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SUPERIOR COURT OF CALIFORNIA
COUNTY OF CONTRA COSTA

THE PEOPLE OF THE STATE OF CALIFORNIA v. SCOTT EDGAR DYLESKI, DEFENDANT.	NO. 5-060254-0 REPLY TO PROSECUTION OPPOSITION TO MOTION FOR HEARING REGARDING ADMISSIBILITY OF DNA EVIDENCE DATE & TIME: TBA • DEPT. 2

I. EVIDENCE OF A DNA MATCH IS IRRELEVANT ABSENT RELIABLE SCIENTIFIC EVIDENCE OF THE STATISTICAL SIGNIFICANCE OF THE MATCH

Evidence of a DNA "match" is irrelevant absent some evidence of the significance of that match. (*People v. Pizarro* (2003) 110 Cal.App.4th 530; *People v. Wallace* (1993) 14 Cal.App.4th 651, 661; *People v. Barney* (1992) 8 Cal.App.4th 798, 817.) California Courts considering the admissibility of DNA evidence have long recognized that "[t]he statistical calculation step is the pivotal element of DNA analysis, *for the evidence means nothing without a determination of the statistical significance of a match of DNA patterns.*" (*Barney, supra*, 8 Cal.App.4th at 817 (emphasis added); see also *Wallace, supra*, 14 Cal.App.4th at 661.)

Pizarro, *supra*, reiterated that without a valid statistical analysis, evidence of a DNA match is irrelevant:

> [W]hen the perpetrator's and the defendant's profiles are found to match, the statistical significance of the match must be explained in terms of the rarity or commonness of that profile within a particular population--that is, the number of people within a population expected to possess that particular genetic profile, or, put another way, the probability that a randomly chosen person in that population possesses that particular genetic profile. **Only then can the jury weigh the value of the profile match.**

(*Pizarro*, *supra*, 110 Cal.App.4th at 567-68 (quoting *Brown*, *supra*, 91 Cal.App.4th at 627-29) (emphasis added).) *Pizarro* reasoned that statistical evidence is necessary because:

> ...the purpose of the statistical evidence is to establish *how few people* in the relevant population genetically match the perpetrator... The effect of the statistical evidence is to indirectly incriminate the defendant by allowing the jury to *infer* that because the defendant is one of the few people who genetically match the perpetrator, he is *likely to be the actual perpetrator.*

(*Pizarro*, *supra*, 110 Cal.App.4th at 542.)

Here, the district attorney seeks to introduce evidence that Mr. Dyleski's Y-STR profile matched one found in an evidence sample. He wants to introduce this evidence however, *without* any explanation of the rarity or commonness of that profile within the relevant population and without any proof of the probability that a randomly chosen person would share the profile. The district attorney is requesting, in essence, permission to tell the jury that a profile "match" exists in vacuum, thus encouraging the jurors to make scientifically unsupported inferences about the rarity of that profile.

II. EVIDENCE OF THE EXISTENCE OR NONEXISTENCE OF A DNA PROFILE IN A GIVEN DATABASE MUST BE ACCOMPANIED BY A SCIENTIFICALLY RELIABLE STATISTICAL ANALYSIS

If the proponent of DNA evidence seeks to present evidence from which a jury may infer the rarity of a DNA profile in the population, he must demonstrate that the inference is scientifically valid. The California Supreme Court has framed the "question" posed by DNA analysis as follows: "Given that the suspect's known sample has satisfied the "match criteria," what is the probability that a person chosen at random from the relevant population would likewise have a DNA profile matching that of the evidentiary sample?" (*People v. Venegas* (1998) 18 Cal.4th 47, 63-64.) The *Venegas* Court explains that answering that question is more than the "simple counting of the numbers of profiles in the databank," which the prosecution advocates in this case. (Prosecution opposition at p. 9.) In order to draw *any* inference from the absence of a particular DNA profile in a database, the court must be satisfied that the database complies with a myriad of complex, technical requirements and that the inference regarding the rarity of the profile in the general population is supported by reliable, scientifically valid statistical calculations.[1] (See *Id.* at 66-68.)

The *Venegas* Court considered and rejected the argument that a jury can use common sense to draw conclusions based on a DNA profile being absent from a database. (*Id.* at 82.) There, the District Attorney argued that "the procedures for determining the statistical significance of a match are immune from the requirements of *Kelly/Frye*" because they merely employ "well-established mathematical formulae such as those used to calculate the frequency of blood-group markers." (*Id.* at 82.) The Court disagreed, holding that while "calculations of the

[1] In order to draw scientifically valid conclusions regarding the rarity of a profile, for example, the database must be in Harvey-Weinberg and linkage equilibrium; there must be proof that the profiles in the database are not skewed by geography; the samples should be random (as opposed to convenience samples); and sufficient steps must be taken to insure that the racial groupings are accurate.

frequencies of these non-DNA traits within the general population are readily understandable by laypersons," the interpretation of DNA results is far more complicated and does require a *Kelly* foundation. (*Id.* at 82-83.)

Here, the district attorney is seeking to introduce evidence of the absence of a particular Y-STR profile in a databank. He is *not* introducing any evidence of the statistical significance of that fact. Nor is he able to present any scientifically reliable evidence of the probability of a random person matching that profile or its rarity in the population. He *cannot* present such evidence, in fact, because the database is not in equilibrium. Despite this, the district attorney argues that the jurors should be allowed to infer "as a matter of logic, that it [the profile] is not common." (Prosecution opposition at p. 9) However, both logic and the Supreme Court of California dictate that the commonness of a DNA profile is not a matter of "common sense" at all and DNA evidence must be accompanied by a statistical analysis that complies with the requirements of *Kelly*.

The prosecution's efforts to compare DNA evidence to tattoos and eyeglass prescriptions are similarly misguided. Courts have long held that "DNA evidence is different." (*People v. Brown* (2001) 91 Cal.App.4th 623, 646.) *Brown* noted that admission of DNA evidence depends more heavily on proof of compliance with *Kelly* because "[u]nlike "fingerprint, shoe track, bite mark, or ballistic comparisons, which jurors essentially can see for themselves, questions concerning whether a laboratory has adopted correct, scientifically accepted procedures for [DNA testing] or determining a [profile] match depend almost entirely on the technical interpretations of experts." (*Id.*, quoting *Venegas*, *supra*, 18 Cal.4th at 91.) The significance of a DNA match has also always been subject to *Kelly* scrutiny. (*Brown*, *supra*, 91 Cal.App.4th at 649.)

In, *Pizarro*, *supra*, the Court held that a scientifically valid statistical analysis was a prerequisite to the admission of evidence of a DNA profile match:

> A match between all the defendant's alleles and all the perpetrator's alleles (i.e., between their profiles) does not signify an *absolute* match between the entirety of the perpetrator's DNA and the entirety of the defendant's DNA, which would absolutely prove the perpetrator and the defendant are the same person. The match is actually between only a few or several regions of an enormous amount of DNA, and therefore it does not absolutely prove identity. What it does prove is that the defendant *could be* the perpetrator. **However, this information standing alone is not particularly helpful to the jury; it is in fact unwieldy, overwhelming, even irresistible. If the jury is told simply that the defendant's genetic profile matches the perpetrator's profile and thus the defendant could be the perpetrator, the jury, awed by the sophistication and incomprehensibility of the DNA evidence, will naturally respond by assuming the match absolutely proves identity. For this reason, courts have insisted that the prosecution provide comprehensible evidence regarding the meaning or significance of the match.** [Citations omitted]

(*Pizarro*, *supra*, 110 Cal.App.4th at 576.)

The evidence the district attorney seeks to offer here is not only incomplete, it is affirmatively misleading. Because he cannot offer a valid statistical probability of randomly encountering the DNA profile at issue in a relevant population, he is asking the jury to "infer" that probability – a task that even scientists are incapable of performing. As the above cited cases point out, the inference regarding rarity is not one that can be drawn simply using logic or common sense. An inference about the rarity of a DNA profile must be based on an accurate assessment of its statistical probability and must take many factors into account.

The *Pizarro* Court was concerned that the bare fact of a match without a statistical explanation would lead jurors to the unjustified, yet "irresistible" conclusion that the profile is unique. Allowing evidence that the profile was not seen in a group of 3,561 people presents even greater potential for jurors to reach irresistible – and scientific invalid – conclusions. By definition, generation upon generation of men in every family have identical Y-STR profiles.

Even autosomal DNA typing finds that certain profiles are more common among people in certain racial groups.[2] Jurors would be incapable of taking either of these factors into account in determining how "uncommon" this profile may be; and any conclusions they reach about the commonness of the profile without accounting for these considerations would be wrong. This is exactly why *Kelly* applies to the interpretation of DNA typing results.

While a layman may well be able to formulate an opinion regarding the significance of the existence of a tattoo, he would not be similarly equipped to draw a conclusion regarding the probability of encountering a given Y-STR DNA profile in the relevant population. Unlike tattoos and eyeglasses, DNA evidence is highly complex and the inferences that can accurately be drawn from it depend on a variety of complex variables beyond the common experience of most people.

CONCLUSION

For the foregoing reasons, Defendant respectfully requests that his motion be granted.

Dated: June 26, 2006

Respectfully Submitted,

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[2] Additionally, it bears noting that the database the prosecution seeks to introduce is comprised of people of different races and the 3,561 figure is the total number of people in the database. The fact that the statistical rarity of the profile would vary for each racial group serves to highlight the folly of adding the numbers together and telling the jury to figure it out.