Handwriting Analysis
Questioned Documents Unit

• unit of the FBI
• examines
  – handwriting
  – typewriting
  – shoeprints and
  – tire treads
Physical Examinations of QDU

- something on surface – handwriting, typewriting, alterations, obliterations
- something in surface – indented writing, watermarks, safety fibers
- damage to surface – torn edges, moisture, charring
Handwriting Comparisons

• based on the principles that no two people write exactly alike
• characteristics reoccur in someone’s writing

• side-by-side comparisons are preferred
• exemplars are the comparison samples
Simulation

• occurs when someone is trying to disguise own handwriting or copy someone else’s writing

• Is it a fake? Look for
  – shaky lines
  – dark and thick starts and finishes of words
  – a lot of pen lifts
  – = careful, slow letter formation
Mickey Mantle

Bucky Mantle

Mickey Mantle
Lindbergh kidnapping

<table>
<thead>
<tr>
<th></th>
<th>Hauptmann Writing</th>
<th>Anonymous Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;you&quot;</td>
<td>jnn</td>
<td>jnn</td>
</tr>
<tr>
<td></td>
<td>jnn</td>
<td>jnn</td>
</tr>
</tbody>
</table>

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<tr>
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<th>Hauptmann Writing</th>
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<tbody>
<tr>
<td>&quot;to&quot;</td>
<td>w     w</td>
<td>w     w</td>
</tr>
<tr>
<td></td>
<td>w           w</td>
<td>w           w</td>
</tr>
</tbody>
</table>
How to get the best exemplar

- do not share the questioned document
- do not tell how to spell words
- do not share how to use punctuation or grammar
- use writing materials similar to those of questioned document
- dictated text should have some features in common with questioned document – compare specific words / phrases
- dictate / write three times
Basic Characteristics to consider

• Letter form – curves, slants, proportions, slope, connecting lines
• Line form – smooth and darkness = pressure
• Formatting – spacing between letters or words, placement of words on line, margins, spacing between lines
<table>
<thead>
<tr>
<th>A</th>
<th>Use of Margin</th>
<th>A space exists between the margin and first word on each line/ a space does not exist / spacing for each line varies</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Size of letters</td>
<td>Small / large / uniform in size / not uniform in size</td>
</tr>
<tr>
<td>C</td>
<td>Slant of writing</td>
<td>Towards the right / towards the left / no slant (vertical)</td>
</tr>
<tr>
<td>D</td>
<td>Spacing between letters</td>
<td>Small spacing / large spacing</td>
</tr>
<tr>
<td>E</td>
<td>Spacing between words</td>
<td>Small spacing / large spacing</td>
</tr>
<tr>
<td>F</td>
<td>“I” dotting format</td>
<td>Dotted / not dotted / dotted to the left / dotted to the right</td>
</tr>
<tr>
<td>G</td>
<td>“t” crossing format</td>
<td>Crossed / not crossed / crossed at a high point on the letter / crossed at a low point on the letter</td>
</tr>
</tbody>
</table>
Our business in Switzerland is great. We are grossing over one million dollars a year. We know this will double by the next decade.
Space between capital letters and small letters:

Jack and Jill went up the hill.

Space between capital letters:

J. P. Stevens

Space between word formations:

Jack_ and_ Jill_ went_ up_ the_ hill.
3. Size and proportion:
Height of overall writing:
Jack and Jill went to the hill.

Height of short to tall letters:
Jack and Jill went up the hill.

Evidence of diminishing strokes:
Jack and Jill went up the hill.

Evidence of increasing strokes:
Jack and Jill went up the hill.
8. Pen pressure:
   Light: 
   Jack and Jill went up the hill.

   Medium: 
   Jack and Jill went up the hill.

   Heavy: 
   Jack and Jill went up the hill.

9. Slant:
   Right slant to letters:
   Jack and Jill went up the hill.

   Left slant to letters:
   Jack and Jill went up the hill.
10. Baseline writing:
   Straight on line:
   _Jack and Jill went up the hill._

   Words leave baseline below it:
   _Jack and Jill went up the hill._

   Words slant up from baseline:
   _Jack and Jill went up the hill._

11. Fancy writing:
    Any unusual strokes?
    \[\text{MyT Don}^{\_}\]

12. Placement of diacritics:
    Are i’s dotted?
    Lightly? \[\checkmark\] Firmly? \[\checkmark\] Left of stem? \[\checkmark\] Right of stem? \[\checkmark\] Circular pattern? \[\checkmark\]
    Jabbed? \[\checkmark\] No dot? \[\checkmark\]

    Are t’s crossed?
    Lightly? \[\checkmark\] Heavy? \[\checkmark\] Left of stem? \[\checkmark\] Right of stem? \[\checkmark\] Concave? \[\checkmark\] Convex? \[\checkmark\]
    Uncrossed? \[\checkmark\] Short in proportion to stem? \[\checkmark\]
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Writing utensil pressure</td>
<td>High / medium / low</td>
</tr>
<tr>
<td>I</td>
<td>Misspelling</td>
<td>Present / not present</td>
</tr>
<tr>
<td>J</td>
<td>Punctuation</td>
<td>Proper / improper</td>
</tr>
<tr>
<td>K</td>
<td>Appearance of the bottom portion of lower case letters</td>
<td>Expanded / straight line</td>
</tr>
<tr>
<td>L</td>
<td>Appearance of letters at the end of words</td>
<td>Letter ends close to base of line / letter exhibits an exaggerated upstroke</td>
</tr>
<tr>
<td>M</td>
<td>Line quality</td>
<td>Do the letters flow or are they written with intent strokes?</td>
</tr>
<tr>
<td>N</td>
<td>Lifting pen</td>
<td>Does the author lift his/her pen to stop writing a word and start a new word?</td>
</tr>
<tr>
<td>O</td>
<td>Baseline habits</td>
<td>Does the author write on, above or below the line?</td>
</tr>
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</table>
4. Penlifts:
Removes pen entirely before starting new word:

Jack and Jill went up the hill.

Pen continues on paper close to next word:

Jack and Jill went up the hill.

5. Connecting strokes, ending, and beginning strokes:
Do they begin as flourished or embellished? Do they end flourished?

My

Do they begin as inflexible and straight? Do they end abruptly?

M

Cat