



### J27 A Study of the Impact of a Primary Learned Handwriting Language on a Secondary Language

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**Learning Overview:** After attending this presentation, attendees will be able to understand how a primarily learned handwriting language affects the handwriting in the secondary learned language. The significance of the analysis is further represented with the help of various statistical tools.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by serving as a key aspect in the field of handwriting examination. This is the prevalent aspect in the field because people around the globe are being attracted to learning new languages, but their native language always has some impact on the later learned language.

Identification of handwriting found on a disputed document by comparison with the known handwriting samples of the suspect still comprise the problem that is most commonly referred to a forensic document examiner. One of the important scientifically established principles that govern such analysis and identification is the “Principle of Comparison,” which explicitly states that, for obtaining correct results, like has to be compared with like; meaning, thereby, that the expert has to analyze and rely upon similar letters and combinations between the questioned and the standard handwriting samples and, consequently, the problems in which similar handwriting samples in the same script have not been provided for comparison usually fall outside the scope of forensic document examination. However, in this field, like any other human activity, perfect and ideal conditions are hard to achieve.

Handwriting is an acquired motor skill and combined output comprised of visual perception and activity, comprehension of form, activity of the central nervous system, the anatomy and physiology of bones, muscles of the hand and arm, and, most commonly, the script used by a person in common and its effect on his secondary language. Linguistic diversity among different world populations is a well-established and recognized fact. Throughout the world, thousands of languages exist that are written in hundreds of different scripts.

As we know, India is a polyglot country as there are a total 122 languages and 234 mother tongues. Only 22 languages have gained official status by the Constitution of India. From prior studies, it was demonstrated that the mother tongue has a great impact on the language that we learn later in life. In a similar way, the language that one uses primarily for writing purposes affects the secondary language. Rendering an expert opinion has become highly difficult and problematic in cases in which a questioned document in one language and a standard document in another language are available for comparison. Handwriting examination in these types of cases is of foremost importance because these features may lead to the nationality and locality of the writer of the handwriting in question and may help the document examiner compare the handwriting samples, irrespective of the script.

This study is basically focused on the similarities found in the class as well as individual characteristics of the Mother tongue and secondary learned language. One hundred individuals were selected for the study and eight handwriting samples for both languages (Punjabi [the Mother tongue of the Punjab region] and English) were collected with the consent of the subjects. Results obtained were statistically analyzed, and it was revealed that an earlier learned language affected the secondary language significantly. In 68% of the cases, there is a similarity between the individual and class characteristics of the two languages. Apart from this, the given study also reveals that script independent comparison of handwriting is possible when basic elements of strokes (for instance, grapheme) are considered.

#### Language, Script, Primary Language