



## Questioned Documents Section – 2008

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### J1 Genuine and Disguised Signatures - An Empirical Approach

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After attending this presentation, document examiners will learn how measured characteristics of genuine and disguised signatures can help in determining authenticity.

This presentation will impact the forensic community by helping to provide a basis for a more empirical approach to signature examinations.

The examination and comparison of signatures to determine their authenticity is a task commonly faced by Forensic Document Examiners (FDEs). The examiner has to determine if a questioned signature is genuine, simulated (forged), or disguised. The strategy of disguise is used by a writer to deny having written his own signature at a later date. A disguised signature may be considered to be a type of genuine signature. The ramifications of an examiner opining that a signature was simulated, when in fact it is a disguised signature can be quite serious in terms of a person's loss of freedom or property and vice versa.

The traditional document examination literature has described the various characteristics of genuine, forged, and disguised signatures. These characteristics have been inferred from observations on static signatures. This paper will investigate the characteristics of genuine and disguised signatures that were captured in the digital domain. There is overlap in some of the features of simulated and disguised signatures and it can be a challenge for the FDE to determine how the signature was executed. Recent research has indicated that there may be some limitations as to how strongly an examiner can conclude whether a signature is simulated or disguised. Some commentators suggest that the furthest an examiner can go is to say that the questioned signature (if simulated or disguised) exhibits features that are not natural to the known writer.

Structurally, signatures can be grouped into three types: "text-based" (where all allographs are legible), "stylized" (where no allographs are legible) and "mixed" (where there are both legible and illegible allographs present). The presence of these structural types in the population is of interest as they may impact on the strategy that a writer uses to disguise their signature. In order to investigate whether the structural variants impact on disguise strategy, the signing behavior of 90 writers (30 "text-based", 30 "stylized" and 30 "mixed") will be analyzed in the dynamic domain. Each writer will be asked to provide 10 normal signatures (GEN), five disguised signatures (DNC) where no contextual scenario is provided, and five disguised signatures (DWC) where subjects were provided with the context that they were to sign as though they were in a bank or similar setting where there was a model signature for comparison. All signatures are to be recorded using a Wacom Intuos 3 digitizing tablet sampling at 200 Hz and 0.0005 cm resolution. Movalyzer software (Version 3.94) [Neuroscript Software, Inc.] will be used to examine and compare the genuine and disguised signatures with respect to response time, mean velocity, movement time, mean pressure, mean number of strokes, and fluency measures such as acceleration maxima. This empirical data will be used to determine whether changed features associated with disguise are different depending on the type of genuine signature normally performed. Traditional views regarding the discrimination of simulated and disguised signatures will be reassessed as to their validity based on whether differences in disguise strategies are present between the different genuine signature types.

#### **Document Examination, Genuine Signatures, Disguised Signatures**