

DNA Testing; The Flaws and Human Error

When defending someone who has been indicted on charges you can automatically think this person either sexually assaulted someone or simply killed. At this point you have a victim or victims and a defendant or defendants. What could possibly convict or acquit these alleged defendants? DNA, of course. DNA is said to be one of the most powerful components to a conviction or acquittal. Yet, how credible is DNA? In criminal defense, DNA evidence should be admitted when it is concrete enough to pursue a conviction or acquittal.

DNA evidence didn't exactly exist until the mid 1980's, when an English entist, Alec Jeffreys, scientist discovered that certain areas of the DNA strand in fact contained patterns that repeat many times. The number of the fascinating repetitions varied between individuals, with the exception of identical twins of course, Dr. Jeffreys developed a test to measure the variation in length of these repetitions. Using said test, Dr. Jeffreys found that that he was able to identify individuals by comparing samples of their DNA. Investigators collect DNA evidence from number of different sources; yet, it can also be insufficient amounts of DNA for testing. Forensic investigators analyze biological samples to get a DNA profile of the individual(s) that the samples came from. If investigators already have suspect(s) in mind, they collect samples to compare to the evidence collected at the scene. There are also databases of DNA profiles that

investigators can use to identify suspects by comparing the database information to the DNA profile obtained from the biological evidence. If investigators have properly

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collected and handled biological evidence and forensic scientists employ accepted methods and conduct analysis correctly, DNA evidence is extremely accurate. The chances of one individual's DNA profile matching another person's are extremely small about one in a billion. However, errors in the collection and/or handling of the biological samples used for the DNA analysis can result in the exclusion of DNA evidence at trial. Similarly, if a lab contaminates the biological sample or is found to use unreliable methods, a judge may reject the DNA evidence at trial.

Errors are more common when the DNA is "mixed," meaning from more than one person or the evidence is degraded by time or improper storage, he continues. Then experts must try to separate out the different sources. The people who are sorting all of this out often know who is supposed to "match," which can influence the process. And while most of the time a match is a match, says Thompson, sometimes an overeager lab, a messy crime scene and a jury that's watched too much crime television can lead to a mistaken conviction. DNA is usually admitted into evidence by the prosecution when trying to convict a defendant. In some cases, it doesn't suffice a conviction, however, it can be enough to convince a jury of a guilty verdict. In criminal defense, DNA evidence should be admitted when it is concrete enough to pursue a conviction or acquittal.

¹ <http://criminal.findlaw.com/criminal-procedure/how-dna-evidence-works.html>

In 1983, Lynda Mann, a 15-year-old schoolgirl, was raped and murdered in the grounds of Carlton Hayes psychiatric hospital in Narborough, Leicestershire. Forensic examination of semen sample showed that it was a type found in only 10% of men, and was from someone with type A blood. However, police had yet to identify a suspect. Three years later, in 1986, 15-year-old schoolgirl, Dawn Ashworth, was similarly sexually assaulted and strangled in the nearby village of Enderby, and semen samples showed the same blood type.

A local 17-year-old with learning disabilities, Richard Buckland, who worked at Carlton Hayes psychiatric hospital, had been spotted near Dawn Ashworth's murder scene and knew unreleased details about the body. In 1986, he confessed to Dawn Ashworth's murder but not Lynda Mann's. Using Sir Alec Jeffreys' new technique, scientists compared the semen samples with a blood sample from Richard Buckland. This proved that both girls were murdered by the same man, and also proved that this man was not Richard Buckland, making him the first person to be exonerated using DNA.

In 1987, during the first mass DNA screen, police and forensic scientists screened blood and saliva samples from 4,000 men aged between 17 and 34. These men and possible suspects, who lived in the villages of Enderby, Narborough and nearby

² <http://www.apa.org/monitor/jun07/problem.aspx>

Littlethorpe did not have an alibi for said murders. Although, the turn out rate was 98%, the screens did not find any matches to the semen samples.

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The police and scientists expanded the screen to men with an alibi, yet still failed to find a match.

In August 1987, a woman overheard a colleague, Ian Kelly, discussing that he had given a sample posing as a friend of his, Colin Pitchfork. Pitchfork had in fact persuaded Kelly to take the test as he claimed he had already given a sample for a friend who had a flashing conviction. Colin Pitchfork was arrested in September 1987, following his arrest and after testing; scientists found that his DNA profile matched that of the murderer. In the past, Colin Pitchfork had been convicted for flashing, and claimed that the murders had begun as flashings, but the girls had run away, which had excited him.

In January 1988, Colin Pitchfork was sentenced to life imprisonment for the murders, and was told he had to serve a minimum of 30 years.

On Nov. 6, 1987, serial rapist Tommy Lee Andrews became the first American ever convicted in a case involving DNA evidence. He was sentenced to 22 years in prison for rape, aggravated battery and burglary. The case against Andrews was not complicated and typical of most that involve DNA evidence. At the time, police sent two samples to a New York laboratory for testing. For purposes of testing, semen left at the crime scene by

³ <http://www.exploreforensics.co.uk/forenisc-cases-colin-pitchfork-first-exoneration-through-dna.html>

the rapist and blood taken from Andrews were forwarded to the lab. The laboratory isolated DNA from each sample, then compared the two and found they matched.

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Although, the lab was unable to match Andrews' entire genetic code to the rapist's which would be technically impossible. But technicians could compare representative pieces of the two DNA samples that scientists know are highly variable in the human population. It's not rare for two randomly selected people to have the same DNA pattern in one of those genetic locations, which are known as variable-number tandem repeats. But it is rare for unrelated people to share the same DNA in two such areas.

As the number of DNA regions sampled increases, so did the rarity of a person's pattern. Finding a pair of people with the same DNA pattern in four places--the minimum number of DNA regions that labs commonly analyze, is just about unheard of, except in cases of identical twins. When you get up to six DNA segments, a person's pattern is as unique as a fingerprint.

After having been convicted of rape and arrested in 1998, the Gov. of Texas Rick Perry granted a pardon on the basis of innocence for Josiah Sutton, exonerating the

⁴ [ANDREWS v. STATE, 533 So.2d 851, District Court of Appeal of Florida, Fifth District, November 10, 1988.](#)

Houston man who was imprisoned for more than four years on faulty DNA evidence.

Sutton was freed from prison after new DNA tests excluded him as a suspect in a 1998 rape.⁵

Sutton, had been sentenced to 25 years in prison largely on DNA evidence processed by the Houston Police Department's crime lab. Since retests excluded him in March 2003, he has lived in legal limbo, free from prison yet still a convicted sex offender. The case against Sutton, who was 16 when he was charged, received new scrutiny after HPD shut down the [DNA division](#) of its crime lab amid questions about the quality and accuracy of its analyses. His case was one of almost 400 being retested by private labs to check HPD's work.

On July 29, 1985, Penny Ann Beernsten was out running along the Lake Michigan shoreline and was surprised by an unknown man who forced her into a wooded area and sexually assaulted her. Based on a physical description of Beernsten's attacker, police provided a photo of nine men. Beernsten selected the photograph of Steven Avery, who was arrested the following day. At the trial, Beernsten identified Avery as her attacker. And state forensic examiner testified that a hair recovered from a shirt of Avery's was consistent with Beernsten's hair. Furthermore, Avery presented 16 alibi witnesses, including the clerk of a store in Green Bay, Wisconsin, who recalled Avery, and mentioned he was accompanied by his wife and five children. buying . A

⁵ EX PARTE SUTTON, AP-75,181 (Tex.Cr.App. 2005)•No. AP-75,181 (Tex. Crim. App. May 25, 2005)

checkout tape put the purchase sometime after the attack which made absolutely no sense with the timeline provided, as well as the distance from the place of incident. Without any hesitation, the jury deliberated for only four hours and convicted Avery almost exclusively on the eyewitness account, on December 14, 1985. He was sentenced to 32 years in prison. In April of 2002, attorneys for the [Wisconsin Innocence Project](#) obtained a court order for DNA testing of 13 hairs recovered from Beernsten at the time of the crime. The state crime laboratory reported that, using the FBI DNA database, it had linked a hair to Gregory Allen, a convicted felon who bore a striking resemblance to Avery. Allen was then serving a 60-year prison term for a sexual assault in Green Bay that occurred after the attack on Beernsten.

The case of Steven Avery is a perfect example of how DNA cannot only exonerate you, but also convict you. Although, his case appears to be much more complicated, ironically, what once freed him, also convicted him. It is safe to say that DNA evidence can be incorrect. After all someone making it vulnerable to a human error tests it. DNA testing is fascinating, however, it takes repetitive testing in order for it to be admissible, yet not making it concrete enough to rely on.

⁶ State v. Avery, No. 86-1831-CR, unpublished slip op. (Wis.Ct.App. Aug. 5, 1987) - See more at: <http://caselaw.findlaw.com/wi-court-of-appeals/1212435.html#sthash.33h9CS82.dpuf>

⁷ State v. Avery, No. 96-3027