

Ordway Hilton,<sup>1</sup> M.A.

## Line Quality—Historic and Contemporary Views

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**REFERENCE:** Hilton, O., "Line Quality—Historic and Contemporary Views," *Journal of Forensic Sciences*, JFSCA, Vol. 32, No. 1, Jan. 1987, pp. 118-120.

**ABSTRACT:** The various elements of the writing movement that are recorded in a person's handwriting are important parts of all identifications, in some problems absolutely controlling. A. S. Osborn introduced the term, line quality, to embrace all factors relating to writing movement. A portion of the factors relates to the writing instrument used. Have modern writing instruments hidden most of these factors? The analysis of this problem finds that there is some need to modify Osborn's conception slightly to a contemporary definition. With such modification the term line quality is still valid.

**KEYWORDS:** questioned documents, handwriting, pens, forgery

Writing movement is a key factor in individualizing and identifying handwriting. It can be all controlling in resolving the question of forgery, particularly when there is a definite attempt at imitation. Trace forgeries can duplicate form accurately, but fail miserably in respect to movement. With the identification of a signature or the proof of genuineness, no opinion is complete without consideration of the writing movement involved, nor can it be ignored in identifying general handwriting.

The line quality of handwriting includes all of the elements of writing movement involved in its execution. It is made up of those very significant factors that help to individualize writing and are virtually independent of letter form. To describe line quality fully, all of the factors that are dependent on the movement of the writing instrument must be considered, and line quality is not entirely independent of the writing instrument itself. Dr. A. S. Osborn created the term sometime early in his lifelong study of questioned documents. The first edition of his *Questioned Documents* (1910) describes what is meant by this term [1].

He describes line quality by summarizing the various elements of handwriting relating to writing movement. There are actually two sections to this description, the factors of pure movement that can be derived from a study of the writing strokes and the influence of the writing instrument on the appearance of the visible trace left as it moves across the paper. In any writing there is evidence of the movement that can be broken down into: speed of writing, its continuity and uniformity, intensity of pen pressure, shading brought about by variation in pressure, freedom or hesitation, rhythm, and writing skill [2]. Osborn recognized that the pictorial record of these factors was influenced by the relationship of the pen point to the paper surface, its nib tracks and their angle to the written stroke.

These latter factors are directly related to the nib pen that was almost universally used in formal writing throughout his years of practice. Actually, in his early practice, it was the steel dip pen that was used. Only occasionally would quill pen writing come into question,

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<sup>1</sup>Examiner of questioned documents, Landrum, SC.

and the less flexible fountain pen was not widely used until after he prepared the second edition of *Questioned Documents* in 1929. The steel dip pen, of which most had significant flexibility, also revealed definite information in its nib track of how it was positioned in respect to the paper surface and the stroke direction.

Osborn frequently emphasizes the importance of line quality in detecting forgery, but it is also a factor in revealing the individuality of signatures and their genuineness, or for that matter, the identification of general handwriting. But, today, do we tend to neglect this element of writing identification? The term appears only infrequently in writings on signature identification. Is it still valid when today's writing instruments, ballpoint pens and soft tip pens, fail to disclose a number of factors that are part of Osborn's description of the term? Certainly it still has a valid use. But it may need redefining.

The writing movement that goes into a modern signature or any other present day handwriting still is made up of writing speed, writing pressure and its variation that produces some suggestion of shading, freedom, hesitation, and writing skill. The movement factors are as much a part of today's handwriting as they were at the turn of the century. It is simply necessary for examiners today to recognize these factors as they are revealed by modern writing instruments [3].

It must be recognized that different classes of writing instruments in use today reveal movement factors differently. Line quality may not appear the same when a fine line ball pen writing is compared with that of a broad point, soft tip pen. There have been instances of court testimony by experts that an authentic signature written with a broad tip pen was a forgery when it could only be compared to ball pen writing by the same writer. The pronounced difference in appearance was a strong factor in reaching this opinion. Today, some writers do not consistently use a single kind of writing instrument, and not all classes of pens record elements of writing movement in the same way or with the same clarity [4,5]. Change in the class of writing instrument can alter the appearance of the written stroke, that is, the visual reproduction of its line quality. But the visual reproduction of movement is what the examiner must use to judge line quality.

Thus, a problem can arise in the use of the term, line quality. Actually, interpretation of the line quality in a series of genuine, undisputed signatures may be different if they are not all written with the same type of pen. Those with a ballpoint pen may display a particular line quality, especially when the writing contains subtle differences in pen pressure and evidence of flying starts and finishes. Other signatures by the same writer written with a broader soft tip pen may not reveal these movement qualities simply because the pen tends to produce a more uniform stroke width and less evidence of the moving pen at the start and finish of words. This condition creates problems in interpreting line quality since the comparable movement factors of both sets of writings are recorded differently.

Furthermore, today, little can be told about how the pen was held. Modern pens do not have nibs to reveal the angle of the pen to the paper or writing stroke. In fact, because of the variety of pens with fine tip or small balls that write a fine line as opposed to heavier lines from larger balls and broader tips, a random collection of standards may, with some writers, provide the basis for several interpretations of line quality based on different groups of known signatures.

However, the fundamentals of writing movement are unchanged from the days of the nib pen. Only the visual track is different. If line quality is limited to the elements of movement needed to produce it, they are the same elements of speed, continuity, uniformity of writing, pen pressure and its variation, rhythm, freedom, stops, lifts and hesitations, and the overall writing skill as described by Osborn. Not all of these factors can be derived from every collection of writing or signatures. Some are hidden by the writing instrument used. But all should be sought out to evaluate the apparent line quality of the writing.

Since line quality is derived from the visual appearance of the written stroke, there will be instances when some groups of a writer's signatures must be described in different terms

from other groups of his signatures. If he is in the habit of using significantly different types of pens, this certainly can be the case. The concept of line quality, however, is still valid as long as it is recognized that it can have different values with different writing instruments. This might be the case as well if a series of receipt signatures are compared with formal signatures of the same person. On the other hand, when dealing with comparison of formal signatures all written with the same class of pens, it is proper to expect those in question to reveal a similar writing quality if all are the work of the same writer. Differences in line quality can be an accurate summation of the different writing movement in a forged signature compared to the authentic specimens.

Today, as was true with Osborn's definition, line quality includes all the elements of writing movement, but it must also include the influence of the writing instrument on these qualities. Osborn described this influence in the way the pen was held. Today, we must do it by including the influence of the class of pens that have been used. Unlike his situation when a very high percent of the writing was produced by a single type of writing instrument 80 or 90 years ago, the modern writer has several different classes of pens at his disposal. As long as we recognize this factor in defining and comparing line quality, it remains a valid term for summation of the elements of writing movement derived from the written stroke.

### References

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Address requests for reprints or additional information to  
 Ordway Hilton  
 P.O. Box 592  
 Landrum, SC 29356