

Morphological similarity and graphological difference

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It's a matter of common sense that the forged handwriting or signature should be as much as possible similar to the morphological aspect of the genuine specimen. This aim attracts the main attention of the forger in his effort to reproduct the authentic's writing external and superficial image on the forged sample. In these cases, and most important in cases where the result of the forgery is successive, apart from the lab analysis of the document (if possible in its original form), the graphological analysis is the ultimate methodological tool to use in order to reveal the forgery. That means that not only the diagnosis of the writer's personality (if possible depending even on the extension of the forged document or the form of writing used such as capital letters are less characteristic), but even several slight graphical tendencies connected to the ideological aspect of the writing's source, could be a major indication and proof of different writers. In most cases the most important factor of revealing the forgery is not the morphological aspect of the sample but the qualitative background of the writing as a product of a certain mental source, of a certain ideological conception (regarding the way of forming the letters or signature) or of a certain neuromuscular system and clinical condition.

The production of handwriting is the result of the following procedure:

1) Ideation = ideological conception of the form of the letters or signature and definition of the sequence of the hand's movement,

2) Execution = graphic movement as a result of the writer's neuromuscular system's activity,

3) Handwriting = material production of the handwriting, morphological aspect, form of the letters expressed on the paper.

The forger, in order to reproduce the specimen he wants to imitate, is obliged to follow the procedure in the opposite order, from the end to the beginning. For him, the most important issue is the imitation of the form of letters, and that is the reason why he analyzes the form in order to identify its particularity. According to Ludwig Klages¹ in this phase the forger's attention is mostly attracted by the most representative elements or points of the handwriting (such as capital letters, initials, initial part of a word or text, voluminous letters). The next step is the graphic reproduction of the handwriting, in which he comes against the first difficulty. He may imitate the form but he can't use the genuine neuromuscular net, but only his own, which may not be compatible with several graphical movements. In the same time, because of the graphic automation, he has to block his own ideological font of letters, in order to replace them with the fonts of the genuine specimen, while attempting to enforce his graphic tool to adopt and materially produce on the graphic surface the new model. The most difficult part of the imitation is the ideation of the letters. In cases of particular forms of letters which are formed in a particular way regarding the direction of the graphic movement, the forger's aim becomes more difficult for two reasons : 1) he can't realize the sequence of the genuine graphic movement or 2) he can't produce an effective imitation of certain letters, due to incompatibility of his own conception of the fonts of letters, due to inefficient analysis and realization of the genuine font or due to neuromuscular incapacity of graphical execution. In some cases the forger's attempt becomes easier because of the simplicity of the genuine specimen or because of the use of capital letters. Slightly "intelligent" forgers use to select the capital letters as means of forgery, because of the fact that the fonts

¹ L. Klages, "*Grundlegung der wissenschaft von Ausdruck*", 7. ed., Bonn, 1950, p. 271.

are more typographic and imply less graphic velocity and less margins of personalization. In cases of genuine specimen of low graphical quality the forger's aim is easily achieved in capital letters because of the fact that most people of the same (low) level of graphical evolution use to remain stable to the classic typographical model of letters (as learned in school) and avoid personalization of graphic forms. Under these circumstances the superficial morphological compatibility is enough to deceive the Document Examiner which has not a graphological education and preparation as well. In revealing the forgery of this cases, the graphological and characterologic (if possible given the specific specimen) analysis is of major importance and directs the investigation in a more secure approach. Before we present a particular case we have to mention that the expert must always take into consideration the historical facts of every case in order to stabilize and orientate the investigating hypothesis conformed to the facts. In this way he can avoid being influenced by coincidences or fraudulent similarities which may disorientate his conclusion. This issue is of major importance in cases such as the following:

On 27/03/2009 (Friday) a patient suffering from serious health problems visits a Hospital in a city of West Greece. The patient lives in an island at least 3 hours away of this town (in order to arrive he has to travel by ferry for 2 hours to continental Greece and then he has to travel a distance of about 90 km by car).



Following the bureaucratic procedure, the patient is admitted to the hospital with the following document:

X1

ΝΟΣΟΚΟΜΕΙΟ ΓΕΝΙΚΟ
ΔΙΕΥΘΥΝΤΗΣ: Καθηγητής ΙΚΗ ΚΛΙΝΙΚΗ 27/03/2009 1

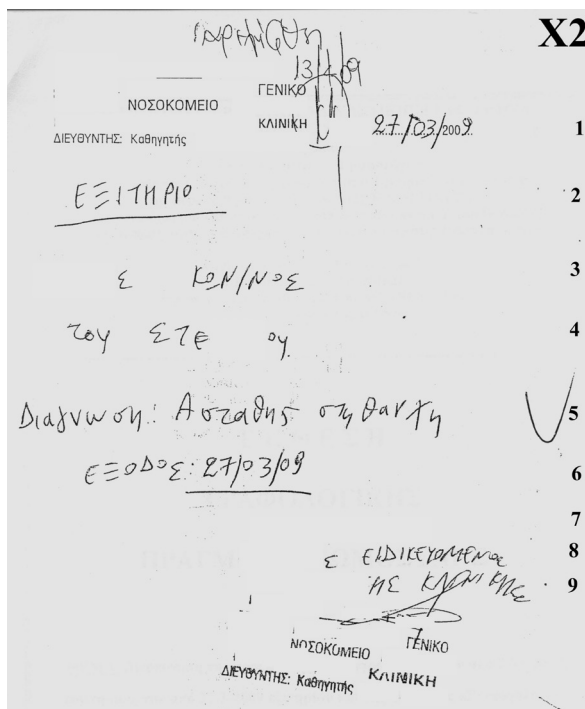
ΕΙΣΗΓΗΤΗΡΙΟ 2
Σ ΚΟΝ/ΝΟΣ 3
204 ΣΤΕ. ΟΥ (2 ΕΤΩΝ) 4

ΕΙΣΑΓΩΓΗ ΟΛΟΓΙΚΗ ΚΛΙΝΙΚΗ 5
ΕΙΣΟΔΟΣ: 27/03/2009 6
Διάγνωση: ΟΞΥ ΕΜΦΡΑΓΜΑ 7
ΜΥΟΚΑΡΔΙΟΥ 8

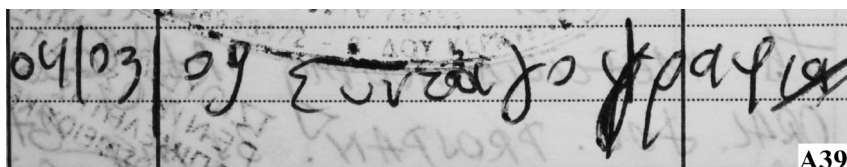
1 9
10
11
12
13

ΝΗ
ΕΚΔΙΚΤΟΜΕΝΟΣ
ΙΚΗΣ ΚΛΙΝΙΚΗΣ
Π.Γ.Ν
ΝΟΣΟΚΟΜΕΙΟ ΓΕΝΙΚΟ
ΔΙΕΥΘΥΝΤΗΣ: Καθηγητής Η ΚΛΙΝΙΚΗ

We have to mention that the name of the hospital has been changed in 2006 and that the printed indication in the upper part and the stamp in the lower part refer to a different denomination of the same hospital. On Monday the 30th, the responsible of the NIO (National Insurance Office), doctor PS, takes the necessary information from the registry in order to update the system. He asks for this particular patient but the two Health Departments of the Hospital which should deal with the patient's problem respond that they did not receive such a patient on Friday. Several days later (13/04/2009) a woman appears to the secretary and hands in the following document regarding the discharge of the patient whose insurance booklet was confiscated.

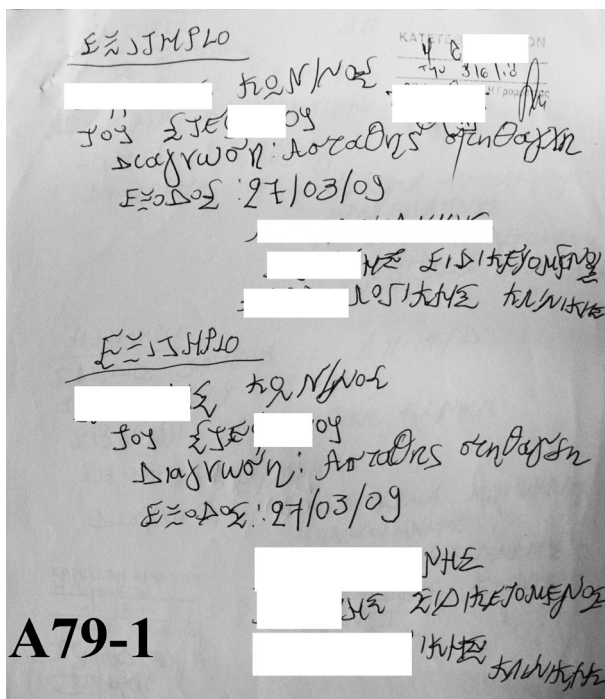


Apart from the administrative investigation of the case there was a parallel penal procedure, in which we observed different and repetitive infringements. The responsible of NIO testified that, according to his opinion, the person who had written the suspected documents was doctor MT who made a pharmaceutical prescription on 04/03/2009 in the medical center of the patient's residence in the island, who had written in the patient's booklet the following word:



We notice several illogical connections: first of all the doctor who testified is not a handwriting expert as to provide graphological conclu-

sions. In addition to that, the letters are not directly comparable because the suspected documents **X1–X2** are written mainly in capital letters. Unfortunately, the district's attorney nominates an expert giving him the order to investigate if doctor MT has written **X1–X2** and he does not include in the investigation the doctor who is supposed to have written and signed the docs (who was in service in that date) or any other person on duty. In addition, although we find an original document of the hospital referring the delivery of the original suspected documents in the case's file, the originals disappeared. They called MT to give a sample in front of the district's attorney without informing him about being accused and according to this sample the first expert arrives to the conclusion that it is intentionally altered. By this diagnosis and for this reason, he arrives to the conclusion that MT has written the suspected documents, although he expressed concerns because he couldn't inspect the originals.



After the expert's report, MT arrives to me and asks for my opinion. I asked him to bring me more original specimen of his own handwriting and we managed to collect more than 80 documents of the period 2004–2013. I demonstrated that it is impossible for MT to have written the suspected documents because of morphologic and characterological incompatibility, although there are important similarities in the morphological aspect of several capital letters. MT's graphic capacity is the result of a graphic skill of low level and low ability and he is a very anxious person. The anxiety provokes to him a tendency to improve the aesthetic part of his handwriting by additional embellishment elements, it blocks his spontaneous writing, it decreases the writing's velocity, his graphic pressure becomes more intense (he really “digs” into the paper's surface) and the alignment becomes instable with the letters jumping in the horizontal vector. These characteristics are less intense in his spontaneous specimen, even in documents of the suspected period.

A73 ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΕΠΙΤΡΟΦΗ ΦΟΡΕΩΝ
ΕΣΥ

ΣΥΝΤΑΓΗ

ΑΜΕΑ=205107803625
ΑΔ.0201212 Α42

ΕΚΔΙΕΤΑΙ ΑΠΟ: [redacted] ΜΑΡΙΑ [redacted]

ΟΔΟΣ: ΜΗΛΙΑ-ΚΟΝΟΠΙΑΣ ΤΟΝ ΔΗΜΟΣ [redacted] Τ.Κ. [redacted] ΤΗΛΕΦΩΝΟ: 2601048469

ΔΙΑΓΝΩΣΗ: Δυσλεξία/Δυσγραφία [redacted] ΑΣΘΕΝΙΑ: [redacted]

ΣΥΜΠΛΗΡΩΝΕΤΑΙ ΑΠΟ ΤΟΝ ΦΑΡΜΑΚΟΛΟΓΙΟ	ΣΥΜ. %	Ποσο. -----	Τ.Μ.Π.		Συνολικό ποσοστό
			μονάδος	συνολικό	
1. CAPS. OMACOR 1000mg					
ΟΔΗΓΙΑ: B(II)(040) 51X8					
2. SYROP. AMBONAL 30mg					
ΟΔΗΓΙΑ: B(II)(040) 51X3					
3. ORAL. SOL. BITOBIONIL 26R					
ΟΔΗΓΙΑ: B(II)(E1) 51X8					

14/04/2017

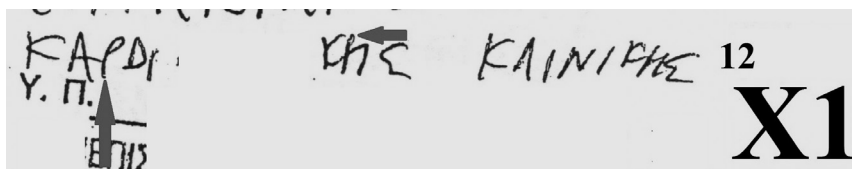
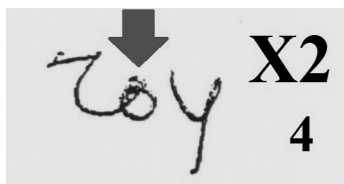
ΗΜΕΡΑ ΕΚΔΟΣΗΣ Ο ΙΑΤΡΟΣ: [redacted] ΗΜΕΡΑ ΕΠΙΣΤΡΟΦΗΣ Ο ΕΞΕΤΑΣΤΗΣ ΙΑΤΡΟΣ: [redacted]

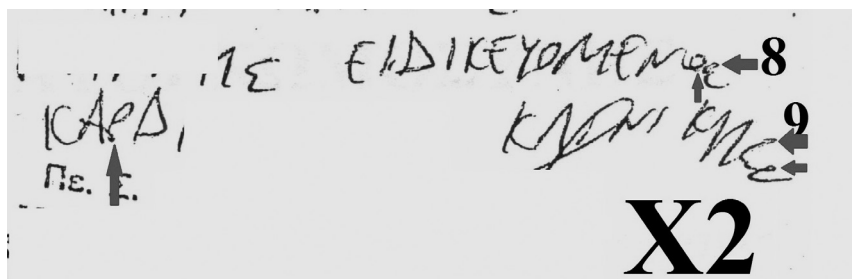
ΤΟΧΗ: [redacted] ΠΟΣΟ: [redacted]

We have to take into consideration the fact that the psychological effect of ‘drawing’ up a forged document, even when it takes place in a time or place far away from the crime's scene, it provokes an internal anxiety and nervousness which affect the final graphic product. So the sample given by MT in the district's attorney reflects the way he reacts in this condition.

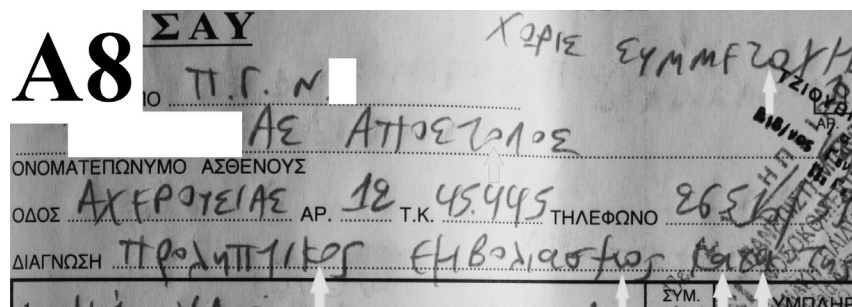
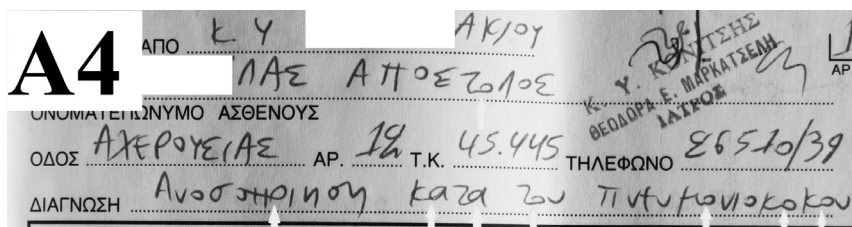
X1-X2 are much more controlled than the sample given by MT, which indicates a more effective capacity of control of the graphic parameters (= characterological indicators) by the hand written the suspected documents, a control that would be out of reach for MT's graphic nature. The main scenario of accusation was a hypothetical attempt of MT to help the patient arrive in pension earlier due to health problems. Apart from the fact that there was no reason for MT to have tried all this procedure so far away from his island (if he would like to do something he could easily do it in his island where he knew all the doctors), even by adopting this scenario the attempt of hospitalization of the patient would be just the first of more than 10 procedural steps in order to arrive on purpose, in every one of which he should have achieved to create fake medical diagnosis. In addition, there were graphological findings that indicated different tendencies in points of more spontaneous expression of the hand in **X1-X2** (last part of them). In these points, the connection of the letters indicated a different ideation.

The connection of the letters "TO" (or similar connections) was accomplished in the upper part of the 2nd letter. In most connections the main tendency was the creation of **internal circles** in **X1-X2** in direction from right to left.





In the authentic documents of MT this connection of letters was effected in the lower part of the 2nd letter and in direction from the left to right.



The main differences regarded:

- 1) Lower level of graphic skill of MT;
- 2) Different level of graphic spontaneity achieved by a different combination of velocity, graphic pressure (expressing concern because of the lack of originals) and graphic correlation of vertical and horizontal expansion;

3) Different management of linear or wavy strokes that indicate a different way of neuromuscular function (and different personality);

4) Different way of ideation and execution of the connection of the letters.

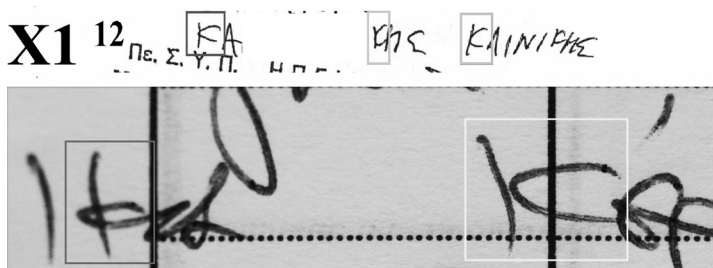
After my report the district's attorney was convinced about the first report's insufficiency and ordered a new one. The new expert was a friend of the former expert as they were both residents and colleagues of the same town (almost 350 km away of the town of the case). This expert, although he did not also have the opportunity to examine the originals of the suspected documents, he expressed a complete certainty of MT being guilty of having written **X1–X2**.

In the first audience of the court when I testified, I indicated the differences between **X1–X2** and specimen of MT (expressing concerns about the impossibility of examining the originals) and I also indicated similarities of **X1–X2** with the handwriting of PS (the doctor who had initially accused MT). We have to say that PS's office was located into the hospital. When the insurance booklet of the patient was confiscated, PS had written in the booklet the reason of this fact, so we found the handwriting of PS. Between **X1–X2** and his handwriting we found several graphic compatibilities that had to do with the qualitative aspect of the writing, such as we didn't have a specimen of all the capital letters to compare even the morphological aspect. His specimen is the following:

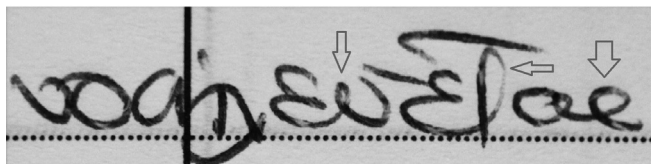
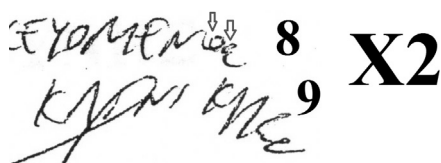
The image shows two pages of a handwritten Greek form, likely a medical insurance booklet. The left page is titled 'ΝΟΣΟΚΟΜΕΙΑΚΗ' (Hospital) and the right page is titled 'ΠΕΡΙΘΑΛΗΤΕΙΑ' (Treatment). Both pages contain handwritten text in Greek, including dates like 27/3/09 and 2/4/09, and names like Ο.Ε.Μ. and Π.Ε.Μ. The handwriting is in cursive and appears to be from the same person.

These are the main indicators of compatibility:

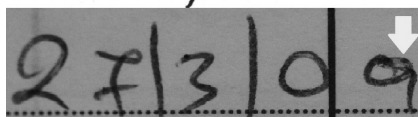
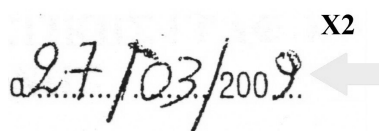
1) The way of forming the letter “K”.



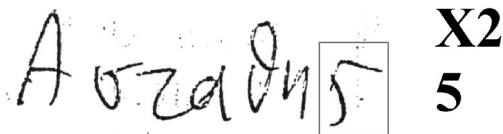
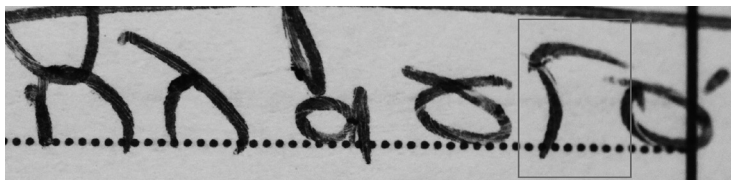
2) The way of ideation and drawing of the **connections** between letters.



3) The particular way of writing number “9”.



4) The particular way of forming the letter “s” and ‘t’ as ‘5’.



In the 1st audience the district’s attorney said that he was convinced of MT’s innocence but he wanted to completely justify the decision of the court and asked a cross examination between me and the court’s expert. In the 2nd audience, after the cross examination, without any reasonable or legal justification, in just a few words, he expressed his certainty proposing the conviction of MT. The judge (on his 1st audience as a judge) proclaimed him guilty and sentenced him to 12 months of imprisonment, by completely adopting the proposal of the district’s attorney.

MT appealed this decision and in the 2nd grade (court composed of three judges), although the court’s expert did not appear again, although there was a second private expert reporting and testifying, although the district’s attorney (which was not the one of the 1st grade) claimed the innocence of MT, the three judges decided (2 to 1) that MT was guilty, and confirmed the 12 months’ imprisonment. I have to point out that the two experts nominated by the court were only Document Examiners and did not have any graphological education or preparation.

Conclusion

Do not considerate graphological analysis less effective, because in many cases it is the key to the solution. Document Examining is a more technical approach of the investigation, lab analysis is extremely and completely useful and necessary, but it does not solve cases where

the dynamical approach of the handwriting is inevitable. Morphological similarity could be tricky and misleading, just because of the simple fact that reflects the main purpose of the forger: the similarity, in which he bases the effort of presenting the forged specimen as genuine.

Reference

Klages L., *Grundlegung der wissenschaft von Ausdruck*, 7. ed., Bonn 1950.

Summary

The Document Examiner's approach could not be based only on the technical aspect of the analysis, but it must very often be extended in the graphological analysis of the case. The Document Examiner has to also take into consideration the particular historical data in order to orientate the investigation's hypothesis. In many cases morphological similarity could be tricky and misleading, just because of the simple fact that reflects the main purpose of the forger: the similarity, in which he bases the effort of presenting a forged document genuine.

Keywords: anxiety, coincidence, comparable, compatible, conception, difference, dynamical, execution, expert, fraudulent, graphological, handwriting, ideation, ideological, opposite, personalization, tendency.