

Handwriting Analysis, Forgery & Counterfeiting

Chapter 10



Objectives

- Describe 12 types of handwriting exemplars that can be analyzed in a document.
- Demonstrate an example of each of the 12 exemplars of handwriting traits.
- Identify the major goals of a forensic handwriting analysis.
- Describe some of the technology used in handwriting analysis.
- Distinguish between the terms forgery and fraudulence.
- Identify several ways in which businesses prevent check forgery.
- Describe 4 features of paper currency that are used to detect counterfeit bills.

Introduction

- **Document analysis**

- Very broad
- Examination and comparison of **questioned documents** with known material
 - **Questioned documents** – any signature, handwriting, typewriting, or other written mark whose source or authenticity is in dispute or uncertain.

- **Document expert**

- specially trained person who scientifically analyzes handwriting and other features in a document.

Introduction to Handwriting

- Factors that cause variation in a person's handwriting
 - Different types of writing instruments
 - Pen
 - Pencil
 - Marker
 - Crayon
 - Mood
 - Age
 - How hurried the person is
- BUT each person has a unique handwriting style-developed over time as they become adults.

12 Characteristics of Handwriting

- 1. Line Quality
 - Do the letters flow or are they erratic and shaky?
- 2. Spacing
 - Are the letters equally spaced or crowded?
- 3. Size consistency
 - Is the ratio of height to width consistent?
- 4. Continuous
 - Is the writing continuous or does the writer lift the pen?

12 Characteristics of Handwriting

- 5. Connecting Letters
 - Are capitals and lowercase letters connected and continuous?
- 6. Letters Complete
 - Are letters completely formed? Or, is a part of the letter missing?
- 7. Cursive and printed letters
 - Are there printed letters, cursive letters, or both?

12 Characters of Handwriting

- 8. Pen Pressure
 - Is pressure equal when applied to upward and downward strokes?
- 9. Slant
 - Left, right, or variable?
- 10. Line Habits
 - Is the text on the line, above the line, or below the line?

12 Characteristics of Handwriting

- 11. Fancy curls or loops
 - Are there fancy curls?
- 12. Placement of crosses on t's and dots on i's
 - Correct or misplaced? Are t's crossed, crossed in the middle, toward top, or toward the bottom? Are the i's dotted, dotted toward the right, left, or centered?

Handwriting Examination

- Forgeries
 - Documents made, adapted, or falsified with the intention of deceiving someone

s Helen Gurney.

Q Helen Gurney

Handwriting Examination

- Analyzing a handwriting sample
 - 3 basic steps
 - 1. Questioned document & the standards (exemplars) are examined & detectable characteristics are recorded.
 - If possible, get a handwriting sample from the suspect without informing them of the comparison that will happen.
 - Best exemplars are letters, diaries, greeting cards, or personal notes.
 - 2. Characteristics of the questioned document are compared with the known standard
 - 3. Experts determine which characteristics are valuable for drawing a conclusion about the authenticity & authorship of the questioned document.

Handwriting Examination

- Similarities do not guarantee common authorship – may not be the same person
 - Unique characteristics of one person's handwriting can occur in another's.
 - Experts have to take into account a lot of factors in their analysis.

Handwriting Examination

- Experts also have ways of determining if someone tries to disguise their handwriting or copy someone else's (conscious writing effort).
 - Suspect should NOT be shown the questioned document
 - Suspect should NOT be given specific instructions about punctuation and spelling
 - The pen and paper should be similar to the questioned document

Handwriting Examination

- Technology Used in Handwriting Analysis

- Biometric Signature Pads



- Computerized Analysis

- Forensic Information System of Handwriting (FISH)
 - Computerized handwriting database maintained by the Secret Service

Handwriting Examination

- Handwriting Evidence in Court
 - Expert prepares a written report to present to jury
 - Expert called upon as an expert witness

Handwriting Examination

- Shortcomings in Handwriting Analysis
 - Some forgeries can be missed
 - Quality of the standards obtained can be poor
 - The effects of mood, age, drugs, fatigue, & illness on a person's handwriting

Handwriting Examination

- **Forgery**

- Process used by criminals to make, alter, or falsify a person's signature or another aspect of a document with the INTENT to deceive another.

- **Fraudulence**

- When material gain, such as money, accompanies a forgery

Handwriting Examination

- Check Forgery
 - Americans write approximately 70 Billion checks a year!
 - About \$27 Million in illegitimate checks are cashed EACH DAY!!!!!!
 - Checks are altered by
 - Ordering someone else's checks from a deposit slip
 - Directly altering a check
 - Intercepting someone's check, altering it, and cashing it
 - Creating forged checks from scratch.

 **STATE OF NEVADA**
DEPARTMENT OF TREASURY
BUREAU OF REVENUE

DATE: 05/15/2004

057474

STEFAN SMITH

DATE: 05/15/2004

AMOUNT: \$ 8,000.00

STATE NAME OF AMOUNT: 8,000 DOLS 00 CTS

CASHIER'S CHECK

Mary Krow

POSTAL CODE: 89101-1190

05/15/2004 800

COUNTERFEIT

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Handwriting Examination

- Preventing Check Forgery
 - How do companies protect themselves?
 - Print checks on chemically sensitive paper
 - Use a large font size that requires more ink and makes alterations more difficult
 - Use high resolution borders on the checks that are difficult to copy
 - Print checks in multiple color patterns
 - Embed fibers in checks that glow under different types of light
 - Use chemical-wash detection systems that change color when a check is altered

Literary Forgery

- Forgery of a piece of writing, such as an historic letter or manuscript
- Best literary forgers try to duplicate the original document by using materials that are similar to those in the original document
- Documents can be treated to make them look older

Counterfeiting

- When false documents or other items are copied for the purpose of deception
 - Most common counterfeited items
 - Travelers' checks
 - Certain bonds
 - Currency
 - Other counterfeited items
 - Coins
 - Food stamps
 - Postage stamps
 - Paper money
 - Federal felony- punishable by up to 15 years in prison
 - Investigated by the Secret Service

Counterfeiting

- Counterfeit Currency
 - In the past, with access to a scanner and a color printer, it was pretty easy to do
 - Secret Service has added features that prevent this today
 - Real money is printed on special paper
 - Relatively easy to detect counterfeit money
 - Iodine pens – stay yellowish on real \$, black on fake
 - There is a movement to move to polymer money- a type of plastic money because it's very difficult to counterfeit.

Features Found in Real Currency

- 1. Portrait stands out from the background & appears raised off the paper.
- 2. There is minute microprinting on the security threads, as well as around the portrait.
- 3. Serial number is evenly spaced and the same color as the Treasury seal.
- 4. Check letter and Quadrant Number.

Features Found in Real Currency

- 5. Federal Reserve seal has no sharp points
- Treasury seal has clear, sharp sawtooth points
- 7. Clear red and blue fibers are woven throughout the bill. Security thread is evident, consisting of a thin, embedded vertical line or strip with the denomination of the bill written on it.

Features Found in Real Currency

- 8. Federal Reserve Number and Letter
- 9. Series
- 10. Check Letter and Face Plate Number
- 11. Watermark appears on the right side of the portrait of the bill in the light
- 12. When a new series bill is tilted, the number in the lower right-hand corner makes a color shift from copper to green resulting from color-shifting ink



Features Found in Real Currency

- I 3. Clear, distinct background details and lines
- I 4. Clear, distinct border edge