

# SIGNATURE VERIFICATION EXAMINATIONS

## Terminology

**Questioned** - a signature or document in which the genuineness or integrity has been denied or questioned.

**Known** - an authentic, acknowledged standard of a signature or document.

**Characteristic** - a mark or trait which distinguishes or identifies.

**Natural Variation** - normal deviations that occur in repeated specimens of one writer.

**Class Characteristics** - characteristics shared between a group of individuals.

**Individual Characteristics** - characteristics unique to an individual.

## General Principles

A layperson can examine signatures and often determine whether they are genuine or non-genuine. The Forensic Document Examiner, however, achieves greater accuracy by conducting examinations that have three distinct processes:

- Analysis
- Comparison
- Evaluation

Many laypeople can competently apply the first two processes; however, the third is a skill that requires the aptitude and years of training and experience of a Forensic Document Examiner.

### 1. Analysis

The very first step is to determine whether all the signatures are genuine or questioned. If a questioned signature is later identified as genuine, that does not create a significant problem. A genuine signature that is later identified as questioned, however, can taint the examination.

The analysis begins with the broad, general features and gradually focuses down to the individual, subtle details of the signature. The inter-relationship of the letters is also a key aspect of the analysis. A major danger for the layperson when examining writing is "to miss the forest because of the trees," i.e., concentrating on small, individual features and missing broad, gradual characteristics. The tendency for a layperson is to concentrate on individual traits or details, before the more general, broader features are identified.

Once the characteristics of the genuine signatures are analyzed, then the same process is applied to the questioned signatures. The signatures are studied by concentrating on the general characteristics. The components and features of the signatures are considered individually and in combination.

Proportions are an example of an important general characteristic. The signatures must be examined to determine the ratios of heights and widths between letters, letter combinations, and within parts of a letter. Proportions are often overlooked if the verifier focuses on individual letters or parts of letters. The relative heights of letters, especially between the tall letters, are a trait that can cause a non-genuine

signature to look "odd" when compared to a genuine signature. Proportions are most noticeable from a comfortable viewing distance (approximately one meter). The broader, larger scale features are assessed. In addition to the study of signature proportions, other handwriting features include, but are not limited to, the following descriptions and related illustrations:

*Skill* (fluent? well formed? clumsy?)

*June*      *june*

*Style* (copybook? simplified?)

*Thanksgiving*      *Am Mm*

*Slope* (vertical? internal?)

*Jill*

*Speed* (blunt/tapered endings? smooth?)

*Jason*

*Pressure* (even? heavy?)

*cu*      *to*

*Proportions* (irregular?)

*dealt*

*Size* (large? small?)

*walrus*      *walrus*

*Placement* (arrangement?)

*Mike*

*Alignment* (baseline - even? irregular?)

*December*

*Spacing* (regular? narrow? wide?)

*see meet*

*Continuity* (connected? breaks?)

*today break*

*Construction* (# of strokes)

*W*      *E*

*Ticks* (hooks? spurs?)

*Friday*      *few*

*Oddities* (unique details?)

*e*      *tephat*

## 2. Comparison

The known and questioned signatures are compared for similarities and differences. All the characteristics of the signatures are analyzed and compared, both general and individual letter forms.

Signatures are not identified on a point system. The danger of a set-point method is that a genuine and a non-genuine signature may have 5 or 10 points in common, just by coincidence. A quantitative approach of simply counting characteristics would cause incorrect findings. Furthermore, signatures are not identified based on whether there are more similarities than differences between the genuine and questioned signatures. The analysis of signatures is qualitative rather than quantitative, the quality and nature of the writing characteristics are more significant than their number. The conclusion that a questioned signature is genuine involves two basic requirements. First, the questioned signature must contain the significant writing characteristics of the genuine signatures. Second, there must not be any fundamental differences between the questioned and genuine signatures. If there is a single fundamental difference between the questioned and genuine signatures, then a conclusion of genuineness is incorrect. This process is typically

more difficult when dealing with signatures than with whole text, due to limited amount of writing in a signature.

### **3. Evaluation**

This last element of the examination requires the greatest discipline, training, and experience. The evaluation phase is the area where the abilities and experience of the Forensic Document Examiner are critical. This is also the part of the examination that is most difficult for the layperson. During the evaluation phase, both similarities and differences are assessed for their significance in determining whether one or two people wrote the signatures.

Identifications typically rely on a combination of similarities. The accurate evaluation of the significance of each of the signature characteristics and of the combination of those characteristics is the basis for the conclusion.

There will always be variations in signatures since they are the product of a person and not the output of a machine. Natural variations may be subtle, minor deviations between several examples of the same letter form or detail, (e.g., the length and shape of two “y” loops). Other variations may be more drastic, such as a person's signature written carelessly on a credit card receipt versus a formal signature on a contract. The range of these variations is different for each writer. Natural variations require that the examiner decide whether the differences between two samples are evidence of one writer or different writers. A single genuine signature will reveal only a few of the variations that occur in that person's signature. Therefore, the professional document examiner requires a representative sampling of the true person's signature. Great care must be taken when a limited sample of genuine signatures is examined since the range of natural variation will not be accurately revealed.

Signatures will also change and mature as the writer ages. Signatures typically continue to mature through the writer's 20's. You should always be aware of the dates of the signatures and the age of the writer. You can expect a greater range of variation if the signatures are not contemporaneous.

#### **Summary:**

- The examination of signatures is a process which consists of three distinct steps (A.C.E.).
- Similarities and differences are not merely tallied but weighted as to their significance.
- Natural variations exist between all signatures.
- The range of natural variation will vary greatly from writer to writer.

#### **Characteristics for Signature Verifications Summary:**

##### *Signature Verification Standard*

A signature on a petition sheet or ballot must be matched to the signature on file in the voter registration records. The following characteristics must be utilized to evaluate signatures to determine whether they are by the same writer:

- 1) Agreement in style and general appearance, including basic construction, skill, alignment, fluency, and a general uniformity and consistency between signatures;

- 2) Agreement in the proportions of individual letters, height to width, and heights of the upper to lower case letters;
- 3) Irregular spacing, slants, or sizes of letters that are duplicated in both signatures;
- 4) After considering the general traits, look for agreement of the most distinctive, unusual traits of the signatures.

A single distinctive trait is insufficient to conclude that the signatures are by the same writer. There must be a combination or cluster of shared characteristics. Likewise, there must be a cluster of differences to conclude that the signatures are by different writers.

**Comments:**

- Placing the questioned and genuine signatures physically as close together as possible in an over and under arrangement will assist your comparison. Overlapping or folding the documents will minimize distracting material and enable you to view several signatures simultaneously. Simultaneous viewing increases the likelihood that the most important handwriting features will be detected.
- Signatures by the same writer may have a wide range of variation. One writer can produce signatures in which every letter is legible and ones that have degenerated into a scrawl.
- Examining more than a single genuine signature enhances the likelihood of a reliable finding.
- An oddity that appears in both signatures (e.g., a "b" that looks like a "le") is evidence of the same writer.
- When dealing with highly stylized signatures, draw the signature with your finger to learn the writing movements. The movements are more important than the visual impression.
- The initial and terminal strokes of letters typically are not consistent and should not be relied on.
- The connection or break between a capital letter and the following lower case letter is an inconsistent trait.
- When in doubt, ask another verifier for their opinion. Do not disclose your conclusion until they have reached their own.
- The skill should be consistent between signatures.

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