**Case Study: The Central Park Jogger**

**Hair Evidence In Jogger Case Is Discredited**

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Contrary to arguments made by a prosecutor at two trials in 1990, four strands of hair were never ''matched'' to any of the Harlem teenagers accused of beating and raping a jogger in Central Park, a former police scientist said this week. The hairs, attributed to the victim and recovered from the clothing of two suspects, were the only pieces of physical evidence offered by prosecutors directly linking any of the teenagers to the crime. The hairs were also cited by the prosecution as a way for the jury to know that the videotaped confessions of the teenagers were reliable. Nicholas Petraco, a detective who examined the hairs when he worked in the Police Department's criminalistics division and testified at the trials, said the technique for hair examination in 1990 was not powerful enough to tie anyone to the crime with certainty.

''You can't say 'match,' '' Mr. Petraco said. ''It's impossible. You could never say it 'matched.' It's ridiculous.''

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At most, Mr. Petraco said, the hairs could be described as ''consistent with and similar to'' those of the defendants and the victim. The reason he used those words when he testified at the two trials, he said, was to make sure that the jurors and lawyers realized it was entirely possible for the hair to have come from other people. In fact, earlier this year, advanced DNA tests not available in 1990 showed precisely that: the hairs did not come from the jogger, and do not link any of the five convicted men to the crime. While Mr. Petraco avoided making an absolute link between the hairs and any person during his testimony, the lead prosecutor, Elizabeth Lederer, showed no such reticence. In her closing arguments, she used emphatic language to assert that hair found on a defendant, Kevin Richardson, had been ''matched'' and vouched for the reliability of the vigorously contested confessions.

''Perhaps the most telling of all,'' Ms. Lederer said, ''is the hair that was found on Kevin Richardson's clothes.''

She referred the jurors to the testimony of Mr. Petraco, the expert witness called by the prosecution. But in parts of her recitation, his cautious phrasing vanished.

''He found on Kevin Richardson's underpants a hair that matched the head hair of'' the victim, Ms. Lederer told the jurors. ''And there was a second hair on the T-shirt that matched'' the victim's pubic hair. She continued: ''There was yet a third hair on his jeans, on his blue jeans, that was consistent with and similar to'' hair from the victim's head. While the convictions are being challenged on many grounds, the results of DNA tests on the hair make it very difficult for the original verdicts to stand, in the view of senior law enforcement officials. The Manhattan district attorney, Robert M. Morgenthau, has said state law requires that a verdict be overturned if it seems that newly discovered evidence would have resulted in a different verdict. Besides the three hairs found in Mr. Richardson's clothing, a hair from the victim was said to have been discovered in the clothing of Steven Lopez, who was originally charged with rape but not prosecuted for it. In her argument, Ms. Lederer noted that the other defendants had described attacks by Mr. Lopez and Mr. Richardson.

''I submit to you that Kevin Richardson's clothing got those hairs when he was with'' the victim, Ms. Lederer said. ''And it was because he was touching her, because he came in contact with her and with her clothes and when he was on top of her and around her, that's how he got her hair on his clothing.''

Historically, the value of hair evidence has often been overstated, according to legal scholars. The basic procedure calls for a side-by-side examination of two hairs -- one plucked from a suspect or a victim, the other collected from a crime scene. Using a microscope, the examiner looks for about 20 features that will distinguish one hair from the other. No one can say with certainty how often a particular feature of hair occurs in the population. Even hairs from the same head will sometimes be impossible to match, Mr. Petraco said. One significant problem is that the results vary depending on the individual examiner and cannot be reliably replicated, although the ability to replicate results is normally a hallmark of the scientific process. In a proficiency test of crime laboratories across the country, some of the worst results were in hair testing, with error rates running as high as 68 percent, according to a 1978 study by the federal Justice Department. In an Oklahoma death penalty case, a hair examiner misidentified 17 out of 17 hairs, putting one innocent man, Ronald Williamson, on death row and another, Dennis Fritz, in prison for life. At one point, Mr. Williamson came within five days of execution. DNA tests later proved both men were innocent. Speaking of the hair evidence, the prosecutor in that case told jurors, ''It's a match.'' Mr. Petraco said that he was often pushed by lawyers to declare that something was or was not a match, but that he has always resisted such pressure. The distinction is more than a semantic one, he said.

''People don't want to understand what the limitations of the method are,'' he said. ''The most you could ever say is it's consistent with, or similar to. Does that mean it's absolutely the same? No.''

He said it was a strict practice in the police laboratory to avoid declaring a match.

''From the place I worked all my life, from the people that trained me and for the people I trained, no one says 'match,' '' Mr. Petraco said. ''No one ever says 'match.' ''

Hair evidence has been a factor in about one-third of the 111 wrongful convictions that have been reversed through DNA tests over the last decade. Through a spokeswoman, Ms. Lederer declined to comment. Although defense lawyers objected to portions of her arguments about the hair, the judge at the trial, Thomas Galligan, told the jury to rely on the witnesses' testimony more than on any arguments from the lawyers on either side. Mr. Petraco, who retired from the Police Department in 1990 but continues to work as a consultant on forensic evidence for the department and for both defense and prosecution lawyers, said looking at hair under a microscope remained a useful discipline, particularly as a way to sort through likely specimens for mitochondrial DNA tests. Those tests became widely available within the last five years. He would not discuss the details of his work on the jogger case, nor would he comment on Ms. Lederer's description of the hair as being a match.

''The testimony speaks for itself,'' he said. ''Most of the evidence in that case was exculpatory, if anything.

''I didn't say it was a match, and I'm not going to say something is a match, because I know it's a misleading statement. That doesn't stop someone from using it in an opening statement, or a closing statement.''