

Abstracts

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Reconstituting Gradation Using Multiple Photocopier Splits (James R. Daniels)

A semblance of tonal gradation may be achieved by image summing a series of light and dark first generation photocopies. The relationship between this rendition and that resulting from conventional photography or high-resolution scanning is demonstrated at the proof-of-concept level using a darkroom gray scale.

ESDA Effects in Light of Current Discussions (Gary Licht and Ercole Murano)

Unknown parameters abound in the collection, preservation and interpretation of indented writings. One very useful method for visualizing these indented writings is through the use of electrostatic detection devices (EDD). In this paper, the instrument discussed is the Electrostatic Detection Apparatus (ESDA). The purpose of this work is two-fold. First, to develop an efficient and safe way to collect and develop impression evidence with little to no loss of reasonable and resolvable detail. Second, to provide some theoretical explanations as to the “why” of the results. Research presented here shows the effects of external factors that cause varying amounts of friction with a document, and how these effects are detrimental to the ability of the ESDA to detect handwriting impression. Some information is developed about why impressions may or may not be visualized with the ESDA whether they are visible with oblique lighting or not. A current theory of what makes writing impressions that are suitable for visualization is reviewed in light of empirical data from experiments and field observations in casework. Recent discussions of the effects of environmental factors, for instance gloves, are fit into the framework of the theory.

Modern Approaches to the Forensic Analysis of Inkjet Printing—Physical and Chemical Examinations (Gerald M. LaPorte)

Documents submitted for forensic examination that have been printed by inkjet printers are becoming much more predominant. With the advent of this technology, there has been tremendous popularity amongst criminals to use inkjet printers and copiers to commit a variety of crimes such as counterfeiting, criminal record keeping, and extortion. In some instances, legitimate transactions such as contracts and wills later become the focus of a criminal investigation. This may prompt a suspect(s) to alter entries, generate new documents in an attempt to substantiate his case, or make false claims regarding the questioned document. Forensic document examiners can perform a variety of physical and chemical examinations that may help link multiple documents with each other or a suspect printer(s), ascertain if the document is legitimate with respect to date, or determine the make and model of the suspect machine. This article will provide a comprehensive discussion of modern approaches to the physical and chemical examination of documents produced by inkjet copiers and printers. In addition, some new ideas will be proposed to provide forensic document examiners (FDE) insight into the future of inkjet analyses.

Admissibility Issues in Forensic Document Examination (Thomas W. Vastrick)

The admissibility of forensic document examination has, on occasion, been challenged in courts across the United States. This paper reviews the requirements and guidelines under U.S. Supreme Court decisions of recent years as related to Rule 702 of the Federal Rules of Evidence and compares them to studies, research, methodologies, testing, and publications within the discipline of forensic document examination that relate to these guidelines, and outlines how forensic document examination meets and exceeds each of these guidelines. In addition, this paper reviews statements made by critics in testimony and nonpeer reviewed articles concerning forensic document examination as it relates to admissibility issues. These statements are compared with the raw data on which many of the statements were based. Many of the critics’ conclusions were inaccurate.

**A Study on the Influence of Light Social Drinking on Writing by Chinese in Hong Kong
(Yau-Sang Patrick Cheng and Yee-Mei Amy Leung)**

A study was conducted on the effect of light social drinking on handwriting involving the writing of Chinese, English, Arabic numerals, and some geometric shapes. All of the 151 participants were ethnically Hong Kong Chinese and ranged from occasional drinkers to habitual drinkers of alcoholic beverages. The results of this study confirmed observations made in previous studies of the effects on handwriting due to alcohol consumption. In general, the forensic document examiner can expect to find the effects to include an increase in size of the writing, wider word spacing, and increased pen pressure along with possible writing mistakes. The other aspects of handwriting such as the quality of writing, writing characteristics including writing movements, alignment, and slant would largely be retained. The writing of geometric shapes after light drinking agreed with that of text writing with some exceptions.