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Signature Analysis of the Will Dated 1989

Expert Opinion – Handwriting Comparison

1. Assignment

The undersigned was commissioned by Osho Lotus Commune to perform a handwriting comparison for the document referred to above and to submit an expert opinion on the same.

The assignment was to perform the comparison on the basis of the non-original documents itemised below in order to pass an opinion on the authenticity of the signature of Mr Osho (Rajneesh Chandra Mohan).

The signature in question is shown in Figure 1.

The material for the comparison was provided by Mr Doetsch for Osho Lotus Commune e.V. by specification of a source on the Internet. The references for this source are as follows:

http://images.search.yahoo.com/search/images?_adv_prop=image&fr=yfpt-900&va=osho+signatures

and

<http://famous-photos2.blogspot.it/2012/03/handwriting-of-acharya-rajneesh-osho.html>

The four signatures found there used for the comparison are shown in Figures 2 – 5, with the individual sources shown beneath the figures. The undersigned is not in a position to assess whether the four comparison signatures are authentic. The responsibility for this (and for the identity¹) are borne by the client.

No information on associated circumstances are available, neither with regard to the writer (e.g. possible limitation of his ability to write resulting from health impairments) nor to the writing situation (specific conditions under which the document was created, assuming its authenticity). Based on the date of birth provided by the client (11 December 1931) and the age of the writer based upon this, there is no reason to assume an inevitable impairment of his ability to write in 1989.

¹ Identity means to the full conformity of the (not available) original document with the available subject of the comparison, the copy. Identity can be established using forensic methods.

We are informed that the bearer of the signed name did **not** base the design or form of his signature or graphical signature image on a standard school-book model, but rather consciously designed it himself. The handwritten text accompanying comparison signature V 1K makes it clear that the deceased was quite able to write in normal Latin handwriting.

A copy of the disputed document (page 1 or cover page) has been attached hereto at the beginning of the documentation section for the purpose of establishing identity.

2. The Handwriting Material

In the examination of the handwriting material in question it must always be remembered what is being examined here is the sample presented for analysis. In this context it is not possible to determine whether an original with handwriting visible in the reproduction actually exists.

2.1 Disputed Signature “XK” (Figure 1)

The disputed document is typewritten with an illustration located on the upper part of the page. On the second page of the copy provided (possibly the reverse side of the will in question) there are further signatures of the executors and witnesses. None of these are the subject of this analysis. Nor is the image of a rubberstamp on the page a subject for discussion here.

The only subject of this analysis is the signature of the name of Mr Rajneesh Chandra Mohan.

The date entered below the image is 16 June 1989. The date entered below the last sentence of the will is 15 October 1989. In what follows, this aspect is seen as being of neutral importance for the assessment.

Identification	Date	Document	Notes
XK	1989	Will	Only the signature of the name of Mr Rajneesh Chandra Mohan is relevant.

2.2 Comparison Material Written by Mr Osho

Four additional signatures of the bearer of the signed name are available for comparison purposes. They were chosen from the websites referenced above because they show isolated signatures. Please see Figures 2 – 5 for details on the individual sources. These four comparison signatures were scaled proportionally for direct comparison with the disputed signature and are shown in Figures 6 – 9.

The additional reference code “K” has been added to identify these documents as copies. The writing implement utilised cannot be identified in such documents. The correspondence of these non-originals with the originals (i.e. their existence and identity) is assumed. This is the responsibility of the submitter, as is the authenticity of the comparison material. For further characterisation of the comparison signatures please refer to the sources cited below Figures 1 – 4.

Identification	Document	Writing Implement	Date
V 1K	Letter dated 1976	-	1976
V 2K	Unknown	-	1977
V 3K	Unknown	-	Unknown
V 4K	Unknown	-	Unknown

The comparison signatures V 1K and V 2K are thus dated before the execution of the disputed writing (1989), assuming their authenticity.

The authenticity of the comparison material is assumed in the following analysis. There is **no** evidence for heterogeneity of the comparison material, which was created at different times and probably also in different contexts.

The bearer of the signed name was born in 1931. The comparison material provides no indication of systematic change. It is consistent and cohesive.

The use of a graphical signature image does not complicate the task of determining authenticity in the current case.

3. Assessment of the Analysis Options

3.1 Missing Originals – Limitations

When comparing handwriting it is essential to have access to the **original** of the disputed document. Only the original document provides adequate options for analysis. In the case of non-originals (or reproductions) it is, at best, normally only possible to provide a **negative** authenticity assessment in exceptional, well-founded cases. The converse assessment is not possible because of the possibility that evidence of manipulation may not be clearly discernible.

In particular, positive identification is **not** possible on the basis of a non-original document. For example, it is not possible to prove from a reproduction whether an original document ever existed or still exists, whether the original contains all the same writing as the non-original, or whether the documents were “assembled” by means of photo montage. In addition to this, non-originals also suffer from elementary deficits of information as regards evidence of the fine motor coordination that is essential for analysis of authorship.

A comprehensive discussion of the possibilities and limitations in this regard can be found in the standard textbooks on handwriting comparison (Hecker, 1993² and Michel, 1982³). According to these works, non-originals do **not** provide a suitable foundation for analysis.

This clear opinion on the analysis possibilities is also upheld by supreme court judgements dating back over three decades, cf. OLG Cologne, 30 June 1981 [NJW 1982, 249; StV 1981, 539 f.; *Mannheimer Hefte für Schriftver-*

² Hecker M.R. (1993): Forensische Handschriftenuntersuchung. Kriminalistik-Verlag, Heidelberg.

³ Michel L. (1982): Gerichtliche Schriftenvergleichung. Berlin, de Gruyter.

gleichung 1983, 106-109 (commentary by L. Michel)] and OLG Celle, 07 July 1981 [StV 1981, 608-610; *Mannheimer Hefte für Schriftvergleichung* 1981, 169-181 and *Mannheimer Hefte für Schriftvergleichung* 1982, 197-199]. The first (homogenous) supreme court ruling on cases based on such materials dates from nearly sixty years ago (OLG Braunschweig 10 April 1953 [NJW 1953, 1053 f.; JZ 1953, 515 f.]). See also the Guidelines 4.00 of the German Trade Association of Handwriting Analysts (GFS e.V.⁴) included at the beginning of the attached documentation section, which has been adopted in similar form by the working group of the German federal and state appraisers [*Sachverständigen des Bundes und der Länder*] (BKA and LKÄ and the German-speaking KT groups in Switzerland and Austria).

There has not been any significant discussion or change in the accepted opinion on this in the German forensic community or German jurisprudence.

When assessing the characteristics of handwriting in a non-original document one must also make the (non-confirmable) assumption that the equipment used for preparing the reproduction functioned correctly, and thus of the identity of the reproduction submitted for examination.

If a **negative** assessment regarding the authorship can be made, then one of the two required conditions for the derivation of legal consequences from the disputed document (authenticity and identity) is lacking. In this case, the question of the identity of the document can remain unresolved. In principle, this consideration justifies the possibility of a negative authorship assessment made on the basis of the image of the same, even when the original is not available and/or unresolved question of identity of the disputed document.

Other Analysis Options

The fine motor characteristics of handwriting (line quality, pressure gradation and line flow) can be assessed on the basis of the colour intensity and/or constancy and in particular also the line thickness, insofar as they can be determined. Visual reproduction systems require a minimum intensity and size of the colouring or graphical information in the original to achieve a result. This means that in the case of signatures that are performed in a continuous flow and with rhythmical pressure, features such as fine, hairline strokes and connecting lines may only be reproduced rudimentarily (e.g. as a line that appears to be interrupted), or even not at all, depending on the quality of the copying device. Writing movements of this kind can then only be guessed at on the basis of initial or terminal residues of colouring.

In addition to this, one can also compare the overall visual form of the signature. However, these are characteristics to which forgers often devote particular care and attention.

3.2 The Disputed Writing Itself

The disputed signature can be characterised – insofar as this can be assessed on the basis of the reproduction – as a style of drawing of medium specificity. Its informative potential is limited somewhat by the emphasis on form. If the disputed signatures were available as originals one could only

⁴ http://www.gfs2000.de/richtlinien_de.html

expect to achieve a positive assessment in the range of moderate probability.

Insofar as the reproduction itself can be assessed, it is not a first copy but rather a generational copy of a higher order (see below). Note for example the jagged edges in the lines as evidence of digitalisation.

3.3 A Note on Copies

The quality of a copy, defined as the degree of congruence with the original, also varies depending on the ink used to produce the handwriting – in addition to factors like settings on the copier (or scanner) and the condition of the device (e.g. contrast/ brightness, maintenance).

When a copy is recopied multiple times, making at each stage the next copy from the previous copy, one refers to this as a generational copy. In generational copies one sees features such as drop-outs in lines or images and also added artefacts, for example dirt marks. In addition to the device settings and the serviceability of the device, these characteristics are also particularly influenced by the relative position of the copy in question in a series of copies. These particular characteristics are more pronounced in later positions within the generational series.

3.4 Comparison Material

The comparison signatures make it possible to assess the style of drawing of the deceased. This comparison material provides **no** evidence for any sustained change in this or different styles of writing.

The undersigned cannot determine whether the deceased also had another style of drawing based on the Latin schoolbook style of writing.

Only a significantly limited range of comparison material is available.

Whether this results in limitations and, if so, what limitations those might be, is something that must be discussed following the conclusion of the analysis.

4. Hypotheses for the Analysis and Methodology

The contrary and exhaustive available hypotheses in this case consist of either “authentic” or “not authentic”, whereas it has already been explained that only a limited possibility for analysis is obtainable in this case (the so-called test of falsehood).

The objective of forensic handwriting analysis is to arrive at an assessment of the authorship of the handwriting by comparing the characteristics of two or more handwriting examples.

Authorship hypotheses are first formulated on the basis of the question posed for the analysis. Next, the suitability of the available handwriting material is assessed on the basis of its material characteristics and graphical informative value of the handwriting in question and the nature and quantity of the material available for comparison. The relevant characteristics are normally ascertained through physical/technical analysis and graphical comparison. The objective, systematically collected findings are then analysed with a view to the hypotheses under consideration. The examiner conducting the analysis defines these hypotheses at the beginning of the analysis.

The nature and quality of the overall findings then lead to conclusions which are expressed in the form of probabilities.

The levels of these conclusions represent the verbal or numerical assessments of the examiner on the probability of the posited authorship hypotheses, based on the handwriting comparison analysis, cf. Köller et al. (2004)⁵.

⁵ Köller N. (2004): Probabilistische Schlussfolgerungen in Schriftgutachten [*Probabilistic Conclusions in Handwriting Analysis*]. Munich, Luchterhand.

	Hypothesis (e.g. identical author)	Alternative Hypothesis (e.g. different authors)
Non liquet	Indifferent probability, approx. 0.5 or 50%	
Tendency as- sessment	Tending towards probability, approx. 0.75 or 75%	Tending towards lower probability, approx. 0.25 or 25%
Substantial as- sessment	Predominantly positive probabili- ty, approx. 0.9 or 90%	Lower probability, approx. 0.1 or 10%
	High probability, approx. 0.95 or 99%	Low probability, approx. 0.05 or 5%
	Very high probability, approx. 0.99 or 99%	Very low probability, approx. 0.01 or 1%
Conclusive as- sessment	Bordering on certainty, approx. 0.9999 or 99.99%	Virtually out of the question, approx. 0.00001 or 0.01%

5. Assessment of Authenticity

One begins with an overall examination of the disputed signature or document, among other things to see whether any special characteristics can be ascertained. This is then followed by a comparison of the signature in question with the comparison material.

It must be emphasised here that in any examples exceeding a certain minimum physical extent, one does not **ever** encounter full congruence or overlay congruence in two handwriting examples; at most just a high degree of similarity. This means that establishment of overlay congruence (at least to a high degree) can serve as evidence for the assessment of authenticity. The system of writing the person in question learned or whether it is a graphical rather than a written signature are both completely irrelevant factors here (stencilled writing and similar systems are excluded from the following discussion).

5.1 Analysis of Overlay Congruence

The disputed signature was compared to the four comparison signatures that were scaled and rotated accordingly to enable direct comparison.

Readers can perform this comparison themselves by laying the two examples to be compared on top of one another and holding them up against the light.

In forensic analysis one uses digital imaging to perform this comparison, overlaying one stored image on top of the image to be compared, which is scaled and rotated accordingly. The software program used to perform this comparison is called Diskus⁶.

In this software, one signature (and the associated document) is displayed using a contrasting colour (white), the other one is displayed in black. In Figure 10 one can see that the two signatures are almost perfectly congruent. The very minimal overhangs in edge areas are the result of the creation of generational copies. This does not contradict the overlay congruence; the

⁶ <http://www.hilgers.com/index1.html> For a description of use in forensic analysis see Riess et al. 2004: *Digitale Vergleichsanlage in der Schriftenvergleichung und Urkundenprüfung, Programm Diskus* [Digital System for Handwriting Comparison and Document Analysis, Diskus Software], *Mannheimer Hefte für Schriftenvergleichung* 31, 54-63.

degree of overlay congruence here is sufficiently high, and is **beyond chance** to a very significant degree.

Figures 11 – 16 show examples of split image over representations of the signatures in question. The high degree of overlay congruence can be seen in the smooth transitions between the two images in these examples.

Inspection of the disputed document (insofar as this is possible) reveals **no** evidence of photo montage. The signature lines contain no indication of disturbance in the flow of the rows or in the distance from the text or the paragraph or the handwriting above it. Even so, the possibility of the use of photo montage **cannot** be excluded here.

More extensive or more detailed analysis is not possible here, in particular because of the characteristics of this “generational copy”.

The high degree of overlay congruence indicates the use of digital photo montage. However, it is not possible to differentiate the creation hypotheses (tracing forgery or photo montage) adequately on the basis of the available reproductions.

5.2 Assessment of the Findings

The high degree of overlay congruence is compelling evidence that at least one of the documents bearing the signatures X 1K and V 1K cannot exist as an original with the content apparent in the reproductions, and thus must be a forgery. However, it is **not** possible to say which of the two documents that is.

This high degree of overlay congruence is very strong evidence that dominates the conclusion in the assessment of the findings.

It can thus be stated with **probability bordering on certainty** that one of the signatures, either V 1K or XK, **cannot** exist as an original in the presented form or in the form that would seem to be indicated by the reproduction.

6. Summary

A handwriting comparison analysis was commissioned to establish the authenticity of the disputed signature from the 1989 will, which is available in the form of reproductions.

In this analysis it was established with **probability bordering on certainty** that the signatures in the signature pair XK and V 1K are overlay congruent. Thus, there is the same degree of certainty that one of the documents is a photo montage.

Given the number of “*n*” overlay congruent signatures, it follows that the number *n* minus 1 of the documents that appear to exist on the basis of the available reproductions cannot actually exist in the original in the form that the reproductions would seem to indicate. Which of the documents this applies to (in the case in point the documents with the signatures XK and V 1K) cannot be established here. In order to establish this it would be necessary to examine the original documents (i.e. at least the quantity *n* minus 1).

[signed]

Dr M. Riess

Translation:

List of documentation attachments to the original German expertise:

- Guidelines 4.0: Use of Non-original Documents in Forensic Handwriting Analysis, German Society for Forensic Handwriting Analysis (GFS e.V.)
- Copy of the original disputed will

Handwriting Comparison Material

Figure 1: Signature from the disputed will

Source: Client

Figure 2: Comparison signature dated 1976

Source: <http://...> [see original]

Figure 3: Comparison signature dated 1977

Source: <http://...> [see original]

Figure 4: Undated comparison signature

Source: <http://...> [see original]

Figure 5: Undated comparison signature

Source: <http://...> [see original]

Comparison Signatures V 1K – V 4K Scaled and Rotated for Comparison

Figure 6: Signature V 1K dated 1976

Figure 7: Signature dated 1977

Figure 8: Undated signature

Figure 9: Undated signature

Overlay Illustration (X and V 1K)

Figure 10: Overlay illustration

Split-Image Illustrations

Figures 11 - 16