

Concurrently Written Signatures- Pictorially Identical Signatures

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Abstract - *'Although these signatures are looking as of mine, but I didn't signed them', is a statement often denied. It may be a true or false statement but needs to be proved forensically. Handwriting is nothing but the brain writing of the person and as the brain cannot be duplicated so as the writing. Hence, two different brains produce two individual writings of the person concerned. In the same way, one brain generates an individual writing but it does not mean writing produced at each time may be exactly similar. It is not possible because brain is not a machine so it cannot produce the replica. There must be presence of certain natural variations in repeated writings, whether these are written just after or after long time. But, what will happen, if a person writes twice or thrice similar writing/signatures at the similar time by a multi instrument writing device? These signatures 'concurrently written signatures' may generate a complex problem for a forensic expert. Therefore, there is an urgent need for the immediate solution of this problem.*



Fig 1: Handwriting is Brainwriting

In simpler terms, handwriting is a very complicated series of acts which is controlled by neuro-muscular coordination and gained after a long continued practice. Hence, there is a direct role of nervous system and muscular system in formation of handwriting. A total of 27 bones and 40 muscles involve, if a person writes with a hand.

Key Words: *Brain writing, concurrently written signatures, identical signatures, multi instrument writing device.*

1.INTRODUCTION

Handwriting is not hand-writing; it is a brain-writing. Instead of calling it as handwriting it should be called as brain-writing or head-writing. Some of the master patterns are stored in our brain and our hand, foot, mouth, nose, ear etc. merely work as a servant of our brain. Since hand is only a tool to brain, which gives command to write; that is why hand writes. All the master patterns are stored in the Parietal part of the brain. A complicated action such as the manipulation of a pen into producing universally recognizable shapes, using a combination of the muscles of the arm, hand, and fingers controlled by the brain both consciously and unconsciously, is clearly likely to give rise to wide variations in methods and effects in handwriting.

Signatures are usually another form of cursive writing, but need to be considered separately. A few people use their name written in block capitals as their signatures, but normally cursive writing is used. Generally, signatures can be divided into two types- (a) those closely resemble with the normal cursive writing of the person and are not more than the name written in his or her normal writing and (b) where a distinctive mark is made, barely readable or completely illegible.

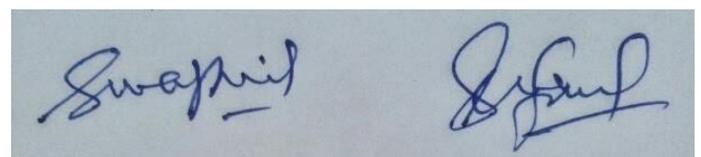


Fig 2: Types of Signatures

Principles in the Identification of Handwriting

- No two people write exactly alike.
- Individual characteristics that are unique to a particular writer exist in every person’s handwriting, distinguishing it from every other handwriting.
- The act of writing is a skill learned through repetition until it becomes a habit.
- A person’s normal form of writing is based on mental images of learned letter designs.
- People stylize their writing from the method they were taught.
- People adopt writing styles by copying those they like.
- Many writing habits are subconscious and therefore cannot be changed by the writer.
- A person’s handwriting changes over the course of his or her lifetime.

Natural Variations

Like writings, a signature is also subject to natural variations. No one can reproduce a signature exactly alike, as in case of printed signatures. Wide variations can be found in the output of a person’s writing. As with writings, some people are quite consistent and others extremely variable. Signatures can be made at various places; some signatures are comfortably made and therefore show definite natural variations. In others, where there is difficulty in writing, the results may be somewhat different.

Although, the natural variations found in the writings of one person can be contained within a defined range for each letter, occasionally there are odd examples where variations do not fall within the range. Accidental events may be caused due to jolting of the pen or difficulties of control near the bottom of the page. Example where no apparent reason is present results into a letter being written sufficiently different from all other. Such differences should not be taken as evidence of another writer. However, if the range within which all or nearly all of the examples of a particular sample fall differs from the range of variation of the same letter in another sample. This shows that the samples may be written by different writers. Sometimes these differences, called consistent

differences, are quite small. But their reproducibility within each sample and their consistency may be different between the samples and it is of greater significance than a larger difference of a single example that may be one-off and atypical. It is rare to find only one example of a consistent difference between two samples of writing. Normally, there will be far more difference than one in the writings of two people and none in the natural writings of one person.

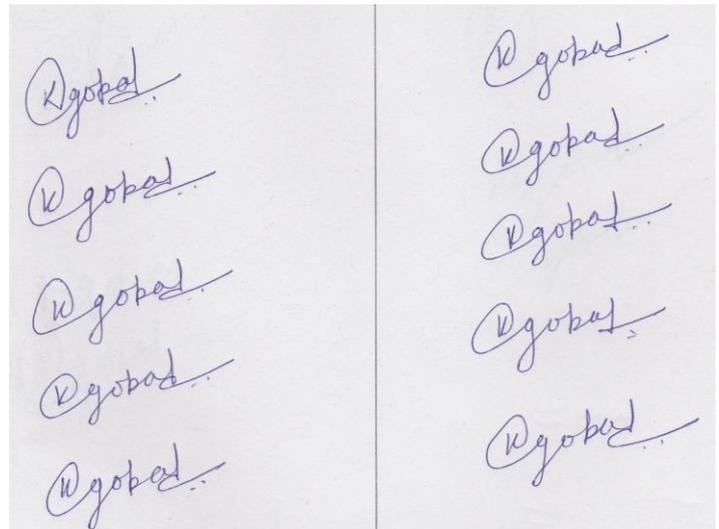


Fig 3: Natural Variations in Signatures

Some authors have written on the subject of distinguishing between writings/ signatures executed at one and the same time and those executed at different times. Diversity notwithstanding, like many other questioned document problems the question is usually one of authentication, fabrication or alteration. This requires a study in search of evidence that signatures, writings or entries, purportedly made on different and separate occasions were, in fact, written at one and the same time or made on a single occasion were, in fact, the products of separate writing instances.

There is also some diversity in the manner in which authors refer to the two writing circumstances. Some use the terms single entries and multientries, others use same time and different time. Some call them periodic entries, others prefer to say made separately or made sequentially. Even the more ambiguous terms like continuous and uninterrupted and their antonyms are occasionally employed. Some use synchronous and its antonym asynchronous in the sense of the Oxford dictionary that defines synchronous as: “happening at the same time,

coincident in time, contemporary in occurrence, related to different events of the same time or period,” but not simultaneous in the strictest sense as in a stroke by stroke reproduction. That would involve a mechanical or electronic device to create two or more writings from the same singular movement of the hand.

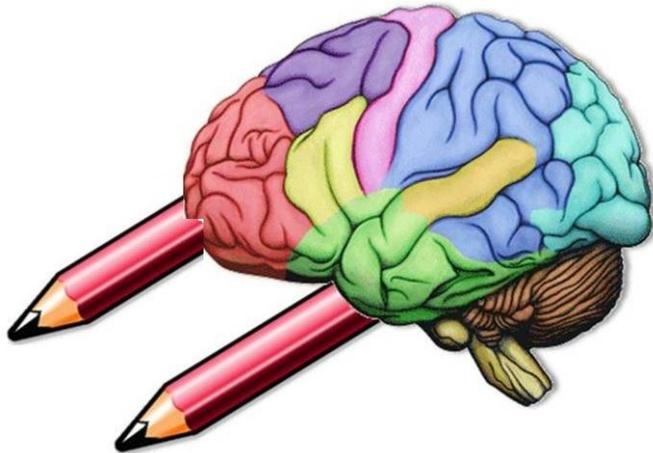


Fig 4: Two writing with same brain at similar time

Generally, one signature is written at a time but what will happen, if two or more signatures can be written at a same time? (Fig 5) The latest scenario involves the formation of signatures with a manual device. If such type of formation is possible by the person himself, it may generate some pictorially identical signatures as they may be having uneven pen pressure as in the case of normal signatures of the person concern.

The main scenario is the time gap while writing the signatures, if two signatures are being written simultaneously by a device having two instruments, then the signature written/formed may be pictorially identical. These signatures are called as ‘**Concurrently Written Signatures**’. These signatures can be present in property related cases e.g. a person sells his/her property and use two concurrent signatures onto two different sheets of the same document. These types of signatures are signed by the person concern in original and anyone can deny his/her signatures at later stage for accepting as his/her original.



Fig 5: Multi Instrument Writing Device for Concurrent Signatures

The scientific method of correlating the observations is to construct a hypothesis and test it by other observations, measurements and specially devised experiments. If these confirm the hypothesis, it stands; but if not, a new hypothesis must be sought and tested. Thus a corpus of knowledge can be build up and relied upon to provide a basis for extending the process further. Forensic science employs many analytical techniques to identify, measure and comparison.

Basic aim of writing these signatures involves occurrence of similarities among them. These circumstances, described below are considered to be conditions exercising control of the internal and external influences on the writing. Accordingly, these signatures required to be written:

- off course, at same time
- with multi instrument writing device
- at the same writing position (sitting or standing)
- with the same media (pen and paper)
- on the same surface (table or writing pad with plain surface)
- for the same purpose (two or more sheets of the same document)
- by the same person
- in the good mental and physical state

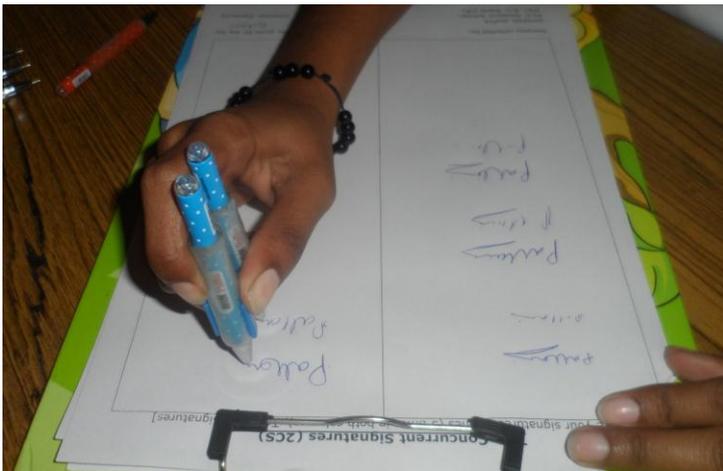


Fig 6: Two Concurrently Written Signatures by Multi Instrument Writing Device

Though, it may seem so with highly skilled writers, a person’s signatures are not exact duplicate each time the name is signed. There will be slight variations in each signature. A letter or character may even vary whether it is written at first of a word, the middle of the word, or the end of the word.

In some cases, concurrent signatures variations are very less and occur only in minor details in the signatures. In other instances, the formation of letters and words will be very similar and around a master pattern of the person concern. The reason behind this small amount of variations is already explained by the authors.

Forensic Examination for Concurrently Written Signatures

In a questioned document signatures are often treated separately from other writings when compared with known writings. An attempt is often made to simulate the signature of the closer of a check when the rest of the writing is written naturally. Initials are utilized in these instances simply as an abbreviated signature. This explanation for their wide use does not suggest that initials resemble any part of the signature of that individual in every case. In fact, the disparity may be surprising. In the majority of instances, however, a close study of one’s initials can disclose at least some basic correspondence with the first or capital letters of the individual’s signature.

To identify the person, who wrote a questioned document depends on the similarity between writing habits manifest in the writing and those found in specimens written by a particular person. While weighing the evidence, consideration must be given to writing variations. Since, variations are an integral part of natural handwriting; no two samples of writing prepared by one person are identical in every detail. The extent of variations differs among writers and, consequently, natural variations form an important element in the identification of handwriting.

Every writer has natural variations in his/her writing. Just as some writers show more control or higher skill than other writers, some writers have more or less variations in their writing depending on the skill level and circumstances under which the writing is executed. Because we are not machines, we cannot exactly replicate our writing each time we write.

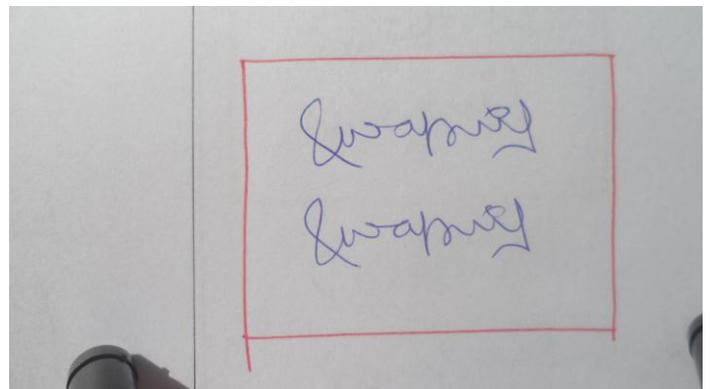


Fig 7: Similarities between Two Concurrent Signatures

The initial examination of handwriting must be done to determine whether the signatures are similar and, if this is so, consideration must then be given to the reasons for it. It is necessary to decide whether the variations are typical of one writer, for this inter-se examination should be carried out. This however is a simplification of the position. The natural variations found in the signatures of one person can be mistaken for evidence of simulation. It is difficult to quantify the minimum number of signatures needed to establish the range of variations, but between 10 and 20 made over a period preferably including the time of the signature in question is usually adequate.

It may also show a clear overall similarity to the genuine signatures, too close to have arisen by chance match. It can be reported as a simulation with no evidence that it was made by the writer of the genuine signature. Not every simulation has clear evidence of poor line quality, retouching, and other ‘classic’ features that demonstrate its deception. Others, especially those made when copying simple short signatures, may have a line quality not very different

from the signature and be formed without pen lifts, retouchings or tracing. But this scenario will be difficult in case of concurrently written signatures.

The careful and systematic use of evidence, which is common to the many disciplines of Forensic Science, is directed toward the identification of an unknown. The process involves three distinct steps or stages, tagged the Law of ACEs (Analysis, Comparison, Evaluations).

Analysis or Discriminating Element Determination the unknown item and the known items must, by analysis, examination or study, be reduced to a matter of their discriminating elements. These are the habits of behaviour or of performance (i.e. features or characteristics and in other disciplines, the properties) that serve to differentiate between products or people which may be directly observable, measurable or otherwise perceptible aspects of the item.

Comparison the discriminating elements of the unknown, observed or determined through analysis, examination or study, must be compared with those known, observed or recorded of the standard item(s).

Evaluation similarities or dissimilarities in discriminating elements will have a certain value for discrimination purposes, determined by their cause, independence or likelihood of occurrence. The weight or significance of the similarity or difference of each element must then be considered and the explanation(s) for them proposed.

Forensic examination of concurrently written signatures may involve some parameters. Concurrently written signatures tend to be more like each other in quality, size, shape etc. than samples done at different times. The followings points can be checked while comparing it with normal signatures:

- ◆ Irregularities (i.e. inconsistencies) in pen pressure and writing quality.
- ◆ Irregularities (i.e. inconsistencies) in inks, writing instruments.
- ◆ The presence or absence of indentations in subsequent pages.
- ◆ Inconsistencies in slant and alignments.

- ◆ Unusual inconsistency in margins, spacing and arrangement.

Presentation of Handwriting Evidence

While giving evidence on handwriting, it is best that the expert should describe his findings and the reasons for them at some length. So that the judge and jury can see for themselves the reason behind the conclusion. From this position, the cross-examination will not be as effective in reducing the impact of the testimony. The desired results can be achieved either directly from a consideration of the writings in question or preferably, by a short outline of the principles of the method employed followed by a demonstration of the application of those principles to the handwritings before the court. The general principles can be described verbally with appropriate clarifying questions from counsel if it appears to him that they are not fully understood, but the details of letter construction and proportions are best shown by photographic enlargements specially arranged to show the features of interest.

Briefly, the discipline must demonstrate at an acceptable level:

1. Reliability of the behaviour that will be the subject of study: i.e., writing.
2. Reliability of interpretation:
 - a. conspectus reliability- the agreement between examiners as to what constitutes evidence in a given sample, and how significant it is (inter-rater reliability).
 - b. inference reliability- the consistency of judgments across different samples from the same writer (test-retest reliability).
3. Discriminative reliability of the process- the consistency of judgments across samples from different writers, including simulations.
4. Validity of premises: habituation and heterogeneity of the population (i.e. the uniqueness of writing to the individual).
5. Validity of process: the level of correctness of assessments or analyses, across samples from different writers, or from the same writer.

6. Skill in analysis: the level of education and special training required vs. intuition.

The document examiner should be more than a technician; he must be a scientist, for the methods at his disposal. Each question with which he is confronted is an individual research problem, but, like all scientific investigations, each has as its ultimate goal and i.e. the discovery of the facts. To reach this goal the examiner must be thorough, accurate, and completely without any bias. His task is not to prove by some devious means certain preconceived ideas of those who consult him, but to establish the facts that tell of the document's preparation and subsequent history through a study of its identifying details and the collation of its elements with those of known specimens. The document examiner's work does not end with the discovery of the identifying details in a document. He must properly interpret them and through logical reasoning arrive at a correct conclusion regarding the problem at hand. After arriving at an opinion, he must be prepared to demonstrate the basis and reasons for his opinion in a manner that a layman, be the judge, juror or interested party, thoroughly understands. Thus, he becomes both a teacher and an advocate for the truth. The skilled examiner, by means of photographic enlargement, charts and sketches and careful explanation of the factors involved, should be able to make his findings apparent to all who are willing to judge with an open mind.

Conclusion

Science is possible only because some things seem to be impossible. Logical description of complex words contains within themselves the seeds of their own limitation. Limits of knowledge are indeed fascinating and their study thought provoking. Awareness that there are limits to one's theories even when they are right in itself is another form of knowledge. There is a path of discovery that unveils limits that are inevitable by products of the knowing process. A concept of impossibility seems to be a necessary pre-requisite for a scientific understanding of the world. Scientific research is a continuous, on-going and unending process. The study of limitations and glorious uncertainties of one theory or hypothesis often gives birth to a new theory, which, too will be self-limiting in character and may be substituted in part or completely replaced by another hypothesis in future. Limitations or failure of one theory should not, therefore, dishearten or discourage the scientists, for who knows, it may become a blueprint of tomorrow's grand

discovery. Therefore, authors try to overcome this problem of 'Concurrently Written Signatures' in a forensic way. If the rescue of such problem is done before the arrival and spreading of it in the proper manner, must be the best thing.

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