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THE RORSCHACH INK-BLOT TEST[1]. I.

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SECTION A. INTRODUCTION.

THE Rorschach Ink-blot test has been widely used in continental countries as a psychiatric diagnostic method, but it is still little known in England and America. My main objects in the present paper are as follows:

(1) To supply a fairly comprehensive survey of the literature bearing on the test (in so far as it has been obtainable), and so to stimulate its further application.

(2) To examine the diagnostic value of the test in respect of presumably normal adults, on the basis of its application to 90 persons, English and American college graduates and undergraduates.

(3) To make recommendations towards the improvement of the test by the adoption of more objective criteria in its scoring.

The test consists of a series of ten blots; the subject or patient, who is shown each blot in turn, describes what they suggest to him, and his responses are then scored or classified according to the following scheme:

(1) Mode of apperception (responses to the whole blot, to details, etc.).

(2) Quality, or main psychological determinant, of response (form, movement, or colour).

(3) Content or meaning of response, including originality and commonality.

[1] I am greatly indebted to Dr S. J. Beck (Boston, Mass.), Mr D. Bryn (Oslo), Dr L. E. Mira (Barcelona), Dr O. Oeser (Cambridge), Dr S. Rosenzweig (Harvard), and others for information about their own work with the test, which would otherwise have been inaccessible to me; also to Prof. M. A. May (Yale) and Prof. H. A. Murray (Harvard) who afforded me facilities for applying the test to college students in their laboratories; and to Prof. G. W. Allport (Harvard) for reading and constructively criticizing the manuscript.

since responses to the latter are largely determined by verbal habits which can have but little diagnostic value (cf. Morgan (47), and Mazkevič (43)). The ink-blots are comparatively free from conventional meanings, and the test can be applied equally well to persons of almost any age, and any nationality, irrespective of language factors.

The clinical significance of ink-blot interpretations was first investigated in 1911 by Dr Hermann Rorschach, a young Swiss psychiatrist[1]. He tried out a wide variety of blots, made with black ink and with colours, before publishing his standard series. His main results, based on the application of the test to 117 normal persons and 288 diverse mental patients, together with a full description of the test and of the scoring methods, are contained in a monograph, *Psychodiagnostik*, published in 1921[2]. He died prematurely in the following year, but some further developments of the method are contained in an article published posthumously by his follower, Dr Oberholzer. These two publications are the standard authorities, which should certainly be consulted before the test is given and the responses scored. The following account of the method is also derived largely from Mueller's (49) and Oeser's (54) articles, and from the investigations on children reported by Behn-Eschenburg (10), Loepfe (38), Loosli-Usteri (39), and Beck (5, 8). Further literature, of somewhat less importance, will be cited below.

SECTION B. DESCRIPTION OF THE INK-BLOTS AND EXPERIMENTAL PROCEDURE.

The test material.

The ten blots are printed centrally on white sheets, measuring $9\frac{3}{4}$ by 7 in. They should not be cut down, but may be pasted on to strong cards for purposes of easy handling. Nos. I, IV, V, VI and VII are black and grey, Nos. II and III include some red splotches in addition; Nos. VIII, IX and X are multi-coloured. Photographic reproductions of some of the blots may be found in Loosli-Usteri (39), Loepfe (38), Pfahler (55), and Wertham and Bleuler (83). Rorschach and Oberholzer (63) give illustrations of the whole series in black and white outline, the approximate colours being written on the figures. The reproduction in the present

[1] Cf. the short biography and account of the philosophical background of the test by Binswanger (11).

[2] This monograph, also Behn-Eschenburg's (10) and the test material, were originally issued by Bircher, Bern, but are now obtainable from Huber, Bern.

article (p. 97) of blot No. III is similar. Illustrations of other series of blots, which are meant to be applied like Rorschach's, are given by Behn-Eschenburg (10), Roemer (59, 61), Struve (69), Gordon and Norman (28), and Weil (80). But the original series should be used, without modification or curtailment, if results comparable to Rorschach's are desired.

All of the figures are symmetrical about a vertical axis. According to Rorschach (62), these figures are neither so simple that the subject considers them merely as meaningless blots, nor yet so complex that he finds it impossible to give any adequate interpretations. Further conditions that governed the invention of each blot may be found in *Psychodiagnostik*, and (in English) in Oeser's article (54).

The experimental situation and instructions.

Working with adults and college students, I find it best to seat the subject in a good light, and to place myself behind and rather to one side, so that I can see the blot in the subject's hand. Each blot can then be given to him in turn, and he will not be distracted by seeing me take down his answers. Every effort should be made to achieve a natural and unconstrained situation. For example, if the subject is accustomed to smoke during ordinary conversation, then he may be encouraged to do so during the experiment. No time limit should be set, nor should there be any suggestion that speed of, or quantity of, associations is of any significance[1].

As the first blot is handed to the subject, the experimenter should, according to Rorschach, Loosli-Usteri (39) and Beck (5), say simply, "What can that be?" or "What do you see?" I prefer to follow the practice of Juarros and Soriano (31) or Pfahler (55) by asking, "Will you tell me if this suggests anything to you?" It is essential not to give the subject the impression that any particular type of interpretation is required (whole or part, form or colour, etc.), hence it is probably best to avoid adding, as Oeser (54) does, "The blots don't mean anything in themselves, but it is possible to see almost anything in them, just as you can see faces and figures in the fire or in clouds." If the subject is unresponsive, he may be encouraged by telling him that any interpretation will do, and that most people see at least one thing, generally more than one, in the blot. If he asks any questions as to the kind of interpretations that are desired, the experimenter should answer entirely non-committally. For it is most important to secure his spontaneous reactions to the standard situation.

[1] Oeser (54) instructed his subjects not to look at each blot until the word 'Now' was given, in order to see whether certain subjects of an impulsive type would comply. In general this restriction is quite unnecessary; it is best to avoid all experimental formalities.

On no account, of course, should the subject have any previous knowledge as to the diagnostic significance that may be attached to his reactions.

The subject should decide for himself how, and at what distance, he examines the blots; they may be held at arm's length if he wishes, but he should not be given the opportunity to view them from a greater distance. If he does not of his own accord turn the blot round and look at it upside-down or sideways, the experimenter should tell him that he may do so, and ask for further interpretations. The blots should, however, be given to him in the first place with the correct side uppermost, *i.e.* with the number on the back in the left-hand top corner. And the standard order of presentation should be adhered to strictly.

Attitude of the subject, and length of the test.

According to Loepfe (38) some subjects gather the false idea that the more interpretations they give, the more they score. And some produce such an excessive number of responses, that the experimenter may feel obliged to cut short the flow. Since this curtailment obviously prejudices the situation, it should be avoided as far as possible. In my own experiments I found it necessary in only three cases out of ninety. Loepfe states, however, that if such subjects are told to confine themselves to seven different responses for each blot, their final scores will not be appreciably affected thereby. Clearly this needs more investigation. The majority of adult subjects complete the experiment within half an hour or less; occasionally my subjects required up to 2½ hours, and no doubt very long times are more frequent among certain psychopathological patients. With a little experience it is generally possible to predict beforehand from acquaintanceship with the subject whether he is likely to take 10 min., 30 min., an hour, or more.

Most subjects seem to evince great interest in the test, so that the subjective situation is generally very favourable for the obtaining of natural responses. More difficulty might be experienced with abnormal subjects; in fact Mira (44) sometimes found it impossible to get complete sets of responses from his patients, and Juarros and Soriano (31) state that the uncoloured blots appear very dull, "*chez les enfants anormaux.*" Loepfe also points out that the personal relations between the experimenter and children who act as subjects are of such importance that different experimenters may obtain quite different results from the same children. As in Binet testing, it is essential to establish an attitude of trust and co-operation. Some of Oeser's (54) 'colour-dominant' subjects

manifested an antipathy for the test which has not been mentioned by other investigators. This was occasioned by the monotonous effect of the symmetry of the blots. Subjects who belonged to this temperamental 'type' disliked any kind of stereotypization, and Oeser occasionally found it necessary to give only half the blots at one session. I never met with this particular difficulty, though a few subjects evinced some boredom because several blots in succession suggested to them a bat or an insect, or an anatomical section. Encouraging remarks of a non-prejudicial character always sufficed to make the subjects carry on until the later, more variegated, blots were reached.

Recording the interpretations, and eliciting further explanations.

The experimenter should, as far as possible, write down every word that the subject says, since the qualifying statements, or general remarks, are often as enlightening as the actual responses. No previous investigator has published any device for recording easily the exact part of the blot to which each interpretation refers. Rorschach, for example, in his table of responses, often gives very imperfect indications as to which detail is meant. To save writing 'upside-down,' 'sideways,' etc., Loosli-Usteri introduced the following useful abbreviations, $\wedge$, $\vee$, $<$, $>$, whose connotation is obvious. I strongly recommend, however, that the experimenter should trace the outlines of each blot and prepare mimeographed or duplicated diagrams. He can then write each interpretation at the appropriate place on his diagram, numbering them as they come. If the subject turns the blot upside-down, the experimenter does the same with his outline diagram, and so on. Space should be left at the bottom or side of the diagrams for writing down interpretations which refer to the blot as a whole, or for additional remarks. The set of ten diagrams belonging to each subject should be permanently clipped together.

The interpretations will have to be classified, later, according to a somewhat complex scheme. It is therefore essential to know, first, whether each interpretation refers to the whole blot or to a particular detail, and, secondly, whether each interpretation was motivated predominantly by the form or shape, by the colour, or by impressions of 'movement' in the blot. (These conditions will be elucidated more plainly below.) If, then, the experimenter is dubious, at the time, as to the proper classification of a response, he should mark it with a cross and go through the series again at the end of the experiment, questioning the subject with respect to these doubtful interpretations[1]. He should not,

[1] Beck (8) holds that even this questioning should be conducted indirectly, in such

of course, interrupt the experiment while in progress for this purpose, since his questions might influence the answers to later blots.

Application of the test to groups of subjects.

It should be theoretically possible to give the test in group form. The blots could be projected on to a screen epidiascopically, or else made into appropriately coloured lantern slides. Each blot could be exhibited long enough for every subject to write down all the interpretations they wished, and could be revolved slowly. The subjects would have outline diagrams, like those mentioned above, and would write their own responses in the correct positions. But the disadvantages of this method would almost certainly, as Wells (81) points out, outweigh the single advantage, that of saving of time. The slower and the more productive subjects would have to be hurried, or else the quicker subjects would have to wait for them. It would be impossible to ensure a favourable subjective attitude, and some subjects might apprehend the instructions quite differently from what was intended. Moreover, it would be impossible to go through the doubtful interpretations a second time, in the manner described in the previous paragraph. My conclusion, therefore, is that the application of the test to the majority of subjects is quite as objective and controlled as the application of the Binet tests, and that it may be given with no difficulty by any intelligent psychologist or psychiatrist after quite a short training. But at the same time each individual case needs careful handling and direction, so that it would be impossible to turn the test into a valuable group method.

SECTION C. THE CLASSIFICATION OF THE INTERPRETATIONS AND THEIR ALLEGED DIAGNOSTIC SIGNIFICANCE.

Introduction.

Much more perplexing and difficult than the application of the test is the scoring or classification of the interpretations or responses which are obtained from the subjects. The procedure is to consider each response, first in respect to its 'mode of apperception,' then its 'quality,' and finally its 'content.' The several categories to which the response belongs are designated by letters or abbreviations of their German names; for example, G = a *Ganz* or whole response, F = a form response, and

a way as to give the subject no idea as to how his responses are to be classified or interpreted. But I can see no harm in direct questioning of a normal adult subject, if he is not to be retested later, and if he does not convey his knowledge of the test to any subsequent subjects.

T = a *Tier* or animal response[1]. Thus when a response has been completely scored it will have received three such symbols; in some cases a fourth letter is added to express its degree of originality or individuality. A number of illustrative examples will be given below, based on ink-blot No. III, which is roughly reproduced on p. 97.

Unfortunately the criteria for deciding under which of the apperception or other categories the response belongs are very indefinite and subjective. In the following pages an attempt will be made to expound these criteria as explicitly as possible, and suggestions will be made towards improving their objectivity and adequacy. But the subjective element in scoring is only likely to be eliminated if some future investigator will undertake to tabulate all the responses of a large and representative group of subjects (on the analogy of Kent-Rosanoff's free word association tables). Between 100 and 300 different responses should suffice for each blot. The correct classification of each of these responses should be decided by a small group of clinicians who have much experience with the test. Any new subject's responses could then be accurately scored by reference to such tables. Until such time as they are available, however, the experimenter is advised to verify his classifications, whenever possible, by comparisons with the sample classifications which are given in *Psychodiagnostik* and other standard publications (49, 63). The experimenter who has applied the test to a considerable number of subjects is recommended, also, not to classify the responses of each subject separately, but to classify the responses to each blot given by all the subjects at one time. Greater consistency is thereby obtained.

The diagnostic significance that has been claimed for each category of response will be outlined briefly below, and the average numbers or percentages of such responses obtained by various groups of subjects (*i.e.* the norms) will be quoted. Rorschach himself does not present any exact averages, but only figures which represent roughly the ranges of scores that he expects to find in normal, or in psychopathological, groups. My own results were obtained from the following three groups of students and adults:

I. Twenty-five male freshmen at Yale University, aged 17–19 years; an undistinguished group of about average intelligence and heterogeneity.

[1] Beck (5, 8), Wells (81) and Wertham (83) in America, and Oeser (54) in England, have presented English equivalents for these symbols; Loosli-Usteri supplies French equivalents. I am inclined to retain the original German symbols, since they are already employed in 80 % or more of the published literature bearing on the test. And it may be noted that Beck, Wertham and Oeser are by no means wholly concordant in their terminologies which they propose to substitute for Rorschach's.

II. Forty-eight male students at Harvard College, ranging from freshmen to seniors, aged 16½–23 years. This group was, as far as possible, unselected in the statistical sense of the term (cf. (73)).

III. Seventeen English subjects, of whom seven were women. This was a highly educated group, consisting for the most part of graduates of Cambridge University. They ranged in age from 20 years upwards, the median age being about 25 years. Owing to their small numbers, no attempt will be made to distinguish the sexes.

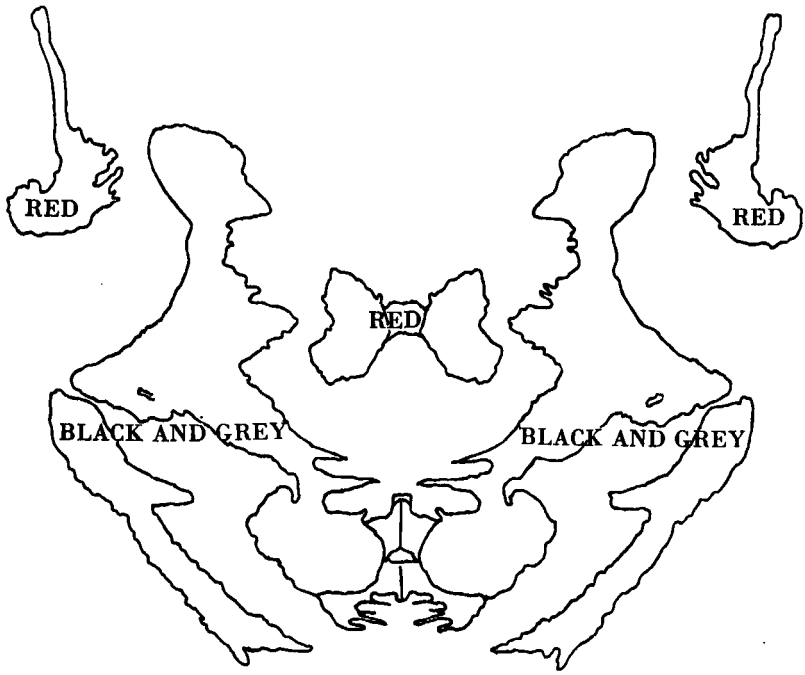


Fig. 1. Outline reproduction of Rorschach's blot No. III.
(Three-quarters original size.)

Oeser tested an English group of nineteen men and thirteen women, similar in composition to my Group III. Since so few figures are available for normal adults, I have summed the averages quoted by Munz (51) for pyknics, asthenics, and intellectuals (cf. p. 182), ninety-one persons in all; these will also be included below. Three sets of children's norms have been published, by Behn-Eschenburg (209 Swiss boys and girls, 13–15 years), by Loepfe (120 Swiss boys, 10–13 years), and by Loosli-Usteri (63 Genevese boys, 10–12 years). The results of other investigators with certain more specialized groups will be discussed in later sections.

Antw = Antworten. This symbol stands for the total number of responses given by the subject. It is an important quantity because several of the later categories of response must be expressed as percentages of it. Its determination is not wholly objective, for some subjects talk about the blots almost continuously, and so make it difficult to decide when an interpretation ends and the next one begins. Hence it is best to number the responses at the time they are given, *i.e.* during the experiment, when it is relatively easy to judge whether the subject is changing over to a new interpretation, or is merely elaborating an old one.

Other subjects may first interpret the blot as a whole and later proceed to describe the details; it may then be difficult to decide whether each detail should be counted as a separate response. Take, however, the following possible responses to blot No. III.

(1) "There are two men bending down and lifting up something. I can see their heads, and arms, and legs...."

(2) "There are two men bending down and lifting up something. Their legs are very much like fishes. The thing in the middle is a large crab which they are pulling to pieces...."

Clearly in the first case we have a single interpretation of the blot, and in the second case there are two additional interpretations of certain parts of the blot.

According to Rorschach, 15 to 30 or more is the normal range of *Antw.* My groups gave an average of 33·1, ranging from 8 to 119 (figures for the three groups separately will be found in the summary table on p. 182). Munz's subjects averaged 33·3, Oeser's 67; Behn-Eschenburg, Loepfe and Loosli-Usteri obtained 33·6, 42 and 23 (median), respectively.

Most investigators with the Whipple blots regard the number of responses as indicating "fertility of imagination." Rorschach entirely disclaims this diagnosis, but allows that "phantasy-lovers," manics and epileptics produce more responses than inhibited, bad-tempered, and most schizophrenic persons. Inability to give any response at all for one or more of the blots should only appear in certain types of schizophrenia and in debile hysteria. My own impression is that the number of responses depends largely on the experimental situation; the subject who feels least trust in the experimenter, who is suspicious about the object of the test, tends to produce fewest interpretations. Many responses occur not only among those who feel at ease, but also among those who have gained the notion that the more suggestions they give, the 'better' their results. Thus the skill of the experimenter in establishing a favourable

attitude in his subject or patient is one of the main determining factors of *Antw.*

It is shown below (Section D) that it is difficult to give a reliable diagnosis when the subject produces very few responses, say less than 30. I would recommend, therefore, that a parallel series of blots should be prepared, and that some or all of these should be applied, in addition to the standard series, when the subject fails to give the requisite minimum of responses. Probably an optimum number of about 50 responses from each subject should be aimed at.

Mode of apperception.

G = *Ganzantwort, i.e.* a response which interprets the blot as a whole.

D = *Detailantwort, i.e.* a response which interprets some part or detail of the blot.

Examples of G responses to blot No. III[1]:

"Two men shaking hands."

(Upside-down) "A large insect's head."

Examples of D responses:

(The upper red patches) "Two parrots hanging upside-down."

(Central black, upside-down) "Negroes' heads."

The G symbol should, strictly, be applied only to 'primary' *Ganzantworten*, where the interpretation is based immediately on the whole blot, without any consideration of details. If, however, the subject first notices a detail and then interprets the whole blot to fit in with his response to this detail, we have a 'confabulatory secondary' *Ganzantwort*, designated as DG. Again, if he notices several details and then relates them together into an interpretation of the whole blot, we have a 'combinatory secondary' *Ganzantwort*. In reckoning up the final total of G responses given by the subject, these and other more complex types of apperception (cf. *Psychodiagnostik*, pp. 27–28, also Beck (9)) are allowed to count as G's, but their incidence should always be noted, since they are characteristic of certain psychoses. In general the correspondence of confabulatory DG responses with the form or shape of the blot is rather poor, but combinatory G responses correspond much more exactly. Hence they are usually classified, below, as $F-$ and $F+$ respectively.

[1] This particular blot is exceptional in that the red patches do not have to be included in the interpretation for it to be classified as a G response. In no other blots are such exceptions allowed.

Certain varieties of details receive special symbols. *Dd* = *Klein-detailantwort*, an unusual or extraordinary detail. These responses are not, as might be expected, based actually on the smallness of the part of the blot which is abstracted for interpretation, but rather on the infrequency with which this detail is interpreted by normal subjects.

Examples of *Dd* responses to blot No. III:

(Upside-down, top grey portion) "A crown;"
"Open mouth of an animal."

Dzw = *Zwischendetailantwort*. If the subject interprets a white detail on a black ground instead of a black detail on a white ground, the response is called *Dzw*. Example in blot No. III:

(Upside-down, middle grey, white and black portion) "Ideal place for duck-shooting."

Occasional responses occur where the whole of the white background is interpreted in relation to the black, as, for example, when a blot is called "The sea surrounding a peninsula," or "A geographical map of bays, etc." Oberholzer (cf. Baenziger(3)) has coined the symbol *Gzw* for such responses. *Ddzw* responses are also sometimes given.

Do = *Oligophrene Detailantwort*. A few subjects who are usually, according to Rorschach, 'oligophrenes' or imbeciles, when interpreting blots such as No. III do not, like most normal persons, see complete figures of men, but pick out the heads alone. In other words a *D* response is called *Do* when the blot "readily lends itself to interpretation as a whole, but only a small part is taken."

Erft = *Erfassungstypus* or apperception type. This expresses the relative proportions of *G*, *D* and *Dd* responses to one another within the individual subject. Rorschach distinguishes several *Erfassungstypen* by the following symbols (for more complex types, cf. *Psychodiagnostik*, pp. 32–4):

G – *D*, when the subject obtains approximately average proportional numbers of both responses (cf. the norms given below).

G – *D* combinatory, when some of the *G* responses are of the secondary combinatory variety.

G – *D* or *G* – **D**, when there is a considerable excess of *G* or *D*, respectively, over the average proportion.

G – *D* – *Dd*, *G* – *D* – *Do*, *G* – *D* – *Dzw*, etc., when there is an unusually high proportion of *Dd*, *Do*, *Dzw* responses, respectively.

D – *Dd*, *D* – *Do*, etc., when there is an exceptionally low proportion of *G* responses.

Sukz = *Sukzession* or sequence. Most subjects give *G* interpretations to a blot first of all, then turn to *D* responses, and lastly (if at all) to *Dd* responses. If this procedure is adhered to for each of the ten blots, we have a 'compulsive sequence' (*straffste Sukzession*). An approximate adherence to this order in most of the blots is called an 'ordered sequence' (*geordnete*, or, *optimal Sukzession*). When the *D*, *Dd*, and other detail responses generally precede the *G* responses, we have a 'reversed sequence' (*umgekehrt*). And when no systematic order of any kind is followed, the sequence is termed 'loose' (*gelockert*); the *zerfahrener Sukzession* is still more irregular.

Criticisms. These various modes of apperception are so elaborate, and in certain cases so dependent on subjective factors in their scoring, that I would suggest a considerable reorganization of method. *Dd* responses are particularly unsatisfactory; as an improvement Loepfe proposes that whenever a *D* response constitutes less than $\frac{1}{2}\frac{1}{2}$nd of the total number of interpretations assigned to that blot by a large group of subjects, it should be called *Dd*. When it accounts for more than $\frac{1}{2}\frac{1}{2}$nd of all the responses, it is called a *D* response, however large or small its actual size. Loosli-Usteri followed a similar plan. But it seems to me unnecessary to introduce the criterion of 'infrequency' at all into these categories; the later categories (pp. 108–111) take care of it. Under the present system there is extreme disagreement between the number of *Dd* responses recorded by different investigators. Behn-Eschenburg, Loepfe and Loosli-Usteri obtain averages of 7·1, 13·5, and 2 (median), respectively; almost certainly such differences are due to the indefiniteness of the classification. Would it not be better to substitute the following scheme?

G + should refer to the whole blot, *G* − to the greater part of it, *D* + to a large portion, *D* − to a small detail. If the tables, which I proposed on p. 96, were available, it would be very easy to decide under which of these four relatively objective categories the response should belong. A single index for the subject's *Erft* or tendency to wholeness-partness should be applied, for example, $\frac{2(G+)+(G-)}{(D+)+2(D-)}$. Instead of scoring more complex varieties of apperception with symbols such as *DG*, *Do*, etc., the experimenter should note, during the experiment, on a specially prepared rating scale, the tendency to 'confabulatory' or 'combinatory' *G*'s, also the tendency to pick out details where most subjects see wholes[1],

[1] To retain a separate category of *Do* responses seems quite unnecessary because no investigator has been able to confirm Rorschach's claim that they are especially characteristic of imbeciles, (cf. below, Section G).

and the type of *Sukz*. *Gzw*, *Dzw* and *Ddzw* responses should first be scored *G* +, *G* −, *D* + or *D* − like all the other responses; then the *zw* symbol should be added to the classification, and so scored quite independently of the wholeness or partness of the response.

Norms. Rorschach regards 4 to 7 *G* responses as the average in normal persons. This figure seems to hold for children (5·8, 3·7 and 5 in the three investigations already referred to), but a much higher figure is often found with adults (Oeser obtains 16, my groups averaged 15·8). Since it is fairly easy to decide whether or not a response is a *G*, we must conclude that Rorschach's subjects differed considerably from English and American groups. No norms for *D*, *Dd*, etc., are given in *Psychodiagnostik*, but in a later article (63) Rorschach regards 8 *G*, 23 *D*, 2 *Dd*, 1 *Dzw* and 0 *Do* as normal for a subject who gives 34 *Antw*. Since Munz's subjects averaged 33·3 *Antw*, and my own 33·1, our corresponding figures should be closely comparable. Munz found 8·7, 17·0, 5·7, 1·3 and 0·5 respectively; my three groups combined gave 15·8, 14·8, 1·8, 0·7 and 0·05. (*Note*. My method of scoring these categories followed Rorschach's as closely as possible; the recommendations contained in the previous paragraph were not applied.) The three investigators of children obtained 18·4, 19·0 and 15 *D* responses, and very few *Do* or *Dzw*.

Diagnostic significance of Erfassungstypus. The apperception type is believed to indicate qualitative features in the subject's intellect. In general *G* responses represent a synthetic kind of thought, *D* responses a meticulous or analytic kind. But for high intelligence, the maximum numbers of responses are not necessarily the optimum number. The *Erft* should be broad in the intelligent person, for too great a superiority of *G* over *D* responses shows unpracticality or inability to take account of details owing to concentration on wholes. The number of *G* responses is directly connected with 'richness of association,' but primary *G*'s indicate a more philosophical and theoretical, secondary combinatory *G*'s indicate a more artistic turn of mind. A reasonable excess of *D* over *G* responses corresponds to a practical or concrete type of intelligence; but the production of many *Dd* responses points to small-mindedness and pedantry. Similarly the *Sukz* should be 'ordered' but not too exact, else it shows stereotypy and meticulousness of apperception. Too 'loose' a sequence indicates an illogical and disordered mind. The *Sukz* is particularly significant in discriminating between different varieties of schizophrenia. The optimal relationship between the components of the *Erft* depends, to some extent, on the age of the individual; presumably the proportion of *D* and *Dd* responses would be expected to increase with age in adults. If

two or more *Dzw* responses are given, they are said to indicate contra-suggestibility, a spirit of opposition and obstinacy, the reason being that most subjects interpret black on a white ground; such responses are therefore the reverse of the usual mode of apperception[1]. The *Erfassungstypen*, characteristic of various mental diseases, are summarized in Table II, p. 180.

Quality of response.

F = *Formantwort*, a response which is determined wholly by the form or shape of the blot, or of a part of the blot. A distinction should be made between $F+$ and $F-$, 'good' and 'poor' responses to form, *i.e.* those that correspond closely or only vaguely to the shape. Examples from blot No. III:

"A smiling face or mask," $GF+$.
(The 'legs') "Fish," $DF+$.
(Upside-down) "Fungus growth round the roots of a tree," $GF-$.
(Lower middle portion) "A cyclone," $DF-$.

Rorschach does not allow the experimenter to make the decision as to the goodness or badness of correspondence; for he states that any interpretation which is given by the majority of normal subjects, however poor its correspondence with the form, counts as $F+$. Other interpretations which seem to correspond more exactly than this standard are also $F+$, and those that are less exact are classified as $F-$. Though Rorschach considers that the differentiation between the two classes of F responses is empirical and objective, yet many writers (cf. Loepfe) have found it most subjective and difficult to apply. This probably accounts for the considerable disagreements in the norms quoted by different experimenters for similar groups of subjects (cf. below). Undoubtedly comprehensive tables of responses are required in order to specify definitely which responses are $F+$, which $F-$. At present the decision must be made by comparisons with Rorschach's samples.

$F+\%$. The actual number of F responses is not employed in diagnosis, but the proportion of good forms to total forms, *i.e.*

$$\frac{100\,(F+)}{(F+)+(F-)}.$$[1]

[1] The meaning of *Dzw* responses is conditioned, however, by the *Erlebnistypus* of the individual (see below); only the extratensive's *Dzw* responses show opposition to the external world; the introversive's represent, rather, 'self-opposition,' scepticism and indecision.

[2] Some writers, such as Oeser (54) adopt, instead, $\frac{100\,(F+)}{Antw}$ as their measure of $F+\%$. Rorschach's method will be adhered to in the present article, and Oeser's published figures have been recalculated on this basis.

I suggest that it might be better in future to score *every* response $F+$ or $F-$, including those that are determined by other qualities (movement, colour or chiaroscuro). This would save a great deal of confusion in scoring such responses as are partly motivated by shape, partly by the other qualities which we are about to discuss.

Norms and diagnostic significance of $F+$ %. Rorschach's normal adults are said to give 70–80 % $F+$ responses; Oeser obtained 84 %, my groups averaged 79 %, Munz's 80 %; the three groups of children averaged 71, 75 and 80 % respectively. Though the percentage of good forms is a component of intelligence, too high a number (90–100 %) generally indicates a very formal, hypercritical and pedantic mentality. Melancholics and paranoid schizophrenics give very high $F+$ %; manics, imbeciles, epileptics and cases of organic psychosis usually give 50 % or less.

B = *Bewegungsantwort*, a movement or kinaesthetic response. Though the subject bases these responses on the shape of the blot, yet at the same time he perceives motion or expresses kinaesthesia in his interpretations. It is essential that there should be "a primary feeling of movement, and not merely the apperception of a form which is secondarily interpreted as being in motion" (63). B responses almost invariably refer only to human figures (thus in blot No. VIII, where practically every subject sees two dogs or other animals at the sides of the picture, the response is not classified as B when the animals are described as climbing up, or walking, but as $F+$). Angels, mythical creatures, apes, or bears, who are described as performing actions similar to those of men may be included as B responses. Very occasionally, also, geometric figures, plants, etc., may be interpreted as in motion. 'Static' kinaesthesis does not count; thus in blot No. III, "Two waiters *holding* a champagne bucket" would not be B, but "Two waiters *lifting*, or *carrying* a champagne bucket" would be. Often, though not always, B responses are accompanied by empathic movements on the part of the subject. He can usually state, at the end of the experiment, how far *Bewegungsempfindungen* influenced any response about which there is some doubt. Thus the classification is fairly easy and certain in actual practice.

$B+$ and $B-$ responses may be distinguished on the same grounds as $F+$ and $F-$. (If, however, my recommendations were adopted, a movement response which corresponded closely to the shape of the blot would be scored $F+B$, and one which corresponded only vaguely would be $F-B$.)

Bkl = *Kleindetailbewegungsantwort*. This is a B response which is also

Dd, as distinct from *G* or *D*, *i.e.* "a kinaesthetically interpreted unusual small part of the picture" (63). In summing a subject's total *B* responses, these are not included; and since very few investigators have made any use of this category it may well be omitted.

Norms and significance of B *responses.* Among normal adults Rorschach expects to find only 2 to 4 *B* responses. Munz's average is 3·5; children produce even fewer (1·3, 0·9 and 0·6 are the three published averages). More intelligent adult groups, however, give a larger number; I found 4·3, but Oeser obtained 8·7. These responses represent the degree of "*innerliches Schaffen*" or intra-psychic creativity and productivity; they are numerous in artistic subjects and all persons of superior intellect. Materially-minded people, pedants, melancholics, catatonic and hebephrenic patients, and imbeciles produce few or none.

There is an obvious *a priori* reason why most of Rorschach's categories of response should possess the diagnostic significance that is claimed for them; but it is difficult to see why kinaesthetic interpretations should have so peculiar and important a symptomatic value. Furrer (23), however, by means of psycho-analytic studies of *B* responses in two subjects, along the lines of ordinary dream analysis, has traced them down to the deepest drives in the unconscious, and has attempted to show how the individual's sexual life and his creative powers come to expression in kinaesthesia. How far this theory would appeal to Rorschach it is impossible to say.

B responses may be further subdivided into those that deal with upright moving human figures, and those that deal with bent, contracted figures. Subjects who produce more of the former are active and energetic, those who incline to the latter tend to be passive persons and neurasthenics.

Fb, FbF, FFb = *Farbe, Farbform, Formfarb Antworten.* Responses are seldom based purely on the colour, *Fb*, of the blot, but also on the form. If the form is of secondary importance, the response is called *FbF*; if the colour is of secondary importance, then the response is *FFb*. The degree of prominence of the colour element may be determined by enquiring whether the same or a similar response would have been given to a black blot of the same shape as the coloured one.

Examples of colour responses to blot No. III:

"Patches of blood," *DFb*.

"A red flower," *DFbF* − .

"Track of a wounded animal," *GFFb* − .

In addition to recording the total numbers of the three types of colour answers, the experimenter should mark them $1\frac{1}{2}$, 1 and $\frac{1}{2}$, respectively, according to the prominence of colour determination, and so obtain a total weighted score, ΣFb, for the subject's colour tendency.

Good and poor forms are denoted by + and − signs, as before, *e.g.* *FbF* +, *FFb* −, etc. These symbols seem, however, to be so confusing[1], that I suggest the substitution of *Fb* +, *Fb* and *Fb* − for the three types of colour answers, their correspondence to the shape of the blot being scored separately. These three symbols would be marked $1\frac{1}{2}$, 1 and $\frac{1}{2}$, as before, for purposes of determining ΣFb.

Farbenshock. In certain abnormal patients, the sight of the first multi-coloured blot (No. VIII) induces a 'colour-shock' or stupor. The strength of the affect aroused makes it impossible for them to find any logical association or interpretation for the blot over as much as half a minute or so. This phenomenon should be recorded separately if it does appear.

Norms and diagnostic significance of colour responses. No primary *Fb* responses nor *Fb shock* are expected by Rorschach in normal subjects; 0 − 1 *FbF* and 1 − 3 *FFb* is the usual score, aggregating a ΣFb of $\frac{1}{2}$ to $2\frac{1}{2}$. My groups averaged 0·6 *Fb*, 1·8 *FbF*, 2·7 *FFb*, 4·0 ΣFb. Munz's subjects also obtained an average ΣFb of 4·0. Oeser does not quote his full results, but found an average of 13 colour responses of all types, a high figure which may be partly due to his inclusion of several art students in his group. In the investigations of children 1·3, 2·7 and 3·0 ΣFb were obtained. The category of colour responses is the only one which bears no relation to intelligence; instead it represents affectivity or fluidity of emotion. Rorschach postulates a natural association between colour and gaiety; hence the melancholic, to whom everything in daily life seems drab and grey, also fails to react to the colours of the blots[2]. Persons with no *Fb* responses of any kind are over-stable, stereotyped pedants, depressives and the like. Many *Fb* responses of all three kinds are found only among the highly-strung, artistic, nervous, unstable; they are characteristic also of imbeciles. A preponderance of primary *Fb* interpretations, uninfluenced by considerations of form, means extreme impulsiveness; they should practically never occur in normally stable persons. In so far as the form also enters, the affect is under the control of the will. Thus a

[1] For example Rorschach fails to state whether the *F* components of *FFb* and *FbF*, also of *B* + and *B* −, responses are to be included in the calculation of *F* + %. The usua practice seems to be to omit them.

[2] Behn-Eschenburg adds that responses to red colours show even greater vividness of affectivity than responses to the colder blue colours.

preponderance of *FbF* responses shows sensitivity, suggestibility, and affective 'lability'; while *FFb* responses correspond, rather, to affective adaptability, and to concrete, practical, and social interests. The smaller the proportion of *FFb*, relative to *FbF* and *Fb* responses, the more unadaptive and egocentric the affectivity. Women are stated to show a rather smaller proportion of *FFb* than men.

In the abnormal field, manics, epileptics, '*zerfahrene*' schizophrenes, and imbeciles may obtain ΣFb scores ranging from 4 to 17. Characteristic of epileptics only is the tendency to name the colours (*e.g.* to call blot No. III, "Red and black"). Colour-shock never appears in the psychoses, but is typical of some of the neuroses.

Erlebnistypus. In the average normal adult ΣFb is almost exactly equivalent to the number of *B* responses; in different individuals, however, considerable variations are found in the relative proportions of these two categories. Rorschach distinguishes the following five types of relationship, or *Erlebnistypen*:

(1) Coarted (*koartiert*) type, who give 0 *B* and 0 ΣFb responses.
(2) Coartative type, who give 0 or 1 *B* and 0 or 1 ΣFb.
(3) Introversive type, who produce 2 or more *B* and 0 or 1 ΣFb.
(4) Extratensive type, who produce 0 or 1 *B* and 2 or more ΣFb.
(5) Ambiequal type, who give equal numbers (2 or more) *B* and ΣFb[1].

If a subject gave, say 3 *B* and 7 ΣFb, he would also be called extratensive; while 5 *B* and 4 ΣFb would denote ambiequality with a slight tendency to introversiveness. In addition, all subjects who produce one or less of either category of response are called 'constricted'; those who give at least two of both kinds are called 'dilated.'

Loosli-Usteri has constructed a useful diagram for expressing graphically the number of persons in a group of testees who belong to each type. This is reproduced, with slight modifications, on p. 109, and shows the scores and *Erlebnistypen* of my own ninety subjects. *Fb* scores are plotted on one axis (half marks being raised to the next highest whole number), *B* responses on the other axis; the numbers belonging to each type may be readily seen.

So important is the diagnostic significance of *Erlebnistypus* that a separate section will be devoted to it below (Section E).

(Fb) = chiaroscuro responses (*Hell-Dunkeldeutungen*). In his later

[1] Behn-Eschenburg slightly altered this scheme. His coartative subjects had fewer *B* and ΣFb responses than the average of his total group. Extratensives or introversives had more than the average ΣFb or *B*, respectively. His ambiequals and other dilated subjects had more than the average of both types of response.

article (63) Rorschach noted that the shading in some of the black and white blots might be the main determinant of a response. In other words, the greys were given colour values. Beck (5) and Oberholzer (Baenziger (3)) allow that responses which are motivated by differential shading in coloured blots may also be classified as *(Fb)*. The relative influence of form in these responses may be denoted, as before, by the symbols *(Fb)F* and *F(Fb)*; but many writers prefer to call all chiaroscuro responses *F(Fb)*.

Example in blot No. III:

(Upside-down, central grey and black) "Landscape, a country road with overhanging trees," *DF(Fb)* +.

This symbol for chiaroscuro responses is so confusing that I recommend the adoption of *Ch* in its place, also *ChF*, *FCh*, ΣCh. The same proposals which I made for the scoring of *Fb* responses might be applied to *Ch* responses.

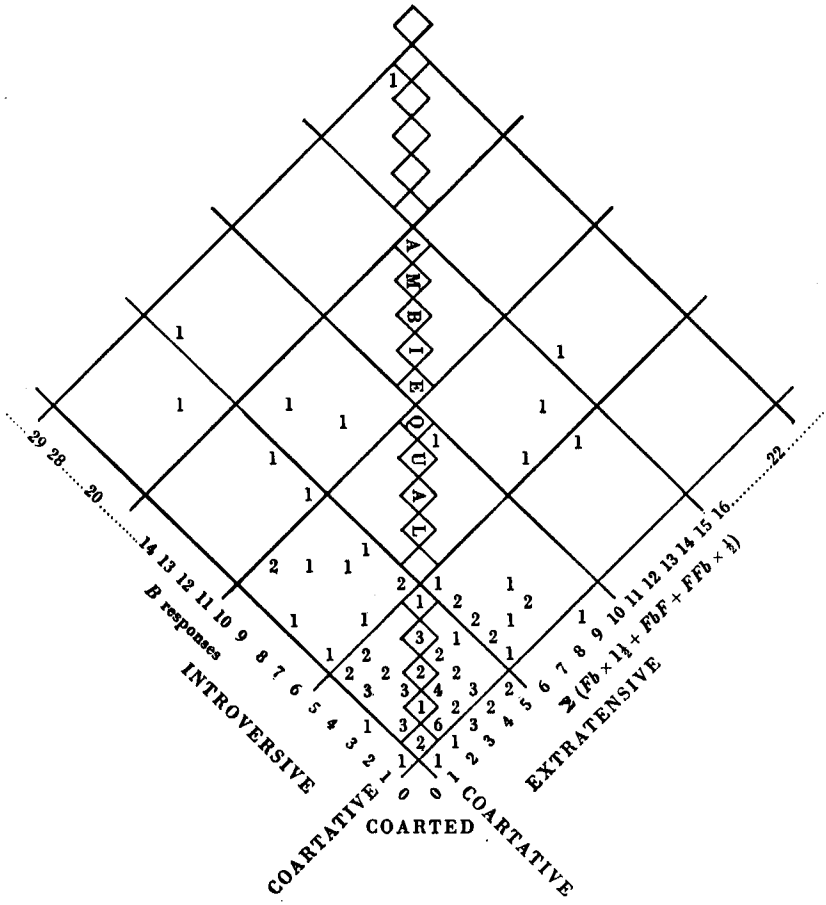
Norms and diagnostic significance of (Fb) responses. The only figures available for the number of *(Fb)* responses in normal subjects are Munz's and my own, averaging 1·3 and 1·4 respectively. These interpretations are said to "point to an anxious, cautious and unfree kind of affective adaptability, and especially to an inclination towards a depressive fundamental disposition, which one tries to master in the presence of others" (63). They are generally associated with responses whose content is largely architectural or three-dimensional, such as castles, buildings, receding landscapes, etc. While these may signify the subject's 'sense of space' and his ability to manipulate spatial dimensions, yet often, together with *(Fb)* responses, they represent wish-fulfilments, feelings of insufficiency and internal disharmonies that are projected into three-dimensional or chiaroscuro interpretations.

Content and originality of interpretations.

$O\,\%$ = the percentage of original responses, *i.e.* the number of individual interpretations in relation to the total number of responses, $\frac{100 \times O}{Antw}$. An original or *O* response, Rorschach states, is one that is not given by more than 1 in 100 subjects. He directs, also, that 'good' and 'poor' responses, $O+$ and $O-$, should be distinguished. Quite absurd responses that are neither $F+$, $B+$, nor $FFb+$ are counted as $O-$. The two kinds are, however, scored equally. In stating the subject's standing on this category, the practice is to write, say, 20 % +, 20 % ±, 20 % ∓,

or 20 % −, according as his 20 % of *O* responses consists predominantly of 'good' or 'poor' ones.

Table I. Erlebnistypen *of* 90 *subjects*.



Criticisms. No writer (except possibly Beck (8)) seems to have realized that many degrees of originality may occur. Even if the experimenter possesses the records of 100 subjects (and few have obtained this number), yet his decision as to the originality of the response remains very largely subjective. For example, the red patches in the top corners of blot No. III were called "Seahorses" by only one subject in my groups; but another called them "Horses' heads," and several other varieties of animal heads were mentioned. Which, if any, of these responses are to be

called original? There is no possibility of exact determination, as in the analogous case of verbal free association experiments. Nor can the experimenter refer to Rorschach's published tables of responses for aid, since a response which might be original in one group of 100 subjects is not necessarily so in another group. Thus Rorschach classifies the response, "A large insect's head" (blot No. III, upside-down) as original. Actually it occurred nine times among my ninety subjects, and there were many other similar, though not identical, responses, such as "The forepart of a crayfish." An objective basis for distinguishing between $O+$ and $O-$ responses is still more impossible to achieve. A further difficulty is that some subjects, who belong to specialized vocations, or who possess highly developed interests along one line, may give a large number of interpretations from their particular field of interest, responses which are not given by any of the other subjects. Such responses should not, apparently, be counted as original, though it is obviously impossible to present empirical criteria for deciding upon their inclusion or exclusion. Certain recommendations for reducing this subjectivity of scoring will be given below.

V % = the proportion of 'vulgar' or common responses. A V response is one which is given by at least 1 in 3 subjects. Loepfe believes this standard to be too high, since it would only allow three possible V responses altogether among his group of 120 children. Hence he, and Loosli-Usteri, used 1 in 6 as their criterion. I found that the 1 in 3 standard admitted of the following eleven possible V responses:

Blot		Full classification
I.	A bat	$GF+TV$
	A butterfly or other insect	$GF+TV$
II.	Clowns, bears, or men doing something, such as shaking hands, etc.	$GB+V$
III.	Men picking up, carrying, or pulling something	$GB+V$
IV.	Hide, pelt, animal skin, fur rug, etc.	$GF+TV$
V.	Butterfly, bat, insect, flying squirrel, etc.	$GF+TV$
VI.	Animal hide, rug, fur coat, etc.	$GF+TV$
VII.	Two persons talking, scolding, frowning, etc.	$GB+V$
	Relief map, peninsulas, lake, stream through canyon, opening of a cave, etc.	$GF+V$ or $GzwF+V$
VIII.	(Pink side portions) Animals (about thirty different kinds were mentioned)	$DF+TV$
IX.	None	
X.	(Green centre, bottom) Worms, caterpillars, sea-serpents, sea-horses, eels.	$DF+TV$

Here again the assignation of an interpretation to the V category is not wholly objective. Indeed an answer may contain both 'vulgar' and

original (common and individual) elements. For example, in blot No. III, I classified the following interpretation, "Two old men who are discovering the secret of eternal youth," as $GB + O + V$.

Recommendations. Since O % and V % are the opposite poles of practically the same characteristic, namely individuality of the responses[1], it would obviously be more convenient to possess an index which would combine both measures, an index, moreover, which was based on all the subject's responses instead of on a few responses at the two extremes. The only satisfactory solution to the difficulty of scoring will be the preparation of adequate tables of responses, derived from a large and representative group of subjects. Several investigators should then rate each response in these tables, taking into account its apparent 'goodness' or 'poorness' of originality; a standard score could then be assigned to it, ranging, say, from 1 to 5. A subject's total score for originality-commonality would then be the sum of these scores for all his responses, divided by their total number[2].

For the present, however, the only course open to the experimenter is to test for himself approximately 100 subjects, to pick out those responses which seem to him to be most clearly original, according to Rorschach's criteria, and call them $O+$. Responses which are somewhat less unique, and responses which seem less apt or adequate (especially $DF-$ responses) may be called $O-$, or else neglected.

Norms and diagnostic significance of O and V responses. Under the circumstances it is only natural that the norms of different investigators for O % and V % should show no agreement. Rorschach expects 0–20 % of O answers among normal adults. Oeser obtains 11 %, Munz 19·5 %, I find 25 % (including $O+$ and $O-$, 7·9 % for $O+$ responses only), and Loepfe claims 25 % among his boys. The average V % is 27 in my groups, 11 and 21 % in Loepfe's and Loosli-Usteri's. No other figures are available for unselected groups.

Originality of response is, of course, claimed to show originality of thought processes. Over a considerable range it should correlate with intelligence, but a larger proportion than 40–50 % may show 'phantasy-richness,' an artistic rather than an intellectual quality. A person with less than 10 % will be of decidedly low intelligence, or very unimaginative; but morons and imbeciles may achieve scores of 30–70 %. The proportion is high, also, in most psychotics and epileptics, in manics as

[1] In my Group II the correlation between O % and V % was $-0{\cdot}78 \pm 0{\cdot}04$.

[2] This procedure would be analogous to Thurstone's method in the standardization of attitude scales.

contrasted with depressives, and in '*zerfahrene*' as contrasted with '*stereotype*' schizophrenics.

V % gives the opposite indications, namely stereotypy and commonality of thought processes.

Content. Comparatively little use is made of the actual meaning of the responses; only the animal interpretations, designated as *T* (*Tier*) must always be enumerated. Being the commonest kind of answer they serve as a further index to stereotypy of response[1], and are fewest among artistic persons. Morons and idiots may give from 60 up to 100 %. Normal subjects give from 30 to 55 %, according to Rorschach. I obtained 46 % as an average, Munz 41·5 %, Oeser 41 %, Behn-Eschenburg 47 %, Loepfe 55 % and Loosli-Usteri 57 %. In general the classification of content is quite objective, though it is not always certain whether, for example, "an animal pelt, "a tiger-skin rug," "a fur rug," "a fur coat," etc., should count as *T* responses (blots Nos. IV and VI). In another blot (No. I), "The eagle on the German flag" should presumably be included.

Other contents are either listed in full, or classified as follows:

Td = some part of an animal.
M = a human being.
Md = part of a human body.
Obj = a lifeless object.
Ldsch = *Landschaft*, a landscape, etc.
Pfl = *Pflanz*, a plant, flower or tree.

Many human figures are liable to occur among artists and people who are especially interested in human beings; many object responses may denote concrete, materialistic interests. The significance of buildings, castles, etc. (for which no standard symbol is provided) has already been mentioned on p. 108.

More important than these scores on content categories is the qualitative, clinical interpretation of the meanings of single responses. Among abnormal patients the significance of content should be explored much as it is explored in the free word association test of Jung. It is, of course, partly determined by the ordinary interests and abilities of the patient, but it is also related to his inner complexes. For example, anatomical associations frequently result from a medical training; but among persons who are not so trained, they sometimes reveal hypo-

[1] *T* % correlates only to +0·54 with *V* % in my Group II; thus they do not overlap to the same extent as *O* % and *V* %.

chondriacal brooding or 'an intelligence complex,' or both. The appearance of sexual contents, *e.g.* the interpretation of parts of the blots as resembling sexual organs, is often significant. Organic psychotics (cases of dementia senilis, progressive paralysis, etc.) tend to define or describe the blots, instead of interpreting them, (cf. Jung's "definition type" of verbal association). Mental defectives and epileptics may also show this characteristic. The subject who continually asks if the blot is meant to mean anything, or whether his interpretations are the 'correct' ones is generally a pedant or depressive. Thus the deductions from content are numerous and complex, but they cannot readily be systematized nor quantified like the deductions from the other categories.

The Psychogramm.

When all the responses have been classified according to *G* or *D*, etc., to *F*, *B*, or *Fb*, etc., to content, and according to *O* or *V* (if they apply), the total numbers or percentages obtained by the subject are tabulated to give his 'psychogramm.' Rorschach usually arranges the psychogramm as follows:

Antw

G	*B*	*M*
D	*F*	*Md*
Dd	(also the number of *F* −)	*T*
Do	*FFb*	*Td*
Dzw	*FbF*	*Obj*
	Fb	etc.

F + %
T %
O % (predominance of + or −)
Erft
Sukz

The object of such a summary presentation is to emphasize the individual as an organized whole, not as a number of isolated scores. For the relations between these various categories, together with additional qualitative observations, may be of prime importance in clinical psychodiagnosis. No single score should be regarded entirely independently of the rest. For instance, a subject who obtains a very high *F* + % is highly intelligent if he shows also a *G–D Erft*:, but, with the same *F* + % and a *D–Dd Erft*, he is merely a meticulous pedant.

In addition to the various modifications which I have proposed throughout the preceding paragraphs, I would suggest that the psychogramm might embody a rating scale for traits which are often shown up by the subject's behaviour during the testing; for example, interest and co-operativeness, affective tone and degree of expressiveness, impulsiveness, inhibitions, etc. This might aid in the subsequent interpretation of the subject's personality.

(To be continued.)

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All the books and articles listed below make some mention of the Rorschach Ink-blot test; some are much more significant than others, and these are marked with an asterisk *. Naturally it is not possible to ensure the completeness of a bibliography, but I believe that practically all the important literature is included here. Some of the references have been available to me only in abstract; these are marked †. Abbreviations are those which are current in the *Psychological Index* or (in a few instances) in the *Zentralblatt für die gesamte Neurologie und Psychiatrie.* The titles of references which are published in languages other than English, German or French, have been translated.

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