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## **BETTER LATE THAN NEVER (PART II)**

### ***DOJ proposes rules for forensic testimony. Do they go far enough?***

*By Julius (Jay) Wachtel.* In [Part I](#) we reported that the Department of Justice was making an (alas, badly belated) effort to address the many wrongful convictions and other miscarriages of justice caused, in part, by forensic “experts” who reach conclusions unsupported by science. To help keep things on the straight and narrow DOJ [has begun the process of issuing official regulations](#) that will govern forensic testimony by Federal employees. (DOJ’s move doesn’t apply to state and local forensics experts, but one can imagine they will feel compelled to adjust their practices as well.)

Why rules are needed was discussed earlier. We’ll start by commenting on those proposed for three forensic disciplines that came under fire in the National Academy of Science’s landmark 2009 report, “[Strengthening Forensic Science in the United States: a Path Forward](#).” (Keep in mind that the regulations are in the proposal stage, with some still out for comments, so don’t expect anything final until the new Administration.) We begin with the granddaddy of all disciplines, fingerprint identification.

**Latent prints.** As best is known, fingerprints are unique. Comparing the individual characteristics of “questioned” (i.e., “latent”) prints recovered at crime scenes to “known” prints of individuals is a long-established practice that is seldom blamed for convicting the innocent. Still, the quality of latent prints varies greatly. What’s more, the process leaves it for examiners to select which “minutiae” (i.e., identifying characteristics) to compare and how many must match to conclude they came from the same source, thus introducing considerable subjectivity. Human nature also gets involved. It’s such things that undoubtedly led to the [most celebrated FBI forensic goof ever](#), when its lab [mistakenly identified Brandon Mayfield](#) as the source of fingerprints found on evidence left behind by the perpetrators of the horrific 2004 Madrid train bombings.

Proposed fix: [Examiners could no longer testify](#) that “two friction ridge prints [an impression taken from a person, another recovered at the scene] originated from the same source to the absolute exclusion of all other sources.” Instead, they would have to say that “two friction ridge prints originated from the same source [person] because there is sufficient quality and quantity of corresponding information such that the examiner would not expect to see that same arrangement of features repeated in another source.” Reducing conclusions to a probabilistic certainty is also forbidden.

And the difference is...: Specialists might appreciate the distinction between the bad, old language (absolutely exclude all other sources) and the good new language (another source not expected.) But jurors are, after all, laypersons, and unless the different approaches are explicitly contrasted, the new, more modest method seems by itself unlikely to lead to a different decision.

**Footwear and tire impressions.** In 1985 Derrick Jamison was convicted of robbery-murder and sentenced to death. **The evidence against him** consisted of a crime scene shoe print from the same brand of footwear that he wore, plus testimony of an alleged accomplice who testified in exchange for a ten-year term. Only thing is, Jameson was six-four in height, while several witnesses, whose testimony was kept from the defense, described the second man as about five-six. Jameson was released from death row and exonerated in 2005.

Unlike fingerprints, which are unique, shoes and tires of the same brand and model share tread patterns - so called "class characteristics" - that create identical impressions when new. To determine whether an impression was made by a particular shoe or tire requires that it have been "individualized" through wear and tear. Just how many imperfections must correspond to call a match, though, **is hard to say:**

...there is no consensus regarding the number of individual characteristics needed to make a positive identification, and the committee is not aware of any data about the variability of class or individual characteristics or about the validity or reliability of the method. Without such population studies, it is impossible to assess the number of characteristics that must match in order to have any particular degree of confidence about the source of the impression.

Proposed fix: As with fingerprints, **DOJ's proposal** forbids examiners from excluding all other possibilities. Instead, they would evaluate shoe and tire impressions on a seven-point scale:

1. **Identification:** ...shoe/tire is the source of the impression because there is sufficient quality and quantity of corresponding features such that the examiner would not expect to find that same combination of features repeated in another source...
2. **Probably Made:** ...shoe/tire probably made the impression and it is unlikely that another shoe/tire is the source of the impression; however, there are limitations which prevent effecting an identification...

3. Could Have Made: ...shoe/tire is a possible source of the impression, but other shoes/tires with the same class characteristics are also included in the population of possible sources...
4. Could Not Be Determined
5. Indications Did Not Make: ...evidence indicates that the shoe/tire is not the source of the impression, but there are limitations which prevent eliminating the shoe/tire...
6. Elimination: ...shoe/tire is not the source of the impression...
7. Unsuitable: ...submitted evidence is unsuitable to conduct footwear/tire examinations...

And the difference is...: Again, jurors aren't specialists, so whether an analyst settles on #1 (identification) or #2 (probable) might make little difference. Actually, simply mentioning there is a scale, which seems inevitable, could lead jurors to exaggerate the probative value of items with extreme or near-extreme scores. As for #3, given that innumerable pairs of shoes and sets of tires have identical tread patterns when new, "could have made" seems a very risky option. Considering the scientific limitations, it would seem far better to restrict testimony about footwear and tire impressions to instances where examiners are positive about either a match (#1) or an elimination (#6).

**Hair examination.** In the notorious 1978 case "Ford Heights Four" [an Illinois state forensic analyst waxed astonishingly](#) about the results of a hair comparison: "I couldn't distinguish if I was looking almost at two hairs," he testified. "They looked just like one." Based in part on his account jurors convicted four defendants of rape/murder. Only problem is, all were innocent. It took eighteen years for DNA to clear them and convict the real evildoers.

[Improper hair analysis was cited by the Innocence Project](#) as the second most frequently occurring forensic lapse in 300 DNA exonerations where improper or invalidated forensic techniques had been at least partly to blame. Indeed, the reputation of hair comparison is so grim and its scientific underpinnings so thin that [the discipline received an unqualified thumbs-down](#) from NAS: "The committee found no scientific support for the use of hair comparisons for individualization in the absence of nuclear DNA" (at page 161, paragraph 2.)

Proposed fix: NIJ refuses to throw in the towel. To its credit, [it openly acknowledges](#) that "the comparison of hair characteristics does not constitute a basis for personal identification." Accordingly, examiners may not "state or imply that a hair came from a particular source to the exclusion of all others." On the other hand, the proposed rule

would allow examiners to testify that “the questioned human hair is microscopically consistent with the known hair sample and accordingly, the source of the known hair sample can be included as a possible source of the questioned hair.

And the difference is...: Irreconcilable. “No scientific support” seems pretty unequivocal. It will apparently remain for the defense to bring up the National Academy’s biting views during cross-examination.

**Everything else.** DOJ also issued proposed rules for forensic anthropology, explosives chemistry, explosives and hazardous devices, forensic geology, forensic handwriting analysis, forensic metallurgy, Y chromosome and mitochondrial DNA typing, forensic paints and polymers, forensic toxicology, forensic examination of serology, forensic glass, forensic textile fiber, and general chemistry (click [here](#) and [here](#).)

Unfortunately, some key disciplines – forensic odontology (i.e., bite marks), causes of fire, and toolmarks and firearms – remain unaddressed. As mentioned in “[State of the Art...Not!](#)” and the other posts referenced below, their application and misapplication have led to terrible injustices, and in the case of fire science, [the execution of Cameron Todd Willingham](#), an innocent man. For now, NIJ’s regulations are also silent about bloodstain pattern analysis, or blood spatter, for short. Popularized in [Phil Spector’s first murder trial](#), where its use by the defense helped hang the jury, the method’s inherent subjectivity led NAS to depict its uncertainties as “enormous” (report, p. 179).

So where do things stand? DOJ is accepting comments on the proposed rules. (To review those received go to [www.regulations.gov](http://www.regulations.gov), enter “forensic” in the search box, then scroll through the hits.) For example, click [here](#) for the only comment we found on hair analysis. Filed by a professor of law and member of the National Commission on Forensic Science, it elaborates on the clash between the discipline’s fundamental uncertainty and DOJ’s proposed language, and suggests that its use would lead to “over-valuation of testimony.”

That’s not to say that DOJ has a simple task, nor that it’s not trying. But at some point one must really, really stop splitting hairs or, in our favorite turn of phrase, making “distinctions without a difference”. Desperate efforts to keep forensic “sciences” like hair analysis alive virtually guarantee that innocent persons will keep getting convicted and imprisoned, and occasionally worse. It really is time to pull the plug on these derelict disciplines and move on.

Tomorrow’s my birthday (President Obama’s, too!) Please, DOJ, give us a present!