



Study of Variation in Repetitive Signature of Same Writer

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ABSTRACT

Comparison of signatures is based on the principle of variation in handwriting as no two signatures are precisely alike. However, due to presence of variation in all handwriting components such as style, slope, slant, alignment, spacing and pen lift, it serves to personalize and identify writing. Therefore, it is essential to resolve these primary elements and habits of writing with an accurate range of variation. In the present study, 3 sample of signature were collected from the 70 persons of Bilaspur district, Chhattisgarh with an attempt to study the variation in repetitive signature of same writer. As a result in a typical state of mind, most of the character and letters were not changed and just a few letters and characters were changed. Thus, it provides evidence of the identity.

Key Words: Handwriting, Signature, Variation, Writing, Identification

INTRODUCTION

Signature, a handwritten depiction of someone's name, gives confirmation of the attribution of the document and the purpose with regard to that document. It is the most common writing act and largely habitual (1). Signature is often used in legal and financial transactions because unique characteristics in an individual's handwriting distinguish it from every other handwriting (2). No two signature specimens are absolutely identical. If a writer signs multiple signatures at same time they have also some variation (1). No one ever signs indistinguishably the same starting with one time then onto the next regardless of the possibility that an author signs numerous marks at same time they have likewise some variety (3). No repeated act is always accomplished with identical the same results regardless of whether it is produced by a machine or human effort. Huber and Headrick (1999) defined variation as imprecision with which the habits of the writer are executed on repeated occasions (4). Variation in handwriting is the primary principle of handwriting examination. Handwriting of an individual is made up of a complexity of habitual patterns which are constant in characteristics variety of variation of the model patterns (5). Variations are expected in angularity, slope, speed, pressure, letter and word spacing, relative dimensions of letters, connections, pen move-

ment, writing skill, and finger dexterity (6). The range of natural variation, rather than the characteristics themselves, will change gradually with time. However, due to presence of variation in all handwriting components such as style, slope, slant, alignment, spacing and pen lift, it serves to personalize and identify writing. Therefore, it is essential to resolve these primary elements and habits of writing with an accurate range of variation. Handwritten evidence is being regarded as a very essential and effective part of information for forensic investigation purposes.

METHODOLOGY

In present study 3 sample of signature were collected from the 70 persons of Bilaspur district for the determination of natural variation in signature of same writer on the basis of handwriting characteristics. Questionnaire cum schedule was being prepared and signature sample was collected in sitting position. The samples were observed for various parameters to measure the physical characters of signature sample such as size, angles, spacing, alignment and other characteristics to differentiate the variation in signature sample. The signatures were analyzed through magnifying lens, enlarger, scale and protector.

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RESULT

Table 1: Characteristic Features Writer 1 Signature

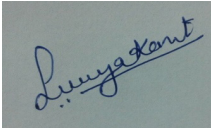
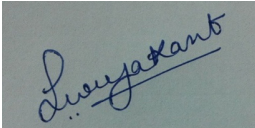
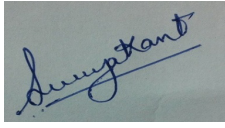
Character	Sample 1	Sample 2	Sample 3
			
Hand movement	Finger+Wrist+Forearm	Finger+Wrist+Forearm	Finger+Wrist+Forearm
Size	3.9	4.1	3.9
Spacing	Absent	Absent	Absent
Pen lift	4	4	4
Pen pause	4	4	4
Change in angle of writing	Acute	Acute	Acute
Abbreviation	Absent	Absent	Absent
Meaningless marks	Present	Present	Present
Alignment	Uphill	Uphill	Uphill
Greater deliberation at start of a word	Present	Present	Present
Unnecessary retouching of stroke or letter	Absent	Absent	Absent
Upstroke	Present	Present	Present
Downstroke	Present	Present	Present
Blunt beginning and ending strokes	Absent	Absent	Absent
Difference of speed within signature	Normal	Normal	Normal

Table 2: Characteristic Features Writer 2 Signature

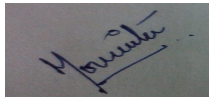
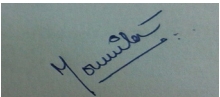
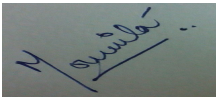
Character	Sample 1	Sample 2	Sample 3
			
Hand movement	Finger+Wrist+Forearm	Finger+Wrist+Forearm	Finger+Wrist+Forearm
Size	1.8	2.4	2.4
Spacing	Present	Present	Present
Pen lift	7	7	7
Pen pause	7	7	7
Change in angle of writing	Acute	Acute	Acute
Abbreviation	Absent	Absent	Absent
Meaningless marks	Present	Present	Present
Alignment	Uphill	Uphill	Uphill
Greater deliberation at start of a word	Present	Present	Present
Unnecessary retouching of stroke or letter	Absent	Absent	Absent
Upstroke	Present	Present	Present
Downstroke	Present	Present	Present
Blunt beginning and ending strokes	Present	Present	Present
Difference of speed within signature	Normal	Normal	Normal

Figure 1.1 represents the percentage of handwriting characters showing variation in which the highest percentage of variation was seen in size of signature (43%) followed by greater deliberation at start of word (20%), blunt beginning and ending strokes (15%), upstrokes (9%) and retouching (7%). On the other hand least variation was observed in characteristics such as meaningless marks (3%), downstrokes (2%) and speed (1%).

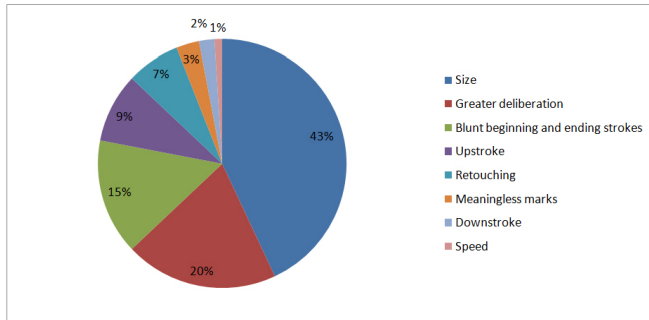


Figure 1.1: Percentage of Handwriting Characters Showing Variation

DISCUSSION

Variation is an attribute of writing that has been observed. It is a reflection of the degree of consistency between or within standards or rather between samples of the discriminating elements present in the standards. The present study reveals that there is little variation in repetitive signature of the same writer. The variations are generally present in the signature characteristics such as size and greater deliberation whereas most of the characteristics remain unchanged. Thus, variations in writing cannot be completely controlled. There is a wide variation in the circumstances under which legitimate signatures are written and almost equal variation in the results.

CONCLUSION

The outcomes in the present study from table alongside the figures, it has been found that in typical state of mind, nerve and muscle the greater part of the character and letters were not changed, just a couple letters and characters were changed mostly such as size of signature, variation in greater deliberation, blunt beginning and ending strokes, upstrokes and in retouching, thus they were not changed totally from begin to the finish of the letter/character. The remaining handwriting characters such as hand movement, spacing, pen pause, pen lift, angle, alignment, abbreviation does not show variation in any sample. The changed parts of the letter/characters were in rhythmic nature. By the help of following data it is now possible to answer questions related to individualization of signature and in determination of intentional and unintentional variation in sitting position during writing of questioned signature.

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