

General Review.

RECENT WORK ON THE RORSCHACH TEST.

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I. INTRODUCTION.

ALTHOUGH a number of useful general surveys of the Rorschach inkblot test have been published, and many psychiatrists and psychologists have some acquaintance with its value in psycho-diagnosis, yet the experimental and theoretical literature on the test (which is very extensive) is not easily accessible to the majority of investigators. The following paper, therefore, like the German *Sammelreferat*, is an attempt to review systematically the contributions which have appeared since the publication of a general account by the present writer in 1933 (66).*

Two of the best surveys are those of Monnier (50) in French and Mandowsky (48) in German. Salas's article (58) in Spanish may also be mentioned; it is an outline for a future detailed monograph. Hertz has published an extensive review of experimental work (33).† Among a large number of briefer accounts which do not include important original contributions, the following may be cited: Boven (13), Bumke (14), Claparède (20), Giehm (27), Kretschmer (38), Kronfeld (39), Linares Maza (41), Maller (47), Römer (54), Ruiz-Maya (56), Zulliger (68). A popular outline has even been broadcast from the B.B.C. (61).

For those who are unfamiliar with the test, the introduction to Guirdham's first article provides a useful description of the significance claimed for the various types or categories of response, and a glossary of the German terms and abbreviations which are employed below.

II. MATTERS OF TECHNIQUE.

Application.—Most investigators have followed Rorschach in trying to obtain from their patients or subjects as many spontaneous responses to the inkblots as possible, in a natural and unconstrained situation. In an attempt

* Grateful acknowledgments are due to the following, who provided the writer with information about unpublished work: Dr. S. J. Beck, Mrs. M. Elvin, Dr. A. Guirdham, Dr. E. Guttmann, Miss M. Kerr, Dr. D. R. MacCalman and Dr. E. Miller.

† Apart from the descriptions of her own experiments, Hertz's paper contains little that was not included in the present writer's previous articles, or in an unpublished appendix which he distributed in 1933. Its value is diminished also by the many inaccuracies in its bibliography.

to standardize the procedure, however, Hertz allowed her subjects only two minutes for each blot (32). This may be legitimate when it is desired to treat the results of normal subjects statistically, but it would be most hampering in the testing of mental patients, and would render detailed individual diagnosis impossible. When her experimental results are quoted below, this alteration in the method of collecting data must be borne in mind.

Scoring.—The scoring or classification of the subject's responses is very uncertain and subjective (cf. 66, pp. 98-114). Meltzer (49), indeed, claims that different experimenters who scored the same sets of responses obtained very different results,* though this is denied by Levy (3), Dubitscher (22) and Kerr (34), who also compared independent scorings. The best solution of this difficulty would seem to be the preparation of a table of all the responses of a large and representative group of subjects, each response being fully classified as nearly as possible as Rorschach would have classified it. Certain further recommendations for improving the accuracy of scoring, made by the present writer (*loc. cit.*), would then be unnecessary, since any subject's responses could be scored sufficiently objectively by reference to this table. Linares Maza (42) and Salas (59) have already published such lists for Spanish children and adults, and Beck is preparing one for Americans.† Hertz used a list of 11,000 responses (not published), and found that two persons who applied it independently in scoring a number of protocols achieved 93% agreement in their results. Hertz and Meltzer also show that some of the difficulties in decisions to be made by the scorer may be reduced by the application of statistical treatment to such a table. For instance, if a certain part of a blot is utilized once, or more often, in every twenty-two responses to that blot, then it may be called *D* (ordinary detail), and if its frequency of occurrence is below this standard it may be called *Dd* (rare detail). The distinction between sharp and vague form responses, *F+* and *F-*, may be similarly clarified. In determining the originality of responses their procedure coincided with that suggested by the present writer. Hertz based her classification of *O+* and *O-* on the qualitative ratings of several judges; and Meltzer gave a mark to every response, ranging from 1 to 5 according to its commonality or originality, instead of classifying only a few responses as very original (*O*) or very common (*V*).

Reliability.—Although too great a mechanization of the scoring procedure is to be deprecated, yet some degree of standardization may have the great advantage of increasing the reliability of the test. The present writer found

* Meltzer eventually got one person who was at least self-consistent to do the scoring of all his protocols. It is obvious, however, that the scoring and interpretation should be carried out by the experimenter who gives the test, since so many of the deductions are affected by observations of the subject's manner and other cues, which are only meaningful to the person who notes them. A set of Rorschach protocols are very different from, say, a set of group intelligence tests which can be mechanically scored (cf. below, Section IX).

† This list, when available, will not be immediately applicable to British testees. The originality and commonality classifications are sure to be different in a different social and cultural environment, and the *F+*, *F-* and *D*, *Dd* distinctions may require revision.

TABLE I.—*Rorschach*

Investigator.	Kerr. ¹						Elvin. ²
	Normal English children.				75 Child Guidance Clinic cases.	100 mental defectives aged 11-14.	41 delinquent boys aged 15½-16½.
Number and description of subjects.	40 aged 7-8.	194 aged 9-12.	154 aged 13-14.	30 aged 15-16.			
Total responses	25.6	29.5	28.4	21.9	32.1	28.6	20.9 (30-12)
<i>G</i>	2.5	5.2	6.0	7.3	5.9	4.1	8.2 (11-4)
<i>D</i>	21.9	23.6	21.7	14.3	25.2	23.6	11.7 (16-5)
<i>Dd</i>							
<i>Dzw</i> ³	1.2	0.7	0.7	0.3	1.0	0.9	1.0 (1-0)
<i>F+</i> %	—	—	—	—	—	—	—
<i>B</i>	1.0	1.7	2.3	2.3	2.7	1.5	0.62 (1-0)
<i>Fb</i>	0.05	0.04	0.01	0.03	0.42	1.45	0.10 (0-0)
<i>FbF</i>	0.74	0.44	0.26	0.20	1.2	1.3	0.46 (1-0)
<i>FFb</i>	0.37	0.35	0.29	0.33	0.4	0.4	0.68 (1-0)
ΣFb	1.00	0.67	0.42	0.41	2.0	3.7	0.95 (1½-0)
<i>F(Fb)</i> ¹⁰	0.2	0.4	0.26	0.33	0.3	0.0	0.78 (1-0)
<i>T</i> %	54.3	58.1	56.2	52.9	54.5	53.3	52.5 (68-36)
<i>M</i> %	11.6	13.1	13.2	14.8	12.7	12.5	10.0 (15-5)
<i>O</i> % +	—	12.6	10.8	15.6	—	—	—
<i>V</i> % ¹¹	18.4	23.4	24.8	27.0	15.5	17.9	—

¹ Kerr's published results (34) for 7-13-year children have been combined with unpublished figures for 228 boys and girls of 10-17 years.

² Unpublished results. Upper and lower quartiles are given below the averages.

³ Cf. Guirdham (29, 30). The epileptics included 47 cases of oligophrenia, 25 with dementia, 26 of epileptic insanity and 34 uncertified. In this table the epileptic *G*, *D*, etc. responses have been raised proportionately to a total of 34, so as to compare with the normal subjects.

⁴ Cf. Linares Maza (42). The majority of these children were aged 11-12 years.

⁵ Cf. Ganz and Loosli-Usteri (26). These figures are medians (not averages); quartiles are given below.

⁶ Cf. Meltzer (49). The majority of these children were aged 11-12 years. Upper and lower quartiles are given below the averages. Many of the responses were considered too vague or lacking in content to be classified, hence the sum of *G* + *D* + . . . etc. is less than 46.6.

Test Norms.

Guirdham. ³		Linares Maza. ⁴		Ganz and Loosli-Usteri. ⁵	Meltzer. ⁶	Beck. ⁷	Skalweit. ⁸
100 normal British adults.	132 adult epileptic patients.	Normal Spanish children aged 8-15.		43 boys, mental defectives aged 11-14.	64 stuttering children (American) aged 6-16.	39 superior adults (American).	90 chronic schizophrenic adults.
		50 boys.	50 girls.				
33.4	25.2	18.6	13.7	29 (36-18)	46.6	56.6	—
9	8½	5.0	3.6	6 (8-4)	7.0 (8-4)	12.7	7.5 (10-5)
20½	19½	11.7	8.9	16 (25-10)	23.6 (31-13)	—	—
2½	4½	1.8	0.8	3 (7-1)	5.1 (7-1)	—	—
2	1½	0.5	0.4	1 (2-0)	1.2 (2-0)	—	1.0 (2-0)
80.5	58.7	74.2	77.7	64 (72-57)	57.7 (68-48)	75.2	58.6 (75-45)
1.63	0.87	1.2	0.9	0 (1-0)	1.5 (2-1)	8.1	1.05 (1-0)
0.18	0.40	0.04	0.04	0 (1-0)	1.6 (2-1)	—	1.39 (2-0)
0.90	0.58	0.4	0.25	0 (1-0)	1.6 (2-1)	—	2.21 (4-1)
1.58	0.72	0.9	0.8	1 (2-0)	1.2 (2-1)	—	0.79 (1-0)
1.96	1.52	0.9	0.7	1½ (3-1)	3.9 (5-3)	7.3	—
1.89	1.52	0.4	0.4	1 (1-0)	1.3 (2-1)	—	—
45.0	36.4	52.7	70.0	55 (68-36)	53.8 (68-39)	28.3	39.8 (55-25)
20.8	25.1	25.2	17.1	10 (18-5)	—	—	—
24.7	33.3 ⁺	11.8	10.6	—	9.6 (11-3)	33.0	58.7 ⁺ (75-45)
14.4	11.4	32.8	34.1	18 (26-14)	14.3 (18-9)	—	—

⁷ Cf. Beck (1, 9) and Meltzer (49). The latter article also gives a few of Beck's results with a contrasted group of adult prisoners, who were generally much more constricted.

⁸ Cf. Skalweit (63). Quartiles are given below the averages. In addition 23 cases of acute schizophrenia were tested; they were generally similar but for higher *F*+% and *B* scores and lower *O*-% scores.

⁹ *Dzw* includes *Gzw* and *Ddzw* responses. *Do* responses are included under *Dd*.

¹⁰ *F(Fb)* includes chiaroscuro responses of all types, equally weighted, since none of these investigators, except Ganz and Loosli-Usteri, followed Binder's classification (cf. below, Section VI).

¹¹ A *V* response is one given by 1 in 3 subjects (Meltzer), 1 in 5 (Linares Maza), 1 in 6 (Kerr, Guirdham, Ganz and Loosli-Usteri).

(by the split half reliability method) that if an alternative form of the test could be applied to the same subjects, their two sets of scores would probably show very poor agreement, represented by an average correlation coefficient of only $+0.54$ (66, pp. 181-4). Kerr (35) has recently retested a group of fifty children after a year; her correlations are closely similar, showing that the results obtained on the second occasion often differ considerably from those obtained at the first testing. The method of inter-correlating the scores on the separate categories is, admittedly, an unfair one, and it is particularly inappropriate because ordinary correlation methods always assume normal frequency distributions, while Meltzer has shown that none of the separate Rorschach scores conform to this type of distribution. Nevertheless, Hertz (32) claims that the scores which are obtained by her standardized procedure almost all yield reliability coefficients of about $+0.80 \pm 0.024$. Even a category such as the oligophrenic details (*Do*), none at all of which are given by 80% or more of normal subjects, attains a coefficient of $+0.813$.* She also confirms some of the inter-relationships between different categories which Rorschach postulated, but which the present writer failed to find in the results of his own subjects.

Norms.—A number of additional norms have been collected for various groups of adults and children; these are listed in Table I. Guirdham's, Kerr's and Elvin's results should be especially useful to British investigators. The majority of Guirdham's normal adults were nurses, hence they are probably somewhat superior to the hypothetical average. In particular, as he points out, their *M*% score is likely to be unusually high owing to their vocation; 15% would be a safer average. Kerr's children, aged 9-14 years, probably constitute a representative sample.

Dubitscher (22, 23) has published results for various groups of diverse adult psychopathic patients, normal and abnormal children. These are not included in Table I, since he does not give exact averages or ranges, only the approximate ranges of scores among the majority of patients in any one group.† Moreover, his subgroups, belonging to the different psychopathic types, are mostly so small that their scores cannot be reliable. Nevertheless the characteristic psychograms of these subgroups are of considerable assistance to investigators engaged in differential diagnosis at a mental hospital. They are therefore indicated roughly in Table II in the form of deviations above or below the averages, either of the total psychopathic adult scores, or of the total normal children's scores.

On the whole, the agreement of the figures in Table I with one another and

* The difference between these results may not be wholly due to Hertz's better standardization of procedure. She may have used a more heterogeneous group of subjects, and her division of the blots into an odd and even numbered series (the scores on which were then inter-correlated) may be more appropriate than the writer's attempted division into two equivalent series.

† In his paper on normal children, Dubitscher only gives graphs of the scores at different ages, although his groups are far too small for age-group differences to be reliable. The figures quoted in Table II have been read off approximately from these graphs.

with previously published results is not very good, even when quite similar groups are compared. One reason for this is the divergence in the scoring standards used by different experimenters; for instance, Kerr includes moving animals as *B* responses; hence her *B* averages are higher than those of most investigators. A fundamental difficulty is the irregular manner in which the separate categories depend on the total number of responses. For example, one normal adult might give 5 *G* (whole) responses out of a total of 16; a second who possessed an exactly equivalent *G* tendency might give about 12 *G* responses out of a total of 60. The absolute number tends to increase with an increasing total, but the relative number or percentage *G* score tends to decrease. In order to establish really effective norms it would be necessary to tabulate different averages for each of the chief levels of total responses; different tables should be prepared, say, for those who give 15, 25, 40, 60 and 90 responses.

Age differences.—Meltzer, Kerr, Linares Maza and Dubitscher note certain changes with age. Meltzer claims that extratensiveness increases with age from 6 to 14; but his tabulated results show the exact opposite, all his 6-7-year children and only 29% of his 14-15-year children being extratensive. This finding is confirmed by the other three investigators. Owing to her large numbers, Kerr's data on the decrease in extratensiveness (see Table I) probably possess considerable statistical significance. Kerr's figures also indicate a rise in *G* responses, in *M*% and percentage of anatomical responses, and (at least from 10 to 16 years) a decrease in *T*%. She does not score *F* + %, but both Dubitscher and Linares Maza find that it increases fairly regularly with age.

Sex differences.—Such data on sex differences as can be extracted from Linares Maza's and Kerr's investigations confirm Rorschach's and Behn-Eschenburg's statements,* in showing that girls give relatively fewer whole and more detail responses; and that they tend more to extratensiveness, since they produce more *FFb* and *F(Fb)* responses. Though no reliable data are available at present, similar differences probably hold between women and men.

III. SUBJECT'S MANNER AND ATTITUDE TO THE TEST.

Attitude to the test.—Stress has been laid in recent work on the subject's manner or attitude, not only to the test as a whole, but also to individual responses (cf. 67). Binder (11) and M. Bleuler (12) admit that it is impossible to make many valid deductions about a subject if full co-operation is not obtained, and if he does not give his "imagination" free rein. An unexpected conclusion, to which several workers in child-guidance clinics have come, is that such *rapport* is less easily established with children than with adults,

* Behn-Eschenburg, H., *Psychische Schüleruntersuchungen mit dem Formdeutversuch*. Bern: Bircher, 1921. Pp. 69.

even among children who are entirely co-operative at most tests. Other media of self-expression seem to provide better material for detailed interpretations of their emotional make-up. Loosli-Usteri (44) makes the interesting suggestion that young children do not readily grasp the notion that the shape of an inkblot is fortuitous. They think that the experimenter has made up the material in such a way that each blot, or each part of a blot, must represent just one animal, human being, or object, etc. This theory should be considered in conjunction with Piaget's work on the development of children's mentalities. Griffiths also observed this attitude in 5-year-old children; but she used a larger number of much simpler blots, not the Rorschach series, and showed only 3 blots a day to each child for 20 days, with very fruitful results.*

Speed of response.—A useful index of the subject's freedom of self-expression, or of inhibition (conscious or subconscious), is the speed of response—that is, the total time taken over the test divided by the total number of responses. In adults the average speed is close to one minute a response, in children rather less. Oeser's superior group of University graduates and undergraduates took 41 seconds,† and Guirdham obtained an average of 61½ seconds among his 100 normal subjects, the more constricted subjects being slower. Kerr lists the average time taken over the *first* response to each blot by normal children. Nos. II and IV seem to be the most difficult (28 and 27 seconds), and Nos. VIII and V the easiest (11 and 14 seconds). As a general rule one can seldom hope for a satisfactory or revelatory psychogram from subjects who take much more than 1½ minutes to respond. Big deviations above a subject's own average are highly significant, as in Jung's word-association method; they suggest the repression of a complex which has been stimulated by the blot. Such repression in the face of a coloured blot, e.g., No. VIII which Rorschach calls colour-shock, is highly symptomatic of neurosis. Guirdham's "staccato phenomenon" is another type of distortion of the flow.

Refusals.—Inability or refusal to give any response to one or more blots primarily indicates lack of *rappport* in the test situation, but it may also be interpreted as a sign of constriction, and probably of maladjustment of personality. Table II shows that it occurred frequently in many of Dubitscher's psychopathic groups. The number was unusually high, also, among Elvin's delinquents—an average of 1.05 per subject. But 20 of her subjects with introversive, extratensive or ambiequal *Erlebnistypen* gave an average of only 0.30, while the other 21 with constricted *Erlebnistypus* averaged 1.76.

Criticisms.—Fraenkel and Benjamin (25) have discussed the significance of criticisms offered by the subject, either of his own responses, or of the test material. *Subjectkritik* or self-criticism usually depends on a good intellectual level, but may sometimes show anxiety and inferiority feelings.

* Griffiths, R., *Imagination in Early Childhood*. London: Kegan Paul, 1935. Pp. 367.

† Oeser, O. A., "Some Experiments on the Abstraction of Form and Colour. Part II: Rorschach Tests", *Brit. Journ. Psychol.*, 1932, xxii, pp. 287-323.

Objectkritik or criticism of the blots is rather a sign of unimaginativeness and intellectual weakness. Criticisms of colour—e.g., a response to blot VIII: “These are two animals; they might be bears but that they are pink”—is a form of reaction to, or else a repression of colour and akin to colour-shock. Æsthetic appraisal of the blots, however, is more likely to occur among artistic subjects. Guirdham notes that subjects who say, “All the blots look like parts of the body”, or, “They might all be flying creatures”, are of superior intelligence; but this does not apply to subjects who frequently give identical responses to successive blots without any apology. Those who comment on the symmetry of all the figures are generally constricted.

Subject's manner.—The overt expression of feelings of pleasure or displeasure, and prominent psychomotor activity such as illustrative gestures or poses seem to be characteristic of extratensive or ambiequal subjects; they seldom appear among introversive or constricted persons. The manner of approach to each blot may supplement the indications derived from the *Erfassungstypus* and *Sukzession*; e.g., the “hare-brained” and the systematic subjects will differ in the amount of time they will look at any particular portion; the unintelligent have to be reminded that they can turn the blot upside down or sideways, and so on. Guirdham finds that subjects who closely scrutinize a portion of a black-grey blot several times from slightly different angles are looking for, and are likely to produce considerable numbers of chiaroscuro responses. Finally, the style of speech and vocabulary in giving the responses (as in any interview or test situation) throws some light on the subject's intellectual level and other characteristics.

IV. ERFASSUNGSTYPUS AND $F + \%$.

Organization responses.—The most important addition to our knowledge of the significance of *Erfassungstypus* (mode of apperception) is a study by Beck (1). He noted that several varieties of organization or synthesis of the inkblot material were possible besides the ordinary *G* responses to the blot as a whole, and he lists the frequency of each variety in each blot. For instance, adjacent details may be combined into a response, or details separated by a white space, or the white spaces themselves and the solid portions, or details of different colours, may be synthesized. Often such organizations of parts occur less frequently, and are therefore presumably more difficult to accomplish, than *G* responses. For example, a *G* response to blot No. V is the easiest one to give; breaking up the whole and resynthesizing some of its parts probably requires much more mental effort.

Several writers have evinced dissatisfaction with *G* responses as an index of mental powers. Though Kerr found a positive correlation between their number and Binet I.Q. in one investigation, the agreement with a group test of intelligence was zero in a later study. In similar experiments Hertz found

a low positive, Meltzer a low negative agreement. Meltzer noted that many of the *G* responses were very vague, lacking any definite concrete content and therefore involving no real organization. Similarly Ganz and Loosli-Usteri discovered as many, or more, *G* responses in defective as in normal boys, but observed that a large proportion of those given by the former group corresponded poorly to the shape of the blot, i.e., were *GF*-responses.* Again, Guirdham found almost as large a proportion of *G*'s in epileptic patients (many of whom were oligophrenics, or showed gross mental deterioration) as in normal subjects, but such responses were often very inferior in quality. Only about half of the *G* responses of Skalweit's schizophrenic patients were of the primary, good quality, kind.

We may conclude, then, that ordinary *G* responses which are frequently given, particularly *GV* responses, are no criterion of a subject's power of organizing; nor are *GF*-*O*- responses, nor the confabulatory *G* responses characteristic of psychotics. But *GF+O+* and most combinatory *DG* responses are significant, as also are any of the unusual types of syntheses of details described by Beck. It is not easy to present any definite standards for classifying such "good organization" responses, since their sharpness of form and their originality or unusualness have to be taken into consideration, as well as their apperceptive features. The present writer's practice is to add the symbol "*g*" when classifying a response which seems to conform to these conditions. Among subjects of average intelligence, about 10% of all the responses are so designated, in a superior University group about 20%. It is probable that these "*g*" responses may yield a considerable correlation with intelligence when they are more strictly defined (e.g., by means of the above-mentioned table of responses) and more carefully recorded in a large group of subjects. Guirdham also discusses the relation of some of Beck's detail-synthesis responses (which he calls "incorporation responses") to intelligence.

Dd, Do, Dzw.—The *Dd*, or unusual detail, responses are probably more frequent in subjects of low intelligence. Hertz and Meltzer report small negative correlations with I.Q., and Guirdham finds that they constitute some 13% of all the responses of epileptics as contrasted with about 7½% among his normal subjects. The evidence with regard to *Do* (oligophrene details) is conflicting; Hertz obtains the expected negative correlation with intelligence, Meltzer fails to; Dubitscher claims that they are much more common in defective than normal children; Ganz and Loosli-Usteri find no difference, and state that if they signify anything it is "inhibition of thought processes" rather than feeble-mindedness. Some other investigators have given up

* Reference may be made here to Lewin's discussion of the defective mentality in the light of Gestalt psychology (40). He also does not accept the bald fact, "X tends to perceive wholes in greater degree than Y" as a sign of X's greater intelligence.

Reymert and Hartmann (53) report no correlation between the Knox cube test of practical intelligence and undefined scores on the Rorschach test.

recording them separately from *Dd* responses. Both *Dd* and *Do* are related to neurotic tendencies and emotional instability, according to Hertz's experiments. The significance of *Dzw* responses (oppositional or white-space details) is also rather obscure. Their incidence is no higher than normal in such anti-social groups as Elvin's delinquents or Guirdham's epileptics. Among 113 chronic or acute schizophrenic patients Skalweit obtained an average of only 1.02. They did, however, occur among 80% of Skalweit's 19 cases of dementia paranoides (average 1.79 per patient), and only among 35% of his 37 paraphrenics and hebephrenics (average 0.60). It may be seen, also, from Table II that they were most prominent in Dubitscher's "sthenic" psychopathic types. Both Meltzer and Hertz provide some slight evidence of their relationship to negativism and maladjustment.

F+%.—In spite of the difficulties of scoring, the proportion of good forms seems to give the most consistent correlations with intelligence tests. Hertz finds the unusually high multiple correlation coefficient of $+0.556 \pm .03$ between a group intelligence test and a battery of Rorschach scores, *F+*%, *D*, *Do* and *O+*%, of which *F+*% is the chief component. Meltzer also obtains positive results, and Ganz and Loosli-Usteri show that the chief respect in which mentally defective children's psychograms differ from those of normal children is in *F+*%. Similar differences between psychotic patients and normals are reported by Levy and Beck, Guirdham and Skalweit. Though the production of good form responses is said to represent precision and definiteness of mental processes, it should not be forgotten that their significance is dependent also on the richness of the psychogram as a whole. High intelligence should only be inferred from high *F+*% when *B* and *O+*% are high, the *Erfassungstypus* well balanced, and the contents of the responses unsteretyped. A similar rich psychogram with moderately low *F+*% indicates an artistic rather than an intellectual mentality, since *F*%+ correlates negatively with artistic inclinations (cf. 66). But a high *F+*% associated with constricted *Erlebnistypus* and a preponderance of unoriginal detail responses shows pedantry and meticulousness. Thus we should expect, as we actually find, the correlation of *F+*% with intelligence to be positive but rather small.

The estimation of intelligence, and qualitative features of intellect.—Although all the separate categories of response yield poor correlations with intelligence tests, it is possible to make fairly accurate estimates from the Rorschach test considered as a whole. In six published investigations the average correlation of separate scores (namely *G*, *B*, *F+*% and *O*%) was only +0.25. If they were combined by the multiple correlation technique, they would still only predict intelligence to the extent of a correlation of about +0.40. The present writer, however, attempted to estimate the I.Q.'s of children from their Rorschach results and their manner while taking the test; his judgments correlated $+0.78 \pm .062$ with independent Binet test results (67). With

more experience a still better figure might be obtained. But it should be pointed out that the Rorschach test was never meant to give quantitative measures of any particular capacities or abilities, and that it certainly cannot replace standardized aptitude or intelligence tests. The *Erfassungstypus*, $F+\%$ and the *Sukzession* (i.e., the regularity of sequence of responses) should be regarded, rather, as an illustration or sample of the characteristic cognitive processes of the subject, and of their balance or one-sidedness. From this point of view they are a valuable supplement to, not a substitute for objective tests. The present writer has shown that several other modes of expression, such as drawings, literary style, handwriting, Lowenfeld's mosaic test, etc., may be expected to yield similar qualitative pictures of the intellect; he is engaged on experiments which should demonstrate the extent of these resemblances or inter-consistencies.

We will turn now to the consideration of the Rorschach test in relation to affective and conative factors in personality.

V. ERLEBNISTYPUS.

Movement responses.—The origin and significance of *B* (movement) responses has been discussed by several writers, Bustamente (16) (a Spanish psychoanalyst, who follows Furrer*), Binder (11) and Shuey (62). The following is an attempted synthesis of their views. *B* responses are ultimately an expression of man's fundamental psychic dynamism or libido. In primitive man the basic sexual energy was freely sublimated into a variety of activities, such as display, dancing, artistic creation, fighting, etc. But at a more advanced level of civilization such direct psychomotor expression became repressed, and there developed coincidentally man's inner phantasy life. A *B* response involves a partial identification of the subject with the moving figure which he projects on to the blot; owing to this symbolization mechanism, the dynamic impulse escapes censorship on its way up from the unconscious. Thus the introversive (who gives many *B*s) is a civilized person, characterized by introspectiveness and artistic creativeness, but is deficient in overt expressiveness.

Certain recent experimental results may be cited which fit in with this claim. Although there can only be a small direct correlation between *B* responses and intelligence, yet its incidence is much higher in cultured than in uncultured persons; for instance, Beck obtained averages of 8.13 and 1.35 in superior adults and prisoners respectively. Introversiveness is also akin to Spranger's spiritual or personally religious type, according to experiments by Stromwall with the Allport-Vernon *Study of Values* test (18). Bailey (6)

* Furrer, A., "Ueber die Bedeutung der 'B' im Rorschachschen Versuch", *Imago*, 1925, xi, pp. 362-5.

For a further discussion of introversiveness see Guirdham (29). A detailed study of *B* responses is promised by Fraenkel and Benjamin in the near future.

has pointed out an interesting parallel between McDougall's conception of introversion and Rorschach's introversiveness. McDougall proposed to use the speed of fluctuation of reversible perspective figures, i.e., a kind of internal psychic motility, as a test of introversion. Though this test fails to correlate with the psychometrist's rather artificial measures of introversion-extraversion, yet it does differentiate cases of dementia præcox from manic-depressive psychosis (cf. Guilford, 28). Moreover, among 25 undergraduate subjects tested by the present writer, the speed of fluctuation of a "staircase" figure correlated +0.42 with Rorschach's introversiveness ($B\% - \Sigma Fb\%$), and only +0.13 with various measures of introversion. Subsequent observations confirm this finding,* though the correlation is only moderate; for sensori-motor tests never do give consistently high agreement with emotional or intellectual traits.

Colour responses.—Colour responses, on the other hand, signify a less sophisticated level of development, where there is an easy and direct relationship between the individual's affective life and his social and physical environment. The extratensive (in whom colour responses predominate) readily expresses himself outwardly, and has less "inner life". There can indeed be no doubt that ΣFb is somehow related to emotional factors; Levy and Beck find an average score of 6.7 in 14 manic or hypomanic patients, Guirldham an average of 0.51 in 50 depressed cases (taken at random from various types of mental disorder). Both Kerr, Ganz and Loosli-Usteri and Dubitscher confirm the presence of higher colour scores in defective than in normal children. An experimental finding by Hertz is also relevant; she obtained quite a high correlation between colour responses and ascendance or dominance in social relationships on the one hand, and between movement responses and submissiveness or withdrawingness on the other hand.†

Probably the total colour score is of less importance than the schema of the affective life, provided by the proportions of the different types of colour responses. Binder, Bleuler and Kretschmer (37) suggest that the more unstable varieties (FbF and Fb) imply egocentricity, and are therefore more often introversive than extratensive. The disparity was especially marked in Skalweit's chronic and acute schizophrenic patients, who gave an average of 0.83 FFb , but 1.39 Fb and 1.96 FbF responses; the preponderance of colour uncontrolled by form was greatest in the most disintegrated cases. Among Guirldham's epileptics the total colour score was subnormal, but the relative number of adaptive FFb responses was especially low. The very high FbF

* The B scores of 36 subjects, omitting Bkl or DdB responses, were compared, not with ΣFb , but with the total number of colour responses and the number of extratensive $F(Fb)$ responses. It was then found that the more introversive half of this group had a fluctuation rate exactly double that of the more extratensive half, namely, 15.4 and 7.7 a minute; the difference between the two averages is practically five times its P.E., and is therefore statistically significant.

† A similar, though smaller correlation, namely, $+0.47 \pm .11$, was found by the present writer among 25 undergraduate subjects who were given both the Rorschach test and Allport's test for ascendance-submission.

and *Fb* scores of Meltzer's group of stutterers (cf. Table I) is also noteworthy, though the author has not yet compared them with the scores of a control group of normal children. Hertz found that *FFb* responses were higher in subjects who obtained low scores (indicative of stability) on the Woodworth Psychoneurotic Inventory, whereas both *FbF*, *Fb* and *B* responses correlated with high scores on this test.

Erlebnistypus.—In view of such findings, Binder is distrustful of the mechanical calculation of *Erlebnistypus* from the total number of *B* responses and the total colour score. Movement responses which are very commonly given (*BV*) should, he thinks, weigh less than original or uncommon ones. The more stable *FFb* and some of the chiaroscuro *F(Fb)* responses (to be described in the next section) are the best indicators of extratensive adaptation. Regard should also be paid to the content of responses, which is closely bound up with *Erlebnistypus* (cf. Section VII). Two other qualifications are pointed out by Guirdham. The production of an elaborate dramatic scene may not be a true movement response, but rather an example of the fantastic confabulation to which psychotic patients are especially prone. And the naming of colours in the blot, although it occurs frequently among psychotics, does not necessarily imply a violent affective reaction to colour, as Rorschach assumed, but may be merely an unimaginative type of descriptive or definition response. Skalweit similarly discounted these responses, which he calls *FbN*.

An extended discussion of the relationship between Rorschach's and other typologies, such as Jung's, was given in a previous paper (66, pp. 188–97), and there is little fresh material to add. The origins of extratensiveness and introversiveness, as traced out above, are very different from the origins of extraversion-introversion. Moreover they should not be conceived as opposed types of adaptation, since they are so often both present or both absent; rather they represent different levels of personality. The amount of free affect, and its control by intellectual or volitional forces, or by neurotic repression, may be quite distinct from the deeper psychomotor impulses which emerge in creative phantasies and in movement responses. Guilford (28) suggests that Rorschach's and Jung's types should be compared experimentally. But the present writer's experiments, and some work by Bailey, show that the overlap is small (Bailey ascribes this to the inadequacy of questionnaire self-rating tests for measuring extraversion). The relationship with Kretschmer's constitutional types has been further studied by Dubitscher and Skalweit. The former confirms the earlier findings of Munz and Enke,* but the latter's schizophrenic patients showed the opposite trend, since their inkblot responses were quite unlike those of normal schizoids or schizothymes (cf. Section VIII). The only other recent objective work on the Rorschach test and other typologies seems to be that of Kerr (35), who found zero correlations between certain scores and motor perseveration tests.

* A useful summary of these findings is given by Kretschmer (37).

VI. CHIAROSCURO.

Classification of F(Fb) and Hd responses.—Probably the most important contribution to the literature of the test since Rorschach's own publications is the lengthy monograph by Binder on *Helldunkeldeutungen* or chiaroscuro responses. It contains far more material on the psychology of inkblot responses of every category than can be summarized here; but in particular it amplifies our knowledge of these responses to the shadings of the blots about which Rorschach said so little. The chief varieties to be distinguished are, first, the true *F(Fb)* responses which always refer to well-defined detailed lines and shadings within the grey (or coloured) areas; they are highly differentiated, and often described minutely by the subject. They are almost always *DF+* or *DdF+*, not *GF-*, and since shape is so important, *(Fb)F* or *(Fb)* responses are never found. Contrasted with these are the *Hd* responses which are based on a more general or diffuse impression of the blot as a whole, or of a major part of it; they are generally *F-*, and they may be subdivided (like colour responses) into *FHd*, *HdF* or pure *Hd* responses according to the relative importance of the outer shape or the inner shadings. Their content is usually taken from nature, or they are abstract (e.g., "black thunder-clouds approaching"), whereas the contents of *F(Fb)* responses are generally animal or human figures, or detailed landscapes. In Gestalt terminology, the chiaroscuro features possess "figure" properties in the one, "round" properties in the other; or, as Binder puts it, the determining factors are the *Farbqualität* and the *Farbquantität* of the grey.* Binder's averages, given in Table III, show that the one is more frequent in normal subjects, the other in abnormal groups.

TABLE III.—*Binder's Norms for Chiaroscuro Responses.*

Subjects.	Total responses.	<i>F(Fb)</i> .	<i>FHd</i> .	<i>HdF</i> .	<i>Hd</i> .
51 normals . . .	45.1	0.7	0.9	0.1	0.0
101 psychopaths . . .	38.2	0.2	3.2	1.1	0.1
58 neurotics . . .	42.4	0.4	2.7	0.5	0.1

Significance of chiaroscuro responses.—From this result Binder concludes that they differ greatly in psychological significance. Evidence is also derived from the inter-variations of the responses with scores on other categories, from the study of individual patients, and from clinical exploration of particular

* The classification of chiaroscuro responses is probably no more difficult or subjective than that of any other category. Certain pseudo-chiaroscuro reactions have to be discounted, such as (1) sharply defined black patches within the grey where shape and not shading is the sole determinant; (2) the very frequent answers such as bats, animal hides or relief maps where shading may play some part but is not specifically stressed by the subject; (3) intellectual and sophisticated references to shading as an afterthought, or as a reminiscence that carries no emotional tone; these generally signify mere striving for originality.

chiaroscuro responses, e.g., by free association. In discussing their interpretation he makes a distinction between "central" and "peripheral" levels of personality. These do not correspond exactly to the "instinct-intelligence" dichotomy, but do coincide closely with protopathic-epicritic. Following up some observations of Christoffel (19) on the influence of affective disturbances on black-white (scotopic) as contrasted with colour and form (photopic) vision, he suggests that *Hd* responses resemble scotopic vision and refer to the central, and fundamental temperamental dispositions which give rise to diffuse, non-directional feelings; whereas *F(Fb)*, like *FFb*, responses are photopic, they are less strongly personal or subjective in tone and refer to the "smaller" peripheral, more specific, emotional adjustments. Thus *F(Fb)* responses generally signify good intellectual level with well-developed self-control and sense of reality, moderation rather than inhibition, and a flexible though mainly "peripheral" affective adaptation. Subjects who give several of them are open to artistic impressions, but are seldom intensely moved. Two sub-groups may sometimes be distinguished: First the "depressive-anxious" type of responses (e.g., gloomy landscapes), which imply dysphoric moods and a negative, sensitive, anxious type of adaptation; these generally appear in subjects whose *FFb* responses are chiefly based on the cold blue and green colours. Secondly, there are the *F(Fb)* responses with euphoric, pleasant tone (e.g., idyllic landscapes, stately buildings, or sympathetically described men and animals); these usually accompany *FFb* responses based on warm red and yellow colours, and they signify a tender, delicate, positive and empathic adaptation.*

The true *Helldunkeldeutungen* are rare in normal subjects; they always indicate either *Stimmungs labilität* or *Verstimmung*. These terms are generally translated "lability of mood" and "depression", but Binder seems to use them in the sense of "temperamental instability" and "temperamental abnormality". The extent to which these psychopathic or neurotic tendencies are under conscious control is indicated by the relative proportions of *Hd*, *HdF* and *FHd* responses. *Labilität* is to be inferred when such responses are given (usually as the first association) to two or more blots which may be far apart in the series; whereas *Verstimmung* generally leads to a greater degree of perseveration, several *Helldunkeldeutungen* of similar content being given to the same or to immediately successive blots. A great many minor varieties are distinguishable which, when considered in conjunction with other features of the psychogram, serve for differential diagnosis of various types of neurosis, or of the various psychopathies described by Kahn; but it would take too long to discuss them here.

Other work on chiaroscuro responses.—So far the only investigators who have made use of Binder's discoveries are Ganz and Loosli-Usteri. In a group of

* The dysphoric *F(Fb)* responses correspond most closely to Rorschach and Oberholzer's original interpretation of chiaroscuro; the euphoric correspond most closely to Munz's alternative interpretation.

normal boys, only 5% gave any *Hd* responses, while 21% of defective boys gave some. The present writer has observed them in a large proportion of cases at a child guidance clinic. He has found also that they never occur in children who produce patterns out of the white and coloured pieces of the Lowenfeld mosaic test, but are fairly common in children whose mosaics contain a lot of the depressive black pieces.

The importance of chiaroscuro was also discovered by Guirdham independently. Unfortunately he did not distinguish between *FHd* and *F(Fb)*, but (following a suggestion made by the present writer) classified both as *FCh*; *HdF* responses were called *ChF*, and *Hd* were *Ch*. Clearly his averages among normals and epileptics, especially among patients who showed the "classical" epileptic, or neurotic, traits (*q.v.*), fit in excellently with Binder's claims; and his observations on the susceptibility of such responses to psycho-analytic interpretation provide valuable confirmation.

VII. ORIGINALITY AND CONTENT.

Rorschach himself laid much less emphasis on content of responses than on the other categories. The few claims which he made for the significance of *T%*, *M%*, anatomical responses, *O%* and *V%* are in general substantiated by later work, and in addition more interest has been taken in the qualitative analysis of contents.

O%, *V%*.—The proportion of "good" original answers, *O+*%, does seem to give some correlation with intelligence, according to Hertz and Bleuler. But the poorer, more bizarre *O-* responses are more closely connected with unconventionality of mental processes and with poor social adaptation than with intellectual factors. The commonplace *V* responses possess the opposite significance. Thus Kerr finds an average *V%* of 21.7 in 100 normal children,* 17.96 in 100 mental defectives, and a still lower average of 15.54 in 75 mal-adjusted children at a child-guidance clinic. A similar difference appeared among Guirdham's normals and epileptics; and the proportion of *O-* responses was extremely high in the latter group and in Skalweit's chronic schizophrenics. Hertz finds that *V%* correlates positively with social ascendance, and with emotional stability; whereas *O%* correlates with instability, *O+* being associated chiefly with "peculiar ideas and delusions" and *O-* with "anti-social tendencies". It should be noted that cultured and artistic persons may also give high *O%* (chiefly *O+*) and low *V%*; their mental processes may be unconventional without their necessarily being socially maladjusted.

T%, *M%*.—*T%* (the proportion of animals) was identified by Rorschach with "stereotypedness" of mental processes. This is confirmed by Kerr and Guirdham, who show that it is highest in persons whose *Erlebnistypus* is coerced or coartative. Hertz and Meltzer confirm the results of several

* In a later study, with normal children, Kerr's average was even higher, namely, 27%. Like Loosli-Usteri, she found a tendency for the figure to vary with age, the older children being more conventionalized.

previous investigators, who found no correlation between $T\%$ and intelligence, and Hertz shows that it tends to correlate positively with social ascendance as opposed to submissiveness. Since it implies "ordinariness" of personality, its lowered incidence in mentally disordered patients such as manics, epileptics and schizophrenics is also significant. Stereotypy in mental disorders is perhaps better shown by the proportion of parts of human figures, $Md\%$, which is especially high in depressive states, in epilepsy and in certain types of schizophrenia. For example, a paranoid patient described by Prados y Such and Linares Maza (52) gave the record number of 1,722 responses (in $6\frac{1}{2}$ hours), almost all of which were $DdF-MdO-$. Zulliger (69) suggests that when $Md\%$ is higher than $M\%$ (whole human figures) among children, anxiety or disturbance of social adjustments may be inferred. Kerr notes that $M\%$ is higher in introversive than in extratensive or constricted children, and that $Object\%$ is highest in extratensives; this fits in with the claim that introversives are more interested in artistic phantasy, extratensives in practical affairs.

Definition, anatomical, three-dimensional and other contents.—Definitions or descriptions of the blots, without any interpretation, are akin to $Object$ responses, in that they go with a predominantly extratensive *Erlebnistypus*, according to Guirdham and Elvin. But they are uncommon in normal subjects; they occurred eight times as frequently in epileptics as in normals, and their incidence was even higher, namely 3.1% , among Elvin's delinquents than among Guirdham's epileptics. Rorschach associated these responses with an "intelligence complex"; according to Guirdham they may appear both in the grossly deteriorated and in subjects of rather high intelligence. In Elvin's investigation, those delinquents who produced them were, to a statistically significant extent, more intelligent than the rest (the average Binet M.A.'s were 14.44 and 12.92 years).

Why anatomical responses (skeletons, dissections, etc.) should also be higher in extratensives is not so obvious. Rorschach identified them with hypochondriacal tendencies; possibly introversives are less inclined to melancholy brooding. Dubitscher states that they occur very frequently in hypochondriacal psychopaths. Hertz finds $Anat.\%$ to be high in children diagnosed as emotionally unstable or neurotic by the Woodworth-Mathews questionnaire, and the present writer notes some association with the preference for "depressive" black pieces in the Lowenfeld mosaic test. The increase of such responses with age is suggestive; Kerr obtains $0.4, 2.4, 3.4$ and 4.2% in 7-8-, 9-12-, 13-14- and 15-16-year children, and Elvin's 16-year delinquents gave 5.3% .

Elvin's data confirms most of the relationships that we have mentioned between content and *Erlebnistypus*, and shows in addition that three-dimensional responses (such as landscapes, relief maps, clouds and architecture) are most prominent in introversives. These responses, which are often $F(Fb)$

or *FHd*, do seem to indicate feelings of insecurity and wish fulfilments, as Rorschach suggested. No norms are available; but their average incidence in Elvin's delinquent group was 15%, which is probably very high. For the proportion was only 12% in 25 of the writer's normal subjects, although this group showed a much greater degree of introversion than Elvin's.

Certain other types of content, not previously systematized, are described by Guirdham, which may be of considerable significance even though their incidence is small. These include purely abstract answers, geometric and pictorial, and characterization or "essential quality" responses. Most of these go with a high artistic or intellectual level, and they are often good material for psycho-analytic exploration.

Qualitative analysis of content.—We may conclude that the quantitative scores on the various content categories described above reveal little that is new about the subject, but that they supplement the indications derived from the other categories as to his intellectual, artistic and emotional characteristics. In addition they sometimes reflect his chief interests or his vocation. Probably, however, the manifest content of a response is far less significant than its latent meaning. Guirdham points out that although the epileptic gives more sex, ego, religious answers and answers concerned with wounds and fits than do normals, yet the influence of his chief preoccupations on his reactions is small, the average of all such responses being less than 2 per patient. Thus interests, sentiments and complexes are seldom directly expressed; symbolism and disguise, witting or unwitting, should be expected as frequently as in dreams.

In actual practice the deduction of some of the chief mechanisms in the personality from the *Erfassungstypus*, *Erlebnistypus* and the quantitative content scores is only the beginning of the interpretation of the test results. It tells little about the specific emotional situation in the subject or patient. Much greater skill and experience is necessary for the next stage, which has to be based not only on the content of particular responses, but also on the numerous cues provided by the subject's manner in responding. When there is great hesitation or emotional tone, or criticism (cf. Section III), that response is probably related to some complex, just as in Jung's word-association test. Binder draws attention also to "lapses into conventionality"; a particularly significant *B*, *Hd*, *Fb* or *F(Fb)* response is often followed by responses of a type poorer than the subject's own average. Still more suggestive is the perseveration of a similar content throughout several movements, colour or chiaroscuro responses.* Guirdham gives a full description of the perseveration phenomenon in epileptics. It should be noted that perseveration of anatomical responses, though certainly abnormal, is not confined to epilepsy; the present writer has obtained it in various types of psychosis and psychoneurosis. Among neurotic or psychopathic persons, a fruitful method of attack is to ask for free

* Griffiths (*op. cit.*) found that the perseveration of similar contents in the responses of a 5-year-old child to her inkblots gave an important indication of the child's chief emotional conflict or complex.

associations (after the experiment) around these perseverating or other complex-determined responses. It is, of course, impossible to summarize any fixed principles in this qualitative interpretation; but Rorschach's posthumous article,* together with Furrer's† and Binder's monographs (both unfortunately out of print), are full of illuminating suggestions, which are of the utmost value to those who wish to make the greatest possible diagnostic use of the Rorschach test.

VIII. APPLICATIONS OF THE RORSCHACH TEST.

Applications in clinical practice and guidance.—MacCalman (46) and the present writer (67) discuss the uses of the test in clinical practice. They conclude, as also does Burt (15), that it is most valuable in the diagnosis of neurotic cases, since it provides considerable insight into the underlying mechanisms or dynamics of the personality, and so serves to integrate or to make more meaningful the scattered data obtained in the ordinary case-history, or from objective tests. If applied to cases who are undergoing a detailed analysis it may assist in the preliminary exploration, and may sometimes open fresh avenues when a stale period is reached. Rorschach recommended its application later in the treatment, to show whether the initial complexes and inhibitions were resolving. But a parallel series of blots is badly needed if the test is to be given twice to the same patient. In a mental hospital it is less useful because of the amount of time it takes, and the skill required in interpretation. Psychotic patients are often very slow, and they all tend to give rather similar results, with the exception of such contrasted groups as manic and depressed cases. In some early or mild cases, however, where there is little deterioration, it may give considerable help in diagnosis.

Among children it is likely to be more revealing than verbal analysis, but, as we pointed out above, the material is often too difficult for them; when they do take to it readily, it should yield data similar to that obtained by play techniques. The present writer finds it particularly useful in vocational guidance of adolescents, not, of course, as a substitute for aptitude tests, but as a means of interpreting the structure of the personality which underlies the more objective manifestations. Also it throws light on artistic and creative tendencies which are but poorly covered by tests in more general use. Biäsch (10) describes its applications and limitations in vocational guidance, classing it with graphology and dream analysis as "methods of insight through expression".‡ It is even said to have been of value in a battery of selection tests for bar-straighteners, according to Dériaz (21).

* Rorschach, H., and Oberholzer, E., "The Application of the Interpretation of Form to Psycho-analysis", *Journ. Nerv. and Ment. Dis.*, 1924, lx, pp. 225, 359.

† Furrer, A., *Der Auffassungsvorgang beim Rorschachschen psychodiagnostischen Versuch*. Zurich: Buchdruckerei Zur Alten Universität, 1930.

‡ Biäsch sometimes gives it to two children simultaneously, in order to see how far they influence one another. This is an interesting extension of Henning's *Zweipersonen Experimente*.

*Applications in research on personality.**—The Rorschach test has been used in a number of investigations of personality and of mental disorders. For instance Guttman employs it in studying the influence of mescaline on depersonalization symptoms; considerable changes in the psychogram, inconsistent in direction, are found under conditions of mescaline intoxication.† Somewhat similarly, the alterations of personality under hypnotic suggestion are being investigated by Hackebüs (31). Monnier (50) reports that malarial treatment of general paralysis affects a patient's Rorschach responses in the direction of greater stabilization; Levy and Beck (3) quote the results of successive applications to patients in acute and hypomanic states, and Skalweit (63) discusses the responses of twenty patients who were given the test several times during the development of acute schizophrenia. Such work is hampered, however, by the lack of a parallel series of inkblot material.

That the Rorschach test is an instrument which may throw fresh light on problems of personality and insanity is indicated by Guirdham's study of the epileptic reaction type (30). Skalweit also tested ninety mixed cases of chronic schizophrenia, with somewhat surprising results (see Table I). He found the typical psychogram to be quite unlike the psychogram of normal schizoid subjects tested previously by Munz and Enke, and to disagree in some respects from Rorschach's tables. The chief difference occurred in *Erlebnistypus*, the majority of the patients being ego-centric-extratensive instead of introversive. Since early cases of acute schizophrenia showed more resemblance to the characteristic schizoid profile, he concludes that there is a distinct break or a qualitative difference between the pre-psychotic and the disintegrated psychotic personality. Bleuler (12) points out that these results are common to most psychotic patients, and even to normal persons when drugged or intoxicated. But he criticizes Skalweit's conclusions on the grounds that other factors, such as intelligence and race, were not controlled, and these might in part account for the differences between Skalweit's and Rorschach's patients or Munz's subjects; also because the test results depend so largely on the patient's attitude, and changes would occur when a patient entered a hospital or institution quite apart from alterations in his personality. Skalweit has recently answered these objections (64), showing that the most intelligent patients in his group gave much the same responses as the less intelligent, and were similarly distributed according to type of disorder. A further criticism, that schizophrenia is not a single entity, appears to be met by Skalweit's discussion of the differences between his various clinical types. Cases of paraphrenia showed the best $F+$ %, B , T %, etc.; catatonics gave the most Dd and the poorest *Sukzession*, hebephrenics the most

* No special mention need be made of research where the test is not used diagnostically, such as Carl's study of the apprehension of meaning by exposing the inkblots (among other material) tachistoscopically. He found that similar associations were aroused in 2 to 5 thousandths of a second as in unrestricted time (17).

† Personal Communication; cf. also Discussion of, Mayer-Gross, W., "On Depersonalization", *Brit. Journ. Med. Psychol.*, 1935, xv, p. 124.

egocentric colour responses; cases of dementia paranoides were intermediate.

The psychology of personality is discussed by Beck in three detailed articles (7, 8, 9). He assumes that the whole of personality can be covered by the balance or interplay of the four chief categories of inkblot responses—form perception ($F + \%$), organizing energy ($G + "g"$), affective drive (ΣFb), and creative activity (B)—together with environmental influences. But his conception, in spite of his insistence on the multi-dimensionality of personality, hardly seems to do justice to the Rorschach test. It may be true that we can deduce a fairly complete picture of an individual's personality by interpretation, both of the psychogram as a whole and of the contents of the responses, but such deduction certainly cannot be based merely upon a mechanical comparison of the four factors which he selects as fundamental.

Other recent examples of the application of the Rorschach test will be briefly mentioned. Loosli-Usteri (43) found that it showed significant differences between the personalities of children reared in institutions and normal children. Luithlen (45) introduced the Rorschach types in his analysis of leadership in children, though he did not actually apply the test. This study, together with the peroration of Skalweit's monograph, suggest that the test is in process of accommodation to the contemporary German *Weltanschauung*. Racial differences might be explored, since the inkblot material is less open to the objection of cultural determination (except as regards the content category) than most tests. Few comparable results are available at present, but Spanish and English children seem to be somewhat more introversive than Swiss, and French ones more extratensive. Bleuler has tested a number of Moroccan Berbers and Arabs (not yet published). It will be surprising if data on the *Erlebnistypen* of Nordics, Jews and negroes are not soon forthcoming from Germany and America.

Further research on problems of heredity has been carried out by Bleuler (2), Koehn (36), Saudek (60) and Kerr (35). Koehn used the test in studying twins, but quotes no results with it. Saudek found it of value in interpreting the personalities of a pair of identical twins reared apart, to whom graphological analysis and other more objective tests were applied. Bleuler points out that geneticists and psychologists have tended to exaggerate the distinction between intellectual and affective functions; he considers intelligence as an abstraction which does not exist in real life, where every reaction of a human being is both cognitively and affectively determined. Hence he hopes that the Rorschach test will reveal more fundamental variables than the I.Q. He claims positive results from the study of twins, siblings, orphans, etc.; and Verschuer obtained greater resemblances between the scores of 23 pairs of identical twins than between those of 23 pairs of fraternal (5). Kerr, however, has failed to substantiate Verschuer's work; she found that the resemblance in *Erlebnistypus*, G responses, $V\%$, etc., was not significantly

greater among 27 pairs of identicals than among 87 pairs of fraternal, and that inter-twin correlations were very low. We will consider some possible reasons for this poor result in the next, concluding section.

IX. CONCLUSIONS.

We have only to recall the inadequate statistical reliability of the Rorschach test, the variations in methods and standards of scoring adopted by different investigators (i.e., the dependence of its results upon the investigator), the effects of the subject's temporary attitude and the distorting consequences of imperfect co-operation, to realize that it is not a suitable instrument for large-scale objective researches. Owing to these defects it is not surprising that so much of the would-be scientific work with the test is inconsistent and contradictory. Correlations with intelligence or other tests vary greatly in different studies; similar groups, normal and abnormal, sometimes obtain divergent results; apparently the dependence of the scores on hereditary factors is highly inconstant. Thus it is difficult to agree with Beck and with many German writers who regard the test as "empirical". Guirdham points out that its use of mathematics (in drawing up the psychogram) does not make it so. It is true that the application and scoring could be made almost as objective as the corresponding processes in, say, the Binet test, though it would be difficult to secure the universal adoption of such a standard in view of the test's cosmopolitan popularity* ; and most users of the test fall much below that standard at present. Even then, however, the practical interpretation of its results would still be largely subjective and personal. If treated as an objective method of diagnosis the test reveals scarcely anything about a subject which could not be found out more easily and with greater certainty by other methods. The only arguments for considering the test as empirical are that it usually gives some moderately significant correlations with tests of intelligence, of artistic interests and of emotional stability, and that certain groups of mental patients usually obtain average scores which differ from the averages of other strongly contrasted groups. These rather meagre facts are, indeed, the starting-points in individual diagnosis. But whenever we wish to find out anything fresh about a personality, or when a subtle differential diagnosis is required, fixed rules are apt to be delusive, and we have to resort to a large measure of subjective interpretation.

For these reasons the writer argues elsewhere (67) that the Rorschach method should be regarded, not as a test in the usual sense of the word, but as a means of obtaining insight into personality which is more closely analogous to the play-techniques of child analysis. He points out its resemblances to a variety of other methods of exploration which derive from the clinical rather than from the psychometric viewpoint; and claims that it does not set out

* To the writer's certain knowledge, the test is already used in at least 15 different countries and in nearly a dozen different languages.

to *measure* traits or aptitudes as does the orthodox psychological test, but only to indicate the cognitive and affective types or mechanisms which Rorschach considered as basic in personality, mechanisms which cannot be conceived quantitatively, nor be defined objectively. From this point of view, the lack of reliability and the irregularity of objective results do not matter very much. Like any analytic technique, its capacities and its defects depend mainly upon the skill and experience of the analyst or experimenter, and the sole disadvantage of such subjectivity is that the experimenter cannot readily communicate the products of his personal ability to others, nor expect others to accept as proven any theoretical conclusions at which he arrives. Many investigators have published the test results of individual patients, and have tried to show verbally that their interpretation of these results throws new light upon the cases, or agrees well with independent diagnoses or sketches of the personalities* ; but such attempts to establish the worth of the test do not constitute scientific evidence. On the other hand, the standard scientific and statistical methods of validation, such as Spearman advocates in a recent article (65), only seem able to yield a minimum of information about the test's capabilities. Nevertheless it should be possible to devise new techniques for treating objectively and quantitatively the products of qualitative investigation, and one such technique has been tried out by the writer.

Several experimenters prepared sketches of the personalities of normal subjects or patients on the basis of their interpretation of Rorschach test results, while others prepared independent sketches from hospital case-notes or from personal acquaintanceship. It was then found possible to match or identify the two sets of sketches together to an extent represented by a correlation (contingency) coefficient of $0.833 \pm .0315$. The experiment and its limitations are described elsewhere, and a much more extensive application of the same technique, which has been undertaken by Rosenzweig (55), is only just starting. But so far as it goes this result is very promising ; for the figure is higher than the validity of any of the objective personality or temperament tests with which psychologists are experimenting at present. And though there is no question that far more scientifically controlled investigation of the potentialities of the test is required, yet this suggests that its application from a clinical viewpoint is scientifically justifiable.

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(*Note.*—The following references to the Rorschach test are all additional to those listed in the present writer's previous paper (66) with the exception of the first five, which are expanded versions of certain references previously cited in an incomplete form. The more important references are starred (*). Those which have been consulted only in abstract are marked †.)

* Examples of such discussions, or of comparisons of test interpretations with independent accounts of the cases, are cited in the writer's previous paper (66, pp. 279-80). In addition the following may be consulted : Bustamante (16), Eyrich (24), Monnier (50), Oberholzer (51), Prados y Such (52) and Salas (57).

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