A COMPARATIVE STUDY OF THE DRAWINGS MADE BY VARIOUS CLINICAL GROUPS.

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I. Introduction.

In the nineteenth century considerable attention was devoted to the art products of psychotics. The approach to these interesting phenomena was, however, unsystematized and of little value to psychopathology. Prinzhorn (1922) described the collection of psychotic art at Heidelberg. His monograph on the subject is a classic, but it has been pointed out by Elkisch (1945) that his analysis was not carried far enough to produce significant diagnostic criteria. In five recent articles Anastasi and Foley (1940, 1941) have made a comprehensive survey of work done on the whole field of the artistic behaviour of abnormal people. They have pointed out the inadequacies of research in this sphere : the lack of control groups of normal people, the generalizations made from a few selected data, and the constant danger of reciprocal projection.

Rorschach workers have long been concerned with the analysis of imaginative responses, and quite apart from the question of the validity of their overall conclusions, they have developed useful categories of form, colour, content, etc., which at first sight it would seem fruitful to apply to the drawings of clinical groups. The Graphic Rorschach, as used by Grassi and Levine (1943), is well known, but it has a more specific purpose than the present study, which endeavours to apply some of the Rorschach categories to drawings produced outside the Rorschach situation, and freely adapts suitable categories from the work of Beck, Piotrowski, Klopfer and Hertz, as summarized by Elderkin Bell (1948). With these an attempt is made to analyse the artistic responses of subjects, in order to discover, *if possible*, significant variables which would differentiate between various psychiatric groups.

Analogous attempts at a diagnostic classification of drawings have been made by Lembke (1930), Pfister (1934), Traube (1937) and Schmidl-Waehner (1942), among others. Only in the last of these studies is any use of Rorschach categories made, and the groups studied are seldom strictly comparable to our own. The research of Ruesch and Finesinger (1941) on the relation of the Rorschach colour response to the use of colour in drawings would at first sight seem to be relevant to the present problem. However, the method which Ruesch and Finesinger employed in classifying the use of colour in drawings is so different from the present one that the results obtained are in no way comparable.

II. The Problem.

The aim of the present investigation is simply to see if Rorschach categories can be used to compare the drawings made by 60 boys and 42 adults in response to the Raven Controlled Projection Test (Raven, 1951). The boys were aged

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8 to 14 years, and had I.Qs. from 80 to 135. They were matched for age and intelligence in three groups of 20, which had been previously designated as "Normal," "Nervous" and "Uninhibited." According to Child Guidance Clinic reports, the nervous boys had "temperamental, educational or speech disabilities." The uninhibited boys showed near-delinquent behaviour. (The test records were those previously used by Barclay (1945).)

The adults were war-time patients at Mill Hill Emergency Hospital, and were thus not advanced cases. They were classified in official records as "anxiety states," "depressives," "hysterics" and "psychopaths." There were 9 male and 3 female anxiety states; 10 male and 2 female depressive; 5 male and 4 female hysterics; 4 male and 5 female psychopaths. These adult groups were not matched for age and intelligence.

III. Method.

The boys' drawings were randomized, and then assessed by both observers together. The child's own description of his drawing was consulted in each case, so as to obtain the maximum of information. A common definition for each category employed was arrived at by discussing each point of difficulty as it arose. The percentage of the page covered by colour, a detail, or the whole drawing, was calculated by using a transparent grid similar to that suggested by Fleischer and McV. Hunt (1941) for the location of Rorschach details. The grid was ruled off in one-inch squares, and covered the standard page used by each subject.

The method of assessment of all the drawings was the same, except that while the children's drawings had been classified by the two observers in collaboration, the adult drawings were assessed separately by each observer on the more subjective categories of form, movement, the relation of colour to form, depth or perspective, style, observers' appreciation, and serial effects. The agreement between the independent ratings was found by the formula:

$$\frac{\text{Mean No. of each subject's drawings with complete observer agreement}}{\text{Mean No. of drawings produced by each subject}} \times 100.$$

On this formula the agreement on the categories was: Form 98 per cent., movement 100 per cent., relation of colour to form 100 per cent., depth or perspective 98 per cent., style 95 per cent., observers' appreciation 48 per cent., serial effects 100 per cent. These figures were undoubtedly raised by the fact that the two observers had previously assessed the children's drawings together.* It seems doubtful if such a high level of agreement would have been obtained by observers assessing the drawings solely on the basis of the definitions given below. Although these provide a fairly close approximation to the standards of judgment used by the observers, they are objectively discriminating in all categories but that of "Observers' Appreciation."

IV. The Categories Considered.

The main aim was to adopt suitable variants and follow them through the various clinical groups for which drawings were available. For this purpose

* Effects of this kind have been described by Sherif (1935) and Schonbar (1945) in their experiments on the formation of group norms.

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TABLE I.—*Assessment of the Drawings of the Clinical Groups.*

	N.	Nvs.	U.	A.	H.	D.	P.	M.	F.	B.*
I. *Distribution of the Subjects.*										
Number of male subjects in each group	20	20	20	9	5	10	4	28	0	60
Number of female subjects in each group	0	0	0	3	4	2	5	0	14	0
Total number of subjects in each group	20	20	20	12	9	12	9	28	14	60
II. *Output and Organization.*										
(*a*) Mean number of pages used	1·05	2·1	2·3	1·67	1·44	1·33	3·67	1·78	2·29	1·82
(*b*) ,, ,, of entities per page	1·05	1·65	1·83	3·23	1·67	3·67	5·22	3·50	3·36	1·51
(*c*) ,, percentage of each page covered by drawing	38	28	38	28	25	42	24	30	33	35
Percentage of drawings containing—										
(*d*) One large object only	43	11	38	13	17	8	14	13	12	31
(*e*) ,, small object only	10	12	3	25	22	16	7	23	8	8
(*f*) A large group of large objects	20	43	19	31	28	42	30	30	39	27
(*g*) ,, ,, of small objects	23	12	28	19	11	25	49	21	34	21
(*h*) A small group of large objects	5	6	1	0	6	8	0	5	0	4
(*i*) ,, ,, of small objects	0	17	11	13	17	0	0	7	7	9
III. *Form and Content.*										
Percentage of drawings—										
(*a*) With well-defined forms	75	40	26	71	50	67	61	62	66	47
(*b*) ,, content classified as—										
Botanical	35	25	31	29	44	18	13	26	25	30
Mountainous	23	16	24	4	22	8	15	6	21	21
Clouds, mist or rain	15	13	20	0	0	8	9	4	4	16
Water	30	29	42	8	22	11	17	11	20	34
Fire or smoke	5	19	41	13	11	3	14	11	7	22
Sun, moon or stars	8	15	22	0	0	0	6	0	4	15
Architecture	25	20	46	13	0	47	29	24	23	30
Domestic	5	1	25	10	0	49	8	25	5	10
Land vehicles	5	29	13	3	0	0	11	5	0	16
Water vehicles	28	42	47	4	22	11	6	10	10	39
Air vehicles	25	36	15	8	11	0	6	9	0	25
Weapons	18	43	27	17	11	0	17	16	0	29
Emblem	35	28	32	13	22	11	23	18	13	32
Title	10	2	7	8	0	0	0	3	0	6
Alphabetical	0	3	21	8	0	29	8	16	4	8
Number	0	0	7	0	6	17	6	9	4	2
Abstract	0	13	13	29	22	21	46	24	39	9
Scribbling	(not assessed)			8	11	8	21	8	19	(not assessed)
Anatomical	0	0	0	13	0	0	13	4	12	0
Human	30	48	43	44	33	29	57	37	46	40
Animal	15	20	9	11	11	17	17	12	18	15

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IV. *Movement.*

Percentage of drawings containing—

(*a*) Depicted or described human movement	25	46	40	0	0	8	22	7	7	37
(*b*) ,, ,, animal movement	15	15	1	0	11	8	13	4	14	10
(*c*) ,, ,, inanimate movement (formless)	5	13	35	13	11	11	9	15	3	18
(*d*) ,, ,, ,, ,, (with form)	48	60	40	8	11	19	11	18	2	49

V. *Colour.*

Percentage of drawings giving—

(*a*) A pure colour response	0	0	1	0	0	0	0	0	0	0
(*b*) A colour response, form being subsidiary to colour	0	7	15	0	0	0	0	0	0	7
(*c*) ,, ,, colour being subsidiary to form	75	71	75	42	26	31	34	27	47	74

Percentage of subjects using—

(*d*) Coloured pencils in addition to black lead pencil	70	90	90	42	33	33	56	32	57	83

Percentage of drawings in which—

(*e*) A white area is used as a figure on a coloured ground	30	20	13	0	0	8	0	3	0	21

Mean percentage of the area of each drawing—

(*f*) Left as enclosed white	58	45	41	47	63	57	57	55	57	48
(*g*) Coloured :										
Black	2	19	21	32	28	33	20	33	20	14
Red	5	5	4	4	3	2	2	4	1	5
Orange	0	1	0	1	1	1	1	1	1	0
Yellow	5	5	4	2	0	1	1	1	1	5
Green	7	10	12	6	2	2	15	3	11	10
Blue	15	6	7	5	6	3	4	3	8	9
Purple	0	3	6	1	0	0	1	1	1	3
Brown	8	3	4	3	0	1	1	2	1	5

VI. *Combination of Movement and Colour.*

Percentage of drawings containing—

(*a*) Both movement and colour	63	64	68	8	11	17	44	19	19	65
(*b*) Movement, without use of colour	5	21	5	8	11	8	11	12	3	10
(*c*) No movement, but use of colour	13	14	23	33	22	17	11	18	28	17
(*d*) Neither movement nor use of colour	20	1	5	50	56	58	33	50	50	9

VII. *Depth or Perspective.*

Percentage of drawings—

(*a*) With marked depth or perspective	23	16	18	10	33	40	21	22	33	19
(*b*) ,, slight depth or perspective	43	36	43	48	22	49	31	51	15	41
(*c*) ,, no depth or perspective	35	48	41	42	44	11	48	26	52	41

VIII. *Style.*

Percentage of drawings—

(*a*) In a primitive style	35	63	58	39	22	24	26	22	41	52
(*b*) ,, photographic style	60	37	41	53	44	64	47	59	41	46
(*c*) ,, sophisticated style	5	0	1	8	33	13	28	20	18	2

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TABLE I.—*Assessment of the Drawings of the Clinical Groups (contd.).*

	N.	Nvs.	U.	A.	H.	D.	P.	M.	F.	B.*
IX. *Observers' Appreciation.*										
Percentage of drawings rated by the observers as—										
(*a*) Very pleasant	15	8	7	0	6	1	20	3	12	10
(*b*) Pleasant	50	42	31	50	61	37	15	42	40	41
(*c*) Indifferent	20	28	30	30	6	41	27	29	24	26
(*d*) Unpleasant	15	23	31	19	22	21	22	25	13	23
(*e*) Very unpleasant	0	0	1	2	6	0	16	2	12	0
X. *Serial Effects.*										
Percentage of subjects showing—										
(*a*) A marked recurrence of similar objects or themes	0	25	10	21	22	0	44	6	36	12
(*b*) A slight recurrence of similar objects or themes	5	5	20	4	0	0	33	12	0	10
(*c*) No recurrence of similar objects or themes	0	20	25	8	0	25	11	11	14	15

* N. = Normal; Nvs. = nervous; U. = uninhibited; A. = anxiety; H. = hysteric; D. = depressed; P. = psychopathic; M. = male; F. = female; B. = boys.

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the categories used by leading Rorschach workers were selected and altered as seemed most appropriate. A number of additional content categories were included, and others eliminated. In the accompanying table it is possible to follow the main Rorschach categories of location, determinants and content. No attempt was made to arrive at a figure for the subject's mode of apperception, experience-balance, etc., as the material was so different from the usual Rorschach data.

The Rorschach method of classification was used in the present study simply as a guide to certain of the aspects of a drawing which could be conveniently described and compared. In most cases the definitions of the Rorschach categories have been radically altered to conform to the very different type of record assessed. This must be kept in mind in any attempt to relate the results to those obtained by Rorschach investigators.

Output and Organization.

The first task was to find the mean number of pages used by each subject; next, to ascertain the mean number of entitites per page, an entity being any discrete object or systematically organized group of objects. The number of square inches of paper included within the outline of the drawing was then measured, to give the mean percentage of each page covered.

The size and grouping of the objects drawn were found by means of the grid. In these calculations the size of the object or group of objects was taken to be the smallest rectangle of inch squares on the grid which would frame the object or group. First, the size of the drawing as a whole was classified as *large* or *small*, according to whether it occupied more or less than one-third of the page. The drawing was then examined to see whether it was well integrated or could be readily analysed into a group of discrete objects. If analysable the component objects were in turn classified as large or small, according to whether most of them occupied more, or less, than one-twentieth of the page each. This gave, in all, six categories of organization, i.e. a single large object only, a single small object only, a large group of large objects, a large group of small objects, a small group of large objects and a small group of small objects.

Form and Content.

The drawings were next judged for well-defined forms. A drawing was described as having a well-defined form if the arrangement of its contour lines produced a total impression of clarity, definiteness and resemblance to the object or pattern which the subject said he had attempted to depict. This is undoubtedly rather a subjective definition, but no more adequate one seems possible at the moment. The problem of an objective distinction between "good" and "poor" form, in our classification, as in the Rorschach, remains to be solved.

The Rorschach content categories were taken over, some being discarded and others added as required. All drawings containing trees, grass, fruit, flowers, etc., were classified under botanical content. Hills, slopes, cliffs, etc., were put in the mountain category. Water included all forms except rain.

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All man-made edifices came under architecture. Interior decorations, household effects, etc., were classified as domestic. Vehicles were differentiated into land, water and air types. Weapons included all military vehicles. Flags, insignia, etc., came under emblem. The title was defined as words set apart from the drawing describing it. All letters and words in the drawing not coming under this classification were then designated as alphabetical content. All patterns, designs, mandalas, etc., were called abstract.

Movement.

Movement clearly depicted in the drawing or described by the subject was differentiated into human, animal and inanimate. The movement of inanimate objects was further classified according to whether the moving objects possessed little or no definite form (e.g., rain, smoke, etc.) or a definite form (e.g., motor-cars).

Colour.

Pure colour responses were noted, being defined as virtually formless coloured scribbling. Form-colour responses were divided into those cases where form was subsidiary to colour, and *vice versa*. The percentage of subjects using coloured pencils in addition to the black lead pencil was assessed. Where a portion of the white paper was used as a figure against a coloured ground, this was noted, and the mean percentage of the area of each drawing left as enclosed white, i.e. as a white figure bounded by a line or coloured area, was calculated. The relative quantities of the following colours used by each subject were also measured by means of the grid, and expressed as a percentage of the total coloured area—black, red, orange, yellow, green, blue, purple and brown.

Combination of Movement and Colour.

This was covered by the use of four categories, comprising the use of both movement and colour, movement without colour, no movement but use of colour, and finally neither movement nor use of colour.

Depth or Perspective.

A three-fold classification of *marked*, *slight* and *no* depth or perspective seemed possible. To have marked perspective, a drawing had to convey an impression of tri-dimensionality. The central object had to possess marked figural qualities, appear tri-dimensional in itself, and stand out against a differentiated ground. If the figure-ground relationships were less evident or distorted, or if only the figure appeared tri-dimensional, no background being shown, the drawing was rated as having slight depth. If, on the other hand, the drawing was flat, with no attempt or a complete failure to portray a third dimension, it was said to possess *no* perspective.

Style.

Naïve representation of human beings and houses, distortion of perspective, etc., were held to be indications of a *primitive* style. Fairly accurate conven-

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tional representation was designated as *photographic*. A *sophisticated* style was shown in economical and expressive use of line.

Observers' Appreciation.

The observers rated the drawings according to their personal affective reactions as very pleasant, pleasant, indifferent, unpleasant, or very unpleasant. This is, of course, a highly subjective category, and is therefore of potential use in the assessment of the observers' personalities.

Serial Effects.

The drawings of each subject were scrutinized for perseverative effects, and a three-fold classification made of those subjects who showed a marked, slight or no reccurrence of similar objects or themes.

V. Tabulation of Results.

In the accompanying table the drawings made by the following groups of subjects are compared with respect to the categories defined :

20 Normal boys . . (N)		12 Anxiety states . . (A)	
20 Nervous boys . . (Nvs)		9 Hysterics . . . (H)	
20 Uninhibited boys . (U)		12 Depressive states . . (D)	
		9 Psychopaths . . (P)	
All 28 male patients . (M)			
All 14 female patients . (F)			
All 60 boys . . . (B)			

In arriving at the figures given in the table, the unit of calculation was always the complete artistic response of each subject, not the single page of drawings. For example, in calculating the percentage of drawings with clearly defined forms in the group of uninhibited boys, a separate figure was calculated for each subject of the percentage of his drawings which contained well-defined forms. The twenty separate percentages were then averaged, and the resulting mean figure for the group as a whole was entered in the table. In this way, the more fluent subjects did not affect the result unduly.

The heterogeneity of the groups rendered them unsuitable for further statistical treatment. Differences in the incidence with which certain categories were noted in the drawings made by various groups studied are, however, interesting, and may in some cases be of potential diagnostic value.

VI. Inter-Group Comparisons.

Limitations of the Data.

The results are throughout subject to the following limitations of the available material.

(1) The number of subjects within each group was not large, and in the adult groups the relative frequencies of males and females varied considerably, two-thirds of the males being anxiety and depressive patients, and two-thirds of the females being hysteric and psychopathic. This has led, in a number of cases, to a strong probability that certain apparent sex differences in the drawings might be an outcome of the clinical groups into which the subjects

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fell, and conversely, that clinical differences have been distorted by the varied proportion of males to females in each group.

(2) There is a distinct need for a control group of normal adults to be tested for comparison with the clinical groups studied. The age and sex comparisons are made mainly for the sake of completeness.

(3) An average of two pages of drawings was obtained from each subject, with a range of from one to nine pages. In view of the great changes which sometimes took place in the drawings of the more fluent subjects, this average seems hardly sufficient.* Judging by experience, it appears that for further studies of this type, each subject should produce a minimum of four pages of drawings.

(4) Certain seemingly inevitable difficulties were found while using the transparent grid to assess the areas covered by various objects drawn and colours used, especially the latter. In cases where an area had been scribbled over, or one colour of shading overlapped on another, the assessment of the area covered by black, enclosed white, green etc., was necessarily subject to error.

Differences in the Three Groups of Boys' Drawings.

It has been comparatively straightforward to distinguish the ordinary from the deviant groups by their drawings, but less easy to differentiate the two deviant groups from one another. The normal boys were less fluent in their artistic production than the others, but more careful. They drew one large object or group of objects with well-defined forms depicted in a conventional photographic way. Their drawings were mainly either black and white outlines, or contained carefully coloured (not black) shading. The drawings of the *nervous* boys occupied less of the available space on the page than those of the others. They often drew large groups of large objects, seldom single large objects. They also often drew weapons, while their drawings sometimes contained movement without colour, and were liable to show marked recurrence of themes. The *uninhibited* boys often drew houses, both from the outside and the inside, fire, smoke, numbers and letters of the alphabet. Their drawings tended to contain poorly-defined forms, which were sometimes subsidiary to the use of colour.

Differences in the Four Groups of Adult Patients.

Of the four groups, the clearest pictures obtained were of the depressed and psychopathic patients. It was rather difficult to distinguish the drawings of the anxiety and hysteric patients from one another and from the other groups. The *anxiety* patient's drawing especially had only one distinguishing characteristic not also found in that of the hysteric, namely, that it was rather more likely to contain movement without colour. The *hysteric* patient drew fewer objects or groups of objects on his page than the others, and tended to show botanical but not architectural objects. The *depressed* patient tended to cover more of his page with his drawing than the others, some of his drawings being of the "horror vacui" type described by Prinzhorn (1922). He tended to

* Schmidl-Waehner (1942) points out that "We cannot emphasize too strongly that the interpretation of only one drawing of a child is insufficient and may be completely inaccurate."

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draw architectural and domestic objects, letters of the alphabet and numbers, and nearly all of his drawings possessed some degree of perspective or depth. The *psychopathic* patient used more pages than the others, and drew more objects or groups of objects on each page. He tended to draw large groups of small objects, abstract shapes and human beings, more of whom were shown as moving than in the other groups. His drawings often contained both movement and colour.

Sex Differences in the Adult Patients.

The *male* group tended to produce rather a greater proportion of drawings containing one single small object. Their content more often depicted domestic scenes, land and air vehicles, weapons and letters of the alphabet. Their drawings more often contained inanimate movement, and made greater use of black and red. In general, the drawings tended to show slight depth or perspective, photographic style, slight recurrence of similar objects or themes, and to be graded by the observers as indifferent or only slightly pleasant or unpleasant.

In the " continuous classifications " of perspective, style, serial effects and observer's appreciation, the drawings of the *female* group tended to include more extreme examples. They also showed a preference for drawing large groups of large or small objects, and the content was more often of the mountainous, water, abstract, scribbling and anatomical types. They drew more animal movement, more often using the coloured pencils, especially green and blue, and showing colour without movement.

Differences Between the Boys' and the Men's Drawings.

The *boys'* drawings contained a smaller number of entities on each page than those of the men. The boys more often depicted a single large object, and mountains, clouds, mist or rain, water, fire or smoke, sun, moon or stars, land, water or air vehicles, weapons and emblems. Their drawings more often showed movement of all kinds, and they made much greater use of the coloured pencils, especially green and blue. This use of colour occasionally predominated over form. They fairly often used a portion of the white paper as a figure against a coloured ground, which the men hardly ever did. Most of the boys' drawings were of a primitive type, and tended to show rather less depth or perspective and more thematic recurrence than those of the men. More of the *men's* drawings depicted a single small object, and possessed well-defined form. The content of their drawings was more often domestic objects, letters of the alphabet, numbers, abstract shapes, scribbling and anatomical objects. The men used more black than the boys. The men's drawings contained a greater degree of depth of perspective ; most were of a photographic type, while drawings of a sophisticated type were also fairly common.

VII. Comparisons with Results of Other Investigations.

Certain comparisons with the results obtained by Rorschach investigators may be of interest. The use of a part of the white paper as a figure against a coloured ground (e.g. where the outline of a cloud has been pencilled in and the

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enclosed space left blank, the surrounding paper being coloured blue to represent the sky) corresponds to the Rorschach "S" category. This "intermediate form" or "space detail" is described by Rorschach (1942, p. 39) as "most common in stubborn, eccentric normals and in negativistic schizophrenics . . . S answers always indicate some sort of *tendency to opposition*." The groups of adults considered included no schizophrenics, and it is interesting to note that this type of response is hardly ever recorded of them. Conversely it seems rather odd that this type of response should appear so often among the groups of boys, especially the normal ones. It may be that by adapting the Rorschach classification to describe different situations we have produced a category whose diagnostic significance, if any, may not be related to that of the original. The point at least seems worthy of further study.

Maclay, Guttman and Mayer-Gross (1938), in their article on "doodling," describe a type of drawing which they found and designated as "*the mescaline type*." This resembles the images reported by patients under the influence of mescaline, and consists of a series of identical shapes drawn side by side and often gradually increasing or decreasing in size. This type of drawing was encountered in four of the subjects, namely, one from the uninhibited group of boys, one female anxiety patient and two female psychopathic patients.

The "horror vacui" type of drawing described by Prinzhorn (1922), in which all the available space on the page is carefully "shaded in" was produced by three of the subjects, all three being male depressed patients.

VIII. Comments and Conclusions.

Pursuing the idea that in comparing drawings we really compare what people see in them and say about them (Raven, J. C., 1951), the writers have used the Rorschach categories as a basis for assessing similarities and differences seen in people's drawings. The numerical data accompanying the present communication are intended to illustrate how far categories of this kind can be applied to the comparative study of drawings rather than as evidence that any particular characteristic can be regarded as indicative of a particular type of personality or clinical group. Deductions from the results obtained are intended chiefly to indicate the differential usefulness of the various categories considered. It may be felt that certain aspects of the drawings have been inadequately dealt with, while others have been over-emphasized. For example, Schmidl-Waehner's (1942) treatment of movement in children's drawings is more exhaustive than the present one, while Ruesch and Finesinger's (1941) assessment of colour responses is simpler. It seemed desirable at the outset to consider as many categories as possible, rather than to omit or elaborate any which might prove to be of differential value, at the expense of making the tabular data appear cumbersome.

In the categories of output and organization certain zero percentages (i.e., the absence of certain types of drawing in certain groups) may be of interest; for example, no normal boy drew a small group of small objects. These categories appear to be unaffected by age and sex.

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Inferences concerning the twenty-one content categories are limited by the restricted frequency of their appearance. Few subjects titled their drawings or introduced anatomical details, and little can be deduced from the slight differences noted. Some content categories, however, show noteworthy differences. Fire and smoke was depicted by the uninhibited boys far more often than by the boys in any other group. Architectural and domestic details were drawn by depressed adults more frequently than by other adults. Weapons were drawn most frequently by nervous boys, not at all by women or depressed adults. Abstract designs were drawn chiefly by the psychopaths, but this was also characteristic of women, who formed over half of the psychopath group. Normal boys did not make abstract designs.

Many of the movement and colour categories appear differential. Formless inanimate movement differentiates the uninhibited boys from the other boys. Two categories of human movement and movement of inanimate forms are conspicuously absent from the drawings of men compared with boys. The use of colour seems to decline with age, while form subsidiary to colour only appears amongst the boys in the clinic group. The use of black shading differentiates the clinic boys from normal boys, who prefer blue.

Depth or perspective seems to be of considerable diagnostic value. Amongst adult patients its absence seems to characterize anxiety, while its presence seems to characterize depression.

Concerning style, primitive drawings seem characteristic of the abnormal boys, normal boys more often making photographic reproductions. There may also be sex and age differences. Sophisticated drawings occur chiefly amongst hysterical or psychopathic adults.

As regards serial effects, little can be said owing to the fact that few subjects produced more than one page of drawings.

While the foregoing categories have been made as objective as possible, the observers' appreciation is intentionally subjective, being almost entirely determined by the personalities of the observers themselves. It is, however, interesting to note that, amongst the boys, the normal group was preferred by the writers. The sex and age of the person producing the drawing had little effect upon the degree to which his or her drawing was appreciated.

The writers conclude that the results of the investigation support the argument that the Rorschach categories can be adapted to the comparative study of drawings, and open a line of inquiry meriting further investigation.

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