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IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

SIXTH APPELLATE DISTRICT

THE PEOPLE, Plaintiff and Respondent, v. BRAD AZCONA, Defendant and Appellant.	H045676 (Monterey County Super. Ct. No. SS151642A)

Defendant Brad Azcona was sentenced to life without parole after a jury convicted him of two premeditated murders, two attempted murders, three assaults with a deadly weapon, and attempted robbery. Defendant contends the trial court should not have allowed a firearms expert to testify that bullet casings from two of the crime scenes were fired from the same gun, because the method the expert used to reach that conclusion is not generally accepted by the scientific community. He also contends his constitutional right to confront witnesses was violated by the admission of hearsay testimony, and that the prosecutor committed misconduct during closing argument by mischaracterizing the concept of premeditation.

We conclude the trial court committed multiple errors related to the firearms expert testimony. Abandoning its gatekeeping responsibility, the court allowed the expert to testify to conclusions not supported by the material on which he relied. The court violated defendant's constitutional right to confrontation by allowing the expert to testify that his findings were reviewed and approved by a supervisor. Together those errors were prejudicial as to one of defendant's attempted murder convictions and the related convictions for negligently discharging and possessing a firearm. We will therefore

reverse the judgment and remand for a new trial on counts 1, 2, and 3. Defendant's other convictions will remain.

I. BACKGROUND

Over a one-month period in the late summer of 2015, defendant, seemingly at random, committed a series of shootings and related crimes in Salinas. On August 21, the first victim was shot in the arm as he sat on his front porch playing guitar. Defendant fired over a dozen shots while riding past on a bicycle. Some of the bullets struck a nearby house. Police recovered 13 nine-millimeter casings from the scene.

About two weeks later, Carlos Robles was a passenger in a friend's car when defendant rode up to the driver's side on his bike, pulled out a gun, and started firing. When Robles jumped out and ran, defendant shot him multiple times. He died at the scene. His friend, the driver of the car, was shot in the hand and a bullet glanced off his head. The car was hit by eight bullets, and police found 15 nine-millimeter casings in the area.

Two days later, someone matching defendant's description (Caucasian and blonde, wearing an orange sweatshirt, riding a bike) approached a car occupied by a man and his teenage son. The assailant brandished a gun and held it to the man's head, demanding to know if he claimed affiliation with any gang. The man put his head down and drove away, bracing for an impact that never came.

A few days after that, defendant tried to rob a 16-year-old boy. He demanded "everything that [he had]," pulled out a gun and hit the boy with it on the side of the face. He left when a bystander took out a phone to call police. Defendant's final victim was Ramon Herrera, whose body was found that same night in the Chinatown area of Salinas, lying face up in the middle of a road with nine bullet wounds. Herrera had died within minutes of being shot.

Police officers investigating the crimes were familiar with defendant from prior contacts. Most of the surviving victims either identified defendant as the perpetrator in a

photo lineup or provided a description consistent with his appearance, and surveillance videos placed defendant near the Chinatown murder scene around the time of the shooting. A firearms expert examined the collected bullet casings and concluded that casings from the first shooting and the shooting of the two victims in the car were fired from the same gun. A police informant reported defendant admitted killing both Carlos Robles and Ramon Herrera.

The District Attorney charged defendant with two counts of premeditated murder (Pen. Code, §§ 187, 190.2, subd. (a)(3)) with a firearm use enhancement (Pen. Code, § 12022.53, subds. (b)–(d)); two counts of attempted premeditated murder (Pen. Code §§ 187, 664) with an enhancement for using a firearm to cause great bodily injury (Pen. Code, § 12022.53, subd. (d)); three counts of assault with a deadly weapon (Pen. Code, § 245, subd. (a) with a firearm use enhancement (Pen. Code § 12022.53, subd. (a)); four counts of being a felon in possession of a firearm (Pen. Code § 29800, subd. (a)(1)); one count of negligent discharge of a firearm (Pen. Code, § 246.3); and one count of attempted robbery (Pen. Code, §§ 211, 664). Further sentencing enhancements for a prior serious felony conviction (Pen. Code, § 667, subd. (a)(1)); prior strike (Pen. Code § 1170.12, subd. (c)(1)); and prior prison term (Pen. Code, § 667.5, subd. (b)) were also alleged.

A jury convicted defendant of all charges, except for three counts on which it could not reach a verdict (the two counts of assault with a deadly weapon and one count of possessing a firearm as a felon, all stemming from the incident with the father and son victims). The jury also found true the special circumstance allegation that defendant committed multiple murders. In a bifurcated proceeding, the trial court found true defendant's prior conviction. Defendant was sentenced to life without parole, consecutive to a term of 156 years and four months.

II. DISCUSSION

A. FIREARM TOOLMARK TESTIMONY FROM THE PROSECUTION EXPERT

Defendant moved in limine to exclude expert testimony about firearm toolmark comparison. He argued the prosecution's expert witness should not be allowed to testify that it is virtually certain bullet casings recovered from two of the crime scenes were fired from the same gun, because the method used to reach that conclusion—visually comparing marks on the casings—is not generally accepted by the scientific community, as required under *People v. Kelly* (1976) 17 Cal.3d 24. After conducting a hearing, the trial court denied defendant's motion. At trial, a firearms expert testified he compared a bullet casing found at the first crime scene (where a man was shot on his front porch) with a casing found near where two men were shot in a car. In his opinion, they were fired from the same gun. He explained: "I need to see six individual marks in a row [] to meet my identification criteria. That's based on the fact that nobody's ever seen that many by random chance. [¶] We've done numerous studies on the subject trying to see what can happen by random chance, and that's much more than can ever happen by random chance. [¶] So if you see these marks and all your class characteristics are the same and you can identify the source of the marks, it is possible to say they were fired from the same gun. And the thing that's good to add on now days is not just that they were fired from the same gun, but to the practical exclusion of all other guns."

Expert testimony based on the application of a scientific technique is admissible in California if the technique is generally accepted in the pertinent scientific community. (*People v. Kelly*, *supra*, 17 Cal.3d 24, 32.) General acceptance means "a consensus drawn from a typical cross-section of the relevant, qualified scientific community." (*People v. Leahy* (1994) 8 Cal.4th 587, 612.) Unanimous acceptance is not required; "[r]ather, the test is met if use of the technique is supported *by a clear majority* of the members of that community." (*Ibid.*) That test has been criticized as essentially

delegating admissibility to scientists without a judge directly confronting the reliability of the evidence. (*Id*., at p. 602.) But the Supreme Court has continued to endorse the *Kelly* standard, reasoning that "it may be preferable to let admissibility questions regarding new scientific techniques be settled by those persons most qualified to assess their validity." (*Ibid*.)

The California approach is a departure from the test applied to novel scientific evidence in federal courts. Rather than admitting the evidence based on a general consensus about its reliability, federal courts, under *Daubert v. Merrell Dow Pharm., Inc.* (1993) 509 U.S. 579, conduct a broader inquiry which allows the court to exercise its own judgment about whether the technique used is reliable. (See *United States v. Mooney* (1st Cir. 2002) 315 F.3d 54, 63 [*court* must examine the technique and find that "the expert's conclusion has been arrived at in a scientifically sound and methodologically reliable fashion."].) In contrast, "[u]nder the *Kelly* test, the admissibility of evidence obtained by use of a scientific technique does not depend upon proof to the satisfaction of a court that the technique is scientifically reliable or valid. Because courts are ill suited to make such determinations, admissibility depends upon whether the technique is generally accepted as reliable in the relevant scientific community." (*People v. Bolden* (2002) 29 Cal.4th 515, 546.) As a result of the difference in state versus federal approaches, the federal authorities cited by defendant are of limited value here because they focus on directly examining the reliability of toolmark comparison methods.

Defendant does not contend that visual comparison of toolmarks on bullet casings has yet to be generally accepted as reliable.[1] He instead asserts that the technique's

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[1] Both defendant and the Attorney General assume that the ballistics comparison method used here has previously been deemed reliable in a published appellate opinion. But neither party cites (nor have we found) authority addressing toolmark comparison with casings and no source firearm. The authority that is cited, relating to toolmark comparison generally, predates *Kelly*. (*People v. Godlewski* (1943) 22 Cal.2d 677.) But

validity has been recently undermined to such a degree that it is *no longer* admissible. When the continuing admissibility of scientific evidence is at issue, rather than it being the proponent's burden to show the technique is generally accepted by the scientific community, the burden shifts to the opposing party to produce new evidence showing it no longer is. (*People v. Bolden*, *supra*, 29 Cal.4th 515, 546.) Appellate review of a trial court's determination regarding a scientific technique's general acceptance is de novo. (*People v. Doolin* (2009) 45 Cal.4th 390, 447.)

It is not clear that the technique employed here is subject to the *Kelly* standard at all, as visual comparison of marks on physical objects is not so foreign to everyday experience that jurors would have unusual difficulty evaluating it. (As the California Supreme Court observed in *People v. Cowan* ((2010) 50 Cal.4th 401), regarding a similar method of firearm toolmark examination, the *Kelly* rule is "intended to prevent lay jurors from being unduly influenced by procedures which seem scientific and infallible, but which actually are not," and does not apply to such things as fingerprint, shoe track, or ballistics comparisons "which jurors essentially can see for themselves." (*Id.*, at p. 470.)

Although the ballistics comparison technique used in this case is not appreciably different from the technique described in *Cowan*—"essentially a tool mark type of examination when one looks at impressed or striated materials" (*Ibid*.), the expert here presented his opinion in language suggesting scientific certainty. But even if we assume for purposes of our analysis that firearm toolmark comparison is subject to *Kelly* principles, we cannot find the method categorically inadmissible here because defendant did not meet his burden to show that a clear majority of the relevant scientific community no longer accepts the method as reliable. At the hearing on defendant's in limine motion, he called as a witness a research scientist trained in assessing the foundational validity of

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since defendant has conceded throughout that the method was previously generally accepted by the scientific community, we also proceed under that assumption without deciding the point. `

scientific techniques generally. The scientist opined that the method of visual toolmark comparison employed by the prosecution expert is unreliable; in his opinion, "there is no good evidence yet that the [method] will arrive at the correct answers." He testified extensively about three scientific reports—two produced by the National Academy of Sciences in 2008 and 2009, and another similar study from 2016. Those reports sharply criticize visual analysis of firearm toolmarks as an unreliable method, not tethered to objective standards and without a measurable error rate.

The evidence defendant presented falls short of establishing that a "clear majority" of the relevant scientific community no longer accepts firearm toolmark comparison as reliable. (See *People v. Leahy*, *supra*, 8 Cal.4th 587, 612.) Indeed, defendant neither established what the relevant scientific community is, nor that a clear majority of that community now rejects ballistics comparison as unreliable. Defendant focused in the trial court, as he does here, on attacking the reliability of the method itself. But it is not for the court to determine whether the method is reliable (in contrast to what a federal court would do under the *Daubert* standard). The necessary inquiry under *Kelly* is whether most of the relevant scientific community thinks it is.

Defendant presented legitimate criticism from credible sources: scientific reports commissioned by the federal government, and testimony by a research scientist. That evidence undermines the reliability of the method and casts some doubt on the prosecution expert's conclusion that particular bullet casings came from the same firearm. The information was therefore relevant and important for the jury to consider in assessing the expert testimony. And the jury was afforded that opportunity through defense counsel's extensive cross-examination of the prosecution expert regarding those very criticisms of the method. The expert acknowledged he was aware of the reports but disagreed with them, and thought the authors were not qualified to conduct firearms analysis. Criticism of the method from credible sources surely affects the persuasive value of the evidence, but it does not equate to what defendant needed to show to render

the firearms expert's testimony *inadmissible*: that the method is no longer accepted by a clear majority of the relevant scientific community. We are therefore unable to say, on this record, that firearm toolmark comparison testimony is no longer admissible in California.

Nor did the trial court err in denying defendant's request for judicial notice of the reports criticizing firearm toolmark comparison methods. It was the court's task to decide whether a majority of the relevant scientific community rejected the method, so it was necessary to consider the existence of the reports. But that was established through the testimony of the defense expert at the evidentiary hearing—who also testified to the reports' conclusions. Further, assuming the reports are the proper subject of judicial notice (see Evidence Code section 452), notice could only have been taken of their existence and not their content. (*Herrera v. Deutsche Bank National Trust Co.* (2011) 196 Cal.App.4th 1366, 1375.)

A trial court's duty with regard to admission of expert testimony does not end there, however, and neither does our analysis. Trial judges have a critical gatekeeping function when it comes to expert testimony beyond merely determining whether the expert may testify at all. Expert evidence that does not require a *Kelly* analysis must still be admissible under Evidence Code section 801, which mandates it be "of a type that reasonably may be relied upon by an expert in forming an opinion upon the subject." (Evid. Code, § 801, subd.(b); *In re O.D.* (2013) 221 Cal. App. 4th 1001, 1009.) Further, under Evidence Code sections 801, subdivision (b), and 802, the court must act as a gatekeeper to ensure the opinions offered by an expert are not "based on reasons unsupported by the material on which the expert relies." (*Sargon Enterprises, Inc. v. University of Southern California* (2012) 55 Cal.4th 747, 771.) "This means that a court may inquire into, not only the type of material on which an expert relies, but also whether that material actually supports the expert's reasoning. 'A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.' " (*Ibid.*)

A trial court's decision regarding the permissible scope of an expert's opinion is reviewed for abuse of discretion. (*Ibid.*)

A trial court's duty to keep unfounded opinions from the jury is particularly important in a situation like the one presented here, where significant criticism of the expert's methodology was presented (even if it was not shown to have been rejected by a clear majority of the scientific community). The existence of such criticism should prompt a trial court to carefully determine what conclusions can reliably be drawn from the methodology in question. But here the trial court abandoned its gatekeeping role, allowing unfettered expert testimony that went far beyond what the underlying material supported. Over defendant's in limine objection, the court allowed the expert to testify that the matching marks on the relevant projectiles are "much more than can ever happen by random chance," and therefore the projectiles came from the same gun, "to the practical exclusion of all other guns." The expert did not support that conclusion with anything more definitive than a broad reference to having "done numerous studies on the subject trying to see what can happen by random chance."

Such a purportedly infallible conclusion is a leap too far from what the underlying method allowed. There was support for the opinion that the projectiles likely came from the same gun, perhaps more likely than not, but there was no basis to present it as a scientific certainty. The trial court abused its discretion by failing to limit the expert's opinion to what was actually supported by the material the expert relied on.

B. HEARSAY TESTIMONY FROM THE PROSECUTION EXPERT

Defendant contends the trial court violated his constitutional right to confront witnesses by admitting hearsay testimony from the prosecution firearms expert, specifically that his conclusions from comparing the firearm toolmarks had been approved by his supervisors. The expert testified over objection and at some length about that approval: "Q: [] Tell us about that procedure. How do you check to make sure your

work is correct? [¶] A: All of my work is reviewed by another firearms examiner at the laboratory with many [] years of experience. [] It was reviewed for technical aspects in the report to be sure I had everything correct in my work and I didn't transpose anything[.]" The prosecution then introduced into evidence the expert's written report which had been initialed to indicate it was reviewed by two other examiners, and the expert again testified that everything in the report had been checked and approved by his supervisors.

An expert is permitted to relate hearsay statements regarding general background information that contributes to his or her opinion, but not hearsay statements that present case specific facts. (*People v. Sanchez* (2016) 63 Cal.4th 665, 675.) When an expert testifies to a statement made by someone else about the facts of the case before the court, it is testimonial hearsay in violation of the Sixth Amendment right of confrontation. That is what occurred here, when the expert told the jury that another examiner had indicated approval of and agreement with the expert's conclusions in this case. The prosecution was in effect able to introduce the opinion of a second expert without exposing that witness to cross-examination. The trial court erred by allowing the hearsay statements regarding supervisor approval.

Testimonial hearsay admitted in violation of the Sixth Amendment confrontation clause requires reversal unless the prosecution shows the error was harmless beyond a reasonable doubt. (*Chapman v. California* (1967) 386 U.S. 18, 24.) Defendant contends the hearsay statements affected the jury's decision as to his conviction for the attempted murder of the man playing guitar, as well as the two gun-related convictions stemming from that incident. As defendant points out, the evidence tying him to those crimes is far less compelling than the evidence showing he committed the other shootings. A police officer testified that the victim's description of his assailant was consistent with defendant's appearance: a blonde white male riding a bicycle. The only other evidence presented regarding that count was the firearms expert's opinion that the bullet casings

found at the scene came from the same gun defendant used to shoot Ramon Herrera "to the practical exclusion of all other guns." But as we have explained, that opinion should not have been admitted.

We acknowledge that when a testifying expert offers an independently formed opinion, erroneously admitted evidence that a supervisor agrees with the opinion will often be harmless. (See *People v. Lopez* (2012) 55 Cal.4th 569, 585.) But here, the expert's independent opinion was itself inadmissible insofar as it contained the unsupported conclusion that the bullet casings were certain to have been fired from the same gun. Taken together, that conclusion and the hearsay statements about supervisor approval gave the impression that the expert's opinion was entitled to more weight than it would otherwise deserve. In light of the relatively limited evidence presented in support of counts 1, 2, and 3, the jury may well have given significant weight to the expert's opinion in deciding that those charges had been proven.

Under these circumstances, we cannot say beyond a reasonable doubt that the hearsay statement did not contribute to the attempted murder verdict. We must therefore reverse defendant's conviction for attempted murder charged in count 1, and the associated convictions for negligent discharge of a firearm (count 2) and being a felon in possession of a firearm (count 3). As insufficiency of the evidence to support those counts is not raised in this appeal, defendant can be retried. (*People v. Pierce* (1979) 24 Cal.3d 199, 210.)

C. PROSECUTORIAL MISCONDUCT

Defendant also contends the prosecutor mischaracterized the concept of premeditation during closing argument. Although the issue was forfeited for appeal because defense counsel did not object to the prosecutor's argument, we elect to address the merits, both because it is important to resolve allegations of prosecutorial misconduct and because it is judicially economical to do so here, given defendant's alternative contention of ineffective assistance of counsel based on the failure to object.

It is considered misconduct to misstate the law to the jury, and bad faith is not required. (*People v. Centeno* (2014) 60 Cal.4th 659, 666.) But a prosecutor is allowed to vigorously argue the case and is afforded "significant leeway" in discussing the facts and the law in closing argument. (*People v. Sandoval* (1992) 4 Cal.4th 155, 183; *People v. Centeno*, *supra*, at p. 666.) Defendant asserts the prosecutor misstated the law by using two analogies to explain the concept of premeditation, which is relevant to the charges of premeditated murder and attempted premeditated murder. The prosecutor argued that the amount of time required for premeditation is no greater than that which would be required to decide whether to stop at a yellow light, or to decide which loaf of bread to buy at a store:

> "Everybody here has traveled into an intersection [] where the light turns yellow. Okay? When you travel into that intersection and that light turns yellow and you're going to make a decision to go through that light, […] what are the two things you look for? Cars and cops. That's what you're going to look for. And then if you decide to go through, you've looked, you've thought about it. Are there cars? Are there cops? Happens to everybody. Common sense. [¶] So when you do that, you have deliberate[d], you thought about it before you've done it. What are the consequences? I could hit a car, a cop could catch me. You've deliberated it. And then when you went through the light, you premeditated before you went ahead and went through that light. You deliberated and premeditated it. It's as simple as that.
>
> Another example is if you're walking down the bread aisle … and maybe you forget your list and so you call the wife and say, hey, I forgot the bread, I forgot what kind of bread. Get some healthy bread, get some very healthy bread. So you look, look, look, boom, you grab. You've thought about it, you've contemplated it, you deliberated it, and you acted. It can happen as fast as that."

Analogies in closing argument have provided fertile ground for reversal. (See, e.g., *People v. Centeno*, *supra*, 60 Cal.4th at p. 667 [addressing an analogy for reasonable doubt, noting that the "case law is replete with innovative but ill-fated" attempts to explain the standard, and discouraging the practice].) But we find no fault with the

analogies used here. Indeed, the Supreme Court found nothing wrong with essentially the same yellow light analogy in *People v. Avila* (2009) 46 Cal.4th 680, 715 (*Avila*)). Defendant contends the prosecutor's argument here trivialized the concept of premeditated murder compared to *Avila*, where the prosecutor expressly acknowledged that " '[d]eciding to and moving forward with the decision to kill' " was not the same, since it involves " 'great dire consequences.' " (*Ibid*.)

In assessing a claim that counsel misstated the law, we view the argument as a whole to determine whether it is reasonably likely the jury was misled. (*Avila*, *supra*, 46 Cal.4th at p. 714.) Viewing the prosecutor's two analogies in context, we see no suggestion that the decision to kill someone is no more consequential than deciding to drive through a yellow light or which loaf of bread to buy. Rather, the prosecutor's point was that the *time* required for premeditation is no greater than the time needed to make those other (far less consequential) decisions. And the prosecutor specifically called to the jury's attention the instruction regarding premeditation, which states that it is not the length of time spent considering whether to kill that matters but rather whether there was sufficient reflection and consideration of the consequences. (CALCRIM No. 521.) As the gist of the prosecutor's argument was consistent with that instruction, there was no likelihood of misleading the jury and no prosecutorial misconduct.

D. PRIOR SERIOUS FELONY ENHANCEMENT

Because defendant was convicted of premeditated murder with the special circumstance of committing multiple murders, the trial court was required to sentence him to life in prison without the possibility of parole. A determinate term was also imposed for the non-homicide convictions. As part of that consecutive sentence, defendant received a five-year enhancement under Penal Code section 667, subdivision (a), because he had previously been convicted of a serious felony.

Defendant seeks a remand for resentencing so the trial court can exercise the discretion conferred by Senate Bill No. 1393 (Stats. 2018, ch. 1013, § 2, effective Jan. 1,

2019), which amended Penal Code section 1385 to allow a trial court to strike a prior serious felony enhancement in furtherance of justice. The statutory amendment potentially reduces punishment and therefore applies retroactively to this nonfinal judgment of conviction. (*People v. Garcia* (2018) 28 Cal.App.5th 961, 972.) The Attorney General does not object to resentencing on that basis. In light of the remand for possible retrial on several counts, we will therefore also direct the trial court to exercise its newly conferred discretion at the time of resentencing to decide whether to strike the five-year enhancement imposed under Penal Code section 667.

III. DISPOSITION

The judgment is reversed. The matter is remanded to the trial court with directions to vacate defendant's convictions on count 1 (Pen. Code, §§ 187, 664); count 2 (Pen. Code, § 246.3, subd. (a)), and count 3 (Pen. Code, §29800, subd. (a)(1)). The District Attorney may retry defendant on those counts within the time allowed by law. When resentencing defendant, the trial court is directed to exercise its discretion regarding imposition of the Penal Code section 667 enhancement.

Grover, J.

I CONCUR:

Danner, J.

Greenwood, P.J., Concurring.

I respectfully concur. I agree with the disposition reached in the majority opinion, and I agree with its analyses of the claims regarding testimonial hearsay, prosecutorial misconduct, and resentencing on the enhancement. I write separately to set forth my own reasoning for why the trial court erred in admitting expert testimony on firearms toolmark analysis. I would further hold the trial court erred by denying Azcona's request for judicial notice and failing to consider the relevant scientific literature.

I. FACTUAL AND PROCEDURAL BACKGROUND

The jury convicted Azcona of two first degree murders, two attempted murders, and multiple other counts arising out of separate incidents that occurred in Salinas over the course of a month. On counts 1, 2, and 3, the jury convicted Azcona of attempted murder, discharge of a firearm, and possession of a firearm by a felon in connection with the shooting of Richard Flores in August 2015.

Flores, who had been shot in the arm, did not testify at trial. A police officer who interviewed him relayed hearsay from Flores stating that he was outside when a man on a bike approached him and shot him. According to the officer, Flores described the man as a blonde white male with a black hoodie riding a black bicycle with red pegs. Police found multiple bullet strikes on a nearby house, and they collected 13 nine-millimeter shell casings from the scene of the shooting.

Azcona is a white man with blonde hair. The gunman in another one of the charged shootings—the murder of Carlos Robles and the attempted murder of Moises Sanchez—was riding a black bicycle at the time of the shooting. As Azcona concedes, the evidence that he committed the Robles/Sanchez shooting was much stronger than the evidence connecting him to the Flores shooting. The majority opinion characterizes the evidence similarly.

The prosecution connected Azcona to the Flores shooting in part by comparing two shell casings—one found at the scene of the Flores shooting, and the other at the

scene of the Robles/Sanchez shooting. The gun itself was never located. Instead, the prosecution introduced the expert testimony of criminalist Scot Armstrong. Armstrong testified that the shell casings from both shootings were from nine-millimeter rounds. Armstrong examined the firing pin impressions left on the shell casings and determined that both rounds were fired from the same gun, "to the practical exclusion of all other guns." He asserted that the similarities in the firing pin marks left on the two casings could not be due to random chance. He added that his work was reviewed by his supervisor, as well as another expert "with many many years of experience." The prosecution put into evidence three exhibits: Exhibits 3A and 3B—written reports by the expert analyzing the shell casings; and Exhibit 3E—side-by-side photographs of the firing pin marks left on the shell casings as viewed through a microscope.

A. Pretrial Proceedings on Expert Testimony

The prosecution's expert first testified about the toolmark identification method at the preliminary hearing. Armstrong testified that two of the shell casings—one from each of the two shootings—could be matched to the same gun based on his visual examination of similarities in the firing pin marks left on the casings.

When asked about the degree of scientific certainty in his determination that the two shell casings came from the same gun, Armstrong replied, "It would be in the billions to be wrong on this," and added, "It is so certain that I don't think there's any reasonable chance that it's wrong." He asserted that "some statistical analysis using models" had been done by "a British gentleman" but he was unable to cite the name or title of the study. When pressed further on how he reached the "billions" estimate, he replied, "I'm relying on 27 years' of experience in the field. I'm looking at hundreds, if not thousands of known non-match comparisons under a microscope; reading all the important articles out there in the literature and I have come to that conclusion as my best guess." He conceded that he had not done any statistical analysis himself, explaining, "I

used it as an example of what my opinion would be. I don't have numbers to back that up."

B. Motion to Exclude and Request for Judicial Notice

Azcona moved pretrial to exclude the toolmark identification evidence under *People v. Kelly* (1976) 17 Cal.3d 24 (*Kelly*). His motion relied on three recent reports criticizing the scientific validity of this and other forensic methods:

- National Research Council of the National Academies, Ballistic Imaging (2008) ("2008 NRC Report")[1];
- National Research Council of the National Academies, Strengthening Forensic Science in the United States: A Path Forward (2009) ("2009 NRC Report")[2];
- President's Council of Advisors on Science and Technology, Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods (2016) ("PCAST Report")[3].

The National Academy of Sciences is a "society of distinguished scholars engaged in scientific and engineering research" with a Congressional mandate to advise the federal government on scientific and technical matters. (2008 NRC Report at p. *iii*.) The National Research Council is the arm of the National Academies of Science, Engineering, and Medicine responsible for conducting studies. (PCAST Report at p. 1.) The NRC Reports were compiled under the auspices of multiple committees including dozens of scientists from relevant fields such as forensic science, materials science, physics, statistics, engineering, and other technology-related areas. (2008 NRC Report at pp. *v-ix*; 2009 NRC Report at pp. *v-ix*.) The PCAST Report was compiled by the President's

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[1] <https://www.nap.edu/read/12162/chapter/1> [as of December 9, 2020], archived at <https://perma.cc/3VF5-WA4C>.

[2] <https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf> [as of December 9, 2020], archived at <https://perma.cc/9UNJ-82B4>.

[3]<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf> [as of December 9, 2020], archived at < https://perma.cc/YU3P-9MCK>.

Council of Advisors on Science and Technology, "an advisory group of the Nation's leading scientists and engineers, appointed by the President to augment the science and technology advice available to [President Obama] from inside the White House and from cabinet departments and other Federal agencies. PCAST is consulted about, and often makes policy recommendations concerning, the full range of issues where understandings from the domains of science, technology, and innovation bear potentially on the policy choices before the President." (PCAST Report at p. *iv*.)

The 2008 NRC Report was primarily concerned with computerized ballistic imaging and the feasibility of establishing a nationwide database of ballistic images of casings and bullets to assist in criminal investigations. (2008 NRC Report at pp. 1-2.) As such, the report did not purport to "provide an overall assessment of firearms identification as a discipline." (2008 NRC Report at p. 3.) Nonetheless, the report stated that an underlying issue "is the question of whether firearms-related toolmarks are unique: that is, whether a particular set of toolmarks can be shown to come from one weapon to the exclusion of all others." (*Ibid.*) As a central finding, the report concluded, "Finding: The validity of the fundamental assumptions of uniqueness and reproducibility of firearms-related toolmarks has not yet been fully demonstrated." (*Ibid.*) The report contrasted firearms identification with DNA evidence, noting that the former is "markedly different" from the latter due to the "subjectivity inherent in the analysis." (*Id.* at p. 54.) "Firearms identification ultimately comes down to a subjective assessment—specifically, a subjective probability statement (although practitioners often render these as absolute statements)." (*Ibid.*) The report explained, "In the specific context of firearms and toolmark examination, derivation of an objective, statistical basis for rendering decisions is hampered by the fundamentally random nature of parts of the firing process. The exact same conditions—of ammunition, of wear and cleanliness of firearms parts, of burning of propellant particles and the resulting gas pressure, and so forth—do not necessarily apply for every shot from the same gun. Ultimately, as

firearms identification is currently practiced, an examiner's assessment of the quality and quantity of resulting toolmarks and the decision of what does or does not constitute a match comes down to a subjective determination based on intuition and experience." (*Id.* at p. 55.)

The 2009 NRC Report reiterated these conclusions. "[T]he decision of the toolmark examiner remains a subjective decision based on unarticulated standards and no statistical foundation for estimation of error rates." (2009 NRC Report at pp. 153-154.) "Because not enough is known about the variabilities among individual tools and guns, we are not able to specify how many points of similarity are necessary for a given level of confidence in the result. Sufficient studies have not been done to understand the reliability and repeatability of the methods." (*Id.* at p. 154.) As to the use of such methods in criminal investigations, the report stated, "Much forensic evidence—including, for example, bite marks and firearm and toolmark identifications—is introduced in criminal trials without any meaningful scientific validation, determination of error rates, or reliability testing to explain the limits of the discipline." (*Id.* at pp. 107-108, footnotes omitted.)

The PCAST Report also "expressed concerns about certain foundational documents underlying the scientific discipline of firearm and tool mark examination." (PCAST Report at p. 104.) The report criticized toolmark comparison methods as subjective and the definition of matching criteria as "circular." (*Ibid.*) The report also summarized recent changes in the state of the science that have revealed the deficiencies in the methods. "Although firearms analysis has been used for many decades, only relatively recently has its validity been subjected to meaningful empirical testing. Over the past 15 years, the field has undertaken a number of studies that have sought to estimate the accuracy of examiners' conclusions. While the results demonstrate that examiners can under some circumstances identify the source of fired ammunition, many of the studies were not appropriate for assessing scientific validity and estimating the

reliability because they employed artificial designs that differ in important ways from the problems faced in casework." (*Id.* at p. 106.)

The report went on to set forth the methodological problems with these studies in substantial technical detail. (PCAST Report at pp. 106-111.) The PCAST report concluded, "[M]ost of these studies involved designs that are not appropriate for assessing the scientific validity or estimating the reliability of the method as practiced. Indeed, comparison of the studies suggests that, because of their design, many frequently cited studies seriously underestimate the false positive rate." (*Id.* at p. 111.) The report identified only a single study that was appropriately designed, concluding, "PCAST finds that firearms analysis currently falls short of the criteria for foundational validity, because there is only a single appropriately designed study to measure validity and estimate reliability. The scientific criteria for foundational validity require more than one such study, to demonstrate reproducibility." (*Id.* at p. 112.)

In support of his motion, Azcona moved for judicial notice of these reports and requested a hearing to present the testimony of his own expert. The trial court held the requested hearing, at which Azcona introduced the testimony of Dr. Ralph Haber. Among other topics, Dr. Haber generally described the findings of the three reports, and confirmed that the 2008 and 2009 NRC Reports had concluded that "the validity of the fundamental assumption of uniqueness and reproducibility of firearm-related toolmarks has not yet been fully demonstrated." He testified that as part of the PCAST Report, "the scientists found the methods had never been validated or had not been shown to be reliable. In other words, that examiners weren't consistent. Different examiners would give different answers for the same task and their answers didn't necessarily correlate with what the truth was." Dr. Haber affirmed that the determination that casings were fired from the same gun is "a judgment that the examiner is making himself based upon his experience. [. . .] That's what we mean by subjective." He further testified that there is no research to demonstrate a gun makes individual marks on shell casings and bullets.

This is partly due to changes in gun manufacturing, in which the precision and accuracy of the machinery for making guns has improved over time, and the metals used to make the guns have gotten harder and more consistent. Dr. Haber testified that there is no published accepted reliable and validated methodology to compare casings. As to the standard methods used by toolmark examiners to match two casings, there is no way to determine how reliable the method is.

After the hearing, Azcona argued that even if the prosecution's expert testimony was admitted, the expert should not be allowed to present arbitrary numbers or testify that "there is any type of scientific certainty." The trial court denied Azcona's motion to exclude and denied the request for judicial notice. The court stated that it did not think a *Kelly* hearing was necessary because "[t]here are published opinions that have accepted this evidence." But the court did not cite any cases supporting this proposition. The court further found that this was not a new scientific technique and stated, "the law is clear that this type of comparison, both toolmark examination and firearm identification, is admissible and can be admitted."

As to the request for judicial notice, counsel for Azcona argued, "I'm just asking the court to consider the state of the relevant scientific community, which is documented within those reports."[4] The court declined to take judicial notice and responded, "there is no way that any court, if this were how things went, would have the ability to read virtually hundreds of thousands of pages if both sides want to introduce into evidence the treatises and the books and the bases for the expert's opinion."

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[4] The majority asserts Azcona failed to show what the relevant scientific community is. (Maj. opn. *ante*, at p. 7.) Yet the majority also asserts there was no need for the trial court to take judicial notice of the three reports Azcona offered to make that showing. I believe Azcona should have been allowed to offer evidence of the attitude of the relevant scientific community through those reports.

II. DISCUSSION

Azcona contends the trial court erred by refusing to judicially notice or review the NRC and PCAST reports that defense counsel offered to show a change in the scientific consensus on the validity of toolmark comparison. Second, he contends the trial court erred by allowing the expert to testify that the casings came from the same gun "to the practical exclusion of all other guns." As part of this claim, he asserts the trial court erred by finding no change in the scientific consensus on the validity of toolmark comparison. The majority rejects this assertion, stating the record is inadequate to establish "that firearm toolmark comparison testimony is no longer admissible in California."[5] (Maj. opn. *ante*, at p. 8.) I respectfully disagree with this analysis.

A. Legal Principles

In determining the underlying reliability of a new scientific technique, the proponent of the evidence has the burden to make "a preliminary showing of general acceptance of the new technique in the relevant scientific community." (*People v. Kelly* (1976) 17 Cal.3d 24, 30 (*Kelly*); see also *Frye v. United States* (1923) 293 F. 1013.) "To be new, a technique must be meaningfully distinct from existing techniques." (*People v. Jackson* (2016) 1 Cal.5th 269, 316 (*Jackson*).)

The *Kelly* test for a new scientific technique is met if use of the technique is "supported by a clear majority of the members of that community." (*People v. Guerra* (1984) 37 Cal.3d 385, 418.) Once that decision is affirmed on appeal by a published appellate decision, the precedent may control subsequent trials, "at least until new evidence is presented reflecting a change in the attitude of the scientific community." (*Id.* at p. 32; *People v. Venegas* (1998) 18 Cal.4th 47, 53 (*Venegas*) [if a published appellate decision in a prior case has already upheld the admission of evidence based on

[5] As noted below, I am unaware of any published appellate opinion by a California court holding that the method used here was admissible in the first place. The majority's opinion does not stand for that proposition either.

such a showing, that decision becomes precedent for subsequent trials in the absence of evidence that the "prevailing scientific opinion has materially changed"].)

"Appellate courts review de novo the determination that a technique is subject to *Kelly*." (*Jackson*, *supra*, 1 Cal.5th at p. 316.) Whether a method has been generally accepted is a mixed question of law and fact subject to limited de novo review. (*People v. Reilly* (1987) 196 Cal.App.3d 1127, 1134.) We review the trial court's determination with deference to findings of historical fact or credibility, and we decide as a matter of law whether there has been general acceptance. (*People v. Reeves* (2001) 91 Cal.App.4th 14, 38.) "The reviewing court undertakes a more searching review—one that is sometimes not confined to the record. Because it is impractical to parade a true cross-section of scientists before the court, the scientific literature may be considered on the ultimate issue of consensus." (*Ibid.*) "For this limited purpose scientists have long been permitted to speak to the courts through their published writings in scholarly treatises and journals. [Citations.] The courts view such writings as 'evidence,' not of the actual reliability of the new scientific technique, but of its acceptance vel non in the scientific community." (*People v. Shirley* (1982) 31 Cal.3d 18, 56 (*Shirley*).) Accordingly, courts may take judicial notice of such scientific publications—not for the truth of the claims in them, but as a matter of evaluating the acceptance of the methods in the scientific community. (See *People v. Ireland* (1995) 33 Cal.App.4th 680, 685; *People v. Law* (1974) 40 Cal.App.3d 69.)

B. Validity of Firearms Toolmark Identification Methods

I am unaware of any published opinion by a California court holding that the method used here—the comparison of firing pin marks on shell casings—has been accepted by the scientific community. The majority agrees. Neither the parties, nor the trial court cited any such opinion. The Attorney General cites *People v. Godlewski* (1943) 22 Cal.2d 677, but that case—which predated *Kelly*—had nothing to do with marks on shell casings or the issue of whether the scientific community accepts toolmark

comparison methods as valid. Both parties, however, have taken the position that the evidence has previously been deemed admissible in California courts. While that may be the case as to toolmark evidence generally, I believe the parties are mistaken with respect to the specific method used here. So-called "toolmark" methods of identification generally involve the examination of the marks that any kind of tool leaves on a surface material, whether firearms are involved or not. I believe the specific method of identification here—visual comparison of marks left on casings by a firing pin—is sufficiently distinct and individualized such that it should be treated as "meaningfully distinct." (See *Jackson*, *supra*, 1 Cal.5th at p. 316 [for *Kelly* to apply to a new technique, the technique must be meaningfully distinct from existing techniques].) Nonetheless, given Azcona's concession on this point below, I will assume he had the burden to show a change in the attitude of the scientific community.

The majority opinion states, "It is not clear that the technique employed here is subject to the *Kelly* standard at all, as visual comparison of marks on physical objects is not so foreign to everyday experience that jurors would have unusual difficulty evaluating it." (Maj. opn. *ante*, at p. 6.) For this proposition, the majority cites *People v. Cowan* (2010) 50 Cal.4th 401 (*Cowan*). In *Cowan*, a criminalist matched bullets to a gun by using a silicone rubber compound to make a cast of the gun's barrel interior. The criminalist then compared the markings on the cast to markings on the bullets and concluded the bullets were fired from that gun. (*Id.* at p. 469.) The California Supreme Court rejected the defendant's challenge to the scientific validity of the method because the method was not subject to *Kelly*. "Where, as here, a procedure isolates physical evidence whose existence, appearance, nature, and meaning are obvious to the senses of a layperson, the reliability of the process in producing that result is equally apparent and need not be debated under the standards of *Kelly*[.]" (*Id.* at p. 524.)

The method used here is distinct from the technique considered in *Cowan*. Armstrong did not have the gun used in the offenses, and he compared two shell chasings

with each other, not a bullet with a barrel. The methods bear some abstract similarity in that both involved "essentially a tool mark type of examination when one looks at impressed or striated materials, marks impressed or striated materials," (*Cowan, supra*, 50 Cal.4th at p. 470), but the similarity ends there. And while it is true that an ordinary layperson is capable of visually comparing the similarity of the marks on the two shell casings, the expert's testimony here went far beyond that.

Armstrong testified, "If I can see three dimensions, I need to see six individual marks in a row continuous matching stria, to meet my identification criteria. That's based on the fact that nobody's ever seen that many by *random chance*. [¶] *We've done numerous studies on the subject trying to see what can happen by random chance, and that's much more than can ever happen by random chance.*" (Italics added.) Based on these criteria, Armstrong testified that he determined the casings were fired from the same gun "to the practical exclusion of all other guns." Ordinary laypersons are incapable of estimating the degree to which the markings on two shell casings may be due to random chance.[6] According to the expert, the role of random chance in markings—and the presence of "six individual marks in a row continuous matching stria" as a matching criteria—was determined from "numerous studies." Ordinary laypersons do not read or conduct studies on matching shell casings. Such studies would necessarily involve the examination of large numbers of casings and firearms, and estimates of random chance or the development of matching criteria would have to be derived from systematic statistical analyses to be reliable. These are precisely the kinds of scientific methods that are subject to *Kelly*.

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[6] An examination of the shell casing photographs that were shown to the jury demonstrates the difficulty inherent in determining that both casings were fired by the same gun. Some of the marks appear to match, but some do not. A layperson would have no way of knowing how similar or dissimilar these marks would be if the two casings were fired by two different guns.

Assuming *Kelly* applies, the majority opinion concludes Azcona failed to present sufficient evidence "that a 'clear majority' of the relevant scientific community no longer accepts firearm toolmark comparison as reliable." (Maj. opn. *ante*, at p. 7.) Respectfully, I assert this misstates the defendant's burden. Assuming the expert's methods had already been upheld in a published opinion—and as stated above, I am unaware of any such opinion—Azcona merely had to present evidence reflecting a change in the attitude of the scientific community. "Because there was a published appellate decision holding that [the scientific method challenged] was generally accepted as reliable in the relevant scientific community [citations], defendant could challenge the scientific validity of the technique only by presenting 'new evidence . . . reflecting a change in the attitude of the scientific community.' (*Kelly*, *supra*, 17 Cal.3d at p. 32.)" (*People v. Bolden* (2002) 29 Cal.4th 515, 547.) For this purpose, Azcona offered the NRC and PCAST Reports, in addition to the testimony of his own expert.

I would conclude that the NRC and PCAST Reports have demonstrated a "material[] change" in the attitude of the scientific community (*Venegas*, *supra*, 18 Cal.4th at p. 53), and I would conclude the trial court erred by failing to review or judicially notice the reports. First, all three reports were written by numerous highly respected scientists from a wide range of relevant disciplines, including forensic science, materials science, physics, statistics, engineering, and other technology-related areas. The PCAST report further summarized the changing opinions of other forensic scientists in recent years recognizing the need for more rigorous methods and empirical analyses. (See, e.g., PCAST Report at 63, citing Petraco, N.D., Shenkin, P., Speir, J., Diaczuk, P., Pizzola, P.A., Gambino, C., and N. Petraco. "Addressing the National Academy of Sciences' Challenge: A Method for Statistical Pattern Comparison of Striated Tool Marks." (*Journal of Forensic Sciences*, Vol. 57 (2012): 900-11).) By contrast, the prosecution presented almost nothing apart from its own expert's testimony to establish whatever purported scientific consensus might support the expert's analysis.

The NRC and PCAST Reports are highly critical of the absence of scientific rigor inherent in the toolmark comparison methods as used by the expert here. The reports variously state these methods are circular, inherently subjective, lacking in scientific validity or foundation, and developed "without any meaningful scientific validation, determination of error rates, or reliability testing to explain the limits of the discipline." (2009 NRC Report at pp. 107-108.) The PCAST Report also conducted a meta-analysis of past toolmark studies, and found error rates—that is, false-positive matches—potentially as high as 1-in-21. (PCAST Report at p. 111.) This result squarely contradicts the expert's assertion that he could match the shell casings to the same gun "to the practical exclusion of all other guns." At the very least, the trial court should have limited the expert's testimony to exclude statements asserting this degree of certainty in the purported match. (See, e.g, *U.S. v. Monteiro* (D. Mass. 2006) 407 F.Supp.2d 351, 372 ("Because an examiner's bottom line opinion as to an identification is largely a subjective one, there is no reliable statistical or scientific methodology which will currently permit the expert to testify that it is a 'match' to an absolute certainty, or to an arbitrary degree of statistical certainty.")

Given the provenance of the NRC and PCAST reports and the detailed analyses they provide on the current state of the science, I would conclude they reflect a material change in the attitude of the scientific community regarding the validity of firearms toolmark analysis. As such, without any showing to the contrary by the prosecution, I would conclude the trial court erred by denying Azcona's motion to exclude or limit the expert's testimony.

Furthermore, I would conclude the court erred in denying the motion to review or judicially notice the reports. The California Supreme Court has made clear that courts are permitted to look to the scientific literature to assess the attitude of the scientific community, and the court can do so without accepting the contents of the literature as truth. (*Shirley*, *supra*, 31 Cal.3d at p. 56.) The court appeared to rely entirely on the

testimony of the defense's expert, but there is no way the court could have assessed the current state of the scientific community based solely on that testimony. "[W]e think it questionable whether the testimony of a single witness alone is ever sufficient to represent, or attest to, the views of an entire scientific community regarding the reliability of a new technique." (*Kelly*, *supra*, 7 Cal.3d at p. 37.) It was further incumbent on the court to give the reports their due weight, considering they reflect the views of a large number of prominent scientists. "[T]he trial courts, in determining the general acceptance issue, must consider the quality, as well as quantity, of the evidence supporting or opposing a new scientific technique." (*People v. Leahy* (1994) 8 Cal.4th 587, 611.) Instead, it appears the trial court never even considered whether the attitude of the scientific community had changed over time, and the court made no such finding on the record. Rather, the court relied solely on the claim that such evidence has historically been admitted. "To hold that a scientific technique could become immune from *Kelly* scrutiny merely by reason of long-standing and persistent use by law enforcement outside the laboratory or the courtroom, seems unjustified." (*Id.* at p. 606.) I would conclude the trial court erred by failing to consider the relevant materials to determine whether there had been any change in the scientific consensus.

In drawing these conclusions regarding the trial court's obligation to review the scientific reports offered by the defense and to exclude the expert testimony under *Kelly*, I agree with the majority that the trial court also abdicated its gatekeeping function under Evidence Code section 801 (requiring expert testimony to be "of a type that reasonably may be relied upon by an expert in forming an opinion on the subject"). Similarly, I agree that the trial court clearly erred when it admitted the expert's hearsay statements regarding his supervisor's approval and agreement with the expert's opinion. But in my view, the trial court would not have reached those evidentiary decisions had it ruled appropriately on appellant's motion to exclude the expert's testimony. As noted by the majority, the evidence connecting Azcona to the Flores shooting was not strong. Even

under the *Watson*[7] state law harmless error standard, I would conclude this error requires reversal because there is a reasonable probability the outcome would have been more favorable to Azcona if the trial court had excluded the expert's testimony.

There is no question that trial courts will be faced with many challenges to previously accepted expert testimony on forensic techniques that may prove, with the swift advance of science, to be less sound than previously supposed. For this reason I write separately; for the reasons above, I respectfully concur.

[7] *People v. Watson* (1956) 46 Cal.2d 818.

Greenwood, P.J.

People v. Azcona
H045676

Trial Court:	Monterey County Superior Court, Case No.: SS151642A
Trial Judge:	Hon. Pamela L. Butler
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