QUESTION DOCUMENT EXAMINATION

The term "Questioned Documents" covers a variety of different evidentiary questions, which extends well beyond the traditional field of the identification of questioned handwriting. It is commonplace nowadays to find the Questioned Document Examiner being asked to determine questions of authenticity in regards to not only questioned signatures but also to examine questioned typewriting, inks, writing instruments, paper, alterations of documents, erasures or other obliterations, and to determine the relative date of a particular writing. Questioned documents are usually submitted for examination purposes inasmuch as doubts have been raised concerning their 1). origin; 2). authenticity; 3). age; 4). author; 5). circumstances under which the document may have been executed.

(1). U.S. Secret Service, Questioned Document Training Manual, 1975 edition, page 5, Washington, D.C.)

Due to the increasingly sophisticated advances in the automatic production of documents both in the office and in financial institutions, there has been a dramatic change in the typical casework problems presented to the Document Examiner.

In the future the Document Examiner will have to be more familiar with the increasingly complex technology regarding everything from optical character readers and laser printers to desktop publishing software and computer enhancement of blurred or distorted images.

In addition, large financial institutions are microphotographing more and more their financial documents and other devices are being used in its' physical storage, i.e. sheetfeeders, tractors, decoallators, shredders and bursters.

(2). “The Paperless Office: Questioned Documents Future, Nancy N. Berthold, presented at the International Association of Forensic Sciences Conference, Vancouver, Canada, August, 1987.

“The increasing of use by office personnel of desktop publishing hardware and software will increase the complexity of many of the portions that document examiners will face in the future. For example, desktop publishing technology will allow a fully composed page layout (including typeset, text, and graphic images) while using a personal computer, page composition software, and a high resolution output device like a typesetter or laser printer. II

(3). Wes Nikei, “The Color of the Future”, PC World, Feb. 1987 pages 278-283.

In short, our society is moving more and more away from a paper dependent one

to one more dependent upon electronic imagery production and document storage and retrieval. Thus it appears that the Document Examiners in the future will be tackling more complex questions that what his present workload requirements demand today.

(4. IBID, no. 2 - page 11)

No other instrument of crime seems to be as pervasive in our society today as the document. Forged checks, security and exchange fraud, tax fraud, forged or altered wills, counterfeiting, embezzlements, and fraudulent transactions in financial crimes are all examples of potential document crimes. Fortunately over the past few decades continuing scientific research in the field of questioned documents has developed more efficient methods for the detection of fraud. Recent advances by forensic ink chemists have more readily permitted both the identification of the questioned ink sample as to manufacturer and also the relative date of the ink based upon its solubility components. Additionally there have been instrumental methods developed for the examination of obliterated, indented, erased, and charred documents which will be addressed later.

(5.) Richard Saferstein, "FORENSIC SCIENCE HANDBOOK, First Edition, 1982, Prentice-Hall, N.J.

The remainder of this chapter will deal first with more traditional handwriting examination techniques then focus on those problems associated with emerging computer-based technologies and those involving questioned ink and paper problems.

HANDWRITING IDENTIFICATION

Prior to a review of handwriting identification techniques, it might prove useful to discuss the training and certification standards that most forensic document examiners operate under today. Within the past ten years, the American Society of Crime Lab Directors (ASCLD) and the American Academy of Forensic Sciences (AAFS) have improved crime lab operations and have developed regimented methodologies to improve the accuracy rate of participating crime laboratories. In 1976 the American Board of Forensic Document Examiners was established which is presently certifying qualified document examiners who have met the established minimum requirements. Other professional forensic organizations such as the American Society of Questioned Documents Examiners (ASQDE) has also significantly aided in the professionalism of the field and insuring quality standards are maintained by its members. As in other fields of scientific endeavors, it is essential that the legal and investigative professional properly qualify their forensic experts.

Screen the lists of potential experts and select the most qualified in a particular discipline. Due to the ongoing increasing diversification within forensic science there are both an increasing number of experts available for the attorney to select from as well as different specialties appropriate to the question in litigation. So will the expert witness

directories list more than four-thousand disciplines which are employed in the adjudication of criminal and civil cases. Convenient sources for expert witness selection, include; (1). a local County or State Bar Associations; (2). local law libraries containing forensic expert lists; (3). The Expert Evidence Reporter, published by Sheppards-McGraw-Hill; The National Association of Criminal Defense Lawyers; The American Bar Association Journal; Trial Magazine; Experts At Law; together with a host of State Bar publications and newsletters identifying potential expert resources.

(6.) Locating and Qualifying the Expert Witness, by Steve Cain, published February, 1991, in The Investigator, page 8.

Unfortunately many courts have permitted the testimony and findings of an unqualified document examiner be admitted during the trial.

Qualified document examiners often represent themselves as "experts" but unfortunately do not have the variety of training experiences or professional standards required of a forensic document examiner who was trained in a certified crime laboratory. Oftentimes the so-called handwriting experts are self-taught or have received some sort of diploma of Certificate of Completion from a graphological organization but do not have the diversified training required to answer the more complex document problems facing most forensic document experts today. In this country the term "graphology" basically involves the study of personality and character through an interpretation of handwriting traits.

Many document examiners do recognize the importance of an individuals psychological state of mind and its possible adverse affects on the handwritten product but historically steered clear of working closely with psychiatrists, linguists, or psychologists in understanding the interaction of impulses and motor responses. The understanding, however, of the role of personality in handwriting is a far cry from the identification of those individual character traits which graphologists traditionally have advertised as a primary vocational objective.

(7.) "Psycodynamics of the Presidential Assassin and an Examination of the Theme/Graphic Variables of His Threatening Correspondence," Forensic Science, Vol. 19, (1982) page 40.

Many graphologists learn their trade through completion of correspondence courses such as at the International Graphoanalysis Society, Chicago, Illinois, who upon completion are awarded the title of "Certified Graphoanalyst". Other courses of instruction award degrees of "Master Graphologist" which seems to provide credibility to the graphologist as an expert witness. In most cases, the graphologist rarely has their work product reviewed for quality control purposes and seldom devote a forty-hour week to their work. Additionally, they rarely possess the sophisticated equipment need for more complex document examination problems. Unfortunately their success in court is

largely attributable to a lack of cross-examination of their Curriculum Vitae and the Courts ignorance relative to the difference between a forensic document examiner and a graphologist.

(8). "Questioned Document Examination Manual for Investigators", by Marvin Morgan, paper presented at the 43rd Annual Meeting of the American Academy of Forensic Sciences, 1991, Anaheim, California.)

An additional type of forensic examination which has been utilized by both the FBI Crime Laboratory and other reputable forensic laboratories has been the utilization of a forensic linguist.

These individuals often are able to provide useful information concerning the author of a threatening or anonymous communication inasmuch as they examine more the language used in its production rather than the language takes on paper, (i.e. the handwriting characteristics.)

(9). "LINGUISTIC EXAMINATION OF DOCUMENTS AS AN AID IN INVESTIGATIONS " by Penelope Picket, FBI Laboratory, paper presented at the 43rd Annual Meeting of the American Academy of Forensic Sciences, Anaheim, California, February, 1991, page 2.

Forensic linguistic examination often yields demographic and psychological information about the author and provide a basis for making authorship comparisons. The examination results, "can be of assistance in developing investigative leads, narrowing a group of suspects, making psychological assessments of the authors, assessing threats, and comparing two or more communications to determine common authorship or speaker."

(10). IBID, page 9…Picket

The identification of questioned handprinted or handwritten communications is based upon: 1). Whether there exists sufficient individuality within the writing; 2). Whether there are adequate known exemplars of the suspect to reveal those unique characteristics useful for identification purposes and also to indicate the natural variations of the writer. As an individual progresses beyond his formal penmanship training, he will diverge more and more from the so called copybook systems which he was taught and will start injecting his own personality within his writing and thus permit its identification through examination of his individual writing habits. It is the individual habits rather than the class characteristics which permit an expert to identify the author of a particular writing.

The more the writer deviates from the traditional copybook standards of writing the more value a specific trait has for identification purposes. It is therefore essential that

a document examiner have the knowledge of both domestic and foreign handwriting systems to preclude undue weight being attributed to a "foreign element" within the writing that may be related to a particular handwriting system and not a unique identifying trait.

Examples of class characteristics would include the terminal "T" taught by the Palmer method of the numeral 7 with the crossbar prevalent in many European handwritings. Class characteristics by themselves have very little significance in the comparison process.

Writing also is a function of the conscious and subconscious mind of the writer and involves both motor, muscular, and nerve movements of the body.

(11). C. Mitchell, "HANDWRITING AND ITS VALUE", Journal of Royal Society of Arts, 1923, page 81

The existence of natural differences in a persons writing are inevitable as the human body is not a precision instrument which is capable of exact duplication of every detail contained in two separate specimens of writing. Natural or internal variation in letter design is usually nothing more than a variation on the same theme and is usually restricted to superficial modification such as size, proportion, or the degree of care given to the writing act. Freedom, carelessness, speed, illegibility, and reasonable variations are examples of genuineness whose opposite conditions are indicative of forgery.

Just as internal variation is a fundamental part of the writing act, external factors surrounding the writing act also may produce additional variations in handwriting, to include:

a. physical or mental condition of the writer
b. writing instrument employed
c. surface characteristics
d. purpose for which the writing is intended (Le. informal signature on a gas receipt versus a formal signature on a more important document)
e. intoxication
f. drug ingestion
g. occupational influences
h. deficient eye-sight influences
L extreme temperature
J. writing position
k. extreme fatigue
i. cramping of muscles in writing hand

When non-agreeing characteristic are present in two writings, the question then arises as to whether or not these are basic differences construction of the writing, (Le.

fundamental differences indicative of a different writer) or can these differences be accounted for as a result of natural variation.

Significant dissimilarities are those which are truly rare and consistent features and the presences of "accidentals" should not be interpreted as enoting another writer. The dissimilarity must be clearly shown to be a natural feature of the writing. The type of dissimilarity which is regarded as most significant is that which is sought for in the structure of the handwriting and which may be inconspicuous or overlooked by the inexperienced examiner. There is little chance that such inconspicuous dissimilarities were deliberately introduced as disguised writings. Thus, if we have excellent agreement in minute or inconspicuous features but a difference in the more obvious features of the writing, we have a strong indication of genuineness. If, however, more obvious feature of the model are quite accurately reproduced, but minute features and habits display significant differences, we have a good indication of forgery.

It should be noted that quite often the document examiner is unable to arrive at a definite conclusion whether two writings were prepared by the same person. All handwriting identification is based upon the examiners assessment of the chances that combinations of the particular characteristics could be duplicated at random in the writing of two different individuals. Extreme caution should, therefore, be exercised but if there is substantial in the subtle habits with no basic differences extending beyond the writers normal range of variation, obvious disguise can be discounted and an opinion of identity rendered.

The identification of numerals and handprinted forms are closely related to the same principals enumerated above. Before two specimens of handprinting can be identified, we again require that there be a sufficient number of personal writing habits acting in combination with no basic differences extending beyond the writers' range of variation. Special consideration should be paid to pertinent features of the writing to include the detail of the forms of letters; line quality; pressure habits; shading irregularities; slant; proportions; movement (whether arcade, garland, round, angular or combinations thereof); baseline consideration; connecting habits; tremor; retouching; speed; or rhythm of writing. Handprinting and numeral identification can be as uniquely individual and therefore susceptible to identification as a person’s cursive writing, although each case has to be evaluated on its own merits.

DISGUISE

Disguised writing is where the writer attempts to deliberately camouflage their natural writing habits, although in the case of extending writings the maintenance of an extended disguise grows increasingly difficult. Most disguise attempts are relatively simple to identify and are confined mainly to the more conspicuous elements of the writing to include such elements as slant, speed, and the more obvious designs of specific letter forms, such as capital letters. Although the use of the unaccustomed or

awkward hand changes the general pictorial affect of the handwriting it is a seldom successful form of disguise. The product of awkward handwriting tends to be angular and lacks the speed and fluency of "normal handwriting". Other common indications of disguise include: the use of block and script forms of letters, a change and approach in terminal strokes, great speed or slowness of the writing act, and utilization of "copy book style". Certain features which are rarely successfully disguised include: line spacing, marginal habits, inset of paragraphs, arrangement of inscriptions on envelopes, intentional misspelling, alteration of numerical forms, and the use of unusual (i), dots, or periods.

The usual result of a disguise attempt leaves numerous unconscious but individualistic writing habits available for comparison and identification purposes.

(12). Edwin Alford, "DISGUISED HANDWRITING, A STATISTICAL SURVEY OF HOW HANDWRITING IS MOST DISGUISED, Journal of Forensic Sciences, Vol. 15, 1970, pages 476-488).

A recent study of the relationship between disguised handwriting and years of formal education, provided some interesting data. For example, individuals with fewer than 12 years of formal education tended to misspell words with greater frequency and employed the technique of handprinting when disguising their handwriting than did individuals with more formal education. Individuals with more formal education (14-15) and those with an educational equivalent of a doctorate (19 or more years) change lower case letters more frequently than did participants in the other educational categories. The technique most frequently employed in attempting to disguise writing was the changing of the formation of capital letters which occurred at a high rate across all educational categories although no significant observations were made in the changing relative height ratios between letters which heretofore have been thought to be important identifying characteristic of a disguised writing.

(13). J. Michael Hull, "RELATIONSHIP BETWEEN DISGUISED HANDWRITING AND FORMAL EDUCATION", paper presented at the American Academy of Forensic Sciences, Feb. 20, 1991, Anaheim, California.)

ABNORMAL HANDWRITING

Persons signatures which may be adversely influenced by alcohol or drug ingestion very significantly from the defects normally associated with forgery. Certainly the influence of alcohol on a persons writing is dependent upon that individuals tolerance and capabi1ities. The results of several research studies have reported similar results, namely: (1). larger more spreadout writing, more general increase in overall size; (2). increase penlifts, where none were present before drinking; (3). exaggerated sometimes grotesque capital letter forms; (4). little or no attention paid to the baseline, lateral spacing or margins.

(14). IBID, 7, page 45

Intoxication normally creates a loss of muscular coordination wherein the muscles of the eyes are relaxed causing a blurring of vision and mental judgement is often impaired. With acute intoxication the writings may be characterized by: an increase in letter size; writing becomes more spread out,; parts of letters are sometimes omitted; strike-outs and over-writings occur; poor alignment of writing; bizarre letter forms; uneven baseline; extraneous strokes; defective line quality; and uncertainty of T -crossings and the dotting of is. In the form of certain drugs, such as methamphetamines, the writer will probably loose control over the writing act as his ability to concentrate falters. The writing will show impatience and the inability to make the smooth flowing movements which would normally be characterized with natural writing. The writing may also be characterized by a significant tremor, leaving a deteriorated affect on the written line. Naturally, the amount of drug ingested and the ability of the individual to cope with the intoxicant will always playa major factor in examination process. Research by other document examiners has indicated that when addicts are possessing a feeling of well-being there was little observable affect on their writing, although as the subject had an increased need for the drug, there was a corresponding deterioration in size, ability , line quality, and letter formation. Stimulants often caused the writing to be enlarged, sloppy, careless in its execution, lack of continuity, with a grotesque letter shapes. Sedatives were found to often cause a slowness in the writing, greater pressure, a drawn appearance, deterioration of quality, with unnecessary starts and stops.

(15). "ABNORMAL HANDWRITING", James T. Miller, Washington, D.C. U.S. Questioned Document Training Manual, 1975, page 5.

MENTAL AND PHYSICAL ILLNESS AND THE WRITING OF THE AGED

It is essential that a Document Examiner be familiar with those attributes of the writing act which are normally attributable to an individual suffering from a chronic illness inasmuch as some of these characteristics may be similar to those found in forgeries made by tracing. Normally, writings which have been affected adversely by the onset of old age or illness can readily be identified and separated by those writings made in imitation of others,(i.e. through simulation or tracings). Some of the features frequently found in the writing of the physically impaired individual are: tremor, sudden increase in pressure, interrupted pressure, frequent and meaningless duplication, exaggerated underlining, and a general lack of smooth and rhythmic writing movement. An additional element of the seriously ill writer is tremor, and normally this extends throughout the writing.

(16). "ABNORMAL HANDWRITING", Irby Todd, U.S. Secret Service Handwriting Manual, Questioned Document Course, 1975, Washington, D.C., page 6.

Some additional features of the mentally ill include: overwriting of letters forms, frequent and unnecessary underlining profuse capitalization, meaningless duplication of letters or words, bizarre letter forms, and poor margin alignment.

(17). IBID 6, PAGE 45

Occasionally questioned documents may also involve the execution of what is known as a guided-hand signature, which is in affect the written product of two different writers. The signatures are normally written during a serious illness wherein the assisting writer is guiding the hand to such an extent that the normal writing habits are seriously camouflaged and characteristics foreign to that informed person's style may be introduced. These signatures will often appear grotesque with varying amounts of tremor, abrupt changes in direction, poor alignment, irregular or careless pen- lifts, and unnecessary retouching of strokes. In most guided-hands signatures, the resulting signature does not normally bear the same tell-tale signs of unnaturalness one would expect to find in a forged or deliberately disguised signature.

DETECTION OF FORGERY

Forgery involves both the discarding of ones own natural writing habits while at the same time assuming those unfamiliar characteristics of another writer. Generally the forger employs two different techniques to imitate his signature; 1. Utilizing a genuine signature as a model, he attempts to imitate its form by free-hand imitation of its component parts or he may chose to trace the forgery from the model.

(18). SCIENTIFIC EXAMINATION OF OUESTIONED DOCUMENTS, Ordway Hilton, page 183-187, Elsevier, The Netherlands, 1982)

In the tracing example an individual normally will use the transmitted light process by placing the document to be forged over the genuine signature and then tracing its outline from the genuine signature lying underneath. An additional method may involve the use of a sheet of carbon paper which is placed between the top sheet bearing the genuine signature and the fraudulent document below. In this case a carbon outline often exists from the traced signature which can be readily viewed through appropriate infra-red or specialized photographic viewing equipment.

A simulated forged signature, whether accomplished through tracing or free-hand simulation displays close attention to the writing act whereas a genuine signature displays little attention even when crudely written by a poorly skilled writer. Removing the pen from the paper and carefully returning it creating delicate patching and retouching are not consistent with natural variation or genuineness but are instead attributes of the simulated forged signature. Both tracings and careful freehand sketches will normally reveal the following identifying attributes:

a. slow broken stokes, tremulous lines and a basic drawn appearance.
b. unnecessary retouching of strokes or letters.
c. blunt beginning and ending strokes
d. lack of difference in pressure on up-strokes and down strokes
e. greater deliberation at the start of a word
f. awkward looking forms
g. meaningless marks
h. frequent change in the angle of writing
i. acute angles
j. differences of speed within the writing

(19). THE PROCESS OF COMPARISON, Irby Todd, page 3, U.S.S. Secret Service Training Manual, Washington, D.C., 1975)

POSSIBLE CAUSES OF ERROR

The main cause of error in handwriting examinations is the misinterpretations of the significance of the various features found within the questioned and known writings. Often times a lack of sufficient exemplar writing (both in quality and amount) precludes the expert from arriving at any form of definite conclusion.

Sometimes an inexperienced examiner will place more weight on class similarities existing between the two writings as opposed to concentrating on the individual features important for identification purposes. Additional causes of errors include; 1). Basing an opinion upon inadequate amounts of questioned writings; 2). Inadequate amount of exemplar writings; 3). Basing conclusions based on outside statements provided by an interested party; 4). Interpreting all differences as disguised; 5). Allow prejudice or sympathy to affect a conclusion; 6). A hasty or superficial examination; 7). Inability to properly assess and interpret the different characteristics or qualities of the disputed and known writing.

(20.) QUESTIONED DOCUMENTS, Albert S. Osborne, Albany, N.Y., Boyd Publications, 1910

CONCLUSION

Modern day questioned document problems are becoming more complex and the document examiner is being asked to answer more diversified questions concerning the production and/or authenticity of questioned documents. Fortunately with the advent of specialized photographic techniques, computer-based systems for image enhancement, and recent developments in relative ink and paper dating by forensic chemists, the arsenal of analytical tools continues to expand with more conclusive determinations being made by the competent expert who is familiar with their proper applications and uses.