



Questioned Documents Section - 2013

J6 The Forensic Examination of Non-Original Documents and Images: Is It Reliable to Make Conclusions About the Printing Process and the Type of Ink Used to Create the Original Document?

Gerald M. LaPorte, MSFS*, National Institute of Justice, Office of Inv & Forensic Science, 810 Seventh St, NW, Washington, DC 20531

The goals of this presentation are to: (1) determine if a Forensic Document Examiner (FDE) can reliably make conclusions about the printing process and the type of ink used to create the original document when presented with copies and image files; and, (2) determine what impact file format and resolution have on text-based documents.

This research will impact the forensic science community by providing more information about non-handwriting features that can be assessed from a non-original document.

Sometimes, a FDE is provided with copies and/or digital images of an original document that may not be available for examination. There have been extensive discussions in the literature regarding possible limitations when conducting examinations to determine authorship, but very little focus on non-handwriting features such as printing processes and ink type. Specifically, copies, low quality, or monochrome images, and Portable Document Format (PDF) documents are often discounted as insufficient if information is requested about the creation of the original document. Images of text-based documents may be submitted for examination and can be captured in various formats (e.g., PDF, GIFF, TIF, JPG, BMP) at different resolutions. The objective of this study is to determine if an FDE can reliably make conclusions about the printing process and the type of ink used to create the original document. Moreover, what impact does file format and resolution have on text-based documents.

A series of documents were created using various types of laser printers, photocopiers, and inkjet printers bearing ballpoint inks, roller ball pens, gel pens, and felt tip writing instruments. From the original images, copies and scans were produced using various file formats and resolutions. Physical characteristics of the copies and images were evaluated visually and using stereomicroscopy to determine if there were any gross morphological differences in the printing processes and writing inks. Finally, the documents created using the various file formats were compared to ascertain features that should be considered when rendering a conclusion.

The production of digital images and PDF documents in the course of forensic document examinations is becoming more common due to electronic storage of documents. Indeed, there is information that can be obtained from a computer forensic examination, but information about printing processes and writing inks used for the original document is in the prevue of an FDE. Depending on the circumstances in a case, the evidence that can be gleaned from this type of examination can be extremely probative.

Non-Original Document, Ink, Copies