

Fingerprinting As an Effective Forensic Tool in Solving Murders

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Abstract

Fingerprinting is used for identification purposes or to solve crimes. Fingerprinting was first used by Sherlock Holmes in the early 1900's. After World War II, fingerprinting was used as important evidence to solve crimes. Early on, it was found that fingerprints were unique to individuals and no two persons had the same prints. The renowned criminalist Dr. Henry Lee used fingerprinting in the O.J. Simpson case as well as to determine the identity of the DC sniper.

Keywords: fingerprinting, forensics, murder

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Introduction

Fingerprinting is a process which is used to forensically identify individuals. This process was first used in the early twentieth century. Some say Sherlock Holmes was the first to effectively use fingerprinting to correctly identify a murderer (Wilson, 2014). Forensic scientist Dr. Henry Lee (2010) used definitive fingerprints to aid the Washington D.C. police in capturing the DC sniper.

The purpose of this experiment is to practice taking fingerprints and trying to determine if an individual's fingerprint can be matched to those taken from suspects. It is hypothesized that fingerprint similarities between fingerprints found at a crime scene and those of a potential perpetrator can be determined by the number of loops, arches and whorls that are particular to a fingerprint.

Methods and Materials

Five suspects were selected randomly to test for fingerprints. A control fingerprint from one of the subjects was randomly selected acting as a fingerprint found at a crime scene. An ink pad and what is called a "10 Card" was used to take each subject's fingerprint. The 10 card is a hard stock paper that allows for fingers from both hands to be printed.

Individual fingers were pressed on an ink pad then transferred to the 10 card. A 10X magnifying glass was initially used to compare fingerprints of all subjects to the crime scene control. A scanner was then used to scan the fingerprints into a database. The database was

created to simulate APHIS which is the nationally used fingerprint database used by all law enforcement agencies.

Results

For all fingerprints, data were collected to note the number of whorls, ridges, loops and arches from the 10 card prints of each subject and compare those with the fingerprint found at a mock crime scene. The following is an example of a fingerprinting 10 Card.

Figure 1

Example of a Fingerprint 10 Card.



Five randomly selected subjects had all 10 digits fingerprinted. The number of loops, whorls and arches were counted for each subject.

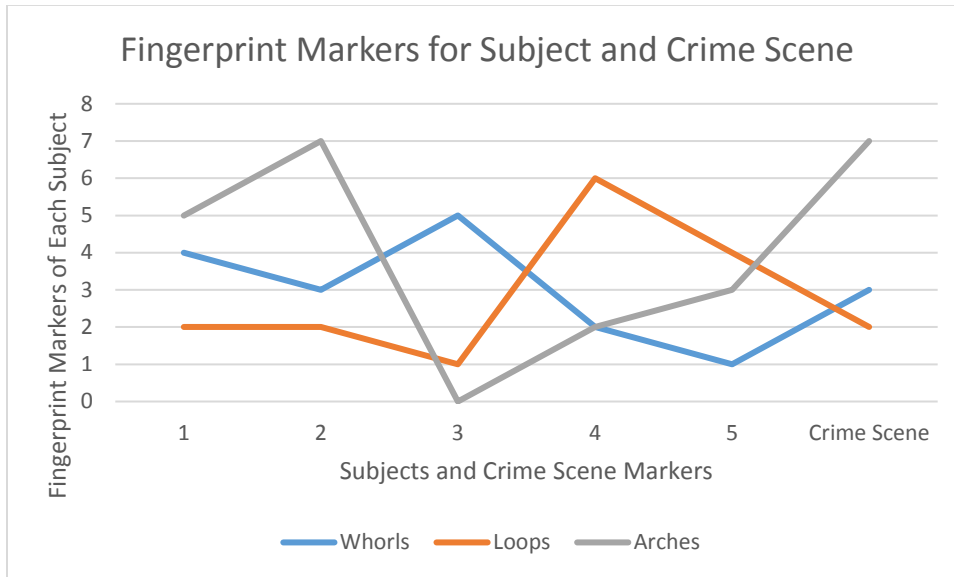
Table 1

Fingerprint Markers for Each Subject Tested

Fingerprint Markers of Subjects						
Subject	1	2	3	4	5	Crime Scene
Whorls	4	3	5	2	1	3
Loops	2	2	1	6	4	2
Arches	5	7	0	2	3	7

Figure 2

Line Graph of Fingerprint Markers from each Subject and Crime Scene.



Discussion

After all subject's fingerprints were compared to those found at the crime scene, it was found that the fingerprints taken from Subject # 2 were the same as those found at the Crime Scene. It was hypothesized that the perpetrator's fingerprints could be determined by comparing those found at the Crime Scene. The hypothesis was supported by the fingerprint evidence.

There may have been some smudging of fingerprints from subject number 2 which may have caused insufficient data for a true comparison.

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