THE HUMAN FIGURE DRAWINGS OF ADULT DEFECTIVES.

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Introductory.

The drawings of children have been studied by many observers during the past forty years, and have yielded valuable information for the psychologist, the ethnologist and the pedagogue. Many of the studies were concerned with the development over a period of years of the drawings of a single child (Luquet (12), Stern (19), Eng (3)). Others were concerned with drawings taken from a large number of children of varying ages. Principal among these studies is that of Rouma (17) in 1912, drawn from a wide field, carefully and accurately observed, and published with a wealth of illustration. More recent researchers have employed the quantitative method, and McCarty's (14) study, published in 1924, is of value principally for its elaborate statistical survey.

By far the most important study yet published is that of Goodenough (5), based upon the drawings of 3,593 children from several districts, and using a simple and entirely objective method of scoring, quite independent of artistic merit. The subject for the test is the human figure, chosen mainly because this is the most popular subject amongst children. Goodenough also contributed a most valuable qualitative study and an exhaustive bibliography (7).

The drawings of defective children have also been the subject of inquiry, though mainly as a side issue arising out of a study of the normal.

Rouma, in 1912, summarized the characteristics of subnormal children as follows (p. 248) :

" (1) A very marked tendency to automatism.

" (2) Frequent manifestation of the flight of ideas. The drawings, which cover a sheet of paper are unfinished. They are numerous, and represent a number of very different objects.

" (3) Frequent retrogressions to inferior stages.

" (4) Slowness in development in the various stages.

" (5) Certain drawings of subnormals, considered alone, are perfect; but when examined more closely we see that the child confines himself to a series of stereotyped forms (clichés), which have evolved slowly, being modified little by little, up to a certain degree of perfection. It is the conservative tendency of the child which has favoured the development of the design. It happens sometimes that these abnormal children have a very great power of visual memory and are capable of producing remarkable designs. These subjects are comparable with

the inferior type who show one remarkable faculty—Inaudi and Diamondi are the best known cases.

" (6) Many subnormal children take great care to present completely the idea which they are drawing, or to reproduce in all its details the acquired stereotyped drawing. It is this tendency which favours the perfection of certain sketches mentioned above.

" (7) Subnormal children like drawings in which the same movement recurs frequently, and they do meticulous work."

Cyril Burt (2) in 1921 published an account agreeing fairly well with Rouma's findings. He stressed the wide " scatter "—the co-existence of primitve characteristics with those of a more mature type—and also a tendency for undue elaboration of detail and exaggerated decoration. He found, too, a tendency to draw schematic and stylized figures, and lastly, in common with other observers, he noted an incoherence, a lack of proportion between the various parts of the drawing.

All these observers dealt purely with the drawings of children ; no account of the drawing ability of adults, either normal or defective, has been published. For the normal this is not unexpected, for as both Goodenough and Burt point out, a stage is reached where the adolescent, realizing his inadequacy as an artist, fails to make a real attempt.

The present study was undertaken as an examination of the drawings of adult defectives, and in particular as an evaluation of Goodenough's test as a component in a battery of performance tests for these subjects.

Method of Giving the Test.

Goodenough gave the test as a group test, but with defective subjects the writer has found presentation as a single test far more suitable, though small groups of four or five give quite good results. Observation of the subject at work is interesting, and gives valuable information from the point of view of personality rating—giving evidence which is often more important than the score of the finished product, and may, in fact, invalidate that score—as in the case of certain subjects in this series, whose drawings represented a lack of effort rather than an inability to draw.

The subject was given a piece of plain paper, size $7\frac{3}{8} \times 5\frac{3}{8}$, and a pencil of B or HB grade. The instructions varied a little with the mental level of the subject : " Draw me a man—as good a man as you can draw. Draw all of him " is a fair sample. Great care was observed to avoid mentioning any part of the body by name. A little coaxing was sometimes required, and re-assurance had to be given to those patients who protested their inability to draw.

The test was usually given at the conclusion of a Binet test, the examiner, under cover of writing the Binet reports, maintaining an adequate but inconspicuous watch upon the subject at work. Such tests as the manikin, profile, or picture completion should not have been given that day.

In giving the test as a group test the subjects must be widely spaced to prevent " copying ".

Data.

In all, 420 drawings from defective patients were studied. The criteria for use in studying the applicability of the Goodenough scale were that the subjects' ages should be between 16 and 40 years, and their " mental age " as measured by the Terman-Binet-Simon scale should lie between 5 and 9 years. The upper age-limit was imposed to exclude as far as possible deterioration and dementia. The lower limit of " mental age " was imposed by the nature of the Terman revision, which renders it unreliable for adults below that level. The upper " mental age " limit was imposed, partly because of the limited material available, and partly because in the highest grade, various influences —self-consciousness, lack of effort and the like—diminish the value of the test.

From 140 drawings (Series A) satisfying these conditions—27 were excluded from the statistical study upon the following grounds :

TABLE I.—*Rejections from Series A.*

Clinical psychosis	12 cases.
Special speech defect	5 ,,
Physical disability	3 ,,
Special ability	2 ,,
Effort failure	3 ,,
Unscorable	2 ,,
Total	27 cases.

The reasons for exclusion given in the table are mostly self-explanatory. In all cases it was considered that the factors named would invalidate one or other of the tests to be compared. For the purpose of the test " special ability " was taken to include all subjects who were known to draw for their own amusement. The term " effort failure " was applied to subjects who either refused the test altogether or who were obviously not making any real effort to succeed.

STATISTICAL ANALYSIS.

Goodenough (6) has published a careful and elaborate statistical analysis of her original study, affording conclusive proof of the value of her method. From that presentation the findings of principal interest here are as follows :

In a group of 194 children of first (*i.e.*, lowest) school grade the test-retest correlation was $\cdot 937 \pm \cdot 006$, whilst the average reliability for ages 5–10 was $\cdot 77$.

The probable error of estimate of a true I.Q. earned on the drawing test is approximately 5·4 points at all ages from 5–10.

Both the drawing test and the Stanford Binet were given to a group of 334 children, æt. 4–10, including 24 children whose I.Qs. were below 70. Correlation of the results for the group showed R = ·741 ± ·016.

Yepsen (20) in 1929 gave the test to 37 defective boys, whose chronological ages ranged from 9 to 18 years, and whose mental ages (Terman) ranged from 4·8 to 11·2 years; he found a correlation of ·60 between the two tests. When the drawing test was given three times at four-day intervals, the following results were obtained: 1st test–2nd test, R. = ·89; 2nd test–3rd test, R. = ·91; 1st test–3rd test, R. = ·91. The variability very rarely exceeded 1·0 years.

The circumstances of the present study have not rendered possible a safe statistical evaluation of the reliability of the test, but here, too, the variability appears rarely to exceed one year in emotionally stable cases.

For the revised series (Series B) of 113 drawings in the present study the correlation with the Stanford Binet was ·48 ± ·07.* The correlation is, of course, lower than that obtained for normal children, but it is more than sufficiently close to justify the test, and to warrant its inclusion in a standard performance battery for patients of this class.

Comparison with Normal Children.

For purposes of comparison with normal children whose chronological age equals the mental age of the adult defectives, 25 drawings from each year-group were selected at random from the series used for correlation, their scores tabulated in terms of the percentage in each group succeeding with each point, and compared with Goodenough's similar tabulation of normal child subjects. The results in general agree closely, but in certain points there were marked differences and these are given in Table II.

From the table it will be seen that defectives succeed better in the illustration of such points as hair, ears, noses—in other words, representation of detail; whilst with the single exception of body length, the normals preponderate in correctness of proportion and in correct execution of the idea represented—in other words, in the integration of their knowledge. Their success in co-ordination is probably in part due to the fact that normal school-children are far better accustomed to handling pencils than are defective adults.

Qualitative Examination.

Purely qualitative examination of the entire series reveals further differences somewhat more subtle and hardly susceptible of tabulation, which are

* These figures were kindly calculated for me by Miss Usher, of the Psychological Department, London Child Guidance Clinic.

TABLE II.—*Per cent. succeeding with Individual Points in Goodenough's Scale. M.D. Adults* versus *Normal Children.*

A. *Advantage with normals :*

Point No.	Description.	Year groups. (Terman age of M.Ds.—Life age of children.)							
		5.		6.		7.		8.	
		N.	D.	N.	D.	N.	D.	N.	D.
10 b	Fingers correct number	10	0	19	16	35	24	41	24
10 e	Hand shown	5	4	12	0	14	4	29	20
12 a	Head proportion correct	33	20	38	4	53	28	69	16
12 d	Feet proportion correct	27	24	42	32	60	44	64	36
12 e	Limbs in two dimensions	27	28	50	28	66	44	86	60
14 a	Co-ordination	18	4	35	12	54	44	77	32

B. *Advantage with defectives :*

4 b	Body length	22	72	33	72	42	88	49	92
5 b	Arm and leg attachments	9	24	12	24	24	48	33	56
6 b	Neck attachment	1	8	6	20	16	48	32	64
7 d	Nose and mouth in two dimensions	0	36	2	32	18	28	24	52
8 a	Hair present	13	24	16	48	22	52	45	68
15 a	Ear shown	10	52	24	52	27	52	28	44
16 a	Eyebrow	9	40	26	48	42	72	55	84

yet, as Burt claims, often sufficient in themselves to render possible a differentiation between the normal and the defective product. These differences have been summed up by Burt in the term " incoherence ". This incoherence can be analysed into several factors, especially into defects of proportion and position amongst the various elements which compose the whole.

Proportion.

Rouma, amongst others, noted that the proportions of the figures drawn improved with increasing age ; and he considered that the sense of proportion is closely connected with intelligence. In the drawings by defective children disproportion was a striking feature, and was more marked in the lower grades. The improvement in proportion in the growing child is least marked in the representation of the head, which remains disproportionately large, long after the size of the other members has settled to within normal limits. For this Rouma suggests the following reasons: (1) That the drawing of the head demands more work and affords more pleasure to the child, on account of the

ease of effective representation of the various features ; (2) that the area which contains most objects tends to appear largest to the eye ; (3) finally, that the proportions of head to body in the child himself differ markedly from those in the adult.

The main difference in the findings in adult defectives is the greater disproportion in head size, and the relative superiority in the proportions of the trunk. In the case of the former, Rouma's first two reasons seem valid, though the third is obviously out of court. An additional reason operative in a few cases, and noted while observing the subject at work, is that the head is drawn first in the centre of the page and without regard to the rest of the figure, which has to be compressed to fit the paper.

Most important of all is the question of " interest " ; for Rouma has demonstrated the child's tendency to exaggerate that which is interesting to him—the head for instance. The trunk, however, is unimportant, a mere peg upon which to hang the head and limbs, representatives of action and interest (Levinstein).

The defective's lack of activity, or of interest in activity, is a commonplace of clinical experience ; in his drawings it is exceptional to find representation of activity in any form. For him, one may suppose, the static head and trunk have relatively more interest than for the normal child, and the limbs correspondingly less ; wherefore he draws the limbs small, the trunk correctly proportioned, and the head—with its wealth of detail—too large.

Position.

The spatial relationships are more important in low-grade than in high-grade drawings, for in the latter their relationships are little different from those of normal children or unskilled adults.

In the low-grade drawing the eyes may appear one above the other, or the head be drawn entirely separate from the face. These curious and chaotic drawings must not be taken as an indication of a similar chaos on the perceptual level. The behaviour of the subjects usually makes it abundantly clear that they appreciate the structure of the human form. The drawing is evidently a synthetic process, the subject adding detail after detail as they " come into his mind ". Bühler (1) advances a similar explanation for the drawings of the normal young child. " The fault lies not so much in a chaotic mind as in the errors of translating from knowledge—formulated in language—to the spatial order of pictorial representation." At the mode of formulation of knowledge in the low-grade defective one can only guess ; presumably such formulation is always very poor.

Fig. 1*a* is a marked example of such a drawing ; the meaning of the features is very difficult to determine ; yet this boy (Case 1) can recognize and distinguish between his fellow patients and the various members of the staff, and

is employed at boot-repairing—of a simple order. His verbal ability is small. When he was asked to draw the various parts of the body by name he produced the drawing seen in Fig. 1*b*. The various parts are indicated as follows: (*a*) Face, (*b*) eyes, (*c*) body, (*d*) mouth, (*e*) arms, (*f*) legs, (*g*) feet.

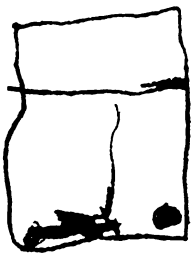

FIG. 1*a*.

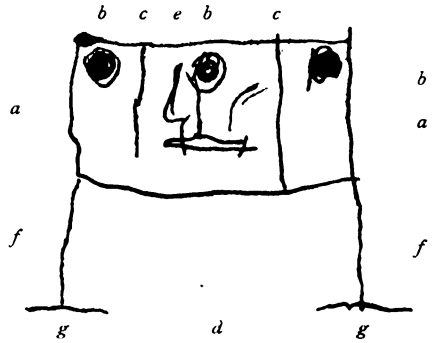

FIG. 1*b*.

Symmetry.

In the normal child's drawing the symmetry is remarkably good. Bühler (1) attributed this to the fact that symmetry is derived, not from optical impression, but from knowledge. The child knows that he has two equal arms, legs, etc., and accordingly draws them so.

Presumably the defective has a similar knowledge, yet in his drawings some degree of asymmetry is almost the rule, and of the 114 drawings in Series B, no fewer than 55 are noticeably asymmetrical. The phenomenon is commoner and more marked in the lower grades, and diminishes alike in frequence and in degree, with rising intelligence.

Scatter.

Measurement on the objective lines of Goodenough's scale does not show the combination of primitive and mature items in a single drawing—the width of scatter that is to say—to be either so common or so marked as other observers, notably Burt (2), have supposed. It seems probable that any marked scattering is always an index of emotional abnormality.

Irrelevant Detail.

In defective children Burt found certain other characteristics—wealth of irrelevant detail, elaborate treatment of the hair and so forth. This study has failed to confirm his findings—except as evidence of emotional disturbance.

Self-Criticism.

It seems certain that many of the characteristics described in the preceding paragraphs are due to a lack of self-criticism. Many of these subjects, on having the disproportion or the asymmetry of their drawing pointed out to them, will draw a definitely improved figure with relative ease. In this connection it is noteworthy that very few of the subjects attempted to alter their drawings; though one or two, after a bad mistake, made a fresh start. Clinical experience supports the suggestion that the findings may represent a lack of self-criticism, an acceptance of things-as-they-are—a defect, that is to say, of emotion rather than of intellect.

Sex Differences.

Goodenough observed certain differences between the sexes in the drawings of normal children. In terms of drawing test score this difference was in favour of the girls, whereas earlier observers report a difference in favour of the boys. Goodenough considers the contradiction to be due to the different methods of evaluation employed.

Qualitatively Goodenough found important and interesting differences between the sexes. The principal of these is a tendency for girls to draw neat, " pretty " and rather static drawings with much detail; whilst the boys tend to draw in profile, to show better proportions, and to represent action. The most marked error of proportion made by the girls is the illustration of very large heads and very small feet; whilst the boys tend to the opposite extreme. The actual details showing these characteristics naturally vary with increasing complexity of the drawings.

No accurate comparison with Goodenough's findings is possible, partly because of the latitude allowed by the scale, and partly because of the small number of suitable drawings in this series. The main impression, however, is that while strongly masculine or strongly feminine types are rare in the defective, the general trend is towards femininity. This is principally because of the large head and small feet usually found in defectives' drawings, and also because of their static nature—characteristics of which the significance has been discussed in the section dealing with proportion. Some corroboration of the views therein expressed is supplied by Goodenough's suggestion that the boys' interest in physical activity may account for their exaggeration of the feet and limbs, as compared with the girls' tendency to minimize these parts. The same reason, she thinks, may account for the earlier change from full face to profile drawings which she finds amongst boys, and for their fondness for representing movement.

If these views are accepted, the apparent tendency to femininity is largely misleading, except amongst the psychopathic defectives, whose drawings will

be considered in a later paragraph. Amongst the emotionally normal group the findings represent mainly emotional inertia.

Drawing as a Special Ability.

It is sometimes claimed that mental defectives have good drawing ability. This is certainly untrue, but on the other hand, it has been found that six patients show a drawing ability sufficiently above their general mental level to be classed as "special". In all six cases the ability was found to be more apparent than real. The subjects, with one exception, are known to have had considerable practice, and in all cases the ability is almost entirely for copying or for memory drawing; true artistic ability is not apparent. All the subjects were considered to be emotionally abnormal. Two of them were homosexual, two were markedly introverted (one showed mild schizophrenia); whilst three, including one of the homosexual subjects, were deteriorating epileptic types. None of the subjects were straightforward cases of primary amentia.

Case 2.—A. W—, male, age 31; mental age 8 years.

An apathetic schizoid type. He had some drawing lessons for about two years when in his teens. Spends much time in drawing. He copies magazine illustrations and photographs well and accurately. Has drawn an ink portrait of a fellow patient which is quite a good likeness. Can draw certain grotesque figures which are evidently from his imagination, but shows no ability whatever for artistic composition.

Case 3.—I. V—, age 25; mental age 7.

Known to be homosexual. He is unstable and has hysterical fits. His power of verbal expression is below his mental age level. His drawings show quite good line, but are very mechanical, and there is a strong resemblance between them all. His only subjects are, firstly, flowers arranged in a conventional bouquet, and secondly, the human figure. His figure drawings are strongly feminine in type. His ability evidently depends mainly upon the slowly acquired *cliché* of Rouma.

Case 4.—M. W—, adult male, epileptic; mental age, 5–6.

Silent and rather solitary. He is employed at boot-repairing, but is only fit for the simplest tasks. He copies illustrations from *Punch* quite creditably. His early history is unknown.

This is the patient referred to in a later section as showing perseveration when asked to draw a man without clothes; here again is seen the effect of the *cliché*.

Case 5.—E. A—, male, epileptic; age 17; mental age, 7 years 10 months.

A case of epileptic deterioration. He attended school and progressed normally until the age of 14. Epilepsy now severe. Has a verbal disability amounting at times to a paraphasia. He spends much time in drawing and copying illustrations from advertisement posters. Many of these are admirably done. Goodenough score, 10 years 3 months. His score would have been higher had he not started an elaborate composition which he was unable to finish properly. The figure contained much meticulous shading.

Case 6.—W. J—, male, epileptic; æt. 18; mental age, 5 years 6 months.

A case of epileptic deterioration; unstable, rather inaccessible, silent and suspicious. He is known to be homosexual. His test results show markedly visual bias. He copied the designs in Terman year 10. The Terman age is certainly too low; it is possible that he has a special verbal disability. He is slovenly and untidy, and unemployable except at simple ward work. His drawing

of a man showed amazingly good line and was quite symmetrical (Fig. 2). The head was disproportionately large, the mouth of "Cupid's bow" type, clothes neatly arranged—all the characteristics of feminine drawing were beautifully shown. Asked where he learned to draw, he replied "at school". No further explanation could be obtained.

FIG. 2.

CASE 7.—T. R—, male, æt. 19; mental age, 10 years 4 months.

He is quiet, introverted, rather shy and dreamy in manner. He has a slight stammer, and for a period showed nocturnal enuresis. All his spare time and money are spent on reading. He is utterly lacking in ambition, and his practical ability is below the average for his intelligence level. He draws very little, but can draw crude caricatures to illustrate local jests. His drawings are quickly done and show surprisingly good line. They are strongly masculine in type.

EVIDENCES OF PSYCHOPATHY.

(a) *Adults.*

That the abnormalities of emotional life may find expression in drawing has long been known, and around the art of the insane quite a large literature has arisen. Réja (16), Kraepelin (10), Jaspers (8), Prinzhorn (15) and Lafora (11) have been among the principal contributors.

The findings vary somewhat with the type of patient observed and with the views of each particular observer. Discussion of the literature is beyond the scope of this paper, but the findings as to the characteristics of psychotic art may be summarized as follows:

(1) Marked over-elaboration and needless intricacy of design.

(2) Much symbolism, hieroglyphic, and occasionally the combination of drawing and writing.

(3) Stereotyped repetition of certain forms and lines.

(4) Crude sexual detail.

(5) Dissociation—as shown by fragmentation of the drawings and confusion of their elements.

(6) Emphasis of unimportant or irrelevant detail.

(7) Meticulous accuracy.

(8) In certain schizophrenics a return to childish drawing standards.

(b) *Children.*

In a small number of Goodenough's children's drawings, certain curious features appeared which she summarized as follows:

(1) " Verbalist " type. Drawings contain much detail, but comparatively few ideas (Mateer) (13).

(2) " Individual response " type containing features inexplicable to any but the child himself.

(3) Evidence of flight of ideas—hair shown on one side of the head only, one ear omitted, etc. (Rouma).

(4) Unusual combination of primitive and mature characteristics in a single drawing (analogous to wide scattering on the Binet scale).

A *questionnaire* to the teachers revealed that the children in whose drawings these features occurred were apparently less stable than a control group.

In 14 children under treatment for psychopathic tendencies the most marked features were (1) drawings of the type usually obtained from children of opposite sex (7 cases), and (2) marked tendency to combine primitive and mature elements.

Three cases seen by the present author showed the tendency to wide scatter, two illustrated sex-organs, whilst one drew elaborate abstract designs and at times introduced symbols into his drawings of concrete objects.

(c) *Adult Defectives.*

Quite obviously the drawings of the defective adult psychotic, with his lack of artistic ability, his poverty of imagery, his low intelligence, and his more primitive reaction type, will differ from those of the psychotic of normal intellect. He cannot approach the amazing complexity or the richness of symbolism shown by certain of Prinzhorn's cases, for example. Certain drawings, however, obtained during the present study showed features which were considered both from their intrinsic nature, and from the type of patient in whose drawings they occurred, to be evidence of gross emotional abnormality, or actual psychosis. These features were: (1) Perseveration, (2) idio-significant detail, (3) sex inversion, (4) sex symbolism and detail, (5) dissociation, and (6) width of scatter.

Perseveration.

The occurrence of a stage of automatism or perseveration in the drawings of very young children has been remarked by Goodenough, by Eng (3), and others.

Rouma (17) and Goodenough (7) also note that automatism occurs in older defectives or subnormal children, and Goodenough considers that in these cases the phenomenon is more truly automatic in character.

In the adult defective automatism or perseveration is not uncommon, but it would appear to be confined, apart from the very low grade, to the drawings of emotionally unstable and psychotic subjects, and to the epileptic.

The relationship between perseveration, psychosis and epilepsy is not clear. Stephenson (18) found a very low "p" factor in five psychotic epileptic "imbeciles". The intellectual level of his subjects was not further defined. Ewen (4), on the other hand, found high perseveration in a series of "insane" epileptics. The different findings may be due in part to the methods employed, and in part to an uncertainty as to the nature of the phenomenon measured.

In the adult epileptic defective, common experience, both in the test-room and the ward, shows that perseveration is much higher than in the non-epileptic. Such perseveration may show itself in ideation, in speech, in writing or drawing, or even in gross motor processes.

The findings from the present study are analysed in Table III.

TABLE III.—*Relation of Epilepsy to Perseveration.*

Clinical condition.	Number of cases.	Number showing perseveration.
Psychosis only	20	9
Psychosis with epilepsy . . .	14	7
Instability only	21	1
Instability with epilepsy . .	5	0
Epilepsy only	20	4

The four cases tabulated as "epilepsy only" are emotionally normal relative to their mental level.

Perseveration may be conveniently described under two headings—perseveration of form and perseverative elaboration of detail. This classification is somewhat arbitrary; essentially both types probably represent the same process, the first mentioned tending to occur in drawings of very simple type, whilst the second is found in those drawings—usually from higher grade psychotic subjects—which show detail. Intermediate and mixed forms also occur.

Perseveration of Form.

Perseveration of form is found usually in drawings from low-grade subjects. The small curve or circle seems to fascinate these people, and having made an eye or a mouth they may proceed to use the same form for other limbs and

features. An extreme example of this is shown in Fig. 3, drawn by Case 8, a low-grade psychotic imbecile boy, æt. 20 (not measurable on the Terman scale). This lad drew first the rough outline, and then filled in first the eyes, next the curious circles above them, and finally the remainder of the drawing. In response to various questions he identified the various parts of the drawing as follows: (*a*) Eyes, (*b*) glasses, (*c*) ears, (*d*) mouth, (*e*) hands, (*f*) " belly ", (*g*) genitals, and (*h*) feet.

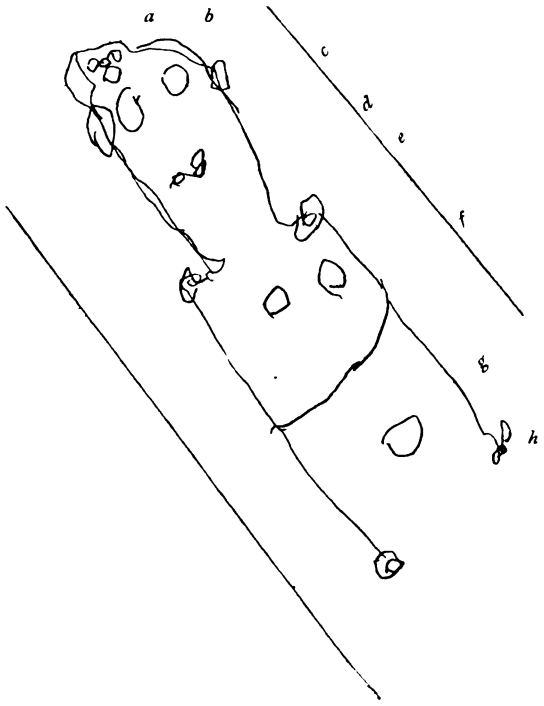

FIG. 3.

CASE 9.

Another striking example is that of a female epileptic, exceedingly unstable and having fleeting persecutory ideas; her mental age is 5 years 4 months. Her attempt to draw the diamond in year VII of the Terman scale is shown in Fig. 4*a*. Asked about two minutes later to draw a man, she drew Fig. 4*b*. Immediately afterwards she produced Fig. 4*c*. Told then to " draw anything you like—not a man ", she produced Fig. 4*d* and then Fig. 4*e*. Figs. 5*a* and 5*b* show similar subjects drawn a month later, without previous presentation of the diamond.

CASE 10.

A similar phenomenon was shown by a psychotic male, having a mental age of 4 years 3 months. He was given the test one minute after copying the square in year IV of the Terman scale, with the result shown in Fig. 6.

CASE 11.

This case illustrates the relationship of perseveration to emotion and effort. A. W—, æt. 30, epileptic imbecile with special ability as a copyist. This subject drew men to a stereotyped formula, quickly, easily and well. Suddenly told to

draw a man with no clothes on, he produced the usual head and arms very quickly. He then slowed down and showed obvious bewilderment, finally drawing a crude oblong " body ", adding a second, a third and even a fourth before he appeared to realize what he had done.

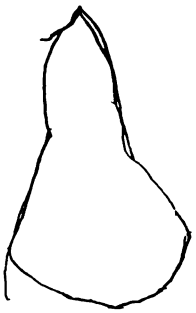

FIG. 4*a*.

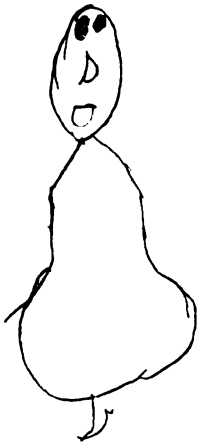

FIG. 4*b*.

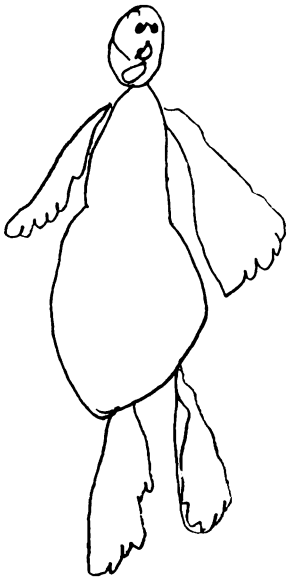

FIG. 4*c*.

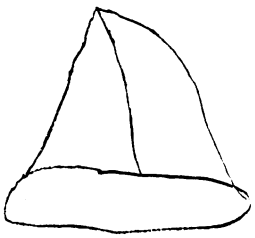

FIG. 4*d*.

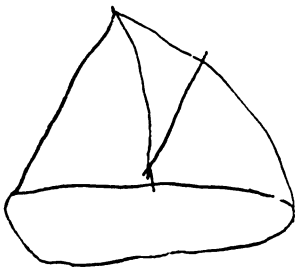

FIG. 4*e*.

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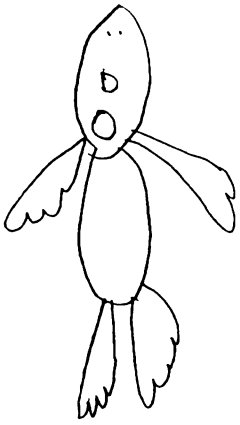

FIG. 5*a*.

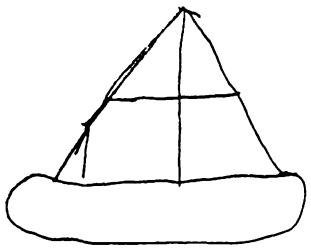

FIG. 5*b*.

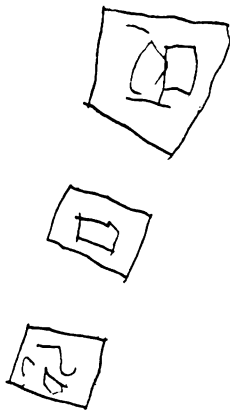

FIG. 6.

Perseverative Elaboration.

Perseverative elaboration of detail is commoner amongst higher-grade and usually grossly psychotic subjects. In this type some feature, or limb, or detail of clothing, represented frequently in a stylized and symbolic fashion, is stressed out of all proportion to its importance, elaborated and repeated again and again, until in marked cases its original form becomes unrecognizable. From a hand decorated with five prominent fingers complete with nails may spring another hand similarly adorned ; hair may be close curled and extended to surround the entire face ; eyelashes may deform the eyes ; teeth cover the entire trunk.

This type of perseveration may show itself in shading, and here one sees

the importance of watching the subject at work ; for in some cases the finished drawing shows nothing but a heavily-shaded figure, whereas observation of the work in progress shows the shading starting lightly in one area, and extended very slowly and painstakingly outside the limits of the limb or garment on which it first appeared, covering, it may be, carefully drawn detail, worked over again and again, until finally the whole drawing is shaded black (Figs. 8, 11).

Repetitive Drawing.

Three subjects—all low-grade psychotics—covered the entire paper with little manikins in response to the instruction " Draw me a man ! " The phenomenon is probably a form of perseverative elaboration.

Flight of Ideas.

Exactly opposed to perseveration is the so-called " flight of ideas " seen in maniacal patients. Goodenough considered that certain types of drawing of her subjects showed this—drawing of one ear and omission of the other, etc. In the present series it has not been found possible to find satisfactory evidence of the phenomenon, though part of the scattering seen in some unstable patients' drawings may arise from some such cause. Some drawings from excitable and unstable subjects who are not definitely psychotic show a " wildness " of line which may have a similar origin, or which may be wholly or partly due to muscular inco-ordination. Neither phenomenon has been included as evidence in Table IV.

Idio-significant Detail.

In the course of the study nine subjects produced drawings showing bizarre and incomprehensible details, somewhat similar to those reported by Goodenough as indications of psychopathic tendencies in children of normal intelligence, analogous, that is to say, to the " individual " type of response occasionally obtained in the Kent-Rosanoff test.

These curious effects apparently had some definite meaning for the subjects, for they appeared constantly in drawings taken on several different occasions.

The idio-significant details—for the subjects were never able to explain their meaning—were accompanied in 6 out of the 9 cases by the elaboration type of perseveration. The subjects all showed gross emotional abnormality and, with one exception, were known to be psychotic. Fig. 11 is an example.

Sex Inversion.

Twelve subjects produced drawings showing inversion of sex characters—7 males producing typically feminine, and 5 females typically masculine

drawings. Eight of these—5 males and 3 females—showed other signs of psychopathy in their drawings (Figs. 2, 7, 8, 9, 13). In the series of 113 drawings used for correlation—from which clinical psychotics were excluded—2 subjects, both males, showed inversion. One of these is grossly unstable; the other is quite normal for his intellectual level.

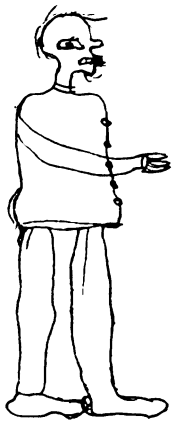

FIG. 7.

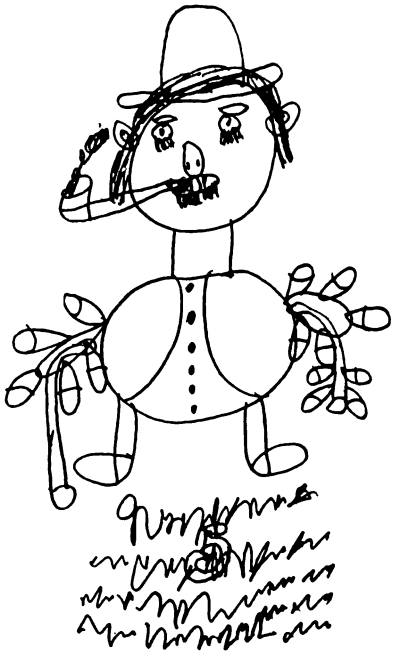

FIG. 8.

FIG. 9.

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Sexual Symbolism.

Two of the subjects illustrate sex-organs. Both these cases are psychotic, one being hallucinated. Both drawings showed gross perseveration of form, whilst the hallucinated subject showed also perseverative elaboration and scribbled shading.

Two other patients, both epiloiacs, illustrated curious sexual symbols. The first of these is illustrated in Fig. 8 (Case 12); the elaborated fingers are considered to be unquestionably phallic. This boy is fond of drawing; has executed many drawings for the author, all of the same type. The second subject (Case 13) was a girl who was semi-stuporose and whose drawing was executed very slowly (Fig. 9). The " male " triangle at the top of the trousers was added very slowly indeed and after a very long pause. Questioned, she described this as his " pister ".

Dissociative Drawings.

Several drawings from psychotic subjects were suggestive of dissociation, and two of these were utterly incomprehensible.

Case 14.—W. C—, male, æt. 34. Known to be psychotic and thought to have auditory hallucinations. Silent, solitary and verbally inaccessible, but quite

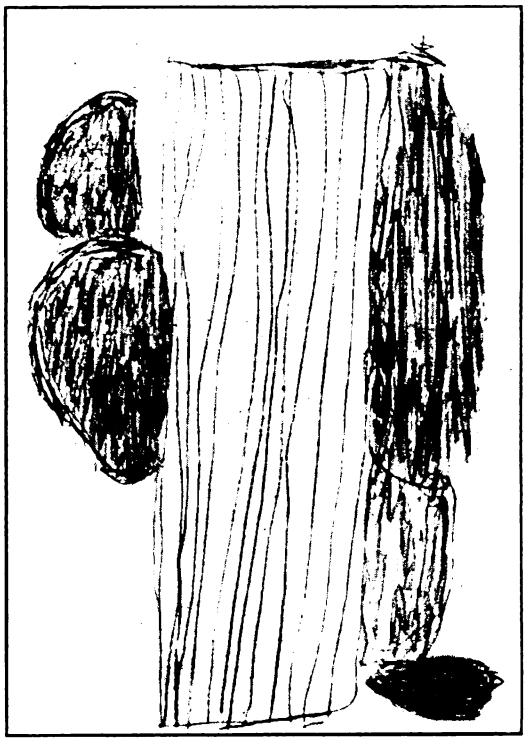

Fig. 10.

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docile and employable at simple tasks. He at first refused to attempt the test, but on being told to draw an official of the institution (named) he set to work busily and purposively and with no trace of hesitation. The drawing (Fig. 10) shows quite a lot of care in design and execution. No other drawing can be obtained from him.

Stylized Drawings.

These subjects produced drawings curiously stylized, all three showing relatively good draughtsmanship, but resembling conventional decoration rather than the actual human figures. The most remarkable of these (Case 16), a psychotic epileptic girl of 24, produced some strange drawings, one of which is shown in Fig. 11.

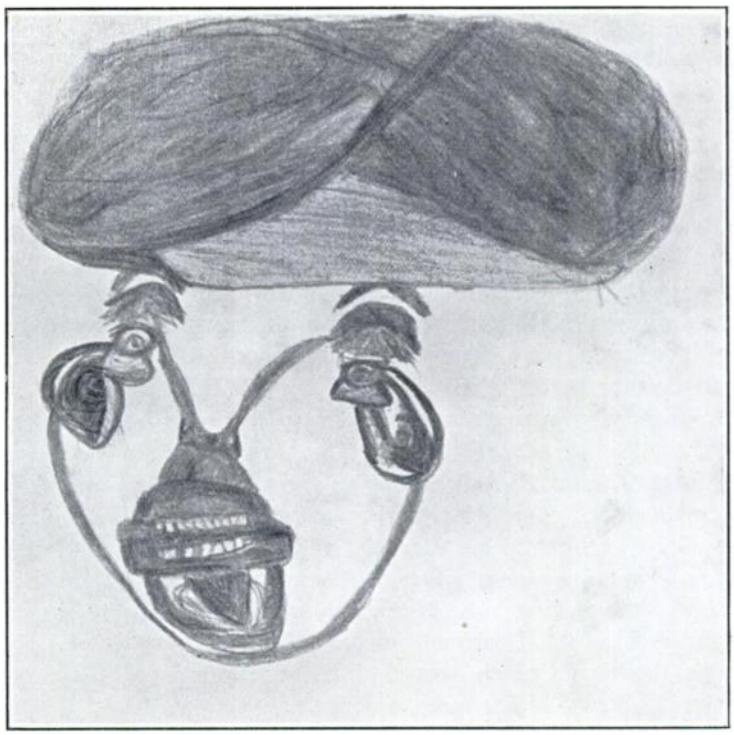

FIG. 11.

The picture took over two hours to draw, and shows a bizarre and stylized effect with marked perseverative shading and idio-significant detail. The subject would not or could not discuss the drawing.

Drawing and Writing.

Three psychotic subjects introduced writing into their drawings. Two of these placed several lines of " pseudo-writing " beneath their figures, whilst the third—a demented schizophrene—introduced written letters as an integral part of the face (Fig. 12).

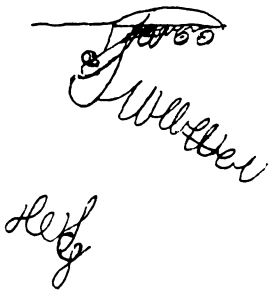

FIG. 12.

Drawings of Psychotics.

In all, 34 drawings were obtained from known psychotic subjects, all of schizophrenic reaction type. The findings, which are analysed in Table IV, show at once that whilst markedly perseverative and idio-significant drawing is always associated with gross abnormality, the converse is by no means the case, for of these 34 drawings, 9 were of the ordinary type obtained from non-psychotic subjects of corresponding degree of intelligence.

The reason why some psychotics show evidence of their psychosis in their drawings, whilst others do not, is hard to discover. It is possible that, as in the normal, subjects who are visualists in imagination find in drawing a means of emotional expression, whilst the auditives are unable to do so. In every mental hospital one sees patients who spend much time in drawing—sometimes of quite a high standard. Case 12 in the present series, a katatonic epiloiac, who is practically mute, appears to have a strong urge to draw (Fig. 8). Deprived of paper, he will go to infinite trouble to scratch his drawings, which show all the indications of psychosis, upon woodwork or linoleum with a piece of wire.

Unstable Types.

Certain of the features which have been described in the preceding paragraphs appeared also in defectives known to be highly unstable, though not actually psychotic. These are analysed, together with the true psychotics, in Table IV. Here again, as with the psychotics, the converse does not hold,

several highly unstable subjects showing no distinctive features in their drawings.

Fig. 13 shows a remarkable example of drawing obtained from an extremely unstable male adult whose mental age (Terman-Binet) is 8 years 9 months (Case 17). The line of the drawing is very good, but asymmetry and disproportion are marked. The features are well drawn, but the neck is omitted. The buttons are elaborately drawn, though the clothing is barely indicated.

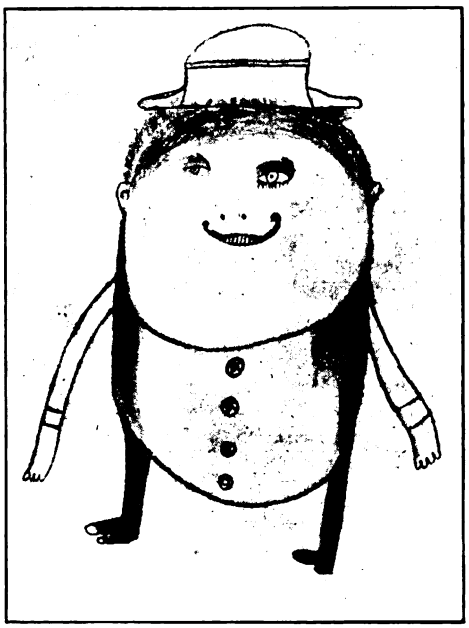

FIG. 13.

The shading of the hair and down the sides of the trunk is almost perseverative in type. Finally, the figure shows all the typical signs of femininity.

The findings for the whole of the emotionally abnormal group are analysed in Table IV.

In addition to the characters listed in the table, one finds that many drawings from this group show certain qualities too ill-defined for tabulation. Principal amongst these is a combination of primitive and mature items in a single drawing—a "scatter", that is to say, far wider than the average for the subjects' mental age. Some cases, too, show a meticulous attention to detail and particularly to shading; this is commonest in high-grade "introvert" types. Lastly comes a failure of effort—either a blank refusal of the test, or

the hasty drawing of a crude scribble; or, as in three unstable males, the starting of an elaborate outline which they failed to complete.

TABLE IV.—*Indications of Psychopathy.*

Drawing features.	Psychosis, 33 cases.	Instability, 26 cases.	Epilepsy alone, 20 cases.*	Totals.
Perseveration of form	10	..	4	14
Perseveration of detail	6	1	..	7
Repetitive drawing	3	..	..	3
Abnormal shading†	3	6	..	9
Dissociation	3	..	..	3
Idio-significant detail	8	1	..	9
Sex inversion	6	6	..	12
Sex-organs	2	..	..	2
Sex symbolism	2	..	..	2
Stylized drawing	2	1	..	3
Effort failure	1	2	..	3
"Normal" drawing‡	9	8	6	23

* Emotionally stable defectives.

† On account of the difficulty of differentiation between perseverative and meticulous types of shading both groups have been included under this heading.

‡ "Normal" for intellectual level.

Value of Drawing as Evidence of Emotional Abnormality.

It is to be noted that the value of drawings as evidence of emotional abnormality is strictly limited; and that while the definite presence of the characters described above is strong evidence of psychosis or instability, their absence has no diagnostic value. Moreover, even when present, their value is purely qualitative, and drawings by themselves give little indication of the depth or severity of the condition present.

SUMMARY AND CONCLUSIONS.

In a study of the drawings of 420 adult mental defectives the following conclusions are reached:

(1) The Goodenough drawing test is a useful component for a performance battery for these patients.

(2) In a group of 113 subjects whose mental ages lie between 5 years and 9 years, the coefficient of correlation between this test and the Stanford-Binet is $+ \cdot 48 \pm \cdot 07$.

(3) Compared with normal children of similar intelligence, defectives excel in representation of detail, but are markedly deficient in correctness of proportion, and of spatial orientation; their drawings display a certain "incoherence".

(4) Defectives' drawings are of static type, and tend towards femininity.

(5) A special ability for drawing is uncommon in defectives. The ability is more apparent than real, and true artistic talent does not occur.

(6) The drawings of psychotic and unstable subjects frequently show distinctive features, notably perseveration, idio-significant detail and marked sex inversion.

I am indebted to Dr. J. K. C. Laing, Medical Superintendent of Darenth Training Colony, for permission to examine and record one of the cases here reported. For the remainder, I am indebted to Dr. T. Lindsay, Medical Superintendent of Caterham Mental Hospital.

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