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***RICHARDS II* TAKES A BITE OUT OF FORENSIC SCIENCE**

*Michelle Cornell-Davis**

I. INTRODUCTION

On June 21, 2016, William Richards walked out of West Valley Detention Center in Rancho Cucamonga, California with his arms raised in triumph.¹ After fifteen years of wrongful imprisonment, Richards had been released.² His long journey to exoneration included two trips to the California Supreme Court and the amendment of a law. When asked what he wanted to do first now that he was out of prison, Richards responded that he just wanted some real food to eat.³

The story of William Richards is an incredible one. His case speaks to how some wrongful convictions occur and what steps can and should be taken to prevent them. *In re Richards (Richards I)*⁴ and *In re Richards II (Richards II)*,⁵ provide an insightful example of the ongoing court-legislature dialogue taking place as a result of the larger national conversation on the need for reliable forensic science standards in criminal cases.⁶ The conversation began because data

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1. *Man Convicted Of Killing His Wife 23 Years Ago Released From Prison In Rancho Cucamonga*, CBS L.A. (June 21, 2016, 6:06 PM), <http://losangeles.cbslocal.com/2016/06/21/man-convicted-of-killing-his-wife-23-years-ago-released-from-prison-in-rancho-cucamonga>.

2. *Id.*

3. *Id.*

4. 289 P.3d 860 (Cal. 2012).

5. 371 P.3d 195 (Cal. 2016).

6. See EXECUTIVE OFF. OF THE PRESIDENT, PRESIDENT'S COUNCIL OF ADVISORS ON SCI. AND TECH., FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS (Sept. 2016) [hereinafter PCAST Report], https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf (advising the President on the state of forensic science and recommending steps to ensure validity of forensic sciences used in the courtroom); see also Judge Alex Kozinski, *Rejecting Voodoo Science in the Courtroom*, WALL STREET J. (Sept. 19, 2016,

gleaned from wrongful conviction cases nationwide have exposed numerous and serious flaws in what has passed as forensic science in the courtroom.⁷ Today, the National Registry of Exonerations counts 2,006 people who have been exonerated since 1989.⁸ Of these 1,905 cases, an estimated 480 of them involved false or misleading forensic evidence.⁹ *Richards I* and *Richards II* illustrate how the California Supreme Court and the California Legislature addressed the use of false or misleading forensic evidence in a case involving bitemark evidence.

Following this introduction, Part II discusses the factual background that led to William Richards's wrongful conviction and the procedural journey that led to his eventual release. Part III analyzes the outcome of the case in light of the current dialogue about forensic science. Part IV concludes that the court's decision, and the legislature's response—amending a statute to address the problem identified by the court—are steps in the right direction towards alleviating some of the wrongs caused by the unreliability of some forensic sciences administered in criminal investigations.

II. BACKGROUND AND STATEMENT OF THE CASE

A. *The Scene*

Though August 10, 1993, started out as an average day for William Richards, by that evening it would turn into the stuff of

7:36 PM), <http://www.wsj.com/articles/rejecting-vooodoo-science-in-the-courtroom-1474328199> (calling for swift implementation of the PCAST Report recommendations and criticizing the use of unreliable forensic science in the courtroom).

7. For example, the National Registry of Exonerations is a project developed by the University of California Irvine, the University of Michigan Law School, and the Michigan State University College of Law. The purpose of the Registry is to “collect[], analyze[], and disseminate[] information about all known exonerations of innocent criminal defendants in the United States, from 1989 to the present.” *Our Mission*, NAT'L REGISTRY OF EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/mission.aspx> (last visited Apr. 1, 2016).

8. *Detailed View*, NAT'L REGISTRY OF EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/about.aspx> (from “Using the Registry” tab, select “Detailed View”) (last visited Apr. 1, 2016).

9. *Id.* (from “Using the Registry” tab, select “Detailed View”; then filter by “False or Misleading Forensic Evidence”). The National Registry finds “false or misleading forensic evidence” when an “[e]xoneree’s conviction was based at least in part on forensic information that was (1) caused by errors in forensic testing, (2) based on unreliable or unproven methods, (3) expressed with exaggerated and misleading confidence, or (4) fraudulent.” *False or Misleading Forensic Evidence (F/MFE)*, NAT'L REGISTRY OF EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/glossary.aspx#FMFE> (last visited Oct. 27, 2016).

nightmares.¹⁰ Just after midnight, Richards came home from work to a horrifying scene.¹¹ His wife, Pamela Richards, had been manually strangled, severely beaten with two fist-sized rocks, and her skull was crushed with a concrete steppingstone.¹² At the time, William and Pamela were living on an isolated piece of “property in the Mojave Desert in San Bernardino County.”¹³

Upon discovering her body, Richards called 911 three times: once at 11:58 p.m. and then twice more in the next half hour.¹⁴ San Bernardino County Sheriff’s Deputy Nourse arrived at the scene shortly after 12:30 a.m.¹⁵ However, it would be about three more hours before any homicide detectives arrived and another few hours after that until the scene itself was finally processed.¹⁶ During that time, the police failed to secure the Richards’s dogs, and the dogs partially buried Pamela during the night.¹⁷

Richards quickly became a suspect when police were unable to find anyone else who had been present at the crime scene.¹⁸ He was charged with his wife’s murder, and in 1997, after *three* mistrials, a jury found him guilty.¹⁹ At trial, the evidence against Richards was thin. The prosecution’s “evidentiary silver bullet”²⁰ was a lesion found on Pamela’s body that allegedly matched Richards’s teeth.²¹ During the fourth trial, the prosecution called Dr. Norman Sperber, an odontologist, to testify as a forensic dental expert and explain the comparison and match.²² Dr. Sperber testified that the lesion was an abnormal human bitemark.²³ He further testified that the mark

10. *Update: William Richards Released on June 21, 2016!*, CAL. INNOCENCE PROJECT, <https://californiainnocenceproject.org/read-their-stories/william-richards> (last visited Nov. 8, 2016).

11. *Richards II*, 371 P.3d 195, 199 (2016).

12. *Id.* at 198, 200.

13. *Id.* at 197.

14. *Id.* at 198.

15. *Id.*

16. *Id.* at 199.

17. *Richards II*, 371 P.3d at 199.

18. *See id.*

19. *Id.* at 197. The first two mistrials were due to hung juries. The third mistrial was due to the trial court recusing itself during jury selection. In the fourth trial, the jury was deadlocked until it received further instruction on “reasonable doubt,” after which it found Richards guilty of first degree murder. *Id.*

20. Michelle Ahronovitz, *SB 694: How Low Can You Go? Reducing the Evidentiary Standard for State Habeas Corpus Petitions*, 47 THE U. OF PAC. L. REV. 616, 617 (2016).

21. *Richards II*, 371 P.3d at 201–02.

22. *Id.*

23. *Id.* at 202.

matched a casting of Richards's teeth and that, based on his personal experience, "one or two or less" out of 100 people would have such a dental abnormality.²⁴ Richards was sentenced to 25 years to life, and in August 2000, his conviction was affirmed on appeal.²⁵

B. Post-Conviction Procedural History

1. Subsequent Habeas Proceedings

In 2007, Richards filed a writ of habeas corpus in San Bernardino County Superior Court.²⁶ His habeas petition asserted that his conviction was based on false evidence and that there was now new evidence proving his innocence.²⁷

A key part of Richards's evidence was a declaration from Dr. Sperber, the prosecution's forensic dentist, in which he repudiated his trial testimony regarding the bitemark match.²⁸ Dr. Sperber's declaration stated, "With the benefit of all of the photographs [of the crime scene and Pamela's injuries], and with my added experience, I would not now testify as I did in 1997."²⁹ He further stated, "I cannot now say with certainty that the injury on the victim's hand is a human bitemark injury."³⁰

The 2007 habeas petition not only included Dr. Sperber's recantation, but also other declarations and reports by forensic dental experts.³¹ Using new technology not previously available at Richards's jury trial, they corrected the angular distortion from the autopsy photograph and compared the corrected photograph to a digital exemplar of Richards's lower teeth.³² Based on their comparisons, the experts could not positively state that it was Richards's bitemark on the victim's hand.³³

The superior court granted Richards habeas relief, and the district attorney appealed.³⁴ The court of appeal reversed the ruling,

24. *Id.*

25. *Id.* at 197.

26. *In re Richards*, No. E049135, 2010 WL 4681260, at *1 (Cal. Ct. App. Nov. 19, 2010).

27. *Id.*

28. *Richards I*, 289 P.3d 860, 863 (2012).

29. *Id.* at 866.

30. *Id.*

31. *Id.* at 871.

32. *Id.*

33. *Id.*

34. *In re Richards*, No. E049135, 2010 WL 4681260, at *1 (Cal. Ct. App. Nov. 19, 2010).

on the ground that “the new evidence . . . failed to undermine the prosecution’s entire case and point unerringly to his innocence.”³⁵ Then, in 2013, the California Supreme Court upheld the court of appeal’s reversal by a 4-3 majority.³⁶ The court reasoned that Dr. Sperber’s recanted testimony did not qualify as “false evidence” under California Penal Code Section 1473.³⁷ This section provided that “a writ of habeas corpus may be prosecuted for, but not limited to, the following reasons: (1) False evidence that is substantially material or probative on the issue of guilt or punishment was introduced against a person at any hearing or trial relating to his or her incarceration. . . .”³⁸ The court interpreted “false evidence” to mean that unless there were “any significant advances in the expert’s field of expertise or in any technologies employed by the expert,” the witness’s original opinion is not actually false merely because the opinion changes at a later date.³⁹ The court held that neither Dr. Sperber’s recantation nor the new technology used by the other experts was enough to show that Sperber’s trial testimony was “objectively untrue.”⁴⁰

Having found that Richards failed to satisfy the “false evidence” standard, the court then turned to whether he met the “new evidence” standard for habeas relief, which, at the time, required new evidence to “point unerringly to innocence or reduced culpability.”⁴¹ After analyzing the cumulative effect of all the evidence presented in the habeas petition, the court found that he also failed to meet this standard, and consequently denied him habeas relief.⁴²

The *Richards I* dissent, however, maintained that the majority incorrectly “heighten[ed] the standard of proof required to show the falsity of expert testimony” and that the underlying basis of Dr. Sperber’s testimony, as well as Dr. Sperber’s ultimate conclusion, had been proven false by a preponderance of the evidence.⁴³ Given the impact of Dr. Sperber’s trial testimony on the jury, the dissent

35. *Id.* at *16.

36. *Richards I*, 289 P.3d at 863–64.

37. *Id.* at 863–64.

38. CAL. PEN. CODE § 1473 (West 2016).

39. *Richards I*, 289 P.3d at 872; *Richards II*, 371 P.3d 195, 206 (2016).

40. *Richards I*, 289 P.3d at 872.

41. *In re Clark*, 855 P.2d 729, 739 (Cal. 1993) (quoting *People v. Gonzalez*, 51 Cal. 3d 1179, 1246 (1990)).

42. *Richards I*, 289 P.3d at 876.

43. *Id.* at 880 (Liu, J., dissenting).

concluded that it was also “reasonably probable that the verdict would have been different without his testimony.”⁴⁴

2. Legislative Response to *Richards I*

In response to the *Richards I* interpretation of false evidence, the California legislature enacted Senate Bill No. 1058, which added subdivision (e)(1) to section 1473, effective January 1, 2015.⁴⁵ Subdivision (e)(1) states, “For purposes of this section, ‘false evidence’ includes opinions of experts that have either been repudiated by the expert who originally provided the opinion at a hearing or trial or that have been undermined by later scientific research or technological advances.”⁴⁶ In revising this section, the California legislature specifically sought to address and correct the *Richards I* decision.⁴⁷ The Committee Report for the bill reiterated that California’s false testimony statutes were designed to “protect an individual from wrongful incarceration due to the false testimony of a witness.”⁴⁸ The report noted that the *Richards I* decision failed to do this because it created “a higher bar” for overturning wrongful convictions in cases of false expert testimony, effectively creating an unjust distinction between the standard used for false testimony of laypersons and expert witnesses.⁴⁹ The report found that this interpretation of section 1473 was “unreasonable and exacerbates the problem of wrongful convictions,” and concluded that “[q]uite simply, this bill will keep innocent people out of prison.”⁵⁰

III. THE REASONING OF THE COURT IN *RICHARDS II*

Richards filed another habeas petition in response to the legislative change.⁵¹ He contended that under the newly amended Section 1473, his conviction should be overturned.⁵² The court decided his new petition in May 2016.⁵³

44. *Id.* at 883; *Richards II*, 371 P.3d at 208.

45. CAL. PENAL CODE § 1473(e)(1) (Deering 2017); *Richards II*, 371 P.3d at 196–97.

46. CAL. PENAL CODE § 1473(e)(1) (Deering 2017).

47. *Richards II*, 371 P.3d at 196–97.

48. Assem. Comm. on Public Safety, Analysis of S.B. 1058, 2013–2014 Reg. Sess., at 4 (Cal. 2014).

49. *Id.*

50. *Id.*

51. *Richards II*, 371 P.3d at 195.

52. *Id.* at 197.

53. *Id.*

In *Richards II*, the court concluded that under the new legislation, an expert witness opinion could later be considered “false evidence” under two circumstances: (1) if the expert repudiates his or her own opinion given at trial; or (2) if the opinion given at trial is undermined by subsequent “scientific research or technological advances.”⁵⁴ Under this new standard, the California Supreme Court held that Dr. Sperber’s bitemark testimony qualified as false evidence under both circumstances.⁵⁵

Applying the first circumstance to this case, the court held it was clear from Dr. Sperber’s later declaration that Dr. Sperber repudiated his trial testimony.⁵⁶ Applying the second circumstance to the case, the court held that new technological advances also undermined Dr. Sperber’s trial testimony because technology that was not available at the time of Richards’s 1997 jury trial was used to correct the angular distortion of the lesion depicted in the autopsy photograph, and the corrected photograph formed the basis of the experts’ opinions during the habeas proceedings.⁵⁷

The Attorney General argued that Richards’s false evidence claim was a masked attempt to present a sufficiency of the evidence claim, because if Dr. Sperber’s testimony was disregarded, the rest of the trial evidence must still be considered and reweighed in evaluating his guilt.⁵⁸ The Attorney General contended this was impermissible because a sufficiency of the evidence claim is not a cognizable habeas corpus claim.⁵⁹ The court rejected this argument, stating that once a petitioner established false evidence, the standard for relief is met as long as the false evidence is “material.”⁶⁰ Evidence is material “if there is a ‘reasonable probability’ that, had it not been introduced, the result would have been different.”⁶¹ Reasonable probability is established when the reviewing court’s assurance in the outcome is undermined.⁶² Thus, a court must determine whether the false evidence is material, rather than

54. *Id.* at 207.

55. *Id.*

56. *Id.*

57. *Richards II*, 371 P.3d at 208.

58. *Id.* at 209.

59. *Id.*

60. *Id.*

61. *In re Roberts*, 60 P.3d 165, 174 (Cal. 2003).

62. *In re Malone*, 911 P.2d 468, 488 (Cal. 1996).

examining whether the verdict may still be supported without the false evidence.⁶³

Applying the materiality standard, the court held that Dr. Sperber's testimony was, indeed, material.⁶⁴ During the 1997 trial, the defense had a substantial response to the prosecution's case, except for the bitemark evidence.⁶⁵ Based on the facts of the case, it was reasonably probable that the false evidence presented by Dr. Sperber at Richards's 1997 jury trial affected the outcome of that proceeding, especially given his impressive credentials at the time.⁶⁶ The court thus held Richards had met the burden of demonstrating "false evidence" under both circumstances and that the false evidence was material, and consequently granted Richards habeas relief.⁶⁷

IV. ANALYSIS AND SIGNIFICANCE OF *RICHARDS II*

It is the position of this Comment that *Richards II* was decided correctly. First, the new legislation was appropriately applied to the facts of the case; second, the petition was not successive because the claim was based on new legislation; and third, the outcome parallels the current national conversation about the reliability of forensic evidence, including bitemark comparison.

A. *The Court-Legislature Dialogue*

On its own, *Richards II* is a straightforward application of the law. The court received a new standard that was specifically directed at remedying the injustice of *Richards I*.⁶⁸ Applying the new standard, the court found that Dr. Sperber's trial testimony constituted false evidence and granted Richards relief. Thus, the court upheld the purpose of the new legislation: to eliminate an "unjust distinction" between lay and expert testimony, which if left

63. *Richards II*, 371 P.3d at 209.

64. *Id.* at 210–11.

65. *Id.* (including responses to shoe prints, blood spatter, and the time of death).

66. *Id.* at 210. (credentials included more than 40 years of dentistry experience, acting as chief forensic dentist for two counties, testifying in more than 100 cases, and receiving "a congressional appointment to set up a national system to identify missing persons through dental records.")

67. *Id.* at 211.

68. See CAL. PENAL CODE § 1473(e)(1) (Deering 2017); *Richards II*, 371 P.3d at 196–97.

uncorrected would “[exacerbate] the problem of wrongful convictions.”⁶⁹

Yet, when viewed in its procedural context, *Richards II* serves as an encouraging example of court-legislature dialogue and a heartening shift in policy for prisoners seeking exoneration. Because of the procedural posture of this case and the conversation between the legislature and the courts, there is now stronger, clearer statutory language, which will allow innocent persons convicted by faulty forensic evidence to more easily seek post-conviction review of their cases.⁷⁰

Moreover, *Richards II* is part of a broader dialogue taking place in California about standards for habeas petitions. For example, until recently there was no codified standard of proof for a habeas petition brought on the basis of new evidence.⁷¹ The standard was based on case law which held new evidence “must undermine the entire prosecution case and point unerringly to innocence or reduced culpability,” and “if a reasonable jury could have rejected the evidence presented, a petitioner has not satisfied his burden.”⁷² This demanding standard, which was one of the highest in the nation,⁷³ was eliminated when Senate Bill 1134 was signed into effect in September 2016.⁷⁴ Under the new amendment to Cal. Penal Code section 1473, the standard was lowered to “new evidence exists that is credible, material, presented without substantial delay, and of such decisive force and value that it would have more likely than not changed the outcome at trial.”⁷⁵ This amendment makes California’s post-conviction standard for new evidence consistent with the post-conviction standards of 43 other states.⁷⁶ These changes in law regarding standards for false evidence and new evidence, of which the *Richards* saga has played a part, will hopefully lead to more exonerations in cases of wrongful convictions in California and “[give] a fallible system a better chance to remedy mistakes.”⁷⁷

69. S. B. No. 1058, Reg. Sess. 2013–2014 (Cal. June 13, 2014).

70. See CAL. PENAL CODE § 1473(e)(1) (Deering 2017).

71. Assemb. Comm. on Public Safety, Analysis of S.B. 1134, at 7 (Cal. 2016).

72. *In re* Lawley, 179 P.3d 891, 897 (Cal. 2008).

73. S. Rules Comm., Analysis of S.B. 1134, at 7 (Cal. 2016).

74. S.B. No. 1134, Ch. 785 2016 Leg., Reg. Sess. (Cal. 2016).

75. *Id.*

76. S. Rules Comm., Analysis of S.B. 1134, at 5 (Cal. 2016).

77. Jaelyn Gioiosa, *New Bill Makes It Easier for the Wrongfully Convicted to Prove Their Innocence*, N. CAL. INNOCENCE PROJECT (Sept. 28, 2016), <http://law.scu.edu/northern-california->

B. Bitemark Evidence

The need for a more inclusive false evidence standard for habeas petitions is uniquely highlighted in the *Richards* case because bitemark comparison is a particularly unreliable forensic science. Forensic odontology, which is the application of dentistry to the law, has come under heavy criticism in recent years.⁷⁸ Forensic odontology includes several fields of study, such as identification of unknown remains, bitemark comparison, interpretation of oral injury, and dental malpractice.⁷⁹ Bitemark comparison, which was used in *Richards*'s case, is considered the most controversial of these areas.⁸⁰

Forensic identification for bitemarks involves two steps.⁸¹ The first step is comparison, where the expert compares a mark or imprint to a known source to determine whether they are similar enough to be called a match.⁸² The second step considers "the probability that the imprint and implement came from the same source."⁸³ Significant risks of error are involved in both of these steps.⁸⁴ Bitemarks face practical difficulties.⁸⁵ Because skin is elastic, pliable, and reactive, it is not a reliable material for bitemark transfers.⁸⁶ Skin stretches, swells, bruises, and becomes inflamed, all of which can lead to distorted images of the biter's dentition.⁸⁷ Additionally, "no thorough

innocence-project/new-bill-makes-it-easier-for-the-wrongfully-convicted-to-prove-their-innocence.

78. NAT'L RES. COUNCIL, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD 42 (2009) [hereinafter NAS Report], <http://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>. Furthermore, this criticism has not just been limited to the world of forensic science; bitemark science has also garnered attention in the national media. See Radley Balko, *How the Flawed "Science" of Bite Mark Analysis Has Sent Innocent People to Prison*, WASH. POST (Feb. 13, 2015), <https://www.washingtonpost.com/news/the-watch/wp/2015/02/13/how-the-flawed-science-of-bite-mark-analysis-has-sent-innocent-people-to-jail/> (part one of a four part article series discussing the flaws and history of bitemark evidence).

79. NAS Report, *supra* note 78, at 173.

80. *Id.* Key areas of contention include "the accuracy of human skin as a reliable registration material for bitemarks, the uniqueness of human dentition, the techniques used for analysis, and the role of examiner bias." *Id.* at 178.

81. Adam Deitch, *An Inconvenient Tooth: Forensic Odontology Is an Inadmissible Junk Science When It Is Used to Match Teeth to Bitemarks in Skin*, 2009 WIS. L. REV. 1205, 1216 (2009).

82. *Id.*

83. *Id.*

84. *Id.*

85. NAS Report, *supra* note 78, at 175.

86. Brief for Michael J. Saks et al. as Amici Curiae Supporting Petitioner at 20, *In re Richards*, 371 P.3d 195 (Cal. 2016) (No. S223651) [hereinafter Amici Brief].

87. *Id.*

study has been conducted of large populations to establish the uniqueness of bitemarks [and] theoretical studies include more teeth than are seen in most bitemarks submitted for comparison.”⁸⁸ There is also “no central repository of bitemarks and patterns.”⁸⁹ Thus, it is possible that a purported match may not actually be a match at all, or could be the result of coincidence.⁹⁰

In addition to the disputed methods involved, forensic odontology “suffers from the potential for large bias among bitemark experts.”⁹¹ This bias can arise because of police agencies providing “the suspects for comparison and a limited number of models from which to choose from in comparing the evidence.”⁹² Bias may also arise as a result of the pressure to identify a suspect in “highly sensationalized and prejudicial cases.”⁹³ Moreover, this bias remains uncorrected because blind comparisons, or a second expert’s opinion, are rarely called for.⁹⁴

Finally, there is an unsettling lack of standardization across the field.⁹⁵ Although the American Board of Forensic Odontology has developed guidelines for the analysis of bitemarks, there is still no general agreement among practicing forensic odontologists regarding national or international standards for comparison.⁹⁶ Experts have differed widely in their evaluations in many instances, and “forensic dentists are free to use whichever method they happen to be familiar with or prefer.”⁹⁷

Given the lack of standardization and the inherent imprecision of scientific methods employed in bitemark matching, many critics have called into question the current use of bitemark matching in criminal investigations. The most prominent critique of bitemark evidence came in a report in 2009 by the National Research Council, a subdivision of the National Academy of Sciences.⁹⁸ The council

88. NAS Report, *supra* note 78, at 174.

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.* at 174–75.

93. *Id.* at 175.

94. NAS Report, *supra* note 78, at 175.

95. *Id.*; Amici Brief, *supra* note 86, at 20–21.

96. NAS Report, *supra* note 78, at 175; Amici Brief, *supra* note 86, at 20–21.

97. Amici Brief, *supra* note 86, at 21.

98. NAS Report, *supra* note 78, at iii. The goal of the council is to “associate the broad community of science and technology with the Academy’s purposes of furthering knowledge and advising the federal government.” *Id.*

concluded that there was “no evidence of an existing scientific basis for identifying an individual to the exclusion of all others,” and found “a lack of valid evidence to support many of the assumptions made by forensic dentists during bitemark comparisons.”⁹⁹ Further, in an amicus brief submitted in the *Richards II* case, a set of scientists, statisticians, law-and-science scholars, and practitioners found that the foundations for bitemark identification were unsound.¹⁰⁰ They suggest that future research may solve some of the issues of bitemark identification, but conclude that bitemark experts “have yet to establish either the validity of their approach or the accuracy of their conclusions, and the courts have been utterly ineffective in addressing this problem.”¹⁰¹

Most recently, a report released by the President’s Council of Advisors on Science and Technology (“PCAST”) in September 2016 concluded, “bitemark analysis does not meet the scientific standards for foundational validity, and is far from meeting such standards.”¹⁰² The report acknowledges that some practitioners fear the fall of bitemark evidence in the courtroom because it “could hamper efforts to convict defendants in some cases.”¹⁰³ Yet the report counters that if this is a true concern, the answer is not to “admit expert testimony based on invalid and unreliable methods, but rather to attempt to develop scientifically valid methods.”¹⁰⁴ Ultimately, the PCAST reporters conclude that the probability of making bitemark analysis scientifically reliable is low, and they advise against putting resources into it.¹⁰⁵

Considering these acknowledgements that bitemark evidence is less of a science and more of a guessing game, bitemark evidence should not be relied upon in any degree.¹⁰⁶ If bitemark science is not

99. *Id.* at 176 (quoting D. Sweet & I. A. Pretty, *The Scientific Basis for Human Bitemark Analysis—A Critical Review*, 41 SCI. & JUST. 85, 85–92 (2001)).

100. *See generally* Amici Brief, *supra* note 86.

101. *Id.* at 45 (quoting NAS Report, *supra* note 78, at 53).

102. PCAST Report, *supra* note 6, at 87.

103. *Id.*

104. *Id.*

105. *Id.*

106. Deitch, *supra* note 81, at 1205 (concluding that courts should refuse to admit bitemark matching testimony in the courtroom); Paul C. Giannelli, *Bite Mark Testimony Under Attack*, 31 CRIM. JUST., Summer 2016, at 40, 40–41 (2016) (concluding that bitemark science “should be challenged at every trial in which it is offered”).

to be disregarded entirely, there must be a safety net for prisoners who have been wrongfully convicted by faulty science.

C. Richards II and the Future of Forensic Science

Richards II was not just decided correctly because bitemark evidence is unreliable. In addition to bitemark evidence, many other types of forensic science have recently been called into question.¹⁰⁷ There has been increasing recognition that many of the methods used in the forensic sciences are outdated.¹⁰⁸ In the wake of the mounting number of exonerations and the growing awareness of faulty forensic science, *Richards II* stands as an important guard against unreliable or changing fields of forensic science.

When forensic tests, such as bitemark matching, were first developed, they were often created in crime laboratories to evaluate evidence from a particular crime scene.¹⁰⁹ As a result, many techniques were never subjected to scientific scrutiny or analysis, and researching their limitations and foundations has not been a top priority.¹¹⁰ Despite this, many forensic sciences were long considered highly reliable. However, since criminal investigators began employing DNA analysis in the 1980s, this view of forensic sciences has begun to change.¹¹¹ DNA analysis is now used to reexamine cases of prisoners who claim they are innocent. As a result of DNA testing, the number of exonerations has grown rapidly across the country in recent years.¹¹² Many of the prior convictions which have been overturned involved faulty forensic science,¹¹³ calling into question entire fields of expertise.¹¹⁴ For example, arson science, which was once highly regarded, is now largely considered a “junk science” and may have led to the wrongful execution of Todd

107. See PCAST Report, *supra* note 6.

108. *Id.*; see also *Richards I*, 289 P.3d 860, 877 (Cal. 2012) (Liu, J., dissenting).

109. NAS Report, *supra* note 78, at 42.

110. *Id.*

111. *Id.* at 40.

112. PCAST Report, *supra* note 6, at 26.

113. *Id.* (“DNA-based re-examination of past cases, moreover, has led so far to the exonerations of 342 defendants, including 20 who had been sentenced to death, and to the identification of 147 real perpetrators.”).

114. Judge Alex Kozinski, *Criminal Law 2.0*, 44 GEO. L.J. ANN. REV. CRIM. PROC., i, v (2015) (A few of these questionable “sciences” include bloodstain pattern identification, foot and tire print identification, and ballistics.).

Willingham.¹¹⁵ Hair microscopy, which is the matching and comparison of hairs, has also been significantly undermined, as illustrated in the case of Santae Tribble.¹¹⁶ Other types of pattern evidence, including firearm analysis and shoeprint comparison, remain highly suspect.¹¹⁷

Considering the widespread and justifiable skepticism concerning the use of forensic science, the standard employed in *Richards I* was neither just nor appropriate. It created a false distinction between lay testimony and expert witness testimony.¹¹⁸ Under *Richards I*, an eyewitness could recant his testimony based on his being mistaken at the time and satisfy the false evidence standard “because the perceptual basis for [his] eyewitness testimony turned out to be false.”¹¹⁹ Yet the testimony of an expert witness, whose opinions are also dependent on inferential and perceptual abilities, needed to be objectively false before a court could consider it false evidence.¹²⁰ As the dissent in *Richards I* correctly observed, there is no reason to treat expert testimony differently: “Just as the truth or falsity of eyewitness testimony under section 1473(b) depends on the truth or falsity of underlying facts concerning the witness’s perceptual abilities, the truth or falsity of expert testimony depends on the truth or falsity of underlying facts essential to the expert’s inferential method and ultimate opinion.”¹²¹

Richards II eliminates the distinction between expert and lay opinion testimony and makes it possible for petitioners to establish false evidence through recanting expert testimony. The California

115. David Grann, *Trial by Fire*, THE NEW YORKER, Sept. 7, 2009, <http://www.newyorker.com/magazine/2009/09/07/trial-by-fire>.

116. For example, Santae Tribble was convicted of murder and sentenced to twenty years in a case where the only physical evidence against him were strands of hair found at the scene. The hairs, which the forensic hair expert at trial testified belonged to Tribble at odds of 10 million to 1, were retested in 2012. It was discovered that one of those hairs belonged to a dog. Spencer S. Hsu, *Santae Tribble Cleared in 1978 Murder Based on DNA Hair Test*, WASH. POST, (Dec. 14, 2012), https://www.washingtonpost.com/local/crime/dc-judge-exonerates-santae-tribble-of-1978-murder-based-on-dna-hair-test/2012/12/14/da71ce00-d02c-11e1-b630-190a983a2e0d_story.html?utm_term=.4eacaf84a78a.

117. Kozinski, *supra* note 114, at v.

118. See *Richards I*, 289 P.3d 860, 876 (Cal. 2012) (Liu, J., dissenting).

119. *Id.* at 877.

120. *Id.* at 870–71 (majority opinion) (“[W]hen new expert opinion testimony is offered that criticizes or casts doubt on opinion testimony given at trial, one has not necessarily established that the opinion at trial was *false*. Rather, in that situation one has merely demonstrated the subjective component of expert opinion testimony.”).

121. *Id.* at 878 (Liu, J., dissenting).

District Attorney's Association opposed the passing of Senate Bill 1058, arguing that eliminating this distinction was unnecessary.¹²² The Association claimed that false expert witness testimony was sufficiently addressed through laws already in place, such as perjury laws.¹²³ However, perjury statutes do not protect against false testimony the expert witness believed to be correct at the time.¹²⁴ Thus, *Richards II* and the amended standard for false evidence are appropriate because they allow a habeas petitioner to challenge false expert testimony made in good faith, while still "protecting the credibility and reputation of expert witnesses."¹²⁵

Neither should critics be concerned that amendments like Senate Bill 1058 and cases like *Richards II* weaken the finality of judgments and undermine the adversarial and legal system. While there are important reasons for ensuring finality in the criminal justice system, finality exists in tension with ensuring the accuracy of outcomes.¹²⁶ *Richards II* will not overthrow that balance. First, the *Richards II* standard is not too low; even the California District Attorney's Association agrees that "persons who have been convicted as a result of flawed opinion should be able to file for a writ of habeas corpus."¹²⁷ *Richards II* and the new standard eliminate the distinction between lay witnesses and expert witnesses, but a court must still "make a finding that it is reasonably probable that the verdict at trial would have been different without the expert's testimony before granting habeas relief."¹²⁸ Additionally, concerns about finality may also be alleviated by participation from the executive branch in this current dialogue. Though *Richards*'s case primarily involves the conversation between the court and the legislature, the executive branch also has an opportunity to participate in the conversation. For example, one form of participation is through conviction review

122. S.B. No. 1058, 2013–2014 Reg. Sess., at 5–6 (Cal. 2014).

123. *Id.*

124. Natasha Machado, *Chapter 623: Giving the Wrongfully Convicted A Better Chance at Review*, 46 MCGEORGE L. REV. 387, 393 (2014).

125. *Id.*

126. Laurie L. Levenson, *Searching for Injustice: The Challenge of Postconviction Discovery, Investigation, and Litigation*, 87 S. CAL. L. REV., 545, 551 (2014). Legitimate reasons for finality include allowing victims "if possible, [to] move on with their lives, and [allowing] law enforcement officials and prosecutors [to] begin to address other cases." *Id.* at 546.

127. S.B. No. 1058, 2013–2014 Reg. Sess., at 6 (Cal. 2014).

128. Assemb. Comm. on Public Safety, Analysis of S.B. 1058, 2013–2014 Reg. Sess., at 4 (Cal. 2014).

units. These units originated in Santa Clara, California, in 2004 and Dallas, Texas, in 2007.¹²⁹ The purpose of these units is to “[conduct] extrajudicial, fact-based review[s] of secured convictions to investigate plausible allegations of actual innocence.”¹³⁰ Conviction review units are typically part of the local prosecutor’s office and are “dedicated to collaborative, good-faith case reviews designed to ensure the factual integrity of a conviction should be independent, flexible, and transparent in its work.”¹³¹ Through these units, the executive branch can constructively participate while still equally focusing on accuracy and finality.

The criminal justice system at the very least should acknowledge the growth, development, and change that take place in forensic science in order to ensure accuracy, as well as finality.¹³² A system that convicts an innocent person based on unreliable science and data is not a reliable system, and it needs a mechanism for correcting what will be inevitable wrongs.

V. CONCLUSION

Certain areas of forensic science, particularly bitemark comparison, are now considered unreliable or outdated. Furthermore, forensic sciences are not static. As technology develops, the methodology in these fields changes with it. People used to think the Earth was flat, but if the sailor today decided to navigate his ship based on the idea that the earth was flat, he would be considered crazy. The same is true for forensic science. Why would we choose to affirm decisions based on the opinions of experts who used methods we know to be outdated and unreliable, especially in light of an expert’s recantation of prior testimony?

Cases like *Richards II* and laws like California Penal Code section 1473 are vital in updating our legal system to reflect the reality of scientific progress. Some who are convicted are not guilty, and to hold an innocent person in prison based on a technical definition of “false evidence” is unjust. What *Richards II* illustrates is that we have robust systems in place to address flaws once they are

129. John Hollway, *Conviction Review Units: A National Perspective*, PENN L.: FAC. SCHOLARSHIP, Apr. 2016, at 1, 10 n.5, http://scholarship.law.upenn.edu/faculty_scholarship/1614.

130. *Id.* at 2.

131. *Id.*

132. Levenson, *supra* note 126, at 551.

identified. It is heartening to see that both the courts and the legislatures are now attuned to the forensic evidence issues that are surfacing with increased frequency, and that they are prepared to address these critical issues.

