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Will Wonders Never Cease?

Fingerprinting Denied its Day in Maryland Trial Court

By James E. Starrs, Senior Co-Editor
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There is one word no expert wants to hear, even if he/she knows what it means without the aid of the OED (Oxford English Dictionary) to enlighten its usage. That word, probably the longest in the English language, is floccinaucinihilipilification.

The word, said to be a George Bernard Shaw construct, is an amalgamation of four separate words, all connoting the same thing. They are flocci, nauci, nihil and pilify. In combination they signify, as applied to an expert witness, that his or her statements are meaningless or, otherwise, worthless.

Stephen Meagher, "a top FBI latent print examiner," (since retired) was recently the recipient of what was in essence a judicial characterization of his testimony at a pre-trial hearing in State v. Rose (K06-545 Cir.Ct. Baltimore, Md. (2007)) as floccinaucinihilipilification, meaning, in this context, not worth a tinker's damn.

Meagher, an expert on fingerprint admissibility issues for hire by the FBI, was a regular in testifying at pre-trial hearings in both Federal and state courts. His testimony in the Frye-Reed admissibility hearing in Rose before Circuit Court Judge Susan Souder, which testimony was in support of the prosecutor's argument for admissibility, was the

particular focus of the judge's 32 page decision denying the admissibility of the fingerprint identification testimony.

Rose was charged with a car-jacking murder of a merchant at a Baltimore mall. He was linked to the murder by the police's concluding that his fingerprints were found on the victim's car as well as in the ditched stolen get-away car. The only identification of the wrongdoers by witnesses was that they were black males. However, a Baltimore crime lab technician identified prints from the cars as belonging to Rose. That identification was confirmed by "a second Crime Lab Technician." The fingerprint identifications, according to Judge Souder, "appear to be the heart of the State's case."(p.4)

The FBI's Stephen Meagher was the sole expert for the prosecution at the pre-trial hearing, supporting the admission of the fingerprint identifications. The defense also weighed-in with its own expert in opposition to Meagher. However, Judge Souder's opinion does not identify that expert nor does it give heed to the preachments of that expert. The exclusive emphasis in Judge Souder's opinion on the oral testimony at the hearing before her was on the words expressed by Stephen Meagher, who was referenced on nine separate occasions in the 32 page opinion and most often not in kind or favorable terms.



Facing Up To Fingerprint Fallibility

More than one half of Judge Souder's opinion was introductory in nature, providing an analysis of fingerprinting as a technique in general terms without specific reference to this case. Indeed, that analysis was the thrust of the judge's opinion, prescinding from the facts of the identifications in this matter. The principal source, serving as the foundation for Judge Souder's exegesis on fingerprinting, was the 220-page report from the U.S. Department of Justice Office of the Inspector General Oversight and Review Division of March 2006 (OIG report) titled "A Review of the FBI's Handling of the Brandon Mayfield Case."

That report, or review as it was titled, might more justifiably have been termed "the FBI's Mishandling of the Brandon Mayfield Case" for it was the egregious fingerprint errors by lead fingerprint personnel of the FBI that was the spur for the OIG investigation. That mishandling has received much concerted media attention since it involved an international terrorist incident with the claimed involvement of an American citizen, Brandon Mayfield, a practicing lawyer and a Muslim convert living in Oregon. The fingerprint submitted to the FBI for analysis by the Spanish National Police, who were investigating the Madrid train bombing in 2004, was thrice misidentified to Mayfield by top players in the fingerprint section of the FBI. It was also misidentified as Mayfield's print by a former San Francisco police fingerprint expert appointed by the court. The dice rolled to "snake eyes" for the FBI when the Spanish police stalwartly disagreed with the FBI's identification of Mayfield and, instead, pinpointed an Algerian as the author of the print. With that information the FBI admitted their three-fold mistaken identification, resulting in a legal action by Mayfield and the FBI's pre-trial settlement awarding two million dollars to him.

With this tawdry background from the citadel of fingerprint eminence at the FBI, is it any wonder that Judge Souder would target those false findings as the most significant basis for her excluding the fingerprint identifications in this case, especially when supported by a "top FBI" expert. Moreover is there any cause for wonder why the judge would rely so heavily on the critical analysis of the FBI's missteps in Mayfield presented by the OIG report?

The particulars of Judge Souder dissent from fingerprint reliability began with the principal underpinning of the state's case featuring "the history of acceptance of fingerprint identification evidence" both in Maryland and nationally. (p. 5) On page 22 and 24-25 of her opinion Judge Souder returns to the state's main theme and replies with an unabashed contretemps. Yes, the judge opines,

"fingerprint evidence has been used in criminal cases for almost a century" but (f)or many centuries. perhaps for millennia, humans thought that the earth was flat. ... Indeed, there still exists a Flat Earth Society for people who cling to the idea the earth is not an orb."

But the flat earth viewpoint was entirely without scientific support and it is noteworthy that it was science

that put it to rout. But science has not been brought to bear on the various claims of fingerprint examiners, so the court posited. Indeed, the courts themselves, admittedly not scientific laboratories, have been pyramiding the early acceptance of fingerprints, "relying on precedent" and "with relatively little scrutiny" and whatever scrutiny there was of the merits of fingerprinting was not "exacting scientific scrutiny." (p. 25 -26)

Judge Souder's lambasting of the views of Stephen Meagher began quite non-committally on page

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BACK ISSUES ARE AVAILABLE

9 of her opinion. Meagher was there described as having testified at pre-trial "about fingerprints generally as well as about latent print examinations." It was not until page 17 that the judicial hammer and tongs were unleashed at Meagher's opinions. His view that the verification factor in the post-modern ACE-V (analysis, comparison, evaluation and verification) currently employed by the FBI was "independent" and thus without bias was said to be "not credible." Independence could not be legitimately claimed when "verifiers are advised of the first examiner's identification" and "(a) refused verification is unusual." Moreover "there is no policy requiring that the first verifier's disagreement (when and if it occurs) be documented..."

Further Meagher was said to be "not credible" (p. 25) in asserting that there is "no error rate for ACE-V" because it is "an infallible methodology." The OIG's report evidenced at least one failure in the methodology in Mayfield with the "circular reasoning" pointed to as used to justify a fingerprint identification.

As to the lack of fingerprint testing fallibility Meagher was pinioned as "neither credible nor persuasive" (p. 28) in basing his opinion on an "assumption" without backing from "reliable scientific studies." (p 28). Fortunately for Meager the court did not suggest he was being disingenuous or even deliberately courting a known exaggeration.

Judge Souder's rejection of the absurd claim of fingerprinting infallibility is roundly seconded recently by Max Houck, formerly with the FBI and now with the forensic science program at West Virginia University. Houck puts it succinctly. "Any scientist knows that no method in science ... has a zero error rate – it is simply not possible. Every measurement has some inherent error," not necessarily tied to the individual doing the testing. (Academy News, AAFS, 37:5, 9/07, p. 12.)

Again in Meagher's efforts to contradict the findings in the OIG's report that documentation in the course of the testing process is essential, he was found to be "neither credible nor persuasive." (p. 29) And in answer to Meagher's unsupported assertion that there are "objective or universal standards that govern the application of the ACE-V technique." (p. 29) the court pointed out that Meagher, in saying so, was shooting himself in the foot for he also said "the individualization is left up to each individual examiner," which throws any concern for objective standards into the midden pile.

The gist of this careful, comprehensive and unrivalled 32 page judicial opinion, is stated on its penultimate page as the "ACE-V (technique) which was the type of procedure Frye was intended to banish, that is, "a subjective, untested, unverifiable identification that purports to be infallible." Thus the judge's bottom line was that "the State (in this murder trial) shall not offer testimony that any latent fingerprint in this case is that of the Defendant."

Miscellaneous Observations

Aside from its stunning conclusion, there are facets of this once in a hundred years opinion that may

limit its impact as precedent in Maryland and nationally. The first was stated by Judge Souder on the first page of her opinion where she captioned the discussion "Death is Different."

The judge affirmed that this being a death penalty case made it distinctive and worthy of close surveillance. Citing multiple Federal and state cases the judge cautioned that the court must be more scrupulous in determining "whether the opinions which a party seeks to present at trial will be permitted." To what extent that attitude will prevail in future cases in distinguishing fingerprint analysis in capital from non-capital cases remains to be seen.

Judge Souder also spoke eloquently about the place of due process concerns in the mix. As she put it "(p)art of the due process guaranty is that an individual will not suffer punitive action as a result of an inaccurate or unproven scientific or technical procedure." This view would imply that capital and non-capital cases are on a par vis-à-vis fingerprint reliability decision-making.

It may be worth noting that Judge Souder does not buy into the position which elevates fingerprinting to the apogee of being a science rather than, as been said of the profession of engineers, a technique. Nor for that matter does the judge conceive of their being differences in the admissibility equation under Frye-Reed for disciplines that are also sciences in contrast to those that are technological without being scientific.

Whether this opinion will apply to a failure in the testing process resulting in a flawed identification due to issues relating to a specific case as opposed, as in this case, to those of a more general nature is not addressed but the court does look favorably on State v. Rockingham, Docket No. 05-5-1129, Sup.Ct. N.H., Jan 17, 2007 (p. 23) where the testimony of this author as an expert resulted in excluding the fingerprint identification in question due to specific shortcomings by the analyst in that case and not necessarily in any others.

Furthermore, this decision specifically refrained from deciding issues arising from the standard fingerprint examiners' claims of permanence and uniqueness as to all fingerprints, or partial ones, everywhere. The prosecution and defense in this instance agreed to stipulate to permanence and uniqueness as a general proposition. In my view the judge's opinion would be buttressed by a close and critical look at the uniqueness claim vis-à-vis fragmentary crime scene prints.

However this court, unlike so many others, did recognize the singular difference between analyzing a pristine fully rolled fingerprint and a crime scene latent which is regularly partial and often distorted by dynamic or even static actions of the finger or fingers impressing the print.

In Sum

This decision is well-thought through, incisive, deftly researched and compelling in its reasoning. The judge is to be congratulated for taking a path less traveled by in other courts. It is, for an academician like myself, quite gratifying to see such heavy credit being

accorded to scholarly materials, like the OIG report, which materials are overwhelmingly in support of the judge's opinion. Unfortunately it leaves an FBI expert who, to begin with was never a fingerprint examiner or even more than a high school graduate, certainly not certified as an examiner by the International Association for Identification, as hanging high for his provably indulging in blatant flossinaucinihilipilification in his pre-trial testimony.

Of course it always possible that an appeal may be taken for appellate review of this, an interlocutory decision. In Maryland, by rule, (Md. Rule 4-242 subsection (h)(2)(B) there may be an appeal from the granting of a suppression motion. If this decision is considered to be within the ambit of a suppression motion rather than a generalized motion in limine, then an appeal appears to be a more likely alternative for the prosecution than going to trial in the absence of the fingerprint evidence.

However in a telephone conversation with Paul De Wolfe, listed as the public defender representing defendant Rose in Judge Souder's opinion, I am informed that no appeal has yet been filed and that none is likely to be authorized by the Maryland rules and statutes. Yet a motion for reconsideration by the prosecution has been interposed, so it was said, with Rose's trial date postponed until April 2008.

It was further learned from Mr. De Wolfe that the defense expert who testified at the pre-trial hearing is Ralph Haber, listed in the I.A.I. directory as an associate member of that organization who is a Research Consultant with Human Factors Consultants from Swall Meadows, California. It is not known how being an expert in human factors analysis suffices to qualify a person as knowledgeable on the principles of science or in the practicalities of fingerprinting.

The author was also informed by Mr. De Wolfe that man in the public defender's office in Baltimore who skillfully masterminded the arguments for Rose is Patrick Kent. Credit is due where credit is deserved.

More Fingerprint Miscues: Florida Joins In

Mistakes in fingerprint identifications are more widespread than the Mayfield case demonstrated at the FBI. Probably the perigee of such wrongful identifications occurred recently (or was at least first brought to light) in Florida's Seminole county Sheriff's laboratory in 2007. So far it is reported by the press that the Sheriff's Office's fingerprint expert Donna Birks erred in reporting the results of her fingerprint testing on at least eight separate occasions, including false positives in which she identified the wrong suspects.

Birks was said by another female fingerprint technician at the Sheriff's Office to have worked by herself without the oversight of a second verifying expert, although such verification was not standard office policy. But on the occasions when Birks did seek to confirm her findings, she sometimes bypassed the lab's fingerprint personnel for outsiders who also got the identification wrong.

As a result of this scandal in the Seminole County's Sheriff's Office lab some 1200 cases are being reexamined by the Florida state lab's fingerprint personnel. Of the 1200 some 870 are said to have been tested by Birks and the rest by other fingerprint experts who worked on cases separate from Birks or in conjunction with her. At least one of Birks' wrongful identifications, that of Clemente Javier "Shorty" Aguirre, 27 was used in his trial for murder which resulted in a sentence of death which is now being challenged.

More facets of this steaming brew have emerged. One Ann Mallory who supervised three of the office's fingerprint experts whose fingerprint work has been proved to be flawed is being investigated but the basis for the contagion's reaching into the management level at the Sheriffs's Office has not yet been explained.

The one most startling feature of this explosive scandal is its standing as solid proof that the Meagher and other fingerprint persons' view that fingerprinting identifications are flawless and infallible is arrant balderdash. The scientific community has waited far too long for a judge, like Judge Souder, to give a fair upending to the pseudoscientific nonsense in which fingerprinting identifications have been mired lo these one hundred years since Mark Twain first put it on the map in his Puddn'head Wilson.

Roiling On With Brandon Mayfield

Brandon Mayfield did not only sue in Federal court for compensation for his being arrested on May 6, 2004 and being held until May 21, 2004, such being a deprivation of his constitutional rights. But that action (Mayfield v. U.S., 504 F.Supp 2d 1023C.D. Ore. '07) did not end with the out of court settlement and payment of two million dollars to Mayfield. It continued on the issue of the constitutionality of his arrest and detention under the expanded provisions of the USA PATRIOT Act. Now that issue has been decided in his favor in an opinion by District Court Judge Ann Aiken in Oregon

Judge Aiken said the provision of the Federal act deleting "the probable cause requirement for criminal searches" was unconstitutional under the 4th Amendment as well as under the separation of powers principle. The separation of powers conflict arose from the act's "requiring courts to defer to executive representations about the foreign intelligence element of a search." Judge Aiken saw the act as going too far constitutionally in authorizing evidence gathering without constitutional constraints for domestic activity, regardless of its having no connection to international terrorism. Domestic criminal prosecutions, according to Judge Aiken's perception, like that launched against Brandon Mayfield could not be so cavalierly denied the availability of treasured constitutional protections.

Such are the pains and penalties of a fingerprint identification gone awry.

Seen on the International Scene

Falsifications Of All Sorts

Taiwan: False Expense Receipts

The chairman, Yu Shyi-Kun, of Taiwan's ruling party has been indicted on corruption charges for his claiming about \$73,000 "in special expenses with false receipts" while acting in various official capacities. Meantime the trial of Taiwan's president's wife for forgery and embezzling substantial sums is ongoing. The son-in-law of the president (who has presidential immunity from prosecution) has already been convicted and sentenced to seven years for insider trading.

Russia: Forged Credentials

The mayor of Arkhangelsk has been charged with an abuse of authority after being previously charged with forgery of a higher education certificate. His punishment by imprisonment is said to be likely to be substantial.

Belgium: Falsified Invoices

The offices of the Muslim executive in Brussels have been shuttered by order of an Examining Magistrate. The executive represents upwards of 350,000 Muslims residing in Belgium. The charge is the falsifying of invoices, a matter which put an earlier board of the Executive on the criminal carpet. The new board had promised to be "a new broom" but, in reality, it has just built on the previous infractions. Apparently the board did not learn from the defalcations of its predecessors.

More Diversified Items:

Germany: Wherefore Fingerprint Patterns?

Much has been written on the mechanism (sic "s") for fingerprint pattern development. As yet the origin of fingerprints continues to be elusive. The author of this extensive article contends, without the benefit of his own independent testing, that fingerprint patterns, both general configurations (arches, loops and whorls) and specific details (minutiae or Galton details) originate during the fetal development when the basal cell layer of the epidermis of the hands and feet is subjected to a natural buckling or folding process.

The author illustrates and explains his book and article-based hypothesis with simulations and the forces which he maintains shape a fingerprint's identifiable characteristics. The view is expressed that fingerprint uniqueness is a consequence of this buckling process. Nothing, however, is said about the other peak of fingerprint claimed distinctiveness – permanence.

The article is supplemented by 49 endnotes. Much of the author's commentary is couched in

probabilistic terms such as "could, likely, may and possible," diminishing the compelling nature of his hypothesis. Kucken, M., "Models For Fingerprint Pattern Formation," *For.Sci.Inter.* 171 (2007) 85-96.

Great Britain: Currency Drug Contamination

A study conducted at diverse locations in the United Kingdom (Great Britain) to determine whether drug levels on bank notes varied significantly from place to place throughout the country is stated to have established the "hypothesis that there are no influences upon the contamination patterns on bank notes" throughout the region under study.

The fact that the circulation of bank notes from one region of the country to another is readily occurring suggests "caution" in attempting to correlate the Bank of England banknote contamination patterns with "regional drug offender statistics," the reader is told. Ebejer, K.A. et al, "Factors influencing the contamination of UK banknotes with drugs of abuse," *For.Sci.Inter.* 171 (2007) 165-170

Great Britain: Submarine Inquest Requested

On April 16, 1951 the British submarine HMS Affray (well named, it appears) was lost at sea with the entire crew of 75 perishing at sea some 30 miles south of the Isle of Wight. The submarine was on a routine training exercise and had left Gosport, Hants on the day of its disappearance. Even though there has never been an underwater exhumation of the Affray, it was located and, due to the difficulties of a full salvage operation, left in its 300 foot deep watery grave, the location marked as an official military grave. An investigation was early conducted into the circumstances of the sinking of the Affray but unlike the earlier sinking of the *Maine* in the harbor in Cuba, no substance to the claim of the submarine's being the victim of foul play (namely, unfit for duty) was established. Now, author Alan Gallop, in researching the facts for his book [Subsmash: The Mystery of HMS Submarine Affray](#) has asked for an inquest into the matter due to his unearthing (sic) probative evidence of the submarine's being known to have been unseaworthy at the time of its going on its last voyage. The Ministry of Defense is unconvinced and is stolidly in opposition to revisiting the matter. As in the case of the Battleship "Maine" one waits to hear if forensic science will be asked to play a role. See news.bbc.co.uk/2/hi/uk_news/England.hampshire/7061593.stm.

Canada: Unhappy Courtroom Campers

Familiarity, as the saying goes, breeds contempt – between judges and lawyers as well as all others.

Justice Marvin Zuker of the Ontario (Canada) family court had a friction-laden relationship with lawyer Harry Kopyto going back to the early 1980s when Kopyto was still a licensed lawyer.

In the mid-1980s, for example, the judge cited Kopyto for contempt for "scandalizing the court" in saying the police and the courts were as stuck together as if by Krazy Glue. Their animosity did not change with Kopyto's being disbarred in 1989 for overcharging Ontario Legal Aid for more than \$150,000.

Kopyto just changed hats after being disbarred. He went from being a lawyer to being a paralegal. As a paralegal, he appeared before Justice Zuker in a divorce proceeding involving Robin Mayer. But Justice Zuker refused to allow Kopyto to represent Mayer, even as a paralegal. Kopyto was, in the judge's estimation, a man with a an unenviable record before him as an attorney. Moreover Kopyto was said to have been "adversarial" in previous appearances before the judge. However, these remarks were later removed by Justice Zuker from the transcripts of the record. The judge was called to task by the Ontario Judicial Council for tampering with the record and was admonished for his "slip from grace."

Meanwhile Kopyto sought to right the imbalance he perceived to exist in Justice Zuker's refusing to allow him to appear for Ms. Mayer. He brought suit against Zuker in small claims court for \$10,000 for damages, the maximum allowed by the jurisdiction of that court, for compensatory and punitive damages as well as for lost income. The litigation, as of this writing, is pending.

Canada: Fingerprints: Developing Latents on Wet Paper

Development of usable latent prints on wet paper was thought hopeless until introduction of Physical Developer (PD). Unfortunately, use of PD is inherently messy and depends on cleanliness of glassware, etc. Even with care, results may be poor and uneven. A potential alternative is Oil Red O (ORO), lipid specific and used in biology to stain lipoproteins. A study was conducted on three types of moist paper to compare results with PD and ORO. Paper types used were thermal, white and brown kraft. Test prints were placed on the samples and the thermal paper placed directly in water whereas prints on white and kraft paper were aged for periods up to 30 days prior to wetting. After water treatment, samples were removed, cut down the middle (the only way to insure comparable test prints) and then developed. Print quality was evaluated and ORO was deemed superior on both thermal and white paper. Both methods gave essentially equivalent results on brown kraft. Rawji and Beaudoin, 30 *Ident. Canada* 4 (2007)

Australia: Drugs: Poppy Seeds Again?

In SSR 14(2) 1990, we examined problems with drug testing following consumption of poppy seed containing foods, e.g. cakes and bagels. The result was a positive test for morphine, in no way a false positive.

A recent report describes consumption of poppy seed tea (PST) by opiate-dependent patients at a Drug Clinic in Wellington, New Zealand. Eleven of the 24 persons studied reported current or past use with it providing the major source of opiates for five despite its foul taste. Nevertheless, considering the positive aspects of PST compared to alternatives, it is considered acceptable in the clinic program¹.

Further investigation revealed that PST drinking in the UK had a considerable history through the nineteenth century but steadily declined until revived by the illicit drug using community². A 1993 report describes a hospital patient in London with dependence on opium poppy tea, an apparently unusual situation³. In 2006, two cases of patients with opioid dependence attributed to drinking PST were encountered at a hospital in Australia. Poppy seeds are cheap, available and nowhere illegal. Although dependency is uncommon, treatment required is equivalent to that for heroin dependence⁴. So, faced with positive drug test results, the subject will vigorously protest "Oh No sir, I don't use drugs or alcohol, I drink only water and a bit of tea."

¹Braye, Harwood *et al*, Poppy Seed Tea and Opiate Abuse in New Zealand, 26 *Drug Alcohol Rev.* 215 (2007)

²London, O'Regan, Aust and Stockford, Poppy Tea Drinking in East Anglia, 85 *Brit. J. Addiction* 1345 (1990):

³Unnithan and Strang, Poppy Tea Dependence, 163 *Br. J. Psychiatry* 813 (1993)

⁴Lloyd-Jones and Bonomo, Unusual Presentations for Pharmacotherapy-Poppy Seed Dependence, 25 *Drug Alcohol Rev* 375 (2006)

DNA

Early Trials and Tribulations

Prior to the introduction of DNA testing in court, the serologist's blood test results provided information often crucial to the resolution of a key issue in the case. What seems almost forgotten today is the fierce struggle, technical and legal, over the reliability of certain blood grouping approaches, particularly electrophoresis, potential sources of error and assignment of individualizing value to the test results. Curiously, these same issues were raised with DNA and, early on, legitimately so. One aspect of results reporting that should have been seen by scientists as embarrassing and absurd on its face were statements that the DNA results implicated an individual by factors several times the earth's population. Fortunately, later work led to the use of far more reasonable numbers and recognition that interpretation of DNA results was not always clear-cut. This report should be required reading for both the forensic science student and the practitioner. Aronson, The "Starch Wars" and the Early History of DNA Profiling, 18 *For. Sci. Rev.* 60 (2006)