

Module 7

Structural and line quality dissimilarities

Overview

At this stage the examiner is of the opinion that a sample of writing is dissimilar to the comparison sample of writing. In order to focus upon the implications that this may have in terms of authorship the primary nature of the dissimilarity is investigated. This module describes the two major categories of dissimilarity that are observed in routine examinations.

Discussion

The relationship between handwriting analysis and exclusionary opinions can become problematic as we move down the scale of complexity (see Module 6). At the lower end of this scale we have not only spurious signatures and small amounts of writing but also larger samples of writing that are not considered to be skilled (that is writings with poor line quality or simply or variably constructed). If we look at the alternative propositions to explain an opinion of ‘dissimilarity’ then we are faced with a situation that it can, dependent on the samples being compared, be difficult to support a definitive exclusionary proposition. In an attempt to tease apart the propositions that can account for dissimilarity, and therefore address the proposition that the writer of a sample base did not write a questioned sample, a determination is made as to whether the primary dissimilarity is associated with either line quality or structural features. In some instances the dissimilarity will be a combination of both of these characteristics. Further detailed discussion of the interpretation of dissimilarities appear in the literature (McAlexander, 1997; Huber & Headrick, 1999).

For the dissimilarities to provide a reliable basis for an opinion indicating exclusion or different writers there needs to be a reasonable body of complex handwriting in terms of the length of line trace, the fluency of the writing and the specimen and questioned material should be close to ideal in terms of sampling. This will allow for a number of dissimilarities or a recurring dissimilarity to be identified confidently. If it is that an exclusionary opinion cannot be expressed this should not be seen to detract from the evidential power of handwriting examinations. The opinion that one sample of writing is dissimilar to another in a significant and illustratable way does provide the court with information that may be of use given other lines of evidence.

Structural dissimilarities

Structural dissimilarities can include such factors as dissimilar individual letter constructions, dissimilar relative feature size relationship variations and dissimilar writing slope or text formatting characteristics (Osborn, 1929; Brewester, 1932; Conway, 1959; Harrison, 1958; Hilton, 1982; Franks, Davis, Totty, Hardcastle & Grove, 1985; Ellen, 1989; Metz, Found, Dick & Rogers, 1994; Found, Dick & Rogers, 1994; McClary, 1997; Hubert & Headrick, 1999). It is important however, to recognize at this point that a change in slope, the addition of a flourish or two, or a dramatic change in the size of a letter construction does not necessarily constitute what the examiner considers to be the type of dissimilarity which may provide support for the proposition that a questioned entry was not written by a particular writer. However a repeated dissimilarity with respect to the direction or in the component strokes of a letter could provide strong support for the proposition that a questioned sample was not written by a particular writer.

There are a number of explanations that can be proposed to explain why it is that a structural dissimilarity has occurred. Examples are: deliberate disguise (Osborn, 1929; Brewester, 1932; Harris, 1953; Harrison, 1958; Conway, 1959; Alford, 1970; Webb, 1977; Michel, 1978; Hilton, 1982; Herkt, 1986; Konstantinidis, 1987; Franck, 1988; Ellen, 1989; Mohammed, 1993; Van Gemmert & van Galen, 1996; Tsui, 1997; Wendt, 2000); accidental or structural changes resulting from an interruption to the flow of the writing act (Found & Rogers, 1992); the sampling of the specimen writings not covering changes in writing habits; the sampling of the specimen writings not covering individuals who have more than one writing style; natural variations that do occur in peoples' writing structures and letter construction habits (Kapoor, Kapoor & Sharma, 1985).

Examples of Structural Dissimilarities

Figures 7.1 to 7.7 show examples of different classes of structural dissimilarity.

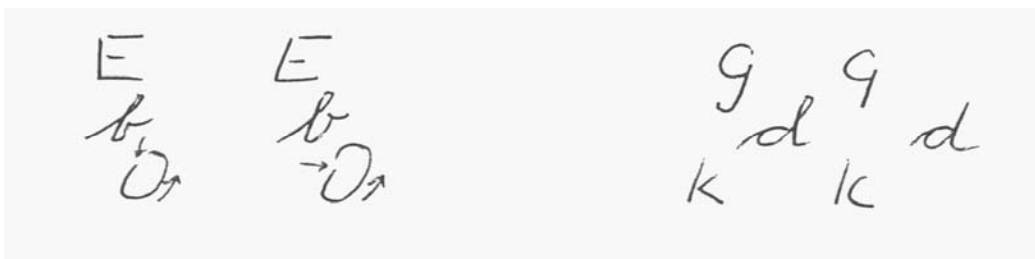


Figure 7.1 Structural dissimilarities with respect to individual letter constructions of marginal significance in terms of writer exclusion.

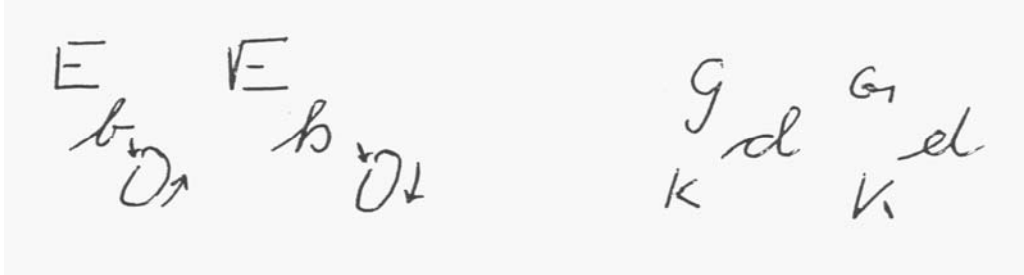


Figure 7.2 Structural dissimilarities with respect to individual letter constructions of significance in terms of writer exclusion.

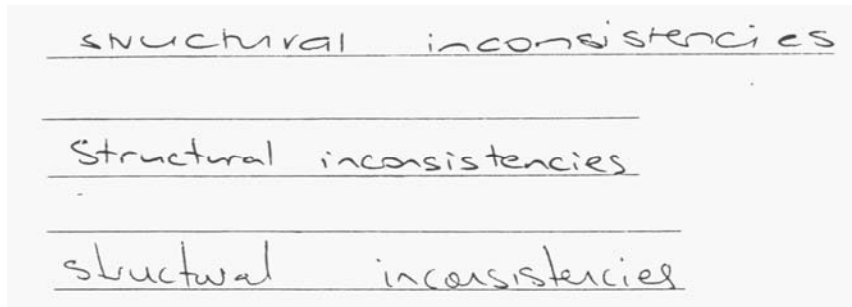


Figure 7.3 Structural dissimilarities with respect to size relationships. Note the height of the letter 't' compared to the surrounding letters for the three different writers.

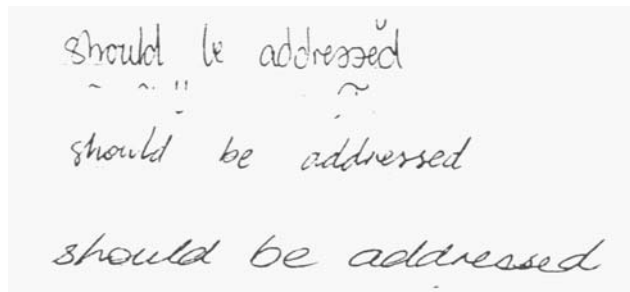


Figure 7.4 Structural dissimilarities with respect to writing slope.

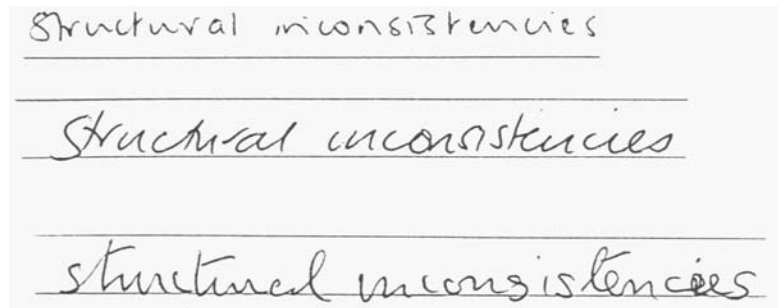


Figure 7.5 Dissimilarities between writers with respect to the alignment of the writing relative to the printed baseline.

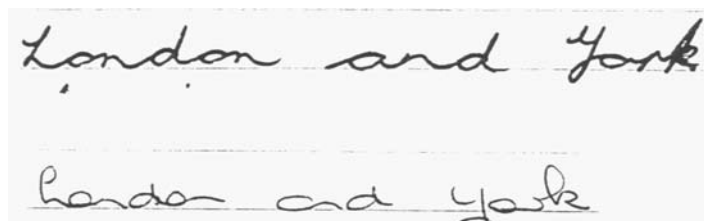


Figure 7.6 Structural Dissimilarities in terms of style habits. Note the construction of the letters 'o' and 'a'.

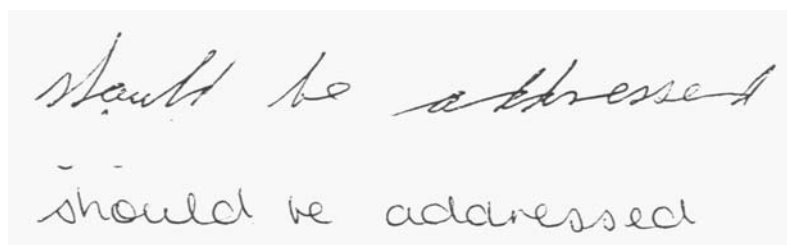


Figure 7.7 Structural dissimilarities in terms of writing angularity.

Line quality dissimilarities

Line quality dissimilarities may be observed in terms of writing pressure, fluency, writing speed and skill levels between the sample writings being compared (Osborn, 1929; Brewester, 1932; Harrison, 1958; Conway, 1959; Hilton, 1982; Moore, 1983; Hilton, 1987; Ellen, 1989; Leung, Y.S., H.T. & N.L., 1993; Van Gemmert & van Galen, 1996; Van Gemmert, van Galen, Hardy & Thomassen, 1996; Huber & Headrick, 1999). Dissimilarities of this type result primarily from a different level of motor control and therefore pen control.

The propositions that can be advanced to explain line quality dissimilarities can be generally divided into two groups:

1. Those line quality dissimilarities adjudged to be the result of the act of simulation (see Module 9). The difference in this instance is where one sample is written slowly, or dysfluently, but shares features in common with the comparison material that are unlikely to result from chance match. In the case of two writings with dissimilar line quality identified as the result of one being a simulation of the other, the likelihood of being able to provide support for either propositions (common writer or different writer) is limited (Osborn, 1929; Hilton, 1952; Harrison, 1958; Conway, 1959; Hilton, 1982; Ellen, 1989).

2. All other types of line quality dissimilarities. These may include, uneven but regular backing surface on which the writing is made, poor ball-point pen function and ball housing effects, the effect of illness or drugs and line quality disturbance caused by attempts to disguise (Osborn, 1929; Brewester, 1932; Hilton, 1957; Harrison, 1958; Conway, 1959; Mathyer, 1969; Hilton, 1969; Hilton, 1982; Vastrick, 1982; Behrendt, 1984; Beck, 1985; Herkt, 1986; Galbraith, 1986; Ellen, 1989; Leung, Fung, Y.S. & N.L., 1993; Van Gemmert, van Galen, Hardy & Thomassen, 1996; Huber & Headrick, 1999).

A range of circumstances can result in line quality dissimilarities. Examples are provided below.

Examples of Line Quality Dissimilarities

Figures 7.8 to 7.12 provide examples of line quality disturbances and/or dissimilarities.



Figure 7.8 Line quality disturbance caused by ball point pen gooping.

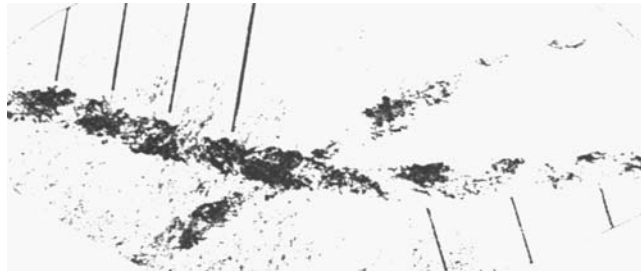


Figure 7.9 Line quality disturbance caused by ball point pen skipping.

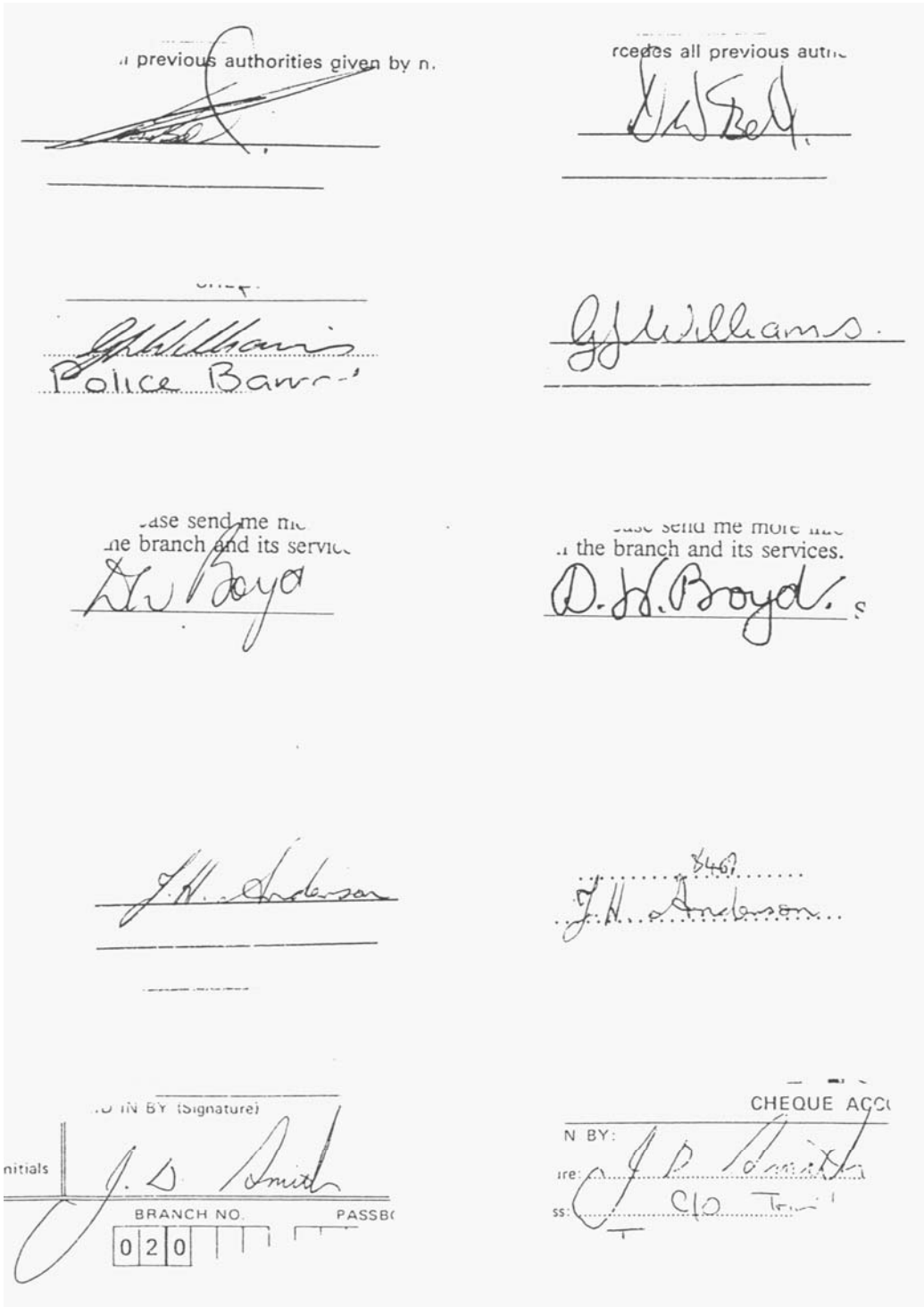


Figure 7.10 Line quality dissimilarities caused by disguise. The left-hand column provides the genuine signature of each of five subjects. The right hand column is an attempt by each subject to disguise his or her own signature.

*needs a decompression chamber. Colds
 tend to sour one's view of human nature
 at once keeping up age with a loud yell, killed
 thousands thousands of precious wild animals*

Figure 7.11 Line quality disturbance resulting from a stroke. The first sample shows the subjects handwriting prior to the stroke.



Figure 7.12 Line quality disturbances caused by a range of variables. 'a' is a genuine signature affected by alcohol; 'b' is a freehand copy; 'c' and 'd' are disguised

signatures; 'e' is a normal genuine signature; 'f' is a genuine signature written standing up with the paper held in the hand; 'g', 'h' and 'k' are genuine signatures written on rough backing surfaces; 'i' is a copy completed with the aid of an indented guideline; 'j' is a traced copy; 'l' is a genuine signature affected by exercise.

Conclusion

In some cases the significance of the observed dissimilarities may be nebulous, on other occasions it will be clear cut and, if occurring repeatedly, potentially very significant. If the significance of an observed dissimilarity is based on a purely qualitative judgment of general form, then it is prudent to err on the side of caution. When a dissimilarity is clearly regarded as a significant structural or line quality change then the adage that 'a significant unexplainable constant dissimilarity is indicative of another writer' should not be lightly dismissed (Osborn, 1929; Brewster, 1932; Harrison, 1958; Conway, 1959; Hilton, 1982; Ellen, 1989; McAlexander & Maguire, 1991; Huber & Headrick, 1999; Harris, 2002).