

DNA Evidence And Its Effect On The Criminal System

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Introduction

Crime scenes bid the DNA traces, and the recovery of these traces have of decisive significance for reenacting and solving crimes, and this affords the criminal justice system with an impartial indication (Mapes, Kloosterman, & Poot, 2015). There are various techniques used for this purpose, and all these techniques are well-established and scientifically validated (Lubaale, 2015). Thus, DNA databases are often mentioned as competent crime-fighting contrivance as these can also support in the proclamation of unfairly imprisoned persons (Mapes et al., 2015). There are certain characteristics of DNA that make it possible to be used in forensic genetics. Individuals have DNA, which is the collection of their chromosomes that show both visible and invisible characteristics. Forensic genetics use these characteristics on the rule that DNA is the same in all of the cells in the bulk of an individual. It is noteworthy that not all the DNA is helpful in the assessment for the crimes, as it has a nonfunctioning part that is different in all individuals, forensics genetics use this part for the assessment.

Despite the competence of the source, there are many cases also in which this evidence has arisen in the form of disputes with references to the decisions of the courts, leading to many questions about its impending effect on the sanction of certain crimes (Lawless, 2013). Although DNA is a golden guide in many crimes regarding public opinion and from the perspective of the judges, there are many cases in which it loses its validity, credibility, and effectiveness in judgment, and whether a deliberate or unintentional human error has responsibility and they have a right to do so.

Piloting And Conducting DNA Samples

The use of DNA as evidence in the crime was started in 1986 when an English inventor of this technology used it in a rape-murder case (Bishops, 1995). The use of this evidence in the courts was permitted in 1988 (Bishops, 1995). The use of these techniques is rapidly increasing, and it is evident from the fact that around 130000 to 150000 DNA identification is being done every year in America (Bishops, 1995). In some circumstances, there is the usage of a short tandem repeat (STR) profile of the particular person that ties to that of a sample occupied at the crime scene and does not openly answer queries of the fault or blamelessness of that individual (Lubaale, 2015). The efficacious practice of DNA in crimes depends on the assured aspects, comprised of these aspects is the sample size and the purity of the sample taken for the investigation (Lubaale, 2015). The validity of the DNA

sample varies over time and depends upon the sample collected. If the DNA is collected in time and is properly saved, its life increases and it can be used for a longer period (Lubaale, 2015).

The sources of DNA collection from the body of the person are the blood of the person, the sperm and semen cells, tissues as well as the organs, the bones of the person and his teeth, and any other body secretion or the epithelial cells present on the body of the person or his clothes (Lubaale, 2015). The one widely used technique by scientists for DNA profiling aimed for use in the investigation is the STR, and it uses the polymerase chain reaction for its functioning (Lubaale, 2015). The PCR, with the ability to produce millions of copies, is then used in the DNA analysis of criminals (Lubaale, 2015). The copies that the PCR products are then subjected to electrophoresis, with the output of an electropherogram that is a computer-spawned graph (Lubaale, 2015).

DNA traces from the crime scene got transferred to the police forensic department and referred to the forensic laboratory after consent was taken from the public prosecutor (Mapes, Kloosterman, & Poot, 2015). When they reach the lab, they get profiled under strict protocol (Mapes et al., 2015). There are two types of criminal cases, and the processing of the DNA varies and depends on the types that cases under exploration (Mapes et al., 2015). These are the SC cases and HCV cases (Mapes et al., 2015). Their handling not only requires different specialized SC officers, but these are also processed differently concerning reaching the labs (Mapes et al., 2015).

The Technique Of Analyzing And Interpreting DNA

UK Forensic Science Service (FSS) used the first technique, the LT-DNA technique, for processing the DNA samples used for the investigation of the crime (Lawless, 2013). There were many incremental adoptions of this technique by scientists for its effective usage. It used the probabilistic Bayesian system as its running mechanism, and this method was successfully used before the collapse of a high-profile case in 2007, due to which there arose doubts about its reliability.

“My study reveals how the technological boundaries that surround LT-DNA showed a high level of multivalency. In the debate discussed here, a series of distinctions were drawn: basic distinctions between ‘valid’ science versus potential ‘pathological science’ and ‘new’ versus ‘the same technology,’ as well as some more subtle distinctions (LT-DNA as a ‘tool’ vs. LT-DNA as a set of ‘conditions’)”. (Lawless, 2013).

In the above, the researcher is highlighting the role of technology in DNA enhancement. However, like technology, innovations and changes in technology are subject to changes in sciences as well. The study instated the argument of accuracy in the field of DNA by exploring the “Pathological science.”

There is controversy associated with the use of the DNA technique about its interpretation also. There are many critical problems that arise during the interpretation of the results that make the use of these techniques unreliable in many circumstances. One such example of the controversial interpretation of the results of the DNA analysis is the Bokolo case. The petitioner, in this case, was

accused of the rape, murder, and battering of the child (Lubaale, 2015). The evidence in the court only found him guilty of the charge of rape, and he appealed to the Supreme Court against this decision. All the decisions of the court rested upon the evidence from the DNA, and the petitioner denied his presence at the site of the crime (Lubaale, 2015).

The STR profile of the accuser was not in dispute when investigated for the results. There were two interpreters that were interpreting these results; one was from the defense, and the other was from the prosecutor. Both these interpreted the results differently, pointing out the weaknesses and shortcomings of the techniques that arose in that particular case (Lawless, 2013). The opinion of the prosecutor was more convincing in this case, and the court had to. When it was analyzed from the other point of view, it seemed that the opinion of the defense was more convincing. The results do not interpret themselves, but the experts interpret them and take the subjectivity into their opinion and make the results biased, this is one of the solid objections raised by the scientists and forensic experts while dealing with DNA profiling as a test of evidence in the crimes cases. Thus, the Bokolo case took into account the alternative interpretation and showed the weakness of this technique effectively.

There is some useful guidance given by Thompson et al that proposes suitable assistance to the defense experts so that they can use the DNA evidence effectively in the courts and interpret them efficiently (Lubaale, 2015). There is a need for access given to the defense expert to the report of the DNA analysis (Lubaale, 2015). The report should have a detailed description of the tested samples, the type of DNA testing being performed on that DNA sample as well as the indication of the common source that the sample had for the testing (Lubaale, 2015). This guidance is suggested to the defense expert so that he may thoroughly analyze the report and interpret it effectively in court as evidence in criminal cases.

The O.J. Simpson Case

Los Angeles police detective must know if he soon found a knife, which appears to be on the property of O.J. Simpson in the late 1990s, containing the DNA of the football star or two people accused of murder. While the LAPD spends a lot of forensic evidence on the knife, police sources said DNA testing is likely to be a key issue for researchers (Winton, 2016).

Sources said a preliminary examination suggests the weapon was not connected to the brutal 1994 murder of Simpson's ex-wife, Nikol Braun Simpson, and his friend Ronald Goldman. It is unclear if any DNA in the knife is there and how long it has been since it was discovered on the Simpson label.

Simpson was tried for murder, but the jury found him innocent.

Presumably, he found the knife when he set up Manor Simpson crews in Brentwood after the property was detected. But the owner of the company that did the demolition said that no one had found a knife.

“I think it’s a joke. I think it’s just filler ... no one on my crew found anything,” said Mike Weber, 70. “I had instructed my people, ‘If you find anything, don’t keep it. Tell me, we’ll take the appropriate action.’”

A police officer on the Los Angeles board gave a knife and found a manufacturer called LAPD to talk about his many years ago; his lawyer said Friday (Winton, 2016).

Preservation Of DNA Evidence

There is a need for the preservation of the DNA evidence properly so that it can be used in the courts for interpretation as the source of the evidence in those crimes. There are various techniques that give the results of preserved DNA. As Lubaale, (2014) claims that, “Although cross-examination is supposedly the ‘greatest engine ever invented for the discovery of truth’, arguably, the complexity of the technique of DNA profiling limits the effectiveness of cross-examination”.

It is evident to realize the techniques for preservation of the DNA. According to the above study, time is the factor that causes the elements to make results inaccurate. Hence, the preservation of DNA could be proved ineffective at times as well.

Conclusion

There is a wide history of DNA evidence that is known as the DNA wars in history, during the period between the 1980s and the early 1990s (Lawless, 2013). There are many legal and scientific challenges to these forensic techniques that have put the use of this technique in question; this controversy gained importance with the participation of genetic scientists by providing evidence against this technique (Lawless, 2013). Incorrect usage of DNA evidence can lead to the miscarriage of justice where the innocent are convicted, and the guilty are acquitted.

All these concerns can be addressed and make this technique effective if it becomes possible to have DNA analysis in real-time at the crime scenes (Mapes et al., 2015). Efforts are being started for the further improvement of the DNA analysis and the interpreting techniques to remove all the objections and weaknesses of this technique (Mapes et al., 2015). Efforts are continuing, and there have been recent advancements in forensic DNA technology in the form of phenotypic profiling and familial searching (Lawless, 2013).

We don’t deny the valuable price of DNA in proving innocence or guilt and in achieving justice in many criminal cases. However, this evidence should be evaluated, and evaluate methods of collecting, analyzing, and preserving them in ways that eliminate the possibility of invalidation and work hard to develop the technology used in testing them. Furthermore, Keep personal and confidential rights in mind.

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