

Graphology and psychiatric diagnosis: Is the writing on the wall?

Mary Davoren, Natalie Sherrard, Eugene Breen, Brendan D. Kelly

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Abstract

Objective: To review the role of handwriting analysis in psychiatry.

Method: Case-report and review of key papers.

Results: M, a 27-year-old man, presented with incoherent speech, palilalia, logoclonia, incongruous affect, paranoid delusions and auditory hallucinations. M was diagnosed with schizophrenia and cannabis misuse, complicated by speech and language difficulties. M spent long periods writing on pieces of paper; towards the start of his admission, his writing was unintelligible but became more intelligible as his psychosis resolved. M's handwriting demonstrates clinical features of psychosis (e.g. clang associations) and graphological abnormalities associated with schizophrenia in the literature (rigidity in letter-formation, mechanical expressions, and tendency toward over-use of straight lines).

Conclusion: Analysis of handwriting is likely to play a limited role in psychiatric diagnosis but may prove useful in monitoring clinical improvement in certain patients.

Key words: Psychoses; Cannabis; Psychomotor dysfunction; Review of the literature

Introduction

The study of handwriting as a diagnostic tool has a lengthy history in psychiatry.¹⁻⁴ Sulner reflected the position of many in the psychiatric and legal professions when she wrote that handwriting was closely related to brain function and was, thus, likely to reflect disordered psychological functioning and mental illness.² Consistent with this idea, authors such as Lewinson¹ and Privat⁴ provide detailed analyses of samples of handwriting from individuals with mental illness.

While this field was the subject of considerable research and clinical interest in the 1940s, 1950s and 1960s, it has not commanded similar attention in recent decades. We aimed to review key papers in this field in light of a specific clinical case in which disturbances of handwriting were a central feature.

Case Report

M was a 27-year-old man who was brought to the Emergency Department by the police, having been found setting fires outside his home. He presented in a confused, dishevelled and unkempt state. On admission, M's speech was incoherent and demonstrated palilalia (repetition of a word with increasing frequency) and logoclonia (repetition of the last syllable of the last spoken word). His affect was incongruent with his situation (i.e. in police custody).

M had multiple delusions that famous actors were involved in his daily life (e.g. making him cups of tea) and that he was being pursued by unknown, threatening forces. M described auditory hallucinations in a "deep, deep voice" but was unable to detail what the voice said. While he was oriented in time, place and person, M's insight was limited: he did not agree that he was ill and was legally detained in hospital as an involuntary patient.

Background history from M's brother revealed that M and his brother, who lived together, were frequent users of large amounts of cannabis and that M had been in this mental state for many months or possibly years. M's brother confirmed that M's delusions persisted even when M was abstinent from cannabis and had preceded M's use of cannabis in the first instance.

M was diagnosed with schizophrenia, according to Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision)⁵ criteria, and substance misuse, complicated by significant difficulties with speech and language. Following admission to hospital, M was prescribed olanzapine orodispersible tablet (10 milligrams per day, administered orally) and as he became less agitated it became apparent that he had significant difficulties with speech and language. Formal assessment by a speech and language therapist revealed that M had minimal verbal output which was generally unintelligible; this caused him considerable frustration. M appeared able to understand the words of others but was poorly cooperative with more detailed speech and language assessments.

M's brother revealed that, prior to admission, M had spent long periods writing letters and words on small pieces of paper. Throughout his one-month hospital stay, M continued to write

* **Brendan D. Kelly**,
Department of Adult Psychiatry,
University College Dublin,
Mater Misericordiae University Hospital,
62/63 Eccles Street,
Ireland.
E-mail: brendankelly35@gmail.com

Mary Davoren,
Senior Registrar and Lecturer in Forensic Psychiatry,
Central Mental Hospital, Dundrum, Dublin 14,
Ireland.

Eugene Breen,
Consultant Psychiatrist, Mater Misericordiae
University Hospital, Eccles Street, Dublin 7, Ireland.

Natalie Sherrard, Liaison Psychiatry Clinical Nurse
Specialist, Department of Psychiatry, Mater
Misericordiae University Hospital, Eccles Street,
Dublin 7, Ireland.

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intensively on sheets of note-paper, the back of cigarette cartons, etc. Towards the start of his admission, M's writings were fragmented and difficult to understand (Figure 1, during first week of admission) but they became more intelligible as his psychosis resolved (Figures 2 and 3, during third and fourth weeks of admission, respectively).

Three weeks after admission, M's psychotic symptoms had decreased significantly and, one week later, he was discharged from hospital. At ten-month follow-up, M remained well in the community on continued antipsychotic medication, although he continued to abuse cannabis.

Discussion

M's diagnoses were schizophrenia and substance misuse, complicated by significant difficulties with speech and language. It is not possible to determine if the difficulties with communication predated his psychotic illness, but it was readily apparent that improvement in psychotic symptoms was associated with improvement in communication behaviours, including handwriting. Samples of M's handwriting reproduced in this paper demonstrate both *clinical* features of psychosis (e.g. clang association, in Figure 2) and some of the more specific *graphological* abnormalities described in the literature on mental illness and disturbances of handwriting.

Sulner, for example, listed a range of "abnormalities" which she suggested "indicate mental disease or mental or emotional disturbance", including repetition of letters or words, omission of letters or words (or parts of letters or words), transposition of letters, incorrect spelling, scribbling in the midst of an otherwise readable text, lack of control of writing, meaningless marks, or interruptions between letters.² Many of these "abnormalities" are, however, common, and Sulner's list does not appear aimed at assisting in reaching a clinical diagnosis, but rather achieving a legal aim: i.e. determining, in a general sense, if an individual was suffering from any "mental disease or mental or emotional disturbance".²

Hilton was somewhat more circumspect about the proposed relationship between handwriting and mental disorders, questioning both the sensitivity and specificity of handwriting abnormalities by posing two key questions: Are such abnormalities always present in the writing of individuals with mental disorder? And are such abnormalities specific to mental disorders?³

It is exceedingly unlikely that any of the anomalies outlined by Sulner² are only found in the handwriting of persons with mental disorder. For example, logoclonus/logoclonia is also found in Parkinson's disease and here represents a spastic repetitive phenomenon, e.g. "I went to the cinema...maa...maaa...maa..." Against this background, Lewinson¹ drew on the work of the German philosopher and graphologist Ludwig Klages (1872-1956) to develop a more detailed approach based on the presence of different *constellations* of features in the writing of individuals with psychosis.^{1,6}

Lewinson studied and reproduced handwriting samples from individuals with schizophrenia, the "paranoid condition" and the

"manic-depressive condition", and concluded that the handwriting of individuals with psychosis was especially characterised by disturbances in all three dimensions of handwriting: height, breadth and depth.¹ Lewinson's handwriting samples included twenty individuals with schizophrenia and these tended to demonstrate "narrowness of letters" (not present in M's handwriting), slant "toward the right" (not present in M's handwriting), "rigid school-copy forms" (present in Figures 1 to 3), an "empty-mechanical" expression (present in Figures 1 to 3) and a "tendency for straight line" (see the letter 'O' in Figure 3, which resembles a square more than a circle).¹

Consistent with the presence of schizophrenia and "paranoid condition" on a single diagnostic continuum, Lewinson described considerable overlap between the handwriting features of these two conditions.¹ Lewinson reported that handwriting in the "paranoid condition" was characterised by "lack of connection in printed writing" (present in Figures 1 to 3), "inhibited, constricted" character (present in Figures 1 to 3), "alteration between wide and narrow letters" (not present in M's handwriting), "wide writing" (present in Figures 1 to 3) and "irregular slant toward the right" (not present in M's handwriting).¹

Handwriting of individuals in the "depressive phase" of manic-depression was characterised by "smallness of the writing" (not present in M's handwriting), "lack of rhythm" (not present in M's handwriting), "narrowness in letters" (not present in M's handwriting) and "vertical to right slanting" (present in Figure 3).¹ Handwriting in individuals with "mania" was characterised by "irregular and increasing" size (not present in M's handwriting), "lack of rhythm" (not present in M's handwriting) and "school copy forms with additions and ornamentations" (see drawings of hands in Figure 2, especially at the end of the fifth last line, where the word "handsome" is presented as a picture of a hand followed by the letters "sume").¹

Overall, M's handwriting was most consistent with the graphological features that Lewinson¹ associated with schizophrenia and the "paranoid condition", although M's handwriting also demonstrated selected features of both the depressive and elated phases of manic-depression. Notwithstanding these similarities to Lewinson's typologies, analysis of M's handwriting did not make a significant contribution to the diagnostic process. The increased intelligibility of his writing as his psychotic symptoms resolved, however, suggests that changes in the content and/or form of handwriting may, in certain patients, assist in monitoring clinical improvement over time. The longitudinal course and predictive usefulness of this approach has not yet been studied.

As a result, it remains the case that graphology can, at best, provide only "supplementary assistance to accepted psychiatric determinations".³ This position may change in future years if and when novel graphological approaches and analytic technologies improve the sensitivity and specificity of handwriting analysis in the context of psychiatric diagnosis and practice.

Conflict of interest

None.

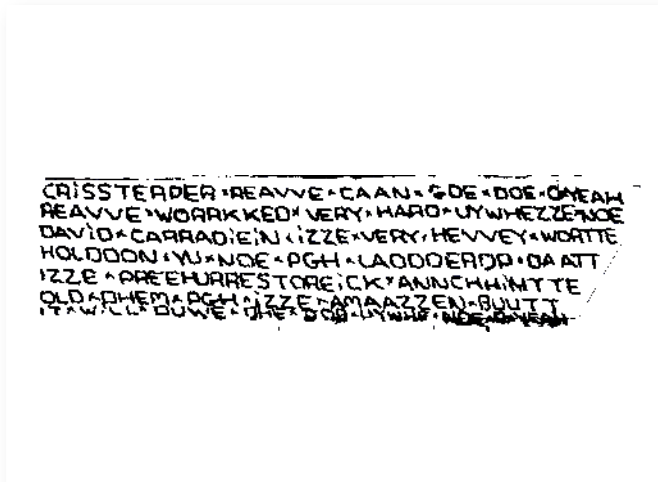


Figure 1
 First sample of handwriting (first week of M's admission), showing "rigid school-copy forms" and "empty-mechanical" expression, consistent with schizophrenia; "lack of connection in printed writing", "inhibited, constricted" character and "wide writing", consistent with Lewinson's "paranoid condition".¹

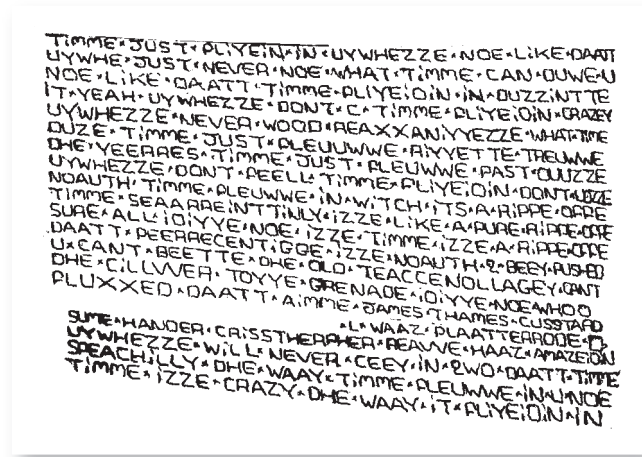


Figure 2
 Second sample of M's handwriting (third week of M's admission), showing "rigid school-copy forms" and an "empty-mechanical" expression, consistent with schizophrenia; "lack of connection in printed writing", "inhibited, constricted" character and "wide writing", consistent with "paranoid condition"; "school copy forms with additions and ornamentations" consistent with mania (see the end of the fifth last line, where the word "handsome" is presented as a picture of a hand followed by the letters "sume").¹

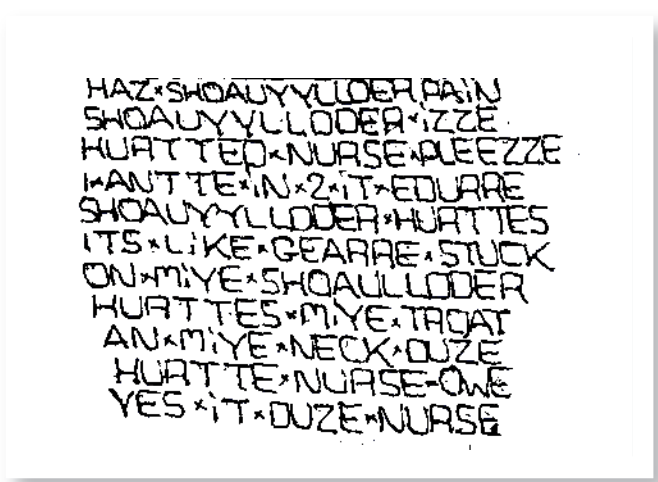


Figure 3
 Third sample of handwriting (fourth week of M's admission), showing "rigid school-copy forms", an "empty-mechanical" expression and a "tendency for straight line" (see the letter 'O', which resembles a square more than a circle), consistent with schizophrenia; "lack of connection in printed writing", "inhibited, constricted" character and "wide writing", consistent with "paranoid condition"; and "vertical to right slanting", consistent with the "depressive phase" of manic-depression.¹

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