

CHARACTER ASSESSMENT FROM HANDWRITING.

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GRAPHOLOGY, the theory and practice of diagnosing character from handwriting, is gradually developing from its initial stage, in which it had been the mysterious art of a few people who claimed to be especially gifted, into a science which can be taught and studied. The widespread mistrust of it is partly justified by this state of development. From a scientific point of view it needs more precision of method and terminology as well as corroboration of its results by objective methods. The description of the character as a whole and assessment of the significance of single features still depend to a large extent on the graphologist's experience and knowledge of human nature as well as on his stylistic abilities, and some other subjective factors. Moreover, only part of the accepted graphological interpretations have been based on inductive methods using statistical comparison, experiment and the like; for the rest, they have regarded handwriting as the more or less unwitting expression of the subject's personality, and they have attempted to assess this either by empathy, or by an effort to understand and explain which might itself be founded on the graphologist's private philosophy or on the psychoanalytical system. The results obtained in this way called for corroboration by statistical evidence. The present writer therefore welcomed Dr. Eysenck's suggestion to submit her graphological reports to objective control in the following way: She was to answer a questionnaire on the temperamental qualities of 50 neurotic patients, a sample of whose handwriting was given her, assess their intelligence, give a short character description, and, last of all, match the specimens of handwriting against anonymous summaries of the case-records of the patients. Her results were then compared with the patients' own answers to the questionnaire, their score in the Progressive Matrices Test, and the psychiatrist's description of the patient's character. Dr. Eysenck has reported the numerical results.* In the present paper the validity of the graphological opinion on personality traits confirmed by at least one of the sources of control will be examined, and the handwriting signs of these traits will be set forth.

I. *The Reflection of Neurosis in Handwriting.*

There are some advantages in the fact that the testing material was obtained from neurotic patients; if there had been a straight contradiction between the graphological analysis and the specific features of the neurosis (for example, if a patient with anxiety and depression had been described as daring, over-confident and pleasure-seeking), this would weigh heavily against the reliability of graphology. If, on the other hand, the specific traits of the neurotic state were mentioned in the graphological analysis as outstanding, or if they were at least not overlooked, this would serve to confirm to some extent the reliability of graphology. It may be stated in advance that contradictions of the kind just mentioned did not occur. There are, however, cases of discrepancy between the psychiatrist's and the graphologist's opinion which deserve special discussion. They seem to indicate that the doctor and the graphologist are not always aiming at the same layer of the personality; the graphologist may point to a deeper-lying trait, the doctor to a surface symptom. In such cases the graphologist, although not mentioning the surface symptom, gives the deeper reason for it. In other cases the neurotic traits them-

* "Graphology and Psychiatry: An Experimental Analysis," *Brit. J. Psychol.* (awaiting publication).

selves may be only on the surface, without having penetrated into the personality ; then they would not be noticeable in the handwriting.

1. Depression.

Depression, which was mentioned 32 times in the medical report, was always referred to by the graphologist. Where the term "depression" does not occur, which happened in 7 cases, the descriptions used—"worried," "afraid of reality," "lacking in self-confidence"—are akin to depression and compatible with it.

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- Ques. 19. Would you ever consider yourself quick & agile in your actions or slow but sure?
- Ques. 20. Do you often rush from one activity to another without pausing or do you prefer leaving a bit of a rest before starting out on anything new?
- Ques. 21. Do you like to talk a lot or do you rather let the others do the talking?
- Ques. 22. Do you like meeting new people or does the prospect of doing so rather upset you?
- Ques. 23. When you and your friends are doing something do you usually take the lead, or do you rather fall in with other people's wishes?
- Ques. 24. Do you have frequent ups & downs in moods, or do you go along on "even keel"?
- Ques. 25. Are you finding easily quiet, or do you tend to remain untroubled in general?

FIG. 1.

The graphological statement of depression was based on the following symptoms in the handwriting :* Falling or fluctuating lines, a heavy pressure or a particularly thin, timid and irregular pressure, slanting to the left and the signature placed towards the middle or the left half of the paper, small letters, diminished height of capital letters, corrections, slow writing. At least two of these qualities were combined whenever depression or a tendency towards it was stated (Figs. 1 and 2).

2. Anxiety.

The medical diagnosis anxiety was given in 38 cases. In the graphological sketch the term "anxiety" was used only three times, but descriptions like

* For the meaning of the technical terms describing the qualities of the handwriting the reader may refer to graphological text-books, e.g. Saudek, *Experiments with Handwriting*, London, 1929, or Jacoby, *Analysis of Handwriting*, London, 1939.

27. When you are out with friends, do you enter into the fun whole-heartedly, or do you tend to be rather quiet and withdrawn.
28. Would you like to go through thrilling experiences and adventures yourself, or do you prefer reading about them or seeing them at the pictures.

FIG. 2.

L/B+

20. Do you often rush from one activity to another without pausing for a rest, or do you prefer having a bit of a rest before starting out on anything new?
21. Do you like to talk a lot, or do you rather let the others do the talking?
22. Do you like meeting new people, or does the prospect of doing so rather upset you?
23. When you and your friends are doing something, do you usually take the lead, or do you rather fall in with other people's wishes?
24. Do you have frequent ups and downs in mood, or do you go along on an even keel?
25. Are your feelings easily hurt, or do you tend to remain unruffled in general?
26. Do you tend to express such emotions as delight, sorrow, anger, etc. readily, or do you feel that it would never do to exhibit your emotions publicly?
27. When you are out with friends, do you enter into the fun whole-heartedly or do you prefer to be rather quiet and withdrawn?
28. Would you like to go through thrilling experiences yourself, or do you prefer reading about them or seeing them at the pictures.

FIG. 3.

"tendency to worry," "fear of the future," "lack of security," point to the pathological state in the other cases. Question 5 of the questionnaire* has a special significance for anxiety cases. The graphologist's answer to this question was

26 Do you tend to express such emotions as delight ~~or~~ sorrow, anger, etc. readily, or do you feel that it would never do to exhibit your emotions publicly?
 27 When you are out friends, do you enter into the fun wholeheartedly, or do you tend to be rather quiet and withdrawn?
 28 Would you like to go through thrilling experiences and adventures yourself, or do you prefer reading them or seeing them at the pictures?

FIG. 4.

"Inclined to worry over possible misfortunes" in all cases but one. This one case is Bai. (Fig. 3). It is a case of—

"Acute anxiety due to very severe enemy action on three fronts—France, Greece and Libya. The patient had been exposed to continuous bombardment,

Do you tend to express such emotions as delight or sorrow, anger, etc. readily, or do you feel that it would never do to exhibit your emotions publicly?
 When you are out friends, do you enter into the fun wholeheartedly, or do you tend to be rather quiet and withdrawn?
 Would you like to go through thrilling experiences and adventures yourself, or do you prefer reading them or seeing them at the pictures?
 Do you try and watch your own mind at work and see for doing things, or do you consider that sort of thing out complicated problems such as crossword etc consider such things "highbrow"
 self ready to meet conditions, or do you take quite often
 easily in exciting situations (examinations or manoeuvres for usually remain, calm-cool & collected

FIG. 5.

had lost his best friend and had been buried several feet in the ground. There are no signs of neurosis in his history before these events."

This may be a case in which the deeper layers of the personality have not been affected by the pathogenic experiences.

In the handwriting of anxiety cases the narrow distance between words and lines is characteristic. The words end abruptly; the ellipses (in o, a, g, etc.) may be

* P. 40.

"compressed" by the next letter; the lines begin at the extreme left without a margin. The signature may be found on the left half of the paper; slant and flourishes may be to the left; the pressure is either heavy or there are irregular losses of pressure; the writing is small and slow, with occasional abrupt loss of height. Two or more of these features were combined in each of these cases of anxiety (Figs. 4 and 5).

NAME:-

AGE:-

OCCUPATION

14. are you often troubled by feelings of self-consciousness, or do you go along happily without bothering much about what others will think of you?
15. When you are working, are you easily distracted by things that are happening around you, or do you usually concentrate whole-heartedly on your work?
16. When you are sitting or lying down, can you usually relax easily, or do you remain tense for a long time?
17. When something unexpected happens, are you easily startled, or do you remain quite unaffected?
18. Do you often sleep badly, or would you call yourself a fairly sound sleeper?
19. Would you consider yourself quiet and agile in your actions, or are you rather "slow but sure"?
20. Do you often rush from one activity to another without pausing for a rest, or do you prefer having a bit of a rest before starting out on anything new?
21. Do you like to talk a lot, or do you rather let the other do the talking?
22. Do you like meeting new people, or does the prospect of doing so rather upset you?
23. When you and your friends are doing something, do you usually take the lead, or do you rather fall in with other people's wishes?
24. Do you have frequent eye and nose in moods, or do you go along "on an even keel"?
25. are your feelings easily hurt, or do you tend to remain unaffected in general?
26. Do you tend to express such emotions as delight, sorrow, anger, etc. readily, or do you feel that it would never do to exhibit your emotions publicly?
27. When you are out with friends, do you enter into the fun wholeheartedly, or do you tend to be rather quiet and withdrawn?
28. Would you like to go through thrilling experiences and ~~and~~ adventures yourself, or do you prefer reading about them at the pictures?

FIG. 6.

3. Obsessional Neurosis.

There were seven cases of obsessional neurosis in the material at the author's disposal. Five of them were described in the graph-sketch as "over-conscientious," "circumstantial and ceremonious," "tries to check himself constantly," "keeps constant watch on his words and expression," "acts under constant compulsion," "under self-imposed restrictions," "not free and natural." The two cases in which the graphologist did not refer to the obsessional features have to be regarded as failures; they show characteristic traits which have been overlooked. These traits are: Regularity and rigidity combined with some artificiality of style, narrowness, small letter formation, touched-up letters, perpendicular direction or slant to the left or irregularity of the slant; wide distances between the words, combined with narrow letters, or extremely small distances between words and lines (Figs. 6 and 7).

Fig. 7 shows the writing of a case of "severe obsessional bouts centering round figure 13": all the figures but 13 are underlined by a short upward stroke to the right, proving the mind's influence on the way of writing. No need to emphasize

that such a phenomenon only allows for a guess, and not for a diagnosis of the underlying mental cause.

4. Hysteria.

Nine cases are diagnosed as hysteria, three of them of the conversion type, and in six more cases hysterical features are mentioned in cases of anxiety, epilepsy or

- 1 Are you rather ^{at Home} over-conscientious in your work or do you tend to be a bit sluggish
- 2 Are you inclined to try and watch your own mind at work and analyze your motives for doing things, or do you consider that sort of thing rather morbid
- 10 Do you enjoy thinking out complicated problems such as cross word puzzles, etc or do you consider such things highbrow
- 11 Do you adapt yourself easily to new conditions or do you take quite some time to settle down
- 12 Do you get rattled easily in exciting situations (examinations or manoeuvres for instance) or do you usually remain calm cool and collected
- 13 Do you often have feelings of inferiority or do you usually feel self-confident
- 14 Are you often troubled by feelings of self-consciousness or do you go along happily with out talking much about what other ~~men~~ think of you

FIG. 7.

reactive depressive states. In the respective graphological sketches the following characteristics are mentioned:

Lack of self-confidence or self-reliance	in all the	15 cases.
A desire to domineer or to be "in the limelight"	in	8 "
Lacking in stability	"	8 "
Emotional, excitable, impressionable	"	11 "
Afraid of reality; wants protection	"	6 "
Cannot reach a decision; torn between opposed tendencies	"	5 "
Self-centred; cannot form an objective opinion	"	5 "
Imitative; likes acting; is versatile	"	4 "
Irritable	"	4 "
His feelings do not go deep	"	2 "

At least two of these features were stated in each case in which the doctor found hysterical tendencies; in four cases there were from five to seven of them.

lined to think things over before acting
 act on impulses.
 inclined to ponder over your feet, or do
 for the day.
 her over-conscientious in your work
 to be a bit slapdash.
 lined to try and watch your own mind at
 your motives for doing things, or do
 sort of thing rather morbid?
 thinking out complicated problems, such
 puzzles, etc. or do you consider such
 yourself easily to new conditions, or do
 time to settle down.

FIG. 8.

need to ponder over your feet, or over
 the day?
 over-conscientious in your work, or do you
 do slapdash?
 ed to try and watch your own mind
 analyse your motives for doing things,
 ider that sort of thing morbid?
 thinking out complicated problems, such
 puzzles, etc. or do you consider such
 as.
 yourself easily to new conditions, or do
 some time to settle down?
 skilled easily in exciting situations,
 manoeuvres for instance, or do
 you cool and collected?
 H.D.

FIG. 9.

The handwriting of the hysterics appears to be of two different types: Either it is characterized by irregularity of height, width and slant, fluctuation of the lines, indistinct, mixed ligature (Fig. 8), or by a grotesque slant to the left, exaggerated flourishes, heavy pressure, covering strokes, irregular connectedness and lack

- (27) When you are out with friends, do you enter into the fun wholesale, or do you tend to be rather quiet and withdrawn.
- (28) Would you like to go through thrilling experiences and adventures yourself, or do you prefer reading about them or seeing them at the pictures.

FIG. 10.

- | NAME | T. | AGE | 2. | OCCUPATION | ADVICE | QUESTIONS |
|------|----|-----|----|------------|--------|---|
| (23) | | | | | | When you and your friends are doing something do you usually like the lead, or do you rather fall in with other people's wishes? |
| (24) | | | | | | Do you have frequent ups and downs in mood, or do you go along on an even keel? |
| (25) | | | | | | Are your feelings usually hurt, or do you tend to remain unruffled in general? |
| (26) | | | | | | Do you tend to express such emotions as Delight, anger, joy, etc. readily, or do you feel that it would never do to exhibit your emotions publicly? |
| (27) | | | | | | When you are out with friends, do you enter into the fun wholeheartedly, or do you tend to be rather quiet and withdrawn? |
| (28) | | | | | | Would you like to go through thrilling and experiences and adventures yourself, or do you prefer reading about them or seeing them at the pictures? |

FIG. 11.

of proportion in the accentuation of some letters, particularly initials (Fig. 9). No single symptom can be regarded as indicating hysteria; at least five of them were found to be combined in each of the cases at the author's disposal.

The only case of "amnesia and hysterical fugues" is described in the graph-sketch as "able to imitate people to the point of losing his personality." It belongs

to the first type of hysterical writing—showing great irregularity, threadlike ligature, covering strokes, broken letters and fluctuation of the lines (Fig. 10).

The psychological difference corresponding to the two types of handwriting is the following: The first type is lacking the mental energy and determination needed to complete his emotional development. The second type is overstraining his energy in the effort to repress the normal emotional development, of which he is frightened.

5. Epilepsy.

In the two cases of epilepsy—none of which was of "epileptic character"—the graphological sketch refers to the losses of consciousness. The basis for this statement is a sudden deficiency of the writing pressure.* The same phenomenon was, however, observed in three cases of hysteria and anxiety in which occasional losses of consciousness were said to occur. From the handwriting it does not seem possible to distinguish between these different causes for loss of consciousness (Fig. 11a).

- 26 Do you tend to express such emotions as delight
sorrow anger etc. readily, or do you feel that it
would do to exhibit your emotions publicly
- 27 When you are out with friends, do you enter
into the fun whole heartedly, or do you tend
to be rather quiet and withdrawn
- 28 Would you like to go through thrilling
experiences and adventures yourself, or do you
prefer reading about them or seeing them
at the pictures

C. M. Owarth

FIG. 11a.

6. Psychopathic Personality.

Two cases are described by the doctor as schizoid personalities, three more as psychopathic. The graphologist's description of one of the schizoids is: "He is wearing a mask to conceal his own weakness, his instability and lack of energy . . . the habit of concealing his inner life and his true nature made him afraid of contact . . . he is also indulging in delusions . . . in practical life he finds people and circumstances hostile to himself; he cannot understand people; he is reserved and wants others to respect his secretiveness."

The graphic symptoms of these character traits are: A rigid, unnatural handwriting, sloping to the left, covering strokes in the middle zone, some tendency to threadlike ligature, exaggerated loops in the lower zone, discrepancy between text and signature, increased height of letters in the middle zone at the end of words, large distances and horizontal strokes between words (Fig. 12). The first five of these symptoms are also to be found in the second case of schizoid personality. In this case the secretiveness was also stressed by the graphologist (Fig. 13). The other psychopaths are described as "excitable," "irritable," "restless," "unsteady," "autistic," "full of opposition," "emotionally primitive with ideas out of all proportion."

* Cf. Cyril Burt, *The Backward Child*, London, 1937, fig. 4, p. 196.

- 1/ Are you interested in sports or in intellectual things?
- 2/ Do you particularly dislike being "bossed", or do you generally do as you are told, without feeling rebellious?
- 3/ Do you usually "hitch up hell" when you are not getting a square deal, or do you usually just shrug your shoulders and say, "oh, it doesn't matter"?
- 4/ Do you enjoy being in a position where you can give orders, or do you dislike having such responsibility?
- 5/ Do you consider yourself a happy-go-lucky individual, or are you inclined to worry over possible misfortunes?
- 6/ Are you inclined to stop and think things over before acting, or do you often act on impulse?
- 7/ Are you inclined to ponder over your past, or do you rather "live for the day"?

FIG. 12.

have frequent ups and downs in mood, or go along "on an even keel"?

Feelings easily hurt, or do you tend to be unoffended in general?

inclined to express such emotions such as sorrow, anger, etc. readily or do you - it would seem - do to exhibit your feelings publicly?

Are out with friends, do you enter into whole-hearted, or do you tend to be quiet and withdrawn?

Are likely to go through troubling experiences - times, or do you prefer reading about

FIG. 13.

Conclusion.

It seems to be borne out by this survey that specific combinations of certain traits of the handwriting correspond to the different kinds of neurosis and psychopathy as represented in the 50 cases at the author's disposal. To claim more would be premature.

*II. The Reflection of Character Traits in Handwriting.**1. Emotionality and Calmness.*

Questions 12 and 17 of the questionnaire, aimed directly at the subject's emotionality, excitability or its opposite, calmness and collectedness. On question 12, which was answered by 49 patients, the graphologist's and the patient's opinion agree in 38.5 cases, they disagree in 8.5 cases. On question 17 there is agreement in 43, disagreement in 5 cases. The doctor's description refers to these features of the patient's character in 36 cases, 32 of which agree with the graphologist's description; 4 cases seem to contradict the graphologist. In one of them the patient himself gives the explanation by saying: "Outwardly I keep cool, inwardly I get rather rattled." The handwriting indicates that he is easily startled and knows bursts of temper between periods of calmness. The doctor describes him, however, as "even tempered." Nevertheless, in the case-history there is a remark that he had "fits of crying when reprimanded" and that he was "depressed upon admission." The other cases are similarly complicated; the graphologist points out that although the patient is irritable and excitable, he wants to appear self-controlled and calm; that he restricts himself successfully. Since the answers to the questionnaire suppose "exciting situations" or "unexpected happenings" they conform to the graphologist's description but not to the doctor's, which is based on the patient's everyday behaviour. In these cases, again, doctor and graphologist are dealing with different layers of the personality.

On the question of calmness, the patients' and the graphologist's opinion differ in six cases; in one of these the doctor also puts the graphologist in the wrong, whilst in the other five cases the doctor supports the graphologist by describing the patient as "restless," "extremely irritable," "subject to futile rages" and the like. A mistake on the side of the patients seems here very likely.

From these facts the graphological diagnosis of excitability and irritability on the one hand, calmness on the other, appears to be well founded.

It was based on the following features of the handwriting:—(Emotionality): Irregularity of height, slant and width of the letters, irregular degree of connectedness, frequent touching up of letters, extreme slant to the right, pointed loops below the line, neglect of the shape of letters (Fig. 10). (Calmness): Sharpness of the stroke combined with some regularity and thinness, particularly of the i-dots (Fig. 11).

In the complicated cases the lack of homogeneity is outstanding; the signature is quite different in style from the text; the writing is careful and slow, but not consistently so; it sometimes degenerates in the same specimen into hasty and primitive forms, or it shows other symptoms of contradictory significance (Fig. 14).

2. Intelligence.

The intellectual qualities which can be discovered from the handwriting are: Ability or inability to combine facts, to detect relations, of thinking clearly and of expressing thoughts clearly. These qualities ought to show some correlation to those examined by the Matrix Test. As a matter of fact, however, there was no satisfactory correlation between the achievements at the Matrix Test and the graphological assessment of intelligence. Table I shows the number of cases in which the ranking of the intelligence according to graphological assessment and to the Matrix Test agree or disagree. Both rankings divided the cases into four groups of intelligence:

	Graphological.	Test.	Agreement.	Difference.
	cases	cases	in 2 cases	in 2 cases
Group I	4	4	5	9
Group II	14	11	14	13
Group III	25	27	0	8
Group IV	7	8		
	50	50	21	32

The graphological assessment is—

	Three groups	higher than the test	in	1 case.
"	"	lower	"	"
Two	"	higher	"	2 cases.
"	"	lower	"	1 case.
One	group	higher	"	13 cases.
"	"	lower	"	11 "
				29 cases

ing out on anything new. " rather let the
 talk a lot, or do you
 Eng. rather let the
 seeking new people or does the prospect of
 best you.
 friends are doing something, do you usually
 do you rather fall in with other people's
 went up & down in mood, or do you go
 heel.
 easily hurt, or do you tend to remain unaffected
 ess such emotions as delight, sorrow, anger, etc.
 feel it would never be to do to exhibit your
 with friends do you enter into the fun wholehearted
 rather quite & withdrawn.
 to go through thrilling experiences & adventures yourself
 acting about them or seeing them at the

FIG. 14.

This rather discouraging result may have three different causes: Either graphology is not fitted for judging intellectual abilities, or the present writer was mistaken in applying it, or, lastly, the abilities measured by the Matrix Test are not as closely related to the subject's intellectual abilities as was presumed.

One particular symptom in the handwriting—the frequent interruption of the stroke (within one word) and the subsequent "jointing" or "patching" (Fig. 12)—may have been overrated by the graphologist. It is supposed to indicate that the subject is not capable of comprehending logical relations, of combining and deducing, and thus of intelligent understanding and acting. From the present material it seems that this symptom is actually not always a sign of impaired intelligence. Finer distinctions will have to be made to ascertain when this is the case and when not.

It is also worth noticing that of the eight patients with I.Q.4 according to the Matrix Test, all of whom were classed higher by the graphologist, two won a scholarship at school, one was "quite a good scholar and almost won a scholarship," one "was very good at school, where he reached the top standard," one was sent from the elementary school to a secondary school at the age of 12, and two more left the school at 14 after reaching the top standard. Only one "who missed school a lot left at 13 after reaching Standard V." Since in normal cases the correlation between achievements in the Matrix Test and at school has been found to be positive* the inference suggests itself that the neurosis may have some bearing on

* Cf. Raven, Bibliography No. 77.

this state of affairs; that the intellectual ability of these patients may be higher than their performance in the Matrix Test.*

Conclusion.

The graphological assessment of intelligence needs more subtle methods based on further research. It ought to be checked by tests obtained from normal subjects before a verdict as to its reliability can be given.

III. *The Attitude Towards Self.*

Self-centredness with or without hypochondriacal features was found by the doctor in 24 cases, by the graphologist in 15 of these, whilst in two more cases "lack of understanding for other people" is said to be revealed by the handwriting.

The graphic signs for egocentrism are: A combination of exaggerated initials with either general slant to the left or flourishes and t-bars which are turned to the left, predominance of the zone below the line, large distances between the words, large letters or great extension of long letters, increased height at the end of words in the middle zone. The first of these symptoms has always been found to be accompanied by one or more of the others in our material. It is, however, usually regarded as sufficient evidence for self-centredness, particularly when appearing in the signature (Fig. 9).

Lack of self-confidence has naturally been a frequent feature in our material. Questions 13 and 14 of the questionnaire are referring to it. The doctor's, the graphologist's and the patients' opinion on this point compare as follows:

All three agree	in 24 cases.
Doctor and graphologist agree; patient only half confirms it	" 8 "
Graphologist and patient agree; doctor does not mention it	" 4 "
Graphologist and patient agree against doctor's opinion	" 2 "
Doctor and patient agree, against graphologist's opinion	" 3 "

Impairment of self-confidence was stated. in 41 cases.

The last two cases† were diagnosed as anxiety cases, which corroborates the graphologist's opinion.

The graphic signs for lack of self-confidence, part of which has been mentioned in the discussion of anxiety, are:—A combination of three or four of the following features: narrow letters, slant to the left, pressure and slow movement; down-strokes which are broken above the line, irregular space between the words, full stops within the words, mixed or threadlike ligature, "écriture suspendue," signature placed on the left half of the paper and on the lower edge, great difference between extension of middle, upper and lower zone, predominance of lower zone, abruptly small endings, accentuation of initials, stylized, artificial writing (Figs. 1, 4, 5 and 6).

Inner conflict is mentioned in 16 of the graphological sketches; the doctor's report confirms it in 8 of these; in no case does it contradict it. The corroborating remarks refer to the patient's obsessional traits (four times), to the state of tenseness (twice, which in one case is "due to a tendency towards self-criticism on the basis of a feeling of insecurity" according to the graphologist, whilst the doctor puts it to "the fact that the patient realizes his difficulties"). In two further cases the graphologist's description is of a more general character than the doctor's. It does not give the details which the doctor knows, but it does not contradict them; in the second case it points to the explanation of the surface symptoms. The cases are:—(1) (Fre): Doctor: "Patient is at war with himself, self-reproachful." Graphologist: "He compels himself to caution." (1) (Dun): Doctor: "Patient is a heavy drinker; his drinking is increasing." Graphologist: "He wants to escape from his own self." (Fig. 15.)

The graphic features indicating inner conflict are: Irregularity of the slant, the ligature, the width of the letters and the distances between the words. Some

* Babcock, Bibliography No. 74; Eysenck, Bibliography No. 76.

† The doctor's and the graphologist's opinions correspond slightly better with each other than with the patients'.

of these irregularities are always combined and provoke the impression of unevenness. There is sometimes also rigidity and narrowness as well as interruption of the fluency of the writing to be found in addition to the high degree of irregularity.

the others do the talking
 Re meeting new people, or does the
 thing so rather upset you.
 and your friends are doing something
 y take the lead, or do you rather fall
 other people's wishes.
 frequent ups and downs in mood, or do
 long on an even keel

FIG. 15.

IV. *The Attitude Towards Other People.*

About the patients' social attitude the doctor's and the graphologist's opinion can be compared with the patients' answers to questions 22 and 27 of the questionnaire. The graphologist found 19 patients to be of a sociable nature. Table II shows the doctor's and the patients' opinion compared with the graphologist's.

TABLE II.—*Sociability.*

	Doctor's remark.	Qu. 22.	Qu. 27.	Graph.
Positive	14 .	11 .	12 + 2½ .	19
Negative	4 .	6 .	4 .	—
Not clear	1 .	2 .	1 .	—
	—	—	—	—
	19 .	19 .	19 .	19

Again the graphologist's and the doctor's opinion correspond slightly better to each other than to the patients'.

Some cases are described by the graphologist as extravert by nature, but having become solitary and reserved in the course of their experience. Two of the patients gave different answers with regard to the change of their reactions since they joined the Forces. In other cases one cannot be certain whether the answers refer to the normal or to the present pathological state of mind. The case-sheets also sometimes contain contradictory statements: The personality is, for instance, described as "cheerful, a good mixing type," which statement has probably been based on the patient's own report at the anamnesis, and in the subsequent "history" the same patient is said to be "depressed, worried and seclusive."

Sociability shows itself in the following qualities of the handwriting: Garland or threadlike ligature, slant to the right, left margin increasing, loops in upper region narrow or missing, t-bar to the right of the letter longer than to the left; i-dots extended into strokes, in advance of the letter to which they belong; rather

wide letters, considerable distance between the letters, but distance between the words neither narrow nor wide; lines ascending to the right; letters within the words connected, sometimes also two consecutive words connected; ovals open at the top, certain flourishes. At least two or three of these symptoms were found combined in the handwritings of sociable patients.

Table III shows the opinions on shyness, timidity, solitariness derived from the different sources. There are 40 cases, nine of them only temporarily unsociable.

TABLE III.—*Shyness, Timidity, Solitariness.*

	Doctor's remark.	Qu. 22.	Graph.
Not sociable . . .	32	27 + 2½	38 + 2½
Sociable . . .	7	4 + 2½	2½
Not clear . . .	1	7	—
	—	—	—
	40	40	40

Five cases of aggressiveness are included in Table III, because this is also an unsociable feature and, moreover, one which may be regarded as an overcompensation of timidity, whilst, on the other hand, timidity may develop on a basis of aggressiveness. This is, for instance, the case with Bat, who is described by one doctor as "timid and faints at the sight of blood," whilst a second doctor writes: "He is pleasant, courteous and eager to help . . . he is fundamentally aggressive, but suppresses most of his aggressive tendencies, and as a result appears submissive and rather timid." The graphologist's opinion is: "He is sometimes harsh, critical and aggressive, but he is sociable nevertheless . . . he is intimidated."

A combination of at least three of the following features in the handwriting indicates timidity, difficulty in making contact, difficulty to adapt and the like: Narrowness of the letters or irregularity of the width of letters; covering strokes; a peculiar shape of the ellipses so that they looked "squeezed," slow small writing, unconnectedness, dots within the words; the ends of the words are particularly revealing; the endstrokes may be missing, or pointing to the left instead of the right; the last downstroke may be arrested above the line (*écriture suspendue*); in the middle zone the last downstroke may be larger than the others, steeper than the beginning of the word; distances between the words may be considerable (Fig. 1).

The symptoms of aggressiveness imply sharpness of the strokes and sharpening of the ends: Pointed horizontal bars at t's or extended and pointed bars, pointed downstrokes in a sharp handwriting, endstrokes which rise diagonally upwards, pointed strokes and increased pressure at the end of words (Fig. 6).

The graphological sketch speaks of "dependence" in 10 cases. In two of these there is no reference to this quality by the doctor. In four of the remaining eight cases doctor and graphologist use the same expression; in the other four their description tends into the same direction. For instance (*Led*): Doctor: "Lacking in initiative." Graphologist: "Weak; depends on other people's decision." At least two of the following symptoms were found in the handwriting of "dependent" subjects: Threadlike ligature or mixed ligature plus thread, irregularity, especially extreme irregularity of the slant, extreme slant to the right, increasing length of the upper zone (as a symptom of the desire for recognition by others) and slant to the left (as a symptom of need of love and protection).

V. *The Attitude Towards Work.*

Initiative; ambition.—In eight cases the doctor and the graphologist refer to the patient's initiative and ambition. In six of these there is full agreement. One case is somewhat complicated; it is a case who is described by two doctors. The first states that the patient is active, the second that he has no initiative; the graphologist that "his ambitions are not satisfied," but that he is "ambitious and keen." The remaining case is called "ambitious" by the doctor, "aggressive" by the graphologist—which is no contradiction.

The graphic symptoms are: For initiative, straight lines or lines leading straight upwards, some width, no loops in the middle zone; for ambition, increasing length

of the letters in the upper zone, large and narrow letters, particularly above the line, enlarged initials, long and thick horizontal bars (Fig. 16).

Lack of initiative is mentioned by the doctor and by the graphologist unanimously in six cases; in two cases there is no conformity—the one has been mentioned above (p. 36) as complicated, the other one is the only case of left-handedness (Fig. 14).

- ¹⁰ Do you enjoy working out complicated problems, such as crossword puzzles etc., or do you consider such things as highbrow
- ¹¹ Do you adapt yourself easily to new conditions, or do you take quite some time to settle down
- ¹² Do you get rattled easily in exciting situations (examination or manoeuvres for instance) or do you usually remain calm cool & collected
- ¹³ Do you often have feelings of inferiority, or do you usually feel self confident
- ¹⁴ Are you often troubled by feelings of self-consciousness, or do you go along happily without worrying much about what others will think of you
- ¹⁵ When you are working are you easily distracted by things that are happening around you, or do you usually concentrate whole heartedly on your work
- ¹⁶ When you are sitting or lying down, can you usually relax easily, or do you remain tense for a long time
- ¹⁷ When something unexpected happens, are you easily startled or do you remain quite unaffected

FIG. 16.

The graphic signs for lack of initiative are: Symptoms of inhibition, such as slant or otherwise increased tendency to the left, narrowness, pressure, together with slowness, signature placed on left half of page, possibly at the lower edge, combined with symptoms of lack of energy, such as irregular slant and pressure, mixed ligature and threadlike ligature.

Conscientiousness; care about detail.—Question 8 of the questionnaire deals with conscientiousness at work. A comparison of the patients' and the graphologist's answers to question 8 shows:

Full conformity	in 31 cases.
Of these the subject is "conscientious" in 29 cases.	
"slap-dash" " 2 "	
Patient calls himself "conscientious," graphologist contradicts " 13 "	
Patient says he is inclined to sacrifice accuracy for speed ;	
graphologist calls him conscientious	" 1 case.
Indefinite answers	" 5 cases.
	<hr/> 50 cases.

Looking at these figures one cannot help the impression that these patients are somewhat unwilling to admit that they are slap-dash at work; only 3 out of 50 own up to it, whilst the graphologist found this attitude in 15 cases. Maybe that the patients being members of the Forces has something to do with this disinclination. The graphologist's statements on conscientiousness need checking by another than the questionnaire method before a verdict on their reliability can be given.

The doctor mentions conscientiousness in six cases, in five of which he is in full agreement with both the graphologist's and the patient's opinion. In the last case symptoms of irritability and impatience which were combined with symptoms of conscientiousness led the graphologist to assume that he was rather slap-dash at work. The patient's answer to question 8 confirms the doctor's opinion.

The handwriting of people who are conscientious at work shows the following characteristics: It is a slow, small handwriting with a certain degree of pressure; it is legible; the strokes below the line are of equal, medium length; the signature is simple, clear, with a full stop behind it; the details of the letters are minutely executed; flourishes are also carefully executed; letters and particularly mistakes are touched up after the word is finished; sometimes the school model form of letters is observed. Naturally, some symptoms of anxiety and obsessional neurosis are also symptoms of conscientiousness (Fig. 1).

Negligence at work was stated when the handwriting showed symptoms of lack of self-control, such as a high degree of irregularity of the height and the slant of letters, irregularly oscillating lines, combined with symptoms of lack of patience, such as pointed loops below the line, and direct neglect of detail in the formation of the letters, such as omission of hooks in letters like f, of dots or of other details, so that the legibility is impaired (Fig. 8).

Responsibility.—In six out of seven cases in which responsibility is mentioned by both the doctor and the graphologist there is agreement; in one the graphologist contradicts the doctor. Question 4 of the questionnaire, putting the accent on the social position usually connected with a responsible job, is referring to timidity as much as to responsibility. Question 4 has been answered by the patient and the graphologist in a positive sense in 14 cases; in four more cases the patient states that he enjoys being in a responsible position whilst the graphologist contradicts him; in one of these cases the doctor's description confirms the graphologist's opinion.

A negative answer has been given to question 4 by 32 patients, but only in 10 of these cases was the graphologist of the same opinion.

The graphic symptoms for responsibility are the same as those for conscientiousness, combined with symptoms for steadiness of purpose, such as an at least medium degree of regularity, and for a tendency to independence, such as straight upward pointing endstrokes.

The graphologist has underrated the patients' fear of responsibility.

Distractibility.—Question 15 of the questionnaire deals with distractibility. Patient and graphologist agree on this question in 25 cases; in 22 on the fact of great distractibility, in 3 on a high degree of concentration. Forty patients regarded themselves as "easily distracted by outward happenings," whilst the graphologist found this characteristic in 28 patients only. The cases in which the two opinions differ are all instances of either anxiety or depression. This may have influenced the answers in so far as it predisposed the patients to taking a poor view of themselves. Moreover, the question is vague; the answer might refer to the patient's civilian work as well as to his work in the Army. If the lack of concentration is not of pathological degree, the subject may well be able to concentrate on his vocation or hobby whilst easily distracted when doing uncongenial work, such as he may have to perform in the Forces. The graphologist directly observes the degree of concentration and perseverance exerted during the process of writing. The writing was produced in circumstances which excluded disturbance from the outside. It is, therefore, evident that distractibility would be recognizable in the handwriting only of outstanding pathological cases, which are, of course, those which the questionnaire wants to find out. The graphic symptoms for distractibility comprise those for negligence, but the degree of irregularity is even higher; i-dots and t-bars are sometimes high, sometimes low above the line, the strokes are interrupted, and there are frequent spelling mistakes which are touched up. There is no even flow of the writing movements; the rhythm is disturbed.

SUMMARY.

The handwriting of 50 neurotic patients was submitted for graphological analysis. The graphologist's answers to 27 questions on the patient's personality, her description of his character and her assessment of his intelligence were checked by the patient's own answers to the questionnaire, by the personality descriptions in the case-sheets, and by the results of the Progressive Matrices Test.

In the different forms of neurosis and psychopathy the handwriting shows a characteristic combination of specific features, which the graphologist can recognize. In no case was the graphologist's description discrepant with the existing neurosis. In some cases it was found to be striking at a deeper level than that of conscious behaviour. When the handwriting does not reflect the neurosis it may be because the deeper layers of the personality are not yet affected by the disorder. Though the graphologist may not be able in some cases to detect a surface symptom, he may nevertheless point to the psychological explanation of it at a deeper level.

The graphological assessment of personality traits has been discussed in respect of emotionality or calmness, intelligence, the attitude towards the self, towards other people and towards work. Those features which are closely related to the neurosis, such as emotionality, self-centredness, lack of self-confidence, impaired sociability and conscientiousness, were found to have been recognized in the handwriting in consonance with the psychiatrist's reports and the patient's own account of himself in more than two-thirds of the cases. Other traits, such as inner conflict, sociability, dependence, initiative at work and the lack of it, concentration and responsibility were similarly detected by the graphologist and confirmed. Distractibility was twice as often mentioned by the patients as by the graphologist.

The graphological analysis was not restricted to these traits, but those which could not be checked by the methods described in this paper have been omitted.

There was no satisfactory correlation between the graphological assessment of the patient's intelligence and that arrived at by the Progressive Matrices Test. One of the reasons for this was that the graphologist overrated one specific trait in the handwriting, indicating an impairment of intelligence. A comparison with the school records of the patients showed, however, that the graphological estimates of intelligence, which were higher than the Matrices Test results, corresponded more closely to the school records than did the test results. Since it is possible that achievement on the Matrices Test are not always indicative of the actual intelligence of neurotics,* the graphological assessments of intelligence ought to be checked on a different group of subjects before deciding their validity in this respect.

CONCLUSION.

The checking of graphological analyses reported in this paper represents an attempt to provide a more scientific basis for the practice of graphology. More statistical evidence, as well as different methods of checking with different sets of individuals, are still needed. Moreover, as Stein-Lewinson and Zubin have demonstrated,† measurement of the graphic symptoms can be rendered more precise. Research on the handwriting of twins,‡ the individual development of handwriting from childhood onwards,§ and the handwriting of outstanding personalities, pathological as well as normal,|| can also contribute towards yielding scientifically acceptable graphological results. The present writer hopes to have shown that graphology can be a useful method of recognizing character, and that it is complementary to the other methods at our disposal. Ultimately, any theoretical and practical approach to human character is based on understanding; it cannot be wholly rational. It would, therefore, also be erroneous to assume that graphology could be entirely reduced to the measurement of stated single symptoms or groups of symptoms in the handwriting. But the more graphology progresses on scientific lines, the more can the factor of subjectivity be restricted.¶

* Cf. Babcock, No. 54.

† Cf. Bibliography No. 44 (Stein-Lewinson and Zubin).

‡ Cf. Bibliography Nos. 27 and 47 (Hartge, M.) (Lottig, H.).

§ Cf. Bibliography No. 68 (Wenzl, A.).

|| Cf. Bibliography No. 61 (Rose and Mannheim).

¶ It would be a step forward on this way if specimens of each patient's handwriting were added to the case-sheets.

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QUESTIONNAIRE.

1. Are you more interested in sports or in intellectual things ?
2. Do you particularly dislike being bossed, or do you generally do as you are told, without feeling rebellious ?
3. Do you usually "kick up hell" when you are not getting a square deal, or do you usually just shrug your shoulders and say, "Oh, it doesn't matter ?"
4. Do you enjoy being in a position where you can give orders, or do you dislike having such responsibility ?
5. Do you consider yourself a happy-go-lucky individual, or are you inclined to worry over possible misfortunes ?
6. Are you inclined to stop and think things over before acting, or do you often act on impulse ?
7. Are you inclined to ponder over your past, or do you rather live for the day ?
8. Are you rather over-conscientious in your work, or do you tend to be a bit slap-dash ?
9. Are you inclined to try and watch your own mind at work and analyse your motives for doing things, or do you consider that sort of thing rather morbid ?
10. Do you enjoy thinking out complicated problems, such as crossword puzzles, etc., or do you consider such things highbrow ?
11. Do you adapt yourself easily to new conditions, or do you take some time to settle down ?
12. Do you get rattled easily in exciting situations, examinations or manoeuvres for instance, or do you usually remain calm, cool and collected ?
13. Do you often have feelings of inferiority, or do you usually feel self-confident ?
14. Are you often troubled by feelings of self-consciousness, or do you go along happily without bothering much about what others will think of you ?
15. When you are working are you easily distracted by things that are happening around you, or do you usually concentrate whole-heartedly on your work ?
16. When you are sitting or lying down can you usually relax easily, or do you remain tense for a long time ?
17. When something unexpected happens are you easily startled, or do you remain quite unaffected ?
18. Do you often sleep badly, or would you call yourself a fairly sound sleeper ?
19. Would you consider yourself quick and agile in your actions, or are you rather slow but sure ?
20. Do you often rush from one activity to another without pausing for a rest, or do you prefer having a bit of a rest before starting on anything new ?
21. Do you like to talk a lot, or do you let the others do the talking ?
22. Do you like meeting new people, or does the prospect of doing so rather upset you ?
23. When you and your friends are doing something, do you usually take the lead, or do you fall in with other peoples' wishes ?
24. Do you have frequent ups and downs in mood, or do you go along on an even keel ?
25. Are your feelings easily hurt, or do you tend to remain unruffled in general ?
26. Do you tend to express such emotions as delight, sorrow, anger, etc., readily, or do you feel that it would never do to exhibit your emotions publicly ?
27. When you are out with friends, do you enter into the fun whole-heartedly, or do you tend to be rather quiet and withdrawn ?
28. Would you like to go through thrilling experiences and adventures yourself, or do you prefer reading about them and seeing them at the pictures ?

BIBLIOGRAPHY.

- (1) ALLPORT, G. W., and VERNON (1933), *Studies in Expressive Movements*. New York.
- (2) BECKER, MINNA (1930), *Graphologie der Kinderschrift*.
- (3) BINET et COURTIER (1893), *Sur la vitesse des mouvements graphiques*. Paris.
- (4) BOBERTAG, O. (1929), *Ist die Graphologie zuverlässig ?*
- (5) BOOTH, G. C. (1937), "The Use of Graphology in Medicine," *J. Nerv. and Ment. Dis.*
- (6) *Idem* (1939), "Objective Technics in Personality Testing," *Arch. Neurol. and Psychiat.*
- (7) CHRISTIANSEN, BR., und CARNAP, E. (1933), *Neue Grundlegung der Graphologie*.
- (8) CRÉPIEUX-JAMIN (1889), *L'Écriture et le Caractère*. Paris.
- (9) *Idem* (1923), *Les Éléments de l'Écriture des Canailles*. Paris.
- (10) *Idem* (1924), *L'Age et le Sexe dans l'Écriture*. Paris.
- (11) *Idem* (1930), *ABC de la Graphologie*. Paris.
- (12) DREVER, J. (1913-14), "The Analytical Study of the Mechanism of Writing," *Proc. Roy. Soc. at Edinburgh*.
- (13) *Idem* (1914), "The Psychology of Writing," *Child Study*.

- (14) DUPARCHY-JEANNEZ (1924), *Les maladies d'après l'écriture*. Paris.
- (15) ERLENMAYER, A. (1879), *Die Schrift*.
- (16) EYSENCK, H. J. (1945), "Graphology and Psychiatry: An Experimental Analysis," *Brit. J. Psychol.*
- (17) FLATOW-WORMS, E. (1931), *Handschrift und Charakter*.
- (18) FREEMAN, F. N. (1945), "Preliminary Experiments in Writing Reactions," *Psychol. Monogr.*, 8.
- (19) *Idem* (1945), *The Handwriting Movement*. Chicago.
- (20) *Idem* (1914), "The Experimental Study of Handwriting," *Psychol. Monogr.*
- (21) FEUCHTWANGER, E., und ROMAN-GOLDZIEHER, K. (1934), "Handschriftenuntersuchungen an Hirnverletzten," *Schweiz. Arch. f. Neurol. u. Psychiat.*, Bd. 34.
- (22) GOLDSCHIEDER (1891), "Zur Physiologie und Pathologie der Handschrift," *Archiv f. Psychiatrie*.
- (23) *Idem*, "Zur Pathologie und Therapie der Handschrift," *ibid.*, Bd. 24.
- (24) GROSS, H. (1899), "Untersuchung ueber die Schrift Gesunder und Geisteskranker," *Kraepelin's Psychologische Arbeiten*, 2.
- (25) HARTGE, M. (1932), "Bericht ueber das Ergebnis einer Untersuchung der Handschriften von 28 Schwerverbrechern," *Zeitschr. f. Menschenkunde*, Bd. 8.
- (26) *Idem* (1933), "Graphologische Untersuchungen der Intelligenz," *Zeitschr. f. angew. Psychol.*, Bd. 44.
- (27) *Idem* (1936), "Eine graphologische Untersuchung von Handschriften eineiiger und zweieiiger Zwillinge," *ibid.*, Bd. 50.
- (28) IVANOVIC, M. (1904), *Der psychologische und pathologische Wert der Handschrift*.
- (29) *Idem* (1920), *Gesetze der modernen Graphologie*.
- (30) JACOBY, H. (1932), *Handschrift und Sexualität*.
- (31) *Idem* (1939), *Analysis of Handwriting*.
- (32) JISLIN, S. G. (1925), "Koerperbau-Motorik-Handschrift," *Zeitschr. f. d. gesamte Neurol. u. Psychiatrie*.
- (33) KLAGES, L. (1910), *Die Probleme der Graphologie*.
- (34) *Idem* (1913), *Ausdrucksbewegung und Gestaltungskraft*.
- (35) *Idem* (1936), *Handschrift und Charakter*, 16 Aufl.
- (36) *Idem* *Graphologisches Lesebuch*.
- (37) *Idem* (1932), *Graphologie*.
- (38) KOESTER (1903), *Die Schrift der Geisteskrankheiten*.
- (39) KRAUSS, R. (1930), "Ueber graphischen Ausdruck," Beiheft 48, *Zeitschr. f. angew. Psychol.*
- (40) LANGENBRUCH (1895), *Graphologische Studien*.
- (41) *Idem* (1911), *Praktische Menschenkenntnis auf Grund der Handschrift*.
- (42) LEWINSON, TH. STEIN- (1938), "An Introduction to the Graphology of Ludwig Klages," *Char. and Personality*.
- (43) *Idem* (1940), "Dynamic Disturbances in the Handwriting of Psychotics," *Am. J. Psychiat.*
- (44) *Idem* and ZUBIN, J. (1942), *Handwriting Analysis*. King's Crown Press.
- (45) LOMER (1914), *Archiv f. Psychiat. u. Nervenkrankheiten*.
- (46) *Idem* (1915), *ibid.*
- (47) LOTTIG, H. (1931), "Hamburger Zwillingsstudien," Beiheft 51, *Zeitschr. f. angew. Psychol.*
- (48) MAYER, K. M. (1933), *Gerichtliche Schriftuntersuchung*.
- (49) MENDELSSOHN, A. (1933), *Schrift und Seele*.
- (50) *Idem* und G. (1930), *Der Mensch in der Handschrift*.
- (51) MEYER, G. (1925), *Die wissenschaftlichen Grundlagen der Graphologie*, 2 Aufl.
- (52) MICHON, J. H. (1872), *La Mystère de la Graphologie*.
- (53) *Idem* (1875), *Système de Graphologie*.
- (54) NÄGELSBACH (1935), "Zur graphologischen Beurteilung psychopathischer Faelle," *Zeitschr. f. angew. Psychol.*
- (55) PREYER, W. (1913), *Zur Psychologie des Schreibens*, 2 Aufl.
- (56) *Idem* (1897), "Die Handschrift der Verbrecher," *Zeitschr. f. Kriminal-anthropologie*.
- (57) *Idem* (1896), "Die Individualität in der Handschrift," *Bericht ueber den Internationalen Kongress f. Psychologie*.
- (58) PULVER, M. (1931), *Symbolik der Handschrift*, 2 Aufl. Basel.
- (59) *Idem* (1934), *Trieb und Verbrechen in der Handschrift*, 2 Aufl. Basel.
- (60) ROMAN-GOLDZIEHER, K. (1936) "Studies on the Variability of Handwriting," *J. Genet. Psych.*
- (61) ROSE, M., und MANNHEIM, F. J. (1938), *Vincent van Gogh im Spiegel seiner Handschrift*. Basel.
- (62) SAUDEK, R. (1926), *Wissenschaftliche Graphologie*. Muenchen.
- (63) *Idem* (1929), *Experiments with Handwriting*. London.
- (64) SCHOENFELD, W., und MENZEL, K. (1934), *Tuberkulose, Charakter und Handschrift*.
- (65) SYLVUS, N. (1932), *Herkologische Graphologie*.
- (66) TITTEL, K. (1934), "Untersuchungen ueber Schreibgeschwindigkeit," *Neue Psychol. Studien*, Bd. 11.
- (67) WALTHER, J. (1938), *Psychologische Bedeutung der handschriftlichen Bindungsarten*.
- (68) WENZL, A. (1937), *Graphologie als Wissenschaft*.

- (69) WIENER, E., "Schriften von schizothymen Asthenikern," *Zeitschr. f. Menschenkunde*. Jahrgang 9.
- (70) WIESER, R. (1930), *Die Handschrift der Betrueger, Diebe und Einbrecher*.
- (71) *Idem* (1933), *Die Handschrift der Sexualverbrecher*.
- (72) *Idem* (1938), *Der Rhythmus in der Verbrecherhandschrift*.
- (73) WOLLNIK, W. (1933), *Grundfragen der Graphologie*.

Other References.

- (74) BABCOCK, H. (1941), *Time and the Mind*.
- (75) BURT, C. (1937), *The Backward Child*.
- (76) EYSENCK, H. J. (1943), "Neurosis and Intelligence," *Lancet*.
- (77) RAVEN (1938), *Brit. J. Med. Psychol.*, xix.