

## Use of DNA evidence is not an open and shut case, professor says

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(PhysOrg.com) -- Whether used to clinch a guilty verdict or predict the end of a "CSI" episode, DNA evidence has given millions of people a sense of certainty -- but the outcomes of using DNA evidence have often been far from certain, according to David Kaye, Distinguished Professor of Law at Penn State.

In his new book, "The [Double Helix](#) and the Law of Evidence" (Harvard University Press), Kaye focuses on the intersection of science and law, and emphasizes that DNA evidence is merely information.

"There's a popular perception that with DNA, you get results," Kaye said. "You're either guilty or innocent, and the DNA speaks the truth. That goes too far. DNA is a tool. Perhaps in many cases it's open and shut, in other cases it's not. There's ambiguity."

In the O.J. Simpson case, for example, Kaye noted that "the defense was able to argue that the result was not conclusive, that maybe the DNA evidence was in fact planted at the [crime scene](#) or was contaminated. As with any evidence, the defense was able to raise some doubt."

One of the book's key themes is that using science in court is hard to do right.

"It requires lawyers and judges to understand a lot about the science," Kaye noted. "They don't have to be scientists or technicians, but they do have to know enough to understand what's going on and whether the

statements that experts are making are well-founded. The lawyers need to be able to translate that information into a form that a judge or a jury can understand."

Kaye also believes that lawyers need to better understand statistics and probability, an area that has traditionally been neglected in law school curricula. His book attempts to close this gap in understanding with several sections on genetic science and probability.

The book also contends that scientists, too, have contributed to the false sense of certainty, when they are so often led by either side of one particular case to take an extreme position. Scientists need to approach their role as experts less as partisans and more as defenders of truth.

Aiming to be a definitive history of the use of [DNA evidence](#), "The Double Helix and the Law of Evidence" chronicles precedent-setting criminal trials, battles among factions of the scientific community and a multitude of issues with the use of probability and statistics related to DNA. From the Simpson trial to the search for the last Russian Tsar, Kaye tells the story of how DNA science has impacted society. He delves into the history of the application of DNA science and probability within the legal system and depicts its advances and setbacks.

The important role that DNA science plays across a broad number of applications cannot be underestimated, according to Kaye. It has already led to the exoneration of more than 200 long-imprisoned individuals, and has helped to changed public perception of the criminal justice system, causing many people to have second thoughts about the death penalty.

"People are also talking about looking at Lincoln's DNA to see if he had Marfan syndrome," he said. "You can use DNA to identify species to find out if what's being sold as caviar is the real thing, or to identify endangered species. And more applications are being considered every

day."

Provided by Pennsylvania State University

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