



J28 Comparing Latin With Cyrillic Script in Handwriting Identification

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Learning Overview: After attending this presentation, attendees will better understand handwriting analysis of documents written in different alphabets.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by introducing a unique study in which documents written in different alphabets were analyzed as well as by teaching attendees about the methods for handwriting and signature examination of documents written in different alphabets.

Identifying handwriting has always represented a challenge as there is no such instrument that could identify the writer in a clear and unambiguous way. In fact, identification has to be made by a handwriting expert, while instruments are used only as tools in his or her work. Even though forensic examination of handwriting has an established and worldwide accepted methodology; its application may differ depending on the script that is examined. The goal of this presentation is to examine the possibilities of handwriting analysis of documents written in different alphabets (Latin vs. the Cyrillic alphabet, and vice versa).

The professional standards used for evaluating handwriting and signatures in the Latin alphabet can also be applied to those in the Cyrillic alphabet. The most important element is the movement of a writing instrument on a writing surface, leaving a trace on the paper that has an important role in identifying the writer.

When an expert witness analyzes text in the Cyrillic alphabet, such as Russian, Serbian, Bulgarian, Ukrainian, or other languages in which some letters are similar to the letters of the Latin alphabet, while others are completely different, he or she has to take into consideration all possible variations of the alphabet. Also, the fact that in the Cyrillic alphabet, it is more difficult to evaluate printed than cursive letters, so the expert has to have access to writing samples from that particular country or region.

The Croatian Latin alphabet has 30 letters, and 27 of them contain one character only. The Cyrillic alphabet has 30 to 40 letters, depending on the language using it. If the lists of letters of both alphabets are compared, one can notice that there are also letters whose form is the same, both in the Latin and Cyrillic alphabet, but they are pronounced in different ways. However, the fact that there are some letters that are the same but have a different meaning makes the comparison of two alphabets easier.

In order to answer research questions, testing and an analysis have been conducted of the handwriting of 12 volunteers from the Vukovar area (a locale in Croatia near the Serbian border) who use both alphabets on a daily basis. In order to collect handwriting samples, every person was asked to copy the same text both in the Latin and the Cyrillic alphabet. Every sample in the group written in the Latin alphabet matched the sample in the Cyrillic alphabet that had been written on the same day with the same instrument, consisting of exactly the same text.

In the first phase of the research, a preliminary analysis was performed to check whether the collected handwriting samples meet handwriting analysis professional standards regarding their quality and quantity as is the standard practice under International Organization for Standardization (ISO) 17025. Next, a detailed examination of general and individual handwriting features was conducted on all handwriting samples written in the Latin and the Cyrillic alphabet for each person individually.

The above-mentioned features of the Latin and the Cyrillic alphabet handwriting samples were examined in terms of their degree of similarity as well as dissimilarity using the comparative method. A stereomicroscope and video spectral comparator were used to compare handwriting samples as well as for the capture of images and for measurements of the size of letters and handwriting in general. Each feature's degree of similarity and dissimilarity was rated by two experts independently. The obtained results have shown that it is possible to evaluate samples of handwritten text written in different alphabets. However, when interpreting the results, one should take into consideration all the limitations suggested by handwriting and signature analysis professional standards, (e.g., photocopies, quality and quantity of materials, similarities in handwritings of various writers, diversity of the content, etc.).

Finally, it should be emphasized that the present research is only a case study. In order to draw universal conclusions, one would have to conduct an experiment on a large group of individuals and real case subjects.

Handwriting Examination, Latin Script, Cyrillic Script