

BOOK REVIEW

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Review of: Connors et al. "Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence after Trial"

REFERENCE: Connors E, Lundregan T, Miller N, McEwan T. *Convicted by Juries, exonerated by science: Case studies in the use of DNA evidence to establish innocence after trial*, U.S. Government Printing Office, Washington, D.C. June 1996, 190 pp.

A paperbound, 109 page report from staff of the institute for Law and Justice (ILJ) summarizes 27 publicized cases in which DNA evidence demonstrated the innocence of 29 men who had been found guilty of sexual assault or murder. The report opens with A Brief Message from the Attorney General. Several take-home messages are actually delivered in the very first section, the Forward, which consists of Commentaries on DNA testing by well known academics, judges, attorneys, criminal investigators and a forensic scientist. The Forward is followed by chapters termed Introduction, Study Findings and Policy Implications. Summaries of the case constitute the fourth chapter for readers interested in the historical details. After the case descriptions, there are a Glossary and an Appendix containing the DQ α phenotypes found in the cases.

I attempted to quantify the reasons for the initial miscarriage of justice in the cases. About 75% involved identity errors by eyewitnesses. About 20% of the original convictions were partly the result of misconduct of forensic experts or the police and by witnesses who were not truthful. In more than half of cases, the forensic non-DNA evidence was more influential than it should have been. In more than 15%, the police failed to follow up a defendant's claims, or a defense attorney was not as prepared or as aggressive as was necessary.

The purpose of the report is to demonstrate the power of DNA tests in the defense of the falsely accused. The report, however, is not a scientific study (and is not claimed to be) for several reasons: terms are poorly-defined, the cases were not randomly chosen, methods are uncontrolled and some conclusions drawn in the commentaries are erroneous.

Although a glossary is provided, some terms are not appropriately explained. For example, the word "marker" is defined correctly if the authors were describing genetic linkage analysis, but

"marker" in human identification casework usually means "allele." The definition given for "epithelial cell fraction" is insufficient to understand what it is. No description is given for PCR, yet the PCR results of the DQ α locus markers in 12 cases are given in the Appendix without explanation of their use. (Notably, in a two-man rape case in which one defendant was DNA-exonerated the DQ α data shown are not exclusionary! It is possible, that the defendant's DQ α DNA type was admixed with a second man's DNA to produce the type observed in the recovered semen.). The "twisted ladder" model of DNA is incorrect.

The study method has ascertainment biases. Three cases came to light because of misconduct by one forensic scientist. Cases were found by search of legal and newspaper databases that produced only DNA exonerations. There is no discussion of false exclusions. The report scarcely mentions false positives caused by chance matches of DNA types or those caused by contamination or other error. (The report does point out that DNA evidence is stated to exonerate 20% of accused men among unselected cases and DNA technology fails in another 20%.) There was no way to achieve follow up of the examined cases, and the true criminal was apprehended in only four. By this last criterion, complete justice was achieved in only 15% of the cases!

The report conscientiously presents the accuracy of DNA typing relative to other forensic identity tests and it presents the fallibilities of the justice system, but a few of the conclusions drawn from the commentaries can be challenged. The Attorney General states that our justice system is a search for the truth, but those who work in the adversarial system are shown to be, as exemplified in the cases reviewed, more motivated by desire to win and to impress peers than to find the truth. (At least one commentary indicates that there are "systemic underlying problems".) DNA evidence, by itself, does not prevent misconduct, perjury, error, incomplete investigation, or prejudice. The system fails to assign appropriate weight to various kinds of evidence. Assigning value to evidence means that mathematics will be used in court presentations, precluding the implication that qualitative opinions of experts are sufficient. The relative power and objectivity of tests must be explained to the court.

In my opinion, but not explicitly stated in the report, the system favors the side with economic or organizational advantage (usually the team of police, public forensic scientist, and prosecutor) against

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a defendant with fewer resources for rapidly pursuing alternative explanations of the evidence. Objective pretrial analysis could improve matters. The slow and costly appeals process, loss or degradation of evidence, and statutes of limitations worked against defendants. Each was incarcerated for an average of over seven years and was exposed to repeated social traumas of trials, appeals, surveillance, and electronic monitoring.

The slow response of forensic DNA laboratories should no longer be technically problematical. PCR and RFLP tests can be reported within days of testing. Usually, response is prolonged by backlogs of cases or insufficient resources rather than by difficulties of analysis. Costs have decreased as a result of improved technology. Interlaboratory competition, however, could drive costs down further. Why not allow certified, monitored private laboratories to provide tests on coded samples? Rapid, impartial (blinded) and objective results could be provided at lower cost, limited amounts of evidence would not have to be tested twice, and public bureaucracies would shrink.

Test results always require interpretation in view of the many complicating circumstances that can be encountered outside the laboratory. Eyewitness misidentification, perjury and false confessions must be weighed against DNA results. Assault without semen deposition, sample misidentification, clerical mistakes, etc. will continue to produce confusing DNA results. Interpretations and adversarial argument will always be necessary. Only the DNA methods and results need to be explained by a scientist's testimony.

According to the ILJ report, the admissibility and power of DNA tests have been generally accepted. Now, a simple language must be developed and adopted. We must learn to understand each other. Scientists and legal professionals must avoid the obfuscation of mathematics and jargon. Furthermore, jurors must be able to understand the relative merits of tests, the meaning, and probative value of a DNA match or difference, and how the DNA evidence might be interpreted under prosecution and defense theories. The report is a wake-up call for all of us: DNA evidence has pointed out weaknesses of the justice system. It's time to change the system.