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Forensic science is an essential study in criminal justice and employs physical, natural, and social sciences testing biological and material evidence to develop facts concerning a case. Crime scene investigation requires expertise and experience. Investigations on a crime scene involve the application of logic. Importantly, forensic science also employs the use of information and technology and is considered the best channel to develop reliable, precise, and accurate details about a crime in contrast to testimonies and eyewitnesses. However, there are controversial legal, ethical, and social issues that affect forensic science.

Legal Issues

Forensic science functions in the context of the legal framework. Its purpose is to guide the criminal investigators to present the court with accurate information concerning what transpired at a crime scene. However, forensic science is faced with various legal issues that hinder the implementation of the generated evidence. One of them is search and seizure. A court ruling might dismiss the forensic evidence if the due processes were not followed during the evidence collection stage (Dolf, 2013). For instance, if the investigating team uses unlawful searches on the victim and suspect's body, the evidence is dismissed regardless of its accuracy levels. Additionally, there exist regulations on the correct procedure to collect the evidence samples (Oliva & Beety, 2017). Also, due process should be followed while dealing with the cases that require the examination of DNA samples, blood tests, and tattoo scanning. If a court proceeding involves evidence from the sources mentioned above, the investigators need to secure a court order which is a lengthy process. For example, in *Frye vs. the United States*, the defendant presented an expert system's evidence. The test examined the systolic blood pressure to argue that the nervous system's impulses influence the pressure. The court denied this evidence on the basis that due process was not followed in the examination procedures. Additionally, the court presented that the evidence collection procedure did not meet the scientific principles.

Secondly, the chain of custody is another legal issue faced in the field of forensic science. From the legal perspective, it is crucial to demonstrate continuity when obtaining samples' control when tested. The conclusive evidence has to show an unbroken chain from seizure to the analysis time in simple terms. If there is insufficient proof to show that the tested sample matches the seized one, the provided evidence is considered irrelevant.

DNA Testing in Forensic Science

The existence of DNA analysis has revolutionized the culture of forensic science for good. Everyone has unique DNA; this makes it easier for investigators to determine the actual perpetrator. Before the emergence of the DNA analysis, the investigators used to rely on eyewitnesses' inaccurate testimonies. Notably, eyewitnesses' misidentification is one of the most frequent reasons for wrong convictions (Kaplan & Puracal, 2018).

Wrongful Conviction. The forbidden conviction aspect occurs when the investigation is conducted inaccurately, negatively affecting the criminal justice system. Most high-profile cases end up in wrongful convictions, which portrays criminal justice processes' failure. Additionally, wrongful conviction dismantles justice systems' role to minimize the number of crimes in society as innocent people are imprisoned. Simultaneously, criminals walk free and probably continue committing other crimes (Zakirova, 2018).

Strengths of Forensic Technology. The use of biometrics combined with forensics has allowed identifying criminals' fingerprints at crime scenes and objects within the vicinity. Also, most road accidents are caused by reckless driving attributed to alcohol consumption. With forensic analysis, one can determine the vehicle condition and its speed and alcohol content in the body fluids. This technology can, therefore, help pinpoint the leading cause of an accident.

Weaknesses of Forensic Technology. The DNA data collected from crime scenes and the convicted criminals are preserved in the Combined DNA Index System. Forensic scientists, other individuals, and police allowed to access the system may see DNA information that may be sensitive, which results in the breaching of privacy rights (Bowers, 2014). Alternatively, confidential information may be leaked in case the system gets compromised. Besides, it is expensive and time-consuming. The results of an analysis may take a lot of time. Without that critical information, criminals often walk free due to the lack of evidence (Bowers, 2014).

Application of Forensic Technology. Forensic technology is being widely used. Notable examples are forensic pathology, forensic anthropology, and crime scene investigations (Bird, Agg, Barnett, & Smith, 2007).

Forensic pathology is a field concerned with determining the course of the death of a victim. James Marsh first tested the technology in 1832. Summoned by the prosecution, he gave his opinion as a chemist in the murder trial where the defendant John Bodle had been accused of killing his grandfather using coffee laced with arsenic. The first successful prosecution led to the continued application. Currently, pathologists also perform autopsies to verify why and how a victim passed on.

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Forensic anthropology is applicable in situations where the decomposition of a human has been severe. Anthropologists' role is to study the human skeleton to determine the identity of the individual and unearth crime evidence. In its first application, forensic anthropology was used on John Toms' trial in 1784 in Lancaster (Verheggen et al., 2017). This field has been used widely in the modern world in securing fingerprints, hair, and fiber at the crime scene to be later used in court as evidence.

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Conclusion

Forensic technology is a broad field that cuts across microchemistry, anthropology, and criminalistics, to mention a few. The legal issues include search and seizure that advocates for a lawful procedure when collecting the forensic evidence and an adequately conducted collection and analysis of samples. The ethical problems are mostly related to the ethical conduct of forensic professionals. Notably, DNA testing is the central discipline in the field of forensic science. DNA facilitates the criminal justice system's efforts to determine the actual perpetrators.