situation (whole blot) and on the other, realistic perception of it combined with unconscious wishes. Our subjects who changed most appear to be those who had a certain balance between these two components. It is interesting that in this balance, the external reality (W) predominates (within limits). In the individuals who changed least we find, on the other hand, either an overwhelming predominance of W or a predominance of "M". In the first instance, the individual ignores his own needs or adheres too completely to the external, or utilizes such an approach as a defensive one; while in the second, his own needs far exceed those of external reality. Yet in our culture are we not faced more frequently with allowing

greater consideration for external events than allowing for gratification of our own needs (impulse delay)? The subjects of this study who showed the greatest increase in "M" employed such an approach.

Recall that subjects who changed most in "M" had the highest score on the total "formula." Those who changed least, on the other hand, had scores in the various components which were at the two extremes. In general, the total score suggests a certain balance of forces: W - M between 11 and 17, CF between 3 and 5, and S between 3 and 5. Other features of the score suggest little anxiety (FY under 6) and good capacity for affectivity (W - sum C of zero or negative). Individuals of this study with a high score can be said to have good capacity for affective relations and, on the whole, impulses which were controlled. They they were able to relate to the examiners and to incorporate the instructions.

Practically speaking, this combined score and the W - M score can aid in identifying those individuals whose Rorschach performance varies most significantly in response to various forces which, it has been shown, can alter certain variables in a record. Specifically, it is being suggested that if scores in these select variables (W - M and so forth), for a given subject, fall

within the limits which we have delineated, then the scores are unstable, and probably the product of temporary factors or forces.

It must be cautioned again that these suggestions and formulations are based upon a limited sample from a select population. Generalizations cannot be made to other dissimilar groups, especially those which include cases of definite psychopathology.

To say that a test is sensitive is not sufficient, particularly when one is faced with the interpretation of an individual record. We know clinically that some individuals are more susceptible to a greater variety of influences than are others, but in many instances the sensitive individuals are difficult to detect. It is being suggested that greater efforts be directed toward identifying both individuals and forces for the result might be increase in accuracy of predictions and adequacy of interpretations.

Chapter VIII

Summary and Conclusions

This study was one part of a larger undertaking designed to answer several general questions about the Rorschach Technique. This portion of the overall project was concerned primarily with the volitional modifiability of the human movement response.

Review of Rorschach's original work revealed that he apparently conceived of kinaesthetic responses as representing an innate constitutional endowment or capacity; human movement responses to him constituted, in part, some sort of primitive equipment, which was subject to certain kinds of modifications such as those occurring with increasing age, but generally was not readily susceptible to alteration. Further survey of the literature indicated that later workers have seemingly accepted the essence of Rorschach's formulations.

At the same time, it has been emphasized by many that the Rorschach is an instrument which is very sensitive to many factors. There is both clinical and experimental evidence which reveal that psychotic disturbances, neurotic conflicts, hypnosis, alcohol, drugs, brain trauma, and a host of other rather major forces (as well as some minor

ones) produce alterations in Rorschach performance. Likewise, it has become increasingly evident that behavior in some individuals is highly variable for a variety of vague and less specific reasons. Yet, the Rorschach is being utilized for evaluation of the effects of various procedures upon personality in situations wherein influences upon behavior are subtle, vague, and elusive. Judging from clinical reports both the variability of behavior and the sensitivity of the Rorschach are frequently overlooked. The purpose of this study was to examine the stability of human movement response when subjects were requested to see more of them. This request was beleived to be a minor force.

Since any one variable in the Rorschach is seldom considered in isolation, it was necessary to study also the following variables: W, F%, A%, number of content categories, sum Y, and sum C, and S. These were chosen for reasons of expediency and also because they usually form the framework upon which interpretations are based. Furthermore, it was deemed necessary not only to examine the number of M responses, but also to examine their quality. This was accomplished by sub-divisions as to: area of the blot utilized; type of movement; content; and content of Hd.

The main hypothesis which was tested was that the mean number of human movement responses would not increase when a group of subjects was requested to see more of them. At

the same time, it was hypothesized that there would be no corresponding changes in other variables on the Rorschach which are commonly thought of as affective and intellective ones. In addition, an effort was made to ascertain differentiating Rorschach characteristics of those who changed most in "M" and those who changed least.

Subjects utilized were undergraduate students at the University of Michigan, enrolled in an elementary course in psychology, who volunteered for the experiment. The Rorschach's were administered by students who were taking a graduate course in "Projective Theory and Technique," and who had no knowledge of the nature of the experiment, of the theory involved, or of the specific hypotheses. Final selection of subjects was done solely upon the basis of a subject and examiner having free time which coincided.

Each examiner first gave the Rorschach according to the usual instructions, modified from those proposed by Beck, to each of four subjects. Following this initial administration, the records were numbered from 1 to 4 in the order in which the examinations had been conducted. Four groups of subjects were thus formed.

Two weeks later, each subject was re-examined by the same examiner. Subjects in the first group (Control) merely repeated the test under similar circumstances as those existing for the first one; those of the second (Experimental I) were requested to see as many parts (D and Dd) of the blots as possible; subjects of the third

(Experimental II) were asked to give as many human movement responses (M) as possible; those of the fourth (Experimental III) were asked to give clear form perceptions (F+), controlled color answers (FC), and human (H) responses.

Following collection of the records, identifying data were removed, and a number was assigned to each from a Table of Random Numbers. The records were then divided into two groups by drawing corresponding numbers from a container. All these procedures were executed by an assistant who was not informed about the nature of the experiment. One group of records was then scored by R. Gibby[12], and one by the writer. At this point, the "M's" in Experimental Group II were further classified into the various subdivisions by K. Pottharst[13], who was unaware of the specific hypothes being investigated by the writer.

Analysis of the data revealed, first, that in Experimental Group II the mean number of human movement responses increased more than one would expect by chance. Of the Rorschach variables studied, the only other significant change in this group, which accompanied the increase in "M's", was a decrease in the mean A%. W, F+%, number of content categories, sum C, sum Y, and S did not change more than one would expect by chance. Particularly striking was a tendency for decrement in sum C. The human

12-13. R. Gibby and K. Pottharst were the other two experimenters. They are referred to in the "Foreward".

movement responses in Experimental Group II were found to be those which are generally considered to be rich meaningful ones; they were also indicative of what Rorschach and others believe to be basic psychologic activity.

Second, increases in the mean number of kinaesthetic responses in the Control Group, Experimental Group I, and Experimental Group III were no greater than would be expected by chance. There were marked fluctuations in "M" scores for approximately two thirds of the subjects in each group.

Third, there were more shifts in the direction of the Erlebnistypus in Experimental Group II than could be attributed to chance (chi-square between 5% and 2% levels). Clinically speaking, there were very significant shifts in both direction and "type" in both the Control Group and Experimental Group II. In the latter group in the repeat test, 19 subjects were "typed" as "Very Introversive". Clinical interpretations would be markedly affected (from original to repeat test) for 15 subjects in Experimental Group II and for 6 subjects in the Control Group.

Finally, from the dichotomized raw data of the original Rorschach records in Experimental Group II a score was derived which showed a statistically significant difference between those who changed "most" in "M" in the repeat test and those who changed "least". Those who produced the greatest increase in the number of "M's" were those who had

the following pattern in original Rorschach scores: a W minus M score of between +1 and +7; CF responses between 3 and 5; S responses between 3 and 5; a sum Y score of below 6; and a W minus sum C score of zero or negative. A score based upon the above combination of symbols would not differentiate between those who changed "least" and "most" in "M" in each of the other groups.

In an effort to explain some of the results, it was suggested that: the "M" is especially sensitive to factors involving interpersonal relations; "M" originates from the inhibition and delay of iipulses; a W minus M score of between +1 and +7 indicates adequate ego strength (in our conception of the term).

In deriving implications and conclusions from this study, careful attention must be directed to the samples to which they apply. Certainly, it cannot be said that subjects having definite psychopathological symptoms would respond similarly to the experimental conditions as did our subjects. Doubtless, there are other persons who would respond differently, for example, individuals of low intelligence. Nevertheless, the following conclusions may be applied to literary college students and possibly to educated young adults, in general:

(1) The human movement response is not a stable variable for all individuals. An externally imposed "set" is an important factor in determining the number

human movement responses which will be produced. It can result in "M's" which are usually considered to be rich meaningful ones. Consequently, a given number of "M's" in a Rorschach record does not necessarily indicate any capacity of stable trait, as has been believed; it may be a product of many factors, both internal and external.

(2) The Erlebnistypus is highly unstable for some individuals. An externally imposed "set" is an important factor in determining its direction. Clinically, both an externally imposed "set" and other factors (probably external), which were not identified, determine the "types" of Erlebnistypus. For adequate interpretation of it, the "set" of the subject must be considered.

(3) It is possible to identify Rorschach characteristics which differentiate between those who show the greatest increment in the number of "M's" and those who show the least.

It was emphasized that a subject's score on a given Rorschach variable is the product of many factors, both internal and external. Thus, for more adequate interpretations, many other features than those which appear in a Rorschach record should be considered. It was suggested that the general milieu in which the examination was conducted, the "frame of reference" of the subject, any pleasant or traumatic event prior to the

examination, and other external variables, be evaluated. It was further emphasized that the findings of this study do not mean that the Rorschach Technique is unreliable; instead, it is a sensitive instrument (as others have concluded), and allowances must be made for its sensitivity when interpretation are made. Fortunately, the very positive results obtained herein suggest that the other influences which have been mentioned can be identified experimentally.

As is frequently the case, research in the area of personality raises many more problems than the specific project was designed to answer. This study was no exception. In order to better understand some of the findings and certain of the formulations offered herein, the following questions are posed as worthy of research endeavors:

(1) How stable are other variables such as sum C, sum Y, and S under conditions similar to those of this experiment?

(2) What is the applicability of our findings to patients of definite clinical groups, for example, psychotics?

(3) How stable are certain variables such as "M" when experimental conditions (e. g. frustration) are not verbally communicated to the subjects?

(4) Will the pattern of Rorschach variables which differentiated between the subjects of this study who

changed "least" and "most" in "M", differentiate between "least" and "most" sub-groups of another group of subjects?

(5) What is the increase in prediction (or stability of interpretation) on a Rorschach examination if systematic tests of a subject's adaptability are made (c. f. Hutt and Shor (10): study on "Testing the Limits")?

(6) How persistent is experimentally induced change in certain Rorschach variables, for example, the Erlebnistypus?

Appendix

Table A

Comparison of the Original Scores In the Control Group and Experimental Group II for Each Relevant Variable

Variable	N	M	SD	N	M	SD	D	SE	t
"M"	21	6.76	3.74	21	6.85	4.06	.09	1.20	.75
sum C	21	6.54	2.94	21	6.27	2.82	.27	.87	.31
sum Y	21	3.90	2.53	21	4.64	4.43	.74	1.11	.66
S	21	5.09	5.15	21	5.33	3.50	.24	1.35	.17
W	21	9.86	5.10	21	8.70	6.06	1.16	1.72	.65
F%	21	88.48	7.76	21	85.55	12.15	2.93	3.22	.91
A %	21	38.08	9.72	21	35.70	12.35	2.38	3.51	.68
# content categories	21	11.28	2.50	21	12.28	3.38	1.00	.94	1.06
Total R	21	49.90	17.10	21	55.05	18.15	5.15	5.53	.93

Table B

Individual M:C ratios for All Subjects in Both the Control Group and Experimental Group II

Subject #	Exp. II Original	Repeat	Subject #	Control Original	Repeat
5	7:3.5	18:0.0	92	6:7.0	8:3.5
9	5:7.0	18:4.0	49	6:6.5	7:2.0
103	6:8.5	10:4.0	25	5:7.0	6:9.5
147	5:6.5	13:9.0	22	5:4.5	5:5.0
143	8:13.0	22:3.0	44	15:3.5	19:3.5
47	5:7.5	12:6.5	96	12:10.5	5:2.0
81	6:7.5	13:0.5	43	5:9.0	4:7.0
73	7:9.5	11:7.0	45	6:11.5	6:7.5
52	5:7.0	22:5.0	31	2:10.5	2:7.5
20	8:4.5	12:5.0	55	16:6.0	15:3.5
231	4:8.5	11:6.0	91	2:9.5	3:8.5
76	6:3.0	8:1.5	12	8:1.0	5:0.5
50	6:8.5	5:5.0	83	4:10.5	3:0.5
14	5:5.0	16:3.0	64	7:6.0	9:5.0
71	5:4.0	6:1.5	13	8:5.0	10:5.0
40	3:1.0	4:5.0	37	2:6.0	2:5.5
39	6:5.5	8:4.5	48	8:9.0	9:5.0
77	12:5.5	22:2.0	10	4:2.5	9:2.5
8	11:2.0	15:1.0	78	6:4.5	3:4.0
93	2:4.5	13:5.5	51	5:2.0	12:0.5
66	22:10.0	27:7.0	36	10:5.5	14:8.5

Table C

Differences Between Experimental Group II and Each Other Group for the "Formulae" Derived from Experimental Group II Dichotomized

A. All 5 Elements

Exp. II N	Exp. II M	Exp. II SD	Control N	Control M	Control SD	D	SE	t
21	2.75	1.48	21	2.43	1.02	.32	.38	.84
				Exp I				
21	2.75	1.48	21	2.52	1.28	.23	.41	.56
				Exp III				
21	2.75	1.48	21	2.25	1.11	.50	.41	1.22

B. W - M Only

Exp II			Control					
21	.50	.51	21	.38	.49	.12	.15	.80
				Exp I				
21	.50	.51	21	.47	1.61	.03	.15	.20
				Exp III				
21	.50	.51	20	.25	.44	.25	.15	1.66

Table D

Comparison of "M" Change in "Least" and "Most" Sub-groups of Each Total Group

Group	N	M	SD	N	M	SD	D	SE	t
Control	10	4.00	2.10	11	.63	.50	3.37	.65	5.18
Exp I	10	5.20	2.53	11	1.18	.75	4.02	.79	5.08
Exp II	11	10.90	3.17	10	2.80	1.54	8.10	1.11	7.29
Exp III	10	4.00	3.05	10	.70	.48	3.30	.97	3.40

Table E

Comparison of Differences for Each Variable Between Original and Repeat Tests in the Control Group and Experimental Group II

Variable	N	Original Test M	Original Test SD	Repeat Test M	Repeat Test SD	Rho	D	SE	t
Control Group									
M	21	6.76	3.74	7.42	4.53	.66	.66	.78	.84
sum C	21	6.54	2.94	4.59	2.67	.38	-1.95	.69	2.82
sum Y	21	3.90	2.53	4.35	4.28	.74	.45	.65	.69
S	21	5.09	5.15	6.33	6.59	.47	1.24	1.42	.87
W	21	9.86	5.10	7.86	3.68	.62	-2.00	.90	2.22
F1%	21	88.48	7.76	88.66	9.58	-.16	.18	2.52	.07
A%	21	38.08	9.72	39.37	8.19	.37	1.29	2.26	.57
# Content	21	11.28	2.50	10.90	3.57	-.11	- .38	.91	.42
Total R	21	49.90	17.10	50.60	18.65	.83	.70	2.35	.30
Experimental Group II									
M	21	6.85	4.06	13.61	6.13	.40	6.76	1.30	5.20
sum C	21	6.27	2.82	4.09	2.51	.36	-2.18	.67	3.25
sum Y	21	4.64	4.43	3.33	2.97	.61	-1.31	.79	1.65
S	21	5.33	3.50	3.81	3.26	.57	-1.52	.70	2.17
W	21	8.70	6.06	5.20	3.38	.71	-3.50	.97	3.61
F1%	21	85.55	12.15	88.00	7.65	.42	2.45	2.52	.97
A%	21	35.70	12.35	27.75	10.60	.60	-7.95	2.32	3.43
# Content	21	12.28	3.38	10.46	3.68	.69	-1.82	.60	3.03
Total R	21	55.05	18.15	51.05	18.95	.53	-4.00	4.02	1.00

Bibliography

1. Beck, Samuel J.; Personality Structure in Schizophrenia; A Rorschach Investigation in Eighty One Patients and Sixty Four Controls; Nervous and Mental Diseases Monograph, number 63, 1938.

2. _____; Rorschach's Test, I Basic Processes; Grune and Stratton, New York, 1944.

3. _____; Rorschach's Test, II A Variety of Personality Pictures; Grune and Stratton, New York, 1945.

4. Ford, Mary; The Application of the Rorschach Test to Young Children; University of Minnesota Institute for Child Welfare Monograph, number 23, 1946.

5. Fosberg, I. A. ; Rorshcach Reactions Under Varied Instructions; Rorschach Research Exchange, 3:12-38, 1938.

6. Gibby, Robert; The Influence of Varied Experimental Sets Upon Certain Rorschach Variables: I. Stability of the Intellectual Variables; unpublished Ph. D. dissertation, University of Michigan, 1949.

7. Hertz, Marguerite; Personality Patterns in Adolescence as Portrayed by the Rorschach Method: IV. The "Erlebnistypus"; Journal of General Psychology, 29:3-45, 1943.

8. Hertz, Marguerite; Reliability of the Rorschach Ink-Blot Test; Journal of Applied Psychology, 18:461-477, 1934.

9. Hertzman, Max and Pearce, Jane; The Personal Meaning of the Human Figure in the Rorschach; Psychiatry 10:413-422, 1947.

10. Hutt, Max L. and Shor, Joel; Rationale for Routine Rorschach "Testing the Limits"; Rorschach Research Exchange, 10:70-76, 1946.

11. Kimble, George A.; Social Influence on Rorschach Records; Journal Abnormal and Social Psychology, 40:89-93, 1945.

12. Klopfer, Bruno; Theory and Technique of Rorschach Interpretation; Rorschach Research Exchange, 3:152-194, 1938.

13. Klopfer, Bruno;and Kelley, Douglas; The Rorschach Technique; World Book Company, Yonkers, 1942.

14. Lane, Barbara; A Validation Test of the Rorschach Movement Interpretation; American Journal of Orthopsychiatry, 18:292-296, 1948.

15. Luchins, A. A.; Situational and Attitudinal Influences on Rorschach Responses; American Journal of Psychiatry, 103:780-784, 1947.

16. Peters, Charles C. and Van Voorhis, Walter R.; Statistical Procedures and Their Mathematical Bases; McGrawOHill, New York, 1940.

17. Piotrowski, Zygmunt; Tentative Rorschach Formulae for Educational and Vocational Guidance; Rorschach Research Exchange, 7:16-27, 1943.

18. Rapaport, David; Diabnostic Psychological Testing, Volume II; Yearbook Publishers, Chicago, 1946.

19. Rorschach, Hermann; Psychodiagnostics; Verlag Hans Huber, Bern; distributed by Grune and Stratton, New York, 1942.

20. Schachtel, Ernest G.; Subjective Definitions of the Rorschach Test Situation and their Effect on Test Performance. Contributions to an Understanding of Rorschach's Test, III; Psychiatry, 8:419-448, 1945.

21. _____ and Hartoch, A.; The Curve of Reactions in the Rorschach Test; American Journal of Orthopsychiatry, 7:320-348, 1937.

22. Vernon, P.E.; The Rorshhach Ink-Blot Test; British Journal of Medical Psychology; 13: 271-291, 1933.

23. Wertham, Frederic and Bleuler, Manfred; Inconstancy of the Formal Structure of the Personality; Archives of Neurology and Psychiatry, 28:52-70, 1932.