Editorial
Volume 7:2, 2022

Journal of Forensic Medicine

ISSN: 2472-1026 Open Access

Editorial Note on Fingerprint Matching using Forensic Evidence

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Editorial

The branch of forensic expertise relating to the conclusion of the identification of the source from the analysis of all friction ridge skin, particularly the fingers, palms, toes, soles, and their marks is known as forensic evidence of fingerprint. However, for the sake of clarity, the material focuses mostly on fingerprints and finger marks. The tremendous variety of the fingerprints stems from two sources: first, embryological understanding of the formation of the papillary ridges, and second, statistical studies of dactyloscopy. In forensic science, this diversity is primarily exploited in four processes: identification verification, forensic intelligence, forensic investigation, and forensic evaluation. Automatic Fingerprint Identification Systems (AFIS) are used in the first three processes (AFIS). The fourth process, forensic evaluation, is a procedure-based, training-based, and experience-based process. The technique and practise differ greatly between countries, particularly in terms of the forensic identification threshold. Most European and South American countries choose a quantitative method based on a numerical norm, but the United States, the United Kingdom, and most Scandinavian countries prefer a qualitative approach based on the dactyloscopist's expertise and understanding. In both techniques, the conclusion is made based on a deterministic expert opinion: exclusion, inconclusiveness, or identification. Because current practise is not error-free and is based in part on the dactyloscopists' subjective probabilities, efforts are being made to develop a new approach based on a logical inference model and statistical probabilities to aid dactyloscopists in producing a logical, testable, and quantitative evaluation of the fingerprint evidence.

The investigation of all the friction ridge skin, namely the fingers, palms, toes, soles, and their marks, is the field of forensic expertise connected to the inference of the identification of source from the analysis of all the friction ridge skin, namely the fingers, palms, toes, soles, and their marks. However, for the purpose of simplicity, the material focuses mostly on fingerprints and finger marks. The tremendous variety of fingerprints stems from two sources: first, embryological understanding of the formation of the papillary ridges, and second, statistical research on dactyloscopy. Within forensic science, this heterogeneity is primarily exploited in four processes: identification verification, forensic intelligence, forensic investigation, and forensic evaluation. The first three steps rely on the usage of Automatic Fingerprint Identification Systems (AFIS) (AFIS). The fourth process, forensic evaluation, is a procedure-based, training-based, and experience-based process. The technique and practise differ greatly between countries, particularly in terms of the forensic identification threshold.

Most European and South American countries choose a quantitative method based on a numerical norm, but the United States, the United Kingdom, and most Scandinavian countries prefer a qualitative approach based on the dactyloscopist's expertise and understanding. In both techniques, the conclusion is made based on a deterministic expert opinion: exclusion, inconclusiveness, or identification. Because current practise is not error-free and is based in part on dactyloscopists' subjective probabilities, efforts are being made to develop a new approach based on a logical inference model and statistical probabilities to assist dactyloscopists in producing a logical, testable, and quantitative evaluation of the fingerprint evidence [1-5].

Conflict of Interest

None.

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How to cite this article: Srinivasan, Samyukta. "Ballistic Simulation used in a Suicide Case." J Forensic Med 7 (2022): 164.

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Received 12 March, 2022, Manuscript No. JFM-22-58798; **Editor assigned:** 14 March, 2022, PreQC No. P-58798; **Reviewed:** 19 March, 2022, QC No. Q-58798; **Revised:** 24 March, 2022, Manuscript No. R-58798; **Published:** 29 March, 2022, DOI: 10.37421/jfm.2022.7.164