

Example of criminal identification procedures in the 21st century dna analysis re...

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Criminal Identification Procedures in the 21st Century: DNA Analysis

At present, forensic science is virtually unregulated—with the paradoxical result that clinical laboratories must meet higher standards to be allowed to diagnose strep throat than forensic labs must meet to put a defendant on death row.

—Eric S. Lander, molecular biologist, 1989

Advantages and Disadvantages of DNA in Law Enforcement

DNA is the most scientifically sound, among all forensic tests used in criminal investigations; yet, it is the most strictly regulated (Giannelli, 2011). In 1988, the FBI established the Technical Working Group on DNA Analysis Methods (“TWGDAM”) to assure quality control in DNA analysis. A few years later, Congress passed the DNA Identification Act of 1994 (42 U. S. C. A. §§ 14131–14134), authorizing the FBI to create a national database of DNA profiles. This database has had a significant impact in criminology, providing forensic evidence to help exonerate the innocent as well as convict the guilty. The Innocence Project has been able to clear 294 innocent people through DNA forensic analysis, including 17 prisoners in death row (The Innocence Project). Some of the data used to exonerate the prisoners was found in the FBI’s database.

However, DNA analysis as a forensic tool is not without its problems. An investigation of a single laboratory found contamination errors in 23 out of 5,000 DNA cases conducted over a four-year period (Giannelli, 2011), a high standard of error, but nevertheless errors did occur. Another issue is that

crime labs are overwhelmed and underfunded, thus DNA evidence can sit around for months, if not years, while waiting for evidence that could clear the innocent or convict the guilty.

The effects of DNA on Due Process

Government underfunding of laboratories exacerbates legislative underfunding of indigent defense, raising issues of due process. Under due process, indigent defendants should be granted timely access to government DNA databanks, for withholding DNA evidence could result in wrongful conviction and incarceration. In *District Attorney's Office v. Osborne* the issue of due process arose concerning access to post-conviction DNA evidence. During Osborne's criminal trial for rape and other crimes, Osborne's lawyer presented as evidence the results of a less accurate DNA test, and Osborne was convicted. Following his conviction, Osborne asked the court for access to DNA evidence for a more sensitive DNA analysis, but the court refused. Osborne appealed to the Supreme Court contending the refusal violated his right to due process under the 14th Amendment. The Court granted certiorari but held that post-conviction DNA testing was not a right protected by the Constitution; that is, there is no federal due process right to access to DNA evidence (*Osborne*, 129 S. Ct. at 2316)

The Effects of DNA on Crime Control

Garrett and Neufeld (2009) conducted a study on the forensic evidence that led to the wrongful conviction of 156 individuals who were later cleared by DNA analysis. The evidence introduced at trial included serological data, fingerprints, shoe prints, bite marks, hair analysis, fibers, and even DNA

testing. Garrett and Neufeld found that 60% of experts called by the prosecution provided invalid testimony during the trial. Moreover, these were not a handful of isolated cases, but included 72 forensic analysts called by the prosecution and 52 other analysts working in laboratories, practices, or hospitals from 25 states. To make matters worse, defense counsel rarely called forensic analysts to testify. The invalid testimony included non-probative evidence introduced as probative, the discounting of exculpatory evidence, poor statistical data, evidence presented without empirical support, and wrongful attribution of the evidence as coming from the defendant. Whereas this last invalid testimony includes the introduction of DNA evidence, in the main, DNA evidence works in favor of the innocent; thus, the impact of DNA evidence on crime control is that it helps the criminal system identify criminals with greater accuracy. DNA evidence also promotes better criminological practices, as there is always the possibility that a DNA sample may contradict other types of forensic evidence; that is, DNA technology works to increase the professional standards of criminology.

Summary and Recommendations

Technology has had a significant impact on forensic science; however, the system is only as good as the people involved. The system could benefit from stricter guidelines to ensure the quality of DNA analysis, as well as that of any other supporting forensic evidence. All laboratories in charge of analyzing forensic evidence should be licensed for each type of evidence they process. In addition, oversight committees should ensure that forensic laboratories are adhering to the highest level of empirical standards.

References

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