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The Affects of Apprendi v. New Jersey on the Use of DNA Evidence at Sentencing—Can DNA Alone Convict of Unadjudicated Prior Acts?

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Introduction

Consider this hypothetical: a suspect is arrested for burglary. His DNA sample is entered into state and national DNA databases and it matches a DNA sample found at the scene of a rape. The rape occurred twenty years ago and cannot be prosecuted due to the statute of limitations in that jurisdiction. States, such as Texas, have mandated that these DNA matches to prior unadjudicated crimes be attached to a suspect's criminal record.[1] In turn, at sentencing, a court may seek to use the rape DNA match

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1. *See* H.B. 2932, 2009 Leg., 81st Reg. Sess. (Tex. 2009) (codified at TEX. GOV'T CODE § 411.0602) ("[T]he bureau of identification and records shall establish and maintain a

to heighten the penalty of defendant's burglary conviction.[2] The statute attempts to hold criminals accountable for their actions and to provide victims some semblance of closure when a case can never be tried.[3] Nonetheless, when no jury has found beyond a reasonable doubt that the defendant actually committed the rape crime and the DNA match stands alone as evidence of the extraneous offense, there must be procedural safeguards at the sentencing stage to be sure the evidence sufficiently satisfies a defendant's Fifth Amendment due process rights and Sixth Amendment right to an impartial jury.[4]

The line of Supreme Court cases following *Apprendi v. New Jersey*,[5] recognizes that limits, although minimal, exist at sentencing.[6] *Apprendi* requires that any additional facts that enhance punishment above the

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central index to collect and disseminate information regarding additional offenses that forensic DNA test results indicate may have been committed by a defendant who has been arrested for or charged with any felony . . . .").

2. *See* VAUGHT ET AL., HOUSE RESEARCH ORGANIZATION BILL ANALYSIS: RECORDING DNA TESTS FOR PRIOR FELONIES IN CRIMINAL HISTORY FILES 3 (2009), http://www.hro.house.state.tx.us/pdf/ba81r/hb2932.pdf ("The information from the database match could be introduced as additional evidence in the punishment phase of trial when the person is convicted of another offense.").

3. *See* Ann Zimmerman, *Links to Sex Crimes to Follow Texas Suspects*, WALL ST. J., Aug. 31, 2009, at A3 ("Women [who have survived rape] want the men to be held accountable in some way.").

4. *See* discussion *infra* Part III (arguing that defendants have constitutional due process rights requiring DNA matching to pass verification equivalent to a preponderance of the evidence standard).

5. *See* Apprendi v. New Jersey, 530 U.S. 466, 490 (2000) (holding that the Sixth Amendment requires that "[o]ther than the fact of a prior conviction, any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury, and proved beyond a reasonable doubt"). In *Apprendi*, the Court considered whether the Due Process Clause of the Fourteenth Amendment requires that a factual determination prompting an increase in the maximum penalty for a crime be made by a jury and proved beyond a reasonable doubt. *Id.* at 469. The Court determined that a criminal defendant is entitled to a jury determination that he is guilty of every element beyond a reasonable doubt. *Id.* at 477. Practice must adhere to the basic principles requiring that the jury consider each relevant fact beyond a reasonable doubt. *Id.* at 483–84. The Court determined that a criminal defendant will suffer loss of liberty if he is punished beyond the sentence provided by statute under certain circumstances and not under others. *Id.* at 484. Applying these principles, the Court held that any fact raising the penalty above the statutory maximum must be proved by a jury beyond a reasonable doubt. *Id.* at 490. Thus, the Court invalidated a New Jersey statute allowing judicial fact-finding on whether a hate-crime was committed with a purpose to intimidate to raise a sentence from ten years to twenty. *Id.* at 497.

6. *See, e.g.*, Blakely v. Washington, 542 U.S. 296, 299–302 (2004) (applying *Apprendi* to a case in which the judge found the defendant acted with "deliberate cruelty" under a state statute); *see also* United States v. Booker, 543 U.S. 220, 243–44 (2005) (reaffirming *Apprendi* with regards to the federal sentencing guidelines).

prescribed statutory maximum for the underlying offense must be tried by a jury and proved beyond a reasonable doubt.[7] In some states, additional facts like DNA matches to extraneous unadjudicated offenses will have little significance on a defendant's final sentence with regards to the *Apprendi* decision, because the sentencing guidelines leave little room for departures above or below the underlying offense.[8] The legislature in those states sets out each offense and its specific corresponding punishment.[9] An unexpected judicial departure would meet with disapproval.[10] In contrast, the constitutional limitations of *Apprendi* will have a greater impact on the proposed hypothetical in states with broad sentencing ranges that give judges broad discretion to consider factors aside from the underlying offense.[11] *Apprendi* would never be triggered under those systems, although the admission of DNA evidence could have a substantial impact on the length of the sentence, because the additional evidence never brings the sentence near the statutory maximum.[12]

If convictions based on DNA evidence alone were always reliable beyond a reasonable doubt, using DNA matches at trial or in the sentencing process would not raise constitutional questions.[13] However, that is not yet

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7. *See Apprendi*, 530 U.S. at 490 (protecting a defendant's right to a jury trial and reinforcing the government's burden of proof beyond a reasonable doubt).

8. *See, e.g.*, Richard S. Frase, *State Sentencing Guidelines: Diversity Consensus, Unresolved Policy Issues*, 105 COLUM. L. REV. 1190, 1219–20 (2005) (explaining that states devoted to greater uniformity and higher compliance rates use nonvoluntary systems with "formal enforcement mechanisms" which may reduce judicial flexibility).

9. *See*, *e.g.*, FRANKLIN E. ZIMRING ET AL., PUNISHMENT AND DEMOCRACY: THREE STRIKES AND YOU'RE OUT IN CALIFORNIA, at ix (Oxford University Press, Inc. 2001) ("What sets California's law apart from the other Three Strikes laws and every other penal law innovation of recent times is the extremity of its terms and the revolutionary nature of its ambitions.").

10. *See id.* (reviewing different mechanisms to discourage judges from departing from the guidelines).

11. *See id.* at 1202 (explaining that indeterminate sentencing systems can create a wide disparity in lengths of sentences and that systems based on theories of recidivism may put more emphasis on offender characteristics than the underlying offense); *see also* Williams v. New York, 337 U.S. 241, 251 (1949) ("New York criminal statutes set wide limits for maximum and minimum sentences. Under New York statutes a state judge cannot escape his grave responsibility of fixing sentence.").

12. *See, e.g.*, Frase, *supra* note 8, at 1192–93 (explaining that some states may choose to implement "voluntary" regimes to allow greater judicial discretion while others do not even require judges to explain departures from the suggested sentencing guidelines); *see also* Williams v. New York, 337 U.S. 241, 252 (1949) (explaining that it is permissible for a judge to rely on facts outside the trial record in determining whether to sentence a defendant to death when the state has an indeterminate sentencing regime).

13. *See* Brooke G. Malcom, *Convictions Predicated on DNA Evidence Alone: How*

the case.[14] Despite the growing use of DNA at trial, the weight to accord it still remains a point of contention, especially when the DNA serves as the sole evidence.[15] In a few rare cases, DNA has been found sufficient to convict without corroborating evidence.[16] Nonetheless, courts, rightfully, remain cautious in placing too much weight on DNA matches alone to convict.[17] Courts and scholars worry that juries will not know how to weigh statistical information or will unreasonably rely on science because it appears infallible.[18] DNA's reputation has progressed as the ultimate crime-solver in legal television shows and literature.[19] Other concerns include the reliability of new methodologies used, privacy rights, human error, and fraud.[20] As a result of this mistrust, experts and analysts testify at trial to the use of DNA and its reliability, or lack thereof.[21] Scholars argue over whether DNA evidence, alone, can ever prove guilt beyond a reasonable doubt.[22] One scholar suggests that courts establish a threshold

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Reliable Evidence Became Infallible, 38 CUMB. L. REV. 313, 315 (2008) ("One central concern is whether these decisions [made based solely on DNA evidence] conflict with the requirement of guilt proven beyond a reasonable doubt.").

14. *See id.* (pointing out that DNA testing has not been proven to be reliable beyond a reasonable doubt).

15. *See id.* ("DNA testing itself remains controversial.").

16. *See, e.g.*, People v. Rush, 630 N.Y.S.2d 631, 634 (N.Y. Sup. Ct. 1995) (holding that "the testimony of even one DNA expert that there is a genetic match between the semen recovered from the victim of a rape and the blood of the defendant . . . is legally sufficient to support a guilty verdict"); State v. Toomes, 191 S.W.3d 122, 131 (Tex. Crim. App. 2006) (holding that DNA evidence admitted without other corroborating evidence was sufficient to support a conviction for aggravated rape); Roberson v. State, 16 S.W.3d 156, 172 (Tex. Crim. App. 2000) (holding that DNA is sufficient to form the sole basis of a conviction for sexual assault).

17. *See* Malcom, *supra* note 13, at 315 ("A major concern, which will be examined in this paper, is whether the significance of DNA has been overestimated by courts and jurors.").

18. *See id.* at 315–16 (noting concerns that stem from a conviction based solely on DNA evidence).

19. *See, e.g.*, Hon. Donald E. Shelton, *Forensic Science Challenges for Trial Judges*, 18 WIDENER L.J. 309, 376 (2009) (reexamining the reasons for the "CSI effect" of jurors' raised expectations at trial today and including the effects of all technology available to jurors on a day-to-day basis).

20. *See id.* at 376–77 (identifying the weaknesses in DNA evidence).

21. *See* Andrea Roth, *Safety in Numbers?: Deciding When DNA Alone Is Enough to Convict*, 85 N.Y.U. L. REV. 1130, 1138 (2010) (explaining that the prosecution calls serologists, analysts, and other technicians to validate the chain of custody and to present the evidence).

22. *See* Malcom, *supra* note 13, at 315 (emphasizing the complexity of DNA evidence and the conflicting view points regarding its admissibility).

for admissibility of DNA evidence that is no less favorable to the defendant than a 1 in 1,000 chance that the defendant is not the source of the DNA.[23] She argues that this standard satisfies the defendant's due process right not to be tried on insufficient evidence.[24] Such a determination becomes necessary as courts and jurors rely more heavily upon DNA at trial.[25]

Similar questions necessarily surface regarding the standard of proof and admissibility of DNA evidence at sentencing.[26] DNA, more so than other sentencing factors, runs the risk of being overly-persuasive when introduced at sentencing because its reliability stems from scientific analysis, less likely to be challenged by a jury or a judge.[27] In addition, if the prosecution provides no witness testimony, a judge cannot weigh the DNA's reliability, except to take it as fact.[28] If other evidence is produced at sentencing, such as eyewitness testimony to an extraneous offense, the judge can more easily weigh its credibility.[29] Determining how certain a court must be that a defendant committed the prior offense connected to the DNA when there exists no corroborating evidence remains unanswered.[30]

This Note contemplates that in light of *Apprendi* and its progeny, a DNA database match should be viewed as an additional fact that must be proved beyond a reasonable doubt by a jury if enhancing the punishment beyond the prescribed statutory maximum. And in states with wide sentencing ranges, DNA evidence of an unadjudicated crime must meet at

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23. *See* Roth, *supra* note 21, at 1173 ("[M]ost people will not reach an actual belief in culpability below a 99.9% chance of culpability, or, equivalently, a 1 in 1,000 chance that the defendant is not culpable.").

24. *See* Malcom, *supra* note 13, at 323 (explaining that a judge weighing the admissibility of evidence must decide whether a rational juror could reach a finding of guilty beyond a reasonable doubt or otherwise grant a motion for acquittal).

25. *See* Shelton, *supra* note 19, at 376 (discussing the increase in reliance on DNA evidence at trial and its relation to jurors expectations of how trials are conducted).

26. *See* discussion *infra* Part II.A (discussing the difficulties that arise in determining the standard of proof that should apply to DNA evidence).

27. *See* Roth, *supra* note 21, at 1133 ("Because of their starkly numerical nature, their tantalizing offer of—'near certain' [proof of identity in some cases]—and the daunting complexity of the statistics involved, pure cold hit cases invite a new conversation about several fundamental issues of criminal procedure and evidence law." (internal citations omitted)).

28. *See* discussion *infra* Part II.B (raising concerns about the legitimacy of verdicts determined solely on the basis of DNA evidence).

29. *See id.* (discussing the increase in cases determined solely on the basis of DNA evidence).

30. *See* discussion *infra* Part II.A (discussing the admission and evaluation of DNA evidence).

least a preponderance of the evidence burden of proof to assure a defendant's right not to be sentenced with insufficient evidence.[31] Part I outlines the changes in sentencing jurisprudence since *Apprendi* and the Court's recognition that constitutional rights of defendants exist at sentencing. Part II.A introduces the standards of DNA admission at trial as a starting point for finding appropriate evidentiary limitations on DNA admission at sentencing. Part II.B examines the limited precedent available on using DNA evidence alone to convict and proposes that doing so requires an initial finding of a DNA random match probability of 1 in 1,000.[32] Part III contends that a defendant continues to have constitutional due process rights at sentencing which require DNA matches to unadjudicated offenses pass a process of reliability verification, equivalent to at least a preponderance of the evidence standard.

I. The Changing Scope of Sentencing Jurisprudence

Sentencing began as a predetermined act based solely on the offense charged.[33] At common law, judges had very little discretion over sentencing.[34] The law provided the applicable punishment for each specific offense, with no possible alterations.[35] Since the nineteenth century, judges have gained wide latitude to sentence within statutory ranges.[36] During the 1970s, indeterminate sentencing reigned and

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31. *See* discussion *infra* Part III (arguing that DNA evidence must meet a preponderance of the evidence standard to avoid infringing on the defendant's right to due process).

32. See Roth, *supra* note 21, at 1155 (proposing that an identifiable numerical threshold be established at which the source probability that the DNA belongs to defendant becomes high enough to assure a juror beyond a reasonable doubt).

33. *See* Apprendi v. New Jersey, 530 U.S 466, 478 (2000) (suggesting that indictments at common law were so precise as to the facts that the defendant knew exactly what his judgment would be from the offense outlined). *But see* Carissa Byrne Hessick & F. Andrew Hessick, *Recognizing Constitutional Rights at Sentencing*, 99 CAL. L. REV. 47, 51 n.12 (recognizing there remains some dispute over the early history of sentencing in the United States).

34. *See* Hessick & Hessick, *supra* note 34, at 51 ("A judge ordinarily did not conduct a separate sentencing proceeding following a defendant's conviction . . . .").

35. *See Apprendi*, 530 U.S. at 478 ("The defendant's ability to predict with certainty the judgment from the face of the felony indictment flowed from the invariable linkage of punishment with crime.").

36. *See id.* at 481–82 ("[J]udges in this country have long exercised discretion . . . in imposing [a] sentence within statutory limits in the individual case." (citing Williams v. New York, 337 U.S. 241, 246 (1949))).

judicial sentencing expanded so much so that appellate review of sentencing virtually disappeared and the disparity of sentencing between criminals of the same crime became incomprehensible.[37] Judges weighed the character of the defendant, along with any other information deemed relevant by the judge's experience, judgment and "wisdom."[38] Correctional officers also played a large role in determining when a defendant had been "rehabilitated."[39] At the same time, jury findings lost significance while sentencing enhancements prescribed by the judge gained importance.[40]

The supporters of indeterminate sentencing lost steam in the late 1970s when the goals of individualized sentencing failed.[41] First, recidivism had not significantly decreased.[42] Second, its application allowed disparate sentences for different defendants guilty of the same crime, often resulting in discrimination of minorities.[43] To appease the rising discontent with indeterminate sentencing, Congress enacted the Sentencing Reform Act of 1984, implementing mandatory sentencing guidelines.[44] The Act required that federal judges impose sentences within the applicable guideline range, unless an aggravating or mitigating circumstance existed that had not adequately been considered

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37. *See, e.g.*, William G. Otis, *From* Apprendi *to* Booker *to* Gall *and* Kimbrough*: The Supreme Court Blunders Its Way Back to Luck-of-the-Draw Sentencing*, ENGAGE, June 2008, at 37 (referring to the 1983 Senate Report accompanying the Sentencing Reform Act of 1984, which recognized that two offenders of similar offenses could receive widely different prison release dates).

38. *See* William J. Powell & Michael T. Cimino, *Prosecutorial Discretion Under the Federal Sentencing Guidelines: Is the Fox Guarding the Hen House?*, 97 W. VA. L. REV. 373, 378 (1995) ("Thus judicial decision-making remained the hallmark of our system of justice under this new sentencing system.").

39. *See id.* ("[C]orrectional officers were given the ultimate authority to determine when the offender was sufficiently rehabilitated to merit release or parole.").

40. *See* United States v. Booker, 543 U.S. 220, 236 (2005) ("It became the judge, not the jury, who determined the upper limits of sentencing, and the facts determined were not required to be raised before trial or proved by more than a preponderance.").

41. *See* discussion *infra* Part I (enumerating the failures of individualized sentencing).

42. *See* Rose Duffy, *The Return of Judicial Discretion*, 45 IDAHO L. REV. 223, 227 (2008) ("The indeterminate system did not seem to be curing defendants, at least based on recidivism rates." (internal citations omitted)).

43. *See* Sanford H. Kadish, *Fifty Years of Criminal Law: An Opinionated Review*, 87 CAL. L. REV. 943, 979 (1999) (presenting the evolution of indeterminate sentencing); *see also* S. REP. NO. 97-307, at 5 (1981) (noting the wide range of sentences to offenders convicted of similar crimes).

44. *See* Otis, *supra* note 37, at 37 (implementing a system of sentencing with appellate review).

by the United States Sentencing Commission.[45] The Guidelines also abolished parole.[46] Other states had also enacted determinate sentencing statutes commanding imposition of a specific sentence for each major felony.[47]

In 1986, the Supreme Court decided *McMillan v. Pennsylvania*,[48] in which the petitioners, convicted of felonies, argued that the visible possession of a firearm constituted an element of the underlying crime and had to be proved beyond a reasonable doubt.[49] At the time, Pennsylvania's Mandatory Minimum Sentencing Act[50] provided that anyone convicted of certain enumerated felonies was subject to a minimum mandatory sentence of five years if the sentencing judge found by a preponderance of evidence that the person possessed a firearm.[51] The Court deferred to this decision by the Pennsylvania

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45. *See* UNITED STATES SENTENCING COMMISSION, FINAL REPORT ON THE IMPACT OF UNITED STATES V. BOOKER ON FEDERAL SENTENCING 1 (Mar. 2006) [hereinafter *Booker* Report] (citing 18 U.S.C. § 3553(b)(1), excised by United States v. Booker, 543 U.S. 220 (2005)).

46. *See id.* at 2 (deciding that parole was based on inconsistent beliefs regarding prisoner rehabilitation); *see also* Stephen Breyer, *The Federal Sentencing Guidelines and the Key Compromises Upon Which They Rest*, 17 HOFSTRA L. REV. 1, 39 (1988) (discussing the replacement of parole with supervised release).

47. *See* Kadish, *supra* note 43, at 980–81 (referencing California's legislature, which passed a determinate sentencing system in 1976).

48. *See* McMillan v. Pennsylvania, 477 U.S. 79, 91 (1986) (holding that a Pennsylvania statute allowing a preponderance of the evidence standard met the due process requirement of the Fourteenth Amendment). In *McMillan*, the Court considered the legality of a Pennsylvania statute imposing a minimum sentence of five years for cases in which, by a preponderance of the evidence, the defendant visibly possessed a firearm during the crime. *Id.* at 81. The Court reasoned that the state's statute came into play only after the criminal defendant had been found guilty of a crime beyond a reasonable doubt. *Id.* at 85–86. Therefore, the statute does not change the maximum penalty for the underlying crime, nor does it create a distinct offense with a separate sentence; it simply limits the judge's discretion in sentencing. *Id.* at 88. Applying this reasoning to the case at hand, the Court upheld the statute, determining that the statutory standard, preponderance of the evidence, satisfies the due process requirement of the Fourteenth Amendment. *Id*. at 91.

49. *Id.* at 83 (upholding the reasonable-doubt standard according to the due process clause (citing *In re* Winship, 397 U.S. 358, 364 (1970) and Mullaney v. Wilbur, 421 U.S. 684, 703 (1975))).

50. *See* Mandatory Minimum Sentencing Act, 42 PA. CONST. STAT. § 9712 (1982) (providing that those convicted of certain felonies are subject to mandatory minimum sentences if the judge finds by a preponderance of the evidence that the person possessed a firearm during commission of the crime).

51. *See McMillan*, 477 U.S. at 85–86 ("[T]he Pennsylvania Legislature has expressly provided that visible possession of a firearm is not an element of the crimes enumerated in the mandatory sentencing statute . . . .").

legislature to make visible possession of a firearm a sentencing factor as opposed to an element of the crime.[52] In addition, the Court upheld a judge's ability to make a finding of fact based on a preponderance of the evidence when it raised only the minimum sentence.[53]

The faith placed in the federal guidelines' ability to conform criminal sentencing did not last long.[54] In 2000, *Apprendi v. New Jersey* acted as the turning point in recent sentencing jurisprudence by effectively ending determinate sentencing.[55] Judicial fact-finding had, up to that point, been firmly grounded in precedent, however *Apprendi* began to chip away at that foundation.[56] In *Apprendi*, the Supreme Court reviewed whether the Due Process Clause of the Fourteenth Amendment requires "a factual determination authorizing an increase in the maximum prison sentence for an offense from 10 to 20 years be made by a jury on the basis of proof beyond a reasonable doubt."[57] The Court found that the Fourteenth Amendment required proof beyond a reasonable doubt for any additional fact introduced at sentencing that would raise the punishment above the statutory maximum.[58]

Defendant, Apprendi, pleaded guilty to two counts of second-degree possession of a firearm for an unlawful purpose and one count of third-degree unlawful possession of a prohibited weapon.[59] At sentencing the two counts of second-degree possession added up to twenty years in aggregate and the third-degree offense was to run concurrently.[60] At sentencing, the main question remained whether his

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52. *See id.* at 90 (discussing the toleration of a wide variety of state sentencing procedures as a result of federalism).

53. *See id.* at 89 (noting that Pennsylvania's statute limits the use of a preponderance of the evidence standard to trial judges deciding to raise minimum sentences); *see also* Douglas A. Berman, *Editor's Observations: Assessing* Apprendi*'s Aftermath*, 15 FED. SENTENCING. R. 75, 75 (2003) ("[F]acts which trigger mandatory minimum sentences can be found by a judge based on a preponderance standard of proof.").

54. *See* discussion *infra* Part I ("Judicial fact-finding had, up to that point, been firmly grounded in precedent, however *Apprendi* began to chip away at that foundation.").

55. *See* Otis, *supra* note 37, at 37 ("The brief and promising life of determinate sentencing had come to an end.").

56. *See Booker* Report, *supra* note 45, at 9 ("*Apprendi* was one of a series of cases challenging under the Sixth Amendment of the Constitution judicial fact-finding when imposing sentences.").

57. Apprendi v. New Jersey, 530 U.S. 466, 468 (2000).

58. *See id.* at 476 (discussing the defendant's rights under the Sixth and Fourteenth Amendments).

59. *See id.* at 469–70 (summarizing the facts of the case).

60. *See id.* (stating the trial judge's sentencing decision).

purpose in the shooting was racially biased and thus, a hate crime.[61] If so, the court had the power to sentence Apprendi to a maximum of twenty additional years in prison.[62] In the end, the trial judge found by a preponderance of the evidence that the crime was motivated by racial bias and enhanced Apprendi's sentence twelve years on that finding.[63] Apprendi appealed on the grounds "that the Due Process Clause of the United States Constitution requires that the finding of bias upon which his hate crime sentence was based must be proved to a jury beyond a reasonable doubt."[64] The Appellate Division of the Superior Court of New Jersey, as well as the New Jersey Supreme Court, upheld the enhanced sentence by viewing the judge's finding as a "sentencing factor," as opposed to an element of the underlying crime.[65]

Justice Stevens, writing for the majority, reversed the lower courts,[66] relying upon *Jones v. United States*.[67] *Jones* noted that "'under the Due Process Clause of the Fifth Amendment and the notice and jury trial guarantees of the Sixth Amendment, any fact (other than prior conviction) that increases the maximum penalty for a crime must be charged in an indictment, submitted to a jury, and proven beyond a

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61. *See id.* at 470–71 (pointing out that the issue remained whether the defendant's crime was racially motivated).

62. *See id.* at 470 (stating that the maximum sentence for a racially motivated hate crime alone would be twenty years).

63. *See id.* at 471 (affirming the trial court's finding that the defendant's crime was racially motivated, warranting an enhanced sentence).

64. *Id.*

65. *See id.* (affirming lower court decisions holding that the trial judge's enhanced sentence did not violate the Due Process Clause).

66. *See id.* at 497 ("The New Jersey procedure challenged in this case is an unacceptable departure from the jury tradition that is an indispensable part of our criminal justice system.").

67. Jones v. United States, 526 U.S. 227, 251–52 (1999) (invalidating the lower court's interpretation of a federal carjacking statute and construing the statute as establishing three separate offenses that must be proven beyond a reasonable doubt). In *Jones*, the Court considered whether a federal carjacking statute enumerated three separate crimes or one crime with three possible maximum penalties, two of which depended "on sentencing factors exempt from the requirements of charge or jury verdict." *Id.* at 229. The Court determined that a fact is an element of a crime, not a sentencing consideration. *Id.* at 232. The Court explained that facts must meet due process requirements, including an indictment charge, a jury trial and proof beyond a reasonable doubt. *Id.* Based on the language of the statute, the Court determined that Congress intended that serious bodily harm be an element of the crime of aggravated carjacking. *Id.* at 236. The Court ultimately decided that the statute was comprised of three separate offenses, each with distinct elements requiring indictment, proof beyond a reasonable doubt and trial by jury. *Id.* at 252.

reasonable doubt.'"[68] *Jones* had been based on a federal statute, and the Court extended the same reasoning to New Jersey's state statute under the Fourteenth Amendment.[69] The Court rejected the idea "that the hate crime statute's 'purpose to intimidate' was simply an inquiry into 'motive.'"[70] Rather, it was an element of the entire offense never found by the jury.[71] According to *Apprendi*, the statutory maximum is "the maximum sentence a judge may impose solely on the basis of the facts reflected in the jury verdict or admitted by the defendant."[72] In sum, the *Apprendi* Court endorsed the finding in *Jones* that "it is unconstitutional for a legislature to remove from the jury the assessment of facts that increase the prescribed range of penalties to which a criminal defendant is exposed. It is equally clear that such facts must be established by proof beyond a reasonable doubt."[73]

Apprendi held strong in *Blakely v. Washington*,[74] which supported the "longstanding precedent . . . to give intelligible content to the right of jury trial. . . . [A] fundamental reservation of power in our constitutional structure."[75] Within the same year, the Supreme Court

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68. *See* Apprendi v. New Jersey, 530 U.S. 466, 476 (2000) (quoting *Jones*, 526 U.S. at 243).

69. *See id.* at 476 ("The Fourteenth Amendment commands the same answer in this case involving a state statute.").

70. *Id.* at 492.

71. *See id.* (arguing that the statute in question requires that the jury examine the defendant's state of mind).

72. Blakely v. Washington, 542 U.S. 296, 313 (2004) (holding that the state trial court's sentencing violated Defendant's Sixth Amendment right to a jury trial based on the fact that the sentencing judge added time to his sentence after concluding that the defendant acted with deliberate cruelty).

73. *Apprendi*, 530 U.S. at 490 (citing Jones v. United States, 526 U.S. 227, 252–53 (1999) (Stevens, J., concurring) (internal quotations omitted)).

74. *See Blakely*, 542 U.S. at 304 (holding that the state's sentencing procedure was unconstitutional because it imposed a sentence based on facts not entered in Defendant's guilty plea and not found by a jury). In *Blakely*, the Court considered whether a ninety-day sentence based on the belief that the crime was committed with "deliberate cruelty" violated the petitioner's Sixth Amendment right to a trial by jury. *Id.* at 298. The Court stated that the statutory maximum sentence is the maximum that may be imposed based solely on the facts revealed in a jury verdict or in a defendant's own admission. *Id.* at 303. In this case, the facts supporting the Court's finding of deliberate cruelty were not submitted to a jury, nor did the petitioner admit them in his statement. *Id.* Thus, the facts in the plea alone were not sufficient to warrant the imposed ninety-day sentence. *Id.* at 304. In light of the record, the Court found that the State's sentencing procedure violated Petitioner's Sixth Amendment rights. *Id.* at 313.

75. *Id.* at 305.

decided *United States v. Booker*,[76] declaring the federal sentencing guidelines unconstitutional as inconsistent with the Sixth Amendment.[77] The sentencing guidelines had improperly ordered a judge to enhance Booker's sentence according to facts not found by a jury.[78] The Court upheld the longstanding belief that the jury stands as a protection of the people from "judicial despotism."[79] As a result the federal sentencing guidelines became advisory as opposed to mandatory.[80] In order to preserve the majority of the guidelines, the Court excised the unconstitutional provisions from the Sentencing Reform Act.[81]

Gall v. United States[82] and *Kimbrough v. United States*,[83] both decided on the same day, solidified the advisory nature of the guidelines

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76. *See* United States v. Booker, 543 U.S. 220, 244 (2005) (reaffirming the holding in *Apprendi* that "any fact . . . which is necessary to support a sentence exceeding the maximum authorized by the facts established by a plea of guilty or a guilty verdict must be admitted by the defendant or proved to a jury"). In *Booker*, the Court considered whether the application of the Federal Sentencing Guidelines violated Petitioner's Sixth Amendment rights. *Id.* at 226. In this case, the petitioner received a substantially longer sentence based on a judge's finding of fact by a preponderance of the evidence. *Id.* at 227. Had the judge imposed the penalty based on the jury's findings beyond a reasonable doubt, the petitioner would not have been subject to a substantially shorter sentence. *Id.* The Court determined that a criminal defendant is entitled to a jury finding that, beyond a reasonable doubt, there is proof that he committed every fact with which he is charged. *Id.* at 230. Because the Guidelines in question are mandatory and not advisory, the Court concluded that any fact which is required to impose a sentence exceeding the maximum must be authorized by the defendant's own admission or by a jury verdict of guilty beyond a reasonable doubt. *Id.* at 244.

77. *See id.* (holding that the Guidelines violate Petitioner's Sixth Amendment rights).

78. *See id.* (stating that the right to a jury trial outweighs any tactics to conclude trials swiftly, including judicial fact-finding).

79. *See id.* at 238 (quoting THE FEDERALIST NO. 83, at 499 (Alexander Hamilton) (C. Rossiter ed., 1961)).

80. *See id.* at 245 (making the Federal Sentencing Guidelines advisory in light of the Sentencing Reform Act of 1984, as amended, 18 U.S.C. § 3551 et seq., 28 U.S.C. § 991 et seq.).

81. *See id.* at 245 (severing and excising the incompatible portions of the Guidelines); *see also* Otis, *supra* note 37, at 40 (classifying this decision as the death of determinate sentencing and stating that the "new, voluntary regime amounted to 'apply-them-when-you-think-best' guidelines, with light-handed appellate review for understandably undefined 'reasonableness'").

82. *See* Gall v. United States, 552 U.S. 38, 41 (2007) (upholding a district court judge's sentencing as reasonable under a "deferential abuse-of-discretion standard"). In *Gall*, the Court determined the standard by which appellate courts should review the reasonableness of sentences imposed by lower level courts. *Id.* at 40. The Court stated that, because the Guidelines are no longer mandatory, extraordinary circumstances are not required to justify a departure from the sentences recommended therein. *Id.* at 47. The Court held that appellate courts must review all sentences, regardless of their relation to the

while maintaining that sentences within the advisory guidelines may be overturned on appeal only for abuse of discretion."[84] In effect, sentences within the advisory guidelines are presumptively reasonable.[85] A sentence imposed outside of the applicable guidelines range is, however, *not* presumptively unreasonable, as had been suggested in *Rita v. United States*.[86] A judge should impose a sentence "sufficient, but not greater than necessary."[87] No definition for "necessary" was given,[88] and the Court frowned upon any "proportional justifications," such as set calculations.[89] Some scholars suspect that this relaxed sentencing structure will lead to the same problems of chaos and idiosyncratic disparity present before the guidelines.[90] In contrast, others praise the shift because it allows judges most familiar with an individual case and defendant to "give proper sentences."[91]

Guidelines, with a deferential abuse-of-discretion standard. *Id.* at 41.

83. Kimbrough v. United States, 552 U.S. 85, 91 (2007) (holding that "under *Booker*, the cocaine Guidelines, like all other Guidelines, are advisory only, and that the Court of Appeals erred in holding the crack/powder disparity effectively mandatory"). In *Kimbrough*, the Court considered whether the distinction between crack and powder cocaine in the U.S. Sentencing Guidelines was advisory or binding. *Id.* at 93. The Guidelines created a disparity in sentencing for the two forms of the drug; crack-related offenses resulted in a harsher sentence than offenses involving the powder form, regardless of the extent of the drug operation. *Id.* at 95. The Court determined that although the Guidelines are advisory after *Booker*, courts must treat them as a starting point for sentencing. *Id.* at 108. The Court reasoned that in terms of specific cases, judges have greater authority than the Sentencing Commission. *Id.* at 109. The Court held that in the instant case, the district court properly considered the sentencing range suggested in the Guidelines, addressed the relevant factors, and reached a reasonable sentence. *Id*. at 111.

84. Otis, *supra* note 37, at 40.

85. *See id.* (discussing the practical effects of *Gall* and *Kimbrough*).

86. Rita v. United States, 551 U.S. 338, 351 (2007) (holding that a sentence within the Guidelines may be considered presumptively reasonable on appeal). In *Rita*, the Court considered whether appellate courts may presume that a sentence within the Guidelines is reasonable. *Id.* at 346. The Court emphasized that such a presumption is not binding; it merely reflects that the Commission and the sentencing judge have come to the same reasonable conclusion. *Id*. at 347. The Court held that when district judges' discretionary decisions and the U.S. Sentencing Commission Guidelines are aligned, the appellate court may presume that the sentence is reasonable. *Id.* at 351.

87. *Kimbrough*, 552 U.S. at 89 (citing 18 U.S.C. § 3553(a) (internal quotations omitted)).

88. Otis, *supra* note 37, at 40.

89. Duffy, *supra* note 42, at 238 (internal quotations omitted).

90. *See, e.g.*, Otis, *supra* note 37, at 42 ("We have standardless sentencing pretending to have standards.").

91. Duffy, *supra* note 42, at 240.

Appellate courts remain unsure as to how to apply *Apprendi* and its progeny.[92] Confusion exists in the courts over which standard of proof applies when resolving factual disputes.[93] The growing trend of using DNA at sentencing adds complexity to this already muddled sentencing process.[94] If a DNA match serves as an additional fact upon which the judge will raise the statutory maximum, it must be proven beyond a reasonable doubt by a jury under *Apprendi*.[95] However, in many states the sentencing range extends over such a length of time that the DNA evidence may have a substantial effect on the final sentence, but not necessarily raise the statutory maximum.[96] As a result, proving that a DNA sample belongs to a defendant and that the defendant committed the extraneous prior offense need not be proven beyond a reasonable doubt according to *Apprendi*.[97] The effect is that defendants may be significantly punished for crimes of which they were never convicted beyond a reasonable doubt.[98] As a result, even when the additional fact to be used at sentencing is a DNA match to a previous unadjudicated crime that does not raise the statutory maximum, courts must meet a preponderance of the evidence standard.[99] Evaluating the use of DNA at trial and the safeguards available at that stage of the judicial process, such as the use of witness or expert testimony, may shed light on how to avoid unbridled use of DNA at sentencing.[100]

II. The Evolution of DNA Evidence at Trial

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92. *See Booker* Report, *supra* note 45, at v ("[A]ppellate case law remains at an early stage of development.").

93. *See id.* at 22 (observing that some appellate courts have applied a preponderance of the evidence standard and others insist on proof beyond a reasonable doubt).

94. *See id.* (emphasizing that DNA evidence has further complicated an already divisive issue).

95. *See* Apprendi v. United States, 530 U.S. 466, 490 (2000) (enforcing the government's burden of proof beyond a reasonable doubt).

96. *See* discussion *supra* Part I (showing that some states have broad sentencing ranges).

97. *See id.* ("Apprendi would never be triggered under [systems with broad sentencing ranges].").

98. *See Apprendi*, 530 U.S. at 486 (maintaining that state statutes preventing juries from evaluating facts that could enhance the penalty pose serious constitutional issues).

99. *See id.* at 490 (requiring that courts find the defendant guilty beyond a reasonable doubt for all elements of the offense).

100. *See* discussion *supra* Part I (advocating that the use of DNA evidence alone at trial cannot necessarily prove guilt beyond a reasonable doubt).

A. From Discovery of DNA to its Infallibility: The Speedy Rise of DNA Admission at Trial

DNA science progressed in the 1980s, when scientists realized that each DNA unit consisted of two strands of polymers.[101] On each DNA strand base pairs of genes, or alleles, are sequenced differently, providing the basis for the difference in each human's DNA.[102] Only identical twins have the same hereditary material, unless "by pure chance, [a different individual] has the same DNA profile as the individual who provided the reference sample."[103] Calculating the probability of such a random match, or the "random match probability" (RMP), estimates the "probability that a randomly selected person from the general population would match the crime scene sample."[104] Lab technicians determine such data by calculating the frequency in the relevant population of each detected allele, usually of twenty-six, on the crime scene strand.[105] A DNA match between a suspect and a crime would be "meaningless without some sense of how unusual it is."[106]

Historically, the federal repositories for DNA identified only sex offenders, by testing semen, hair, saliva and blood often readily available at the scene of sexual misconduct cases.[107] Today, the system identifies suspects for almost any crime.[108] The National DNA Index System (NDIS) contains over 9,298,324 offender profiles and 356,343 forensic profiles as of January 2011.[109] The FBI runs the NDIS program through the Combined

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101. *See* Malcom, *supra* note 13, at 313, 317 (providing a primer on DNA for nonscientists).

102. *See id.* (summarizing the science behind DNA evidence).

103. *Id*. at 318.

104. *Id*. at 319.

105. *See* Thomas M. Fleming, Annotation, *Admissibility of DNA Identification Evidence*, 84 A.L.R.4th 313, at 2c (1991) (explaining the process of DNA analysis).

106. Roth, *supra* note 21, at 1136; *see also* State v. Bible, 175 Ariz. 549, 582 (1993) ("It is the probability favoring a random match . . . that provides the telling and crucial bottom line of DNA evidence.").

107. *See* James Jacobs & Tamara Crepet, *The Expanding Scope, Use, and Availability of Criminal Records*, 11 N.Y.U. J. LEGIS. & PUB. POL'Y 177, 202 (2008) [hereinafter Jacobs & Crepet] ("Forty-four states have expanded DNA collection beyond violent and sex offenders to include all convicted felons.").

108. *See id.* at 203 ("A DNA identification system originally designed to identify sex offenders is rapidly evolving into an all-purpose identification system, similar to the fingerprints database.").

109. FBI, CODIS-NDIS STATISTICS (Jan. 2011), http://www.fbi.gov/about-us/lab/codis/ndis-statistics (last visited Mar. 20, 2011) (on file with the Washington and Lee

DNA Index System (CODIS) software that allows 180 public law enforcement laboratories to participate in the United States.[110]

As DNA evidence expands and becomes more reliable, states broaden the classifications of criminals and suspects required to give DNA samples.[111] States gradually require that DNA be entered into the system for a broader range of criminals, as well as suspects, and even arrestees.[112] For example, in 2009, California began taking DNA samples from anyone arrested for any felony, even without a charge or conviction.[113] In order to subdue concerns over privacy rights, DNA evidence that fails to convict a suspect may be expunged depending upon the state requirements.[114] In Texas, criminal records may be expunged if the person was arrested and acquitted, convicted and pardoned, or when no indictment or information was filed.[115] In order to do so, the person must petition for expunction.[116] However, "[e]vidence used in criminal cases to identify a perpetrator or to exclude a person is required to be preserved until the person dies, is executed, is released on parole or completes his or her sentence."[117] At the federal level, a convicted felon may request expungement if the conviction has been overturned.[118] If arrested, but the charge is dismissed, acquitted or

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Journal of Civil Rights and Social Justice).

110. FBI, CODIS BROCHURE (July 2010), *available at* http://www.fbi.gov/about-us/lab/codis/codis_brochure.

111. *See State Laws on DNA Data Banks Qualifying Offenses*, NATIONAL CONFERENCE OF STATE LEGISLATURES (Feb. 2010), http://www.ncsl.org/IssuesResearch/CivilandCriminal Justice/StateLawsonDNADataBanks/tabid/12737/Default.aspx (compiling state laws on DNA data banks) (on file with the Washington and Lee Journal of Civil Rights and Social Justice).

112. *See* Roth, *supra* note 21, at 1140 ("[S]tate and federal DNA databases have grown to include not only convicted felons, but also misdemeanants and even arrestees.").

113. *See* CAL. DEP'T OF JUSTICE INFO. BULLETIN, EXPANSION OF STATE'S DNA DATA BANK PROGRAM ON JANUARY 1, 2009: COLLECTION OF DNA SAMPLES FROM ALL ADULTS ARRESTED FOR ANY FELONY OFFENSE (Dec. 15, 2008), *available at* http://www.ag.ca.gov/bfs/pdf/69IB_121508.pdf ("The 2008 law requires adults arrested for a felony Penal Code section 290 registerable sex offense, murder, or voluntary manslaughter (including attempts of these crimes) to provide samples for the CAL-DNA Data Bank (Penal Code section 296(a)(2)(A) and (B)).").

114. *See* TEX. CODE CRIM. PROC. ANN. art. 55.01 (providing an example of a state that allows DNA evidence to be expunged).

115. *See id.* (allowing records to be expunged under certain circumstances).

116. *See* TEX. CODE CRIM. PROC. ANN. art. 55.02 (West 2009) (outlining the procedure for expungement).

117. REPORT OF THE SOUTHERN LEGISLATIVE CONFERENCE, SOUTHERN STATES DNA STATUTES: OFFENDER PROFILES AND POST-CONVICTION TESTING 46 (2002).

118. *See* FBI, CODIS-EXPUNGEMENT POLICY, EXPUNGEMENT OF DNA RECORDS IN

no charge was ever filed within the applicable time period, a person may also request expungement.[119]

The standard for admissibility of DNA at trial has evolved from precedent outlining the admission of scientific evidence generally. *Frye v. United States*,[120] first expounded upon the need for inclusion of expert testimony at trial to help explain scientific evidence that may not be understood by the jury.[121] To be sure of an expert testimony's reliability, the Supreme Court appointed judges as "gatekeepers" of the testimony.[122] Judges were to review the scientific testimony before presented to the jury to establish that it was generally accepted by the scientific community.[123] Over seventy years later, in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,[124] the Supreme Court re-addressed the standard for admissibility of scientific evidence, in the wake of a much broader judicial power laid out in the Federal Rules of Evidence 403.[125]

ACCORDANCE WITH 42 U.S.C. § 14132(d)(1)(A), http://www.fbi.gov/about-us/lab/codis/codis_expungement (last visited Mar. 20, 2011) (showing that a convicted felon may request that his federal record be expunged if the conviction has been overturned) (on file with the Washington and Lee Journal of Civil Rights and Social Justice).

119. *See id.* (enumerating alternative grounds on which one may request expungement).

120. Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923) (finding the systolic blood pressure deception test had not yet gained the scientific recognition to justify admission of expert testimony on the subject). In *Frye*, the Court considered whether systolic blood pressure deception test results could justify the admission of expert testimony on the subject. *Id.* The Court stated that a scientific principal must have gained general acceptance in its field to warrant the admission of expert testimony. *Id.* The Court held that this particular scientific principal had not yet gained sufficient scientific recognition to justify expert testimony. *Id.*

121. *See id.* (requiring expert opinions when the trial question involved does not lie within the range of common experience or knowledge of an ordinary person).

122. *See id.* (suggesting that judges are responsible for determining the topics for which expert testimony is appropriate).

123. *See id.* (stating that, before testimony is presented to the jury, judges must determine whether the scientific principal of expert testimony is generally accepted in its field).

124. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 587 (1994) (holding that the *Frye* test of "general acceptance" is superseded by the adoption of the Federal Rules of Evidence). In *Daubert*, the Court was asked to determine the appropriate standard for admission of scientific expert testimony in federal courts. *Id.* at 582. The Court acknowledged that, prior to the Federal Rules of Evidence, *Frye* provided the standard for determining the admissibility of scientific expert testimony. *Id.* at 585. However, the Court held that the more liberal Federal Rules of Evidence are incompatible with and have since superseded the *Frye* standard in federal courts. *Id.* at 587–88.

125. *See* Lawrence Kobilinsky, Thomas F. Liotti & Jamel Oeser-Sweat, *Litigating a DNA Case*, *in* DNA: FORENSICS AND LEGAL APPLICATIONS 197, 201–02 (John Wiley & Sons, Inc. 2005) (discussing the Court's new standard for admissibility of DNA evidence in

The *Daubert* court laid out four factors to be considered by a judge when determining the admissibility of scientific evidence: (1) whether the scientific technique has been or can be tested to determine its validity,[126] (2) whether the theory or technique has been subjected to peer review and publication,[127] (3) whether there is a known or potential rate of error of the scientific technique,[128] and (4) whether the scientific technique has been generally accepted by the scientific community.[129] These factors incorporate a flexible judicial review of the testimony's reliability and relevance superseding the prior sole "general acceptance" standard of *Frye*.[130] Finally, *Kumho Tire Co. v. Carmichael Inc.*[131] extended the judge's gate-keeping role to all expert testimony, not only scientific.[132] These standards apply to both civil and criminal cases.[133]

Under these judicial guidelines on scientific evidence and "absent extraordinary circumstances," DNA evidence will be admitted into court.[134] DNA evidence first entered into a criminal case as evidence in *State v. Woodall*.[135] Almost every state now deems DNA evidence admissible due

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light of the Federal Rules of Evidence 403); *see also* FED. R. EVID. 403 (allowing exclusion of evidence that could potentially confuse the jury when the danger of jury confusion outweighs the value of the evidence).

126. *See Daubert*, 509 U.S. at 593 (requiring that the testimony be scientifically valid).

127. *See id.* (listing peer review and publication as relevant factors in determining the validity of scientific evidence).

128. *See id.* at 594 (stating that the Court should consider the technique's known or potential rate of error).

129. *See id.* (applying the *Frye* "general acceptance" standard as one factor among a more flexible group of factors).

130. *See id.* at 594 (emphasizing the flexible nature of inquiry under Rule 702); *see also id.* at 589 (arguing that the *Frye* standard of "general acceptance" should not be applied in federal trials).

131. Kumho Tire Co. v. Carmichael, Inc., 526 U.S. 137, 147 (1999) (holding that the *Daubert* "gatekeeping" obligation extends to all expert testimony). In *Kumho Tire Co.*, the Court considered how *Daubert*'s holding should apply to non-scientific expert testimony. *Id.* at 141. The Court stated that *Daubert*'s rationale is not limited only to scientific experts. *Id.* at 148. It would be difficult for judges to draw distinctions between strictly scientific testimony and otherwise specialized knowledge. *Id.* The Court concluded that such distinctions are not necessary. *Id.* Thus, the Court determined that *Daubert*'s holding applies to non-scientific expert testimony as well. *Id.* at 147.

132. *See id.* at 147 (extending the *Daubert* ruling to cover all evidence mentioned in Rule 702: "scientific," "technical," or "other specialized knowledge").

133. Kobilinsky, Liotti & Oeser-Sweat, *supra* note 125, at 205 (noting that the gatekeeping function applies to both civil and criminal cases).

134. *See* Malcom, *supra* note 13, at 314 (noting that admissibility concerns are no longer raised).

135. State v. Woodall, 385 S.E.2d 253, 260 (W. Va. 1989) (finding DNA typing

to advances in technology over the past twenty years.[136] Nonetheless, a trial court must still determine that the evidence and proffered testimony will be sufficiently reliable, relevant and probative to help the jury come to a verdict.[137] When these standards are met, a typical cold hit trial includes presentation of the DNA evidence, a witness to establish the chain of custody, and a witness to explain the testing process and results.[138] The analyst may also present RMP information showing the probability in the population that the evidence would match the suspect's DNA profile.[139] The analyst decides "with reasonable scientific certainty [whether] a particular individual is the source of an evidentiary sample."[140] In order to make such a determination, the DNA must have a RMP of around 1 in 280 billion.[141]

The Court of Criminal Appeals of Oklahoma simplified the evidentiary process at trial by determining that "DNA match evidence obtained through RFLP [restriction fragment length polymorphism] analysis, and DNA statistics calculated through standard population

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analysis reliable and generally accepted, and thus no longer requiring a *Frye* hearing). In *Woodall*, the Court considered whether DNA evidence would be admissible at trial based on the *Frye* standard or the West Virginia Rules of Evidence. *Id.* at 259. The Court stated that the burden of proof remains on the proponent because unreliable scientific evidence can be more dangerous than a complete lack of scientific evidence in a criminal proceeding. *Id.* at 260. The Court determined that the scientific community generally accepts the reliability of DNA testing, and the evidence, though inconclusive, is admissible. *Id.* at 260–61.

136. *See* Kobilinsky, Liotti & Oeser-Sweat, *supra* note 125, at 236; Paul C. Giannelli, *The DNA Story: An Alternative View*, 88 J. CRIM. L. & CRIMINOLOGY 380, 380–81 (1997) (reviewing HARLAN LEVY, AND THE BLOOD CRIED OUT: A PROSECUTOR'S SPELLBINDING ACCOUNT OF DNA'S POWER TO FREE OR CONVICT (1996)).

137. *See, e.g.*, Roberson v. State, 16 S.W.3d 156, 165–66 (Tex. Crim. App. 2000) (requiring the trial court meet a "'threshold determination' as to whether the testimony will help the trier of fact understand the evidence or determine a fact in issue . . . . [and then] determine whether the proffered testimony's probative value is substantially outweighed by the danger of unfair prejudice" (internal citations omitted)).

138. *See* Roth, *supra* note 21, at 1135 (explaining the elements of a typical "pure cold hit" trial).

139. *See id.* at 1138 ("The analyst decides, based on the practice of her laboratory, when the RMP is small enough to justify an assertion of source attribution [as opposed to a full RMP report].").

140. *See id.* at 10 (citing Bruce Budowle et al., *Source Attribution of a Forensic DNA Profile*, 2 FORENSIC SCI. COMM. (July 2000), http://www.fbi.gov/hq/lab/fsc/backissu/july 2000/source.htm (last visited Sept. 21, 2010) (internal quotations omitted) (on file with the Washington and Lee Journal of Civil Rights and Social Justice).

141. *See* Roth, *supra* note 21, at 1138–39 ("The FBI currently sets its source attribution threshold at around 1 in 280 billion, or about [1,000] times the population of the United States.").

genetics formulas, pass the *Daubert* test [and] from this point forward, trial courts faced with DNA profiling evidence through these means need not conduct a *Daubert* pretrial admissibility hearing."[142] However, the court noted that cross-examination would still serve as a way to attack the reliability of DNA profiling evidence.[143]

The evolution of DNA admission at trial hastily approaches a point where DNA can be used on its own without any corroborating evidence.[144] This steep incline in dependence on DNA demands a careful examination by the legal community as that becomes reality.[145]

B. DNA's Power Extends to Convictions Without Any Other Corroborating Evidence

As a result of advances in technology, increased reliance on DNA testing procedures,[146] the growing size of DNA databases,[147] and the expansion of John Doe indictments,[148] DNA evidence is being used to convict more frequently without corroborating evidence.[149] In the past few years, court decisions have sparked debate over whether DNA, alone,

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142. *See* Taylor v. State, 889 P.2d 319, 338 (Okla. Crim. App. 1995) (determining that the *Daubert* test applies to scientific evidence and that certain procedures for testing DNA are reliable).

143. *See id.* at 339 (noting that the weight and credibility of DNA profile evidence remains "subject to attack through cross-examination and testimonial challenges").

144. *See* Roth, *supra* note 21, at 1132 (noting an "emerging phenomenon of 'pure cold hit' DNA prosecutions in which the entirety of the government's case against the suspect, aside from his prior conviction, is a DNA profile match or a match accompanied only by general evidence").

145. *See, e.g.*, *Technology and Liberty: Forensic DNA Databases*, AMERICAN CIVIL LIBERTIES UNION (May 20, 2007), http://www.aclu.org/technology-and-liberty/forensic-dna-databanks (noting that the trend to store DNA "represents a grave threat to privacy and the 4th Amendment [and] also turns the legal notion that a person is 'innocent until proven guilty' on its head") (on file with the Washington and Lee Journal of Civil Rights and Social Justice).

146. *See* Frank B. Ulmer, *Using DNA Profiles to Obtain "John Doe" Arrest Warrants and Indictments*, 58 WASH. & LEE L. REV. 1585, 1598 (2001) (noting that DNA evidence is admissible in all U.S. jurisdictions).

147. *See, e.g.*, AMERICAN CIVIL LIBERTIES UNION, *supra* note 145 (noting that "[s]tate and [f]ederal DNA databanks are expanding at an alarming rate").

148. *See* Ulmer, *supra* note 146, at 1586–88 (stating that courts of all jurisdictions have allowed the indictment of an unknown suspect's DNA in order to toll the statute of limitations).

149. *See supra* note 144 and accompanying text (noting the "pure cold hit" DNA prosecution phenomenon).

provides sufficient evidence to prove a defendant's guilt beyond a reasonable doubt.[150]

The most controversial cases present situations in which the defendant is convicted on DNA evidence alone, with no corroborating evidence.[151] These instances are rare because often there will be some other piece of corroborating evidence.[152] *People v. Rush*,[153] serves as one of the extreme cases of conviction based on DNA evidence alone.[154] In *Rush*, the only evidence that existed linking the defendant to the crime was the DNA evidence.[155] An FBI agent testified that the probability of selecting another

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150. *See* Malcom, *supra* note 13, at 315 n.17 (listing court decisions that have held that DNA evidence alone is sufficient for conviction).

151. *See* Roth, *supra* note 21, at 1133 (noting "'the question whether or not DNA evidence on its own is enough to convict an accused' was recently described as 'one of the most talked-about points regarding DNA evidence'" (citing ANDREI SEMIKHODSKII, DEALING WITH DNA EVIDENCE: A LEGAL GUIDE 136 (2007))).

152. *See, e.g.*, Malcom, *supra* note 13, at 331 (distinguishing Springfield v. State, 860 P.2d 435 (Wyo. 1993) and People v. Soto, 35 Cal. Rptr. 2d 846 (Cal. Ct. App. 1994)), *aff'd*, 981 P.2d 958 (Cal. 1999), which included additional evidence to corroborate the DNA evidence); *see also* Roth, *supra* note 21, at 1132 (acknowledging a trend towards "pure cold hit" cases with or without generalized pieces of evidence); *see also* State v. Toomes, 191 S.W.3d 122, 129 (Tenn. Crim. App. 2005) (listing cases in which the Court of Criminal Appeals of Tennessee weighed the sufficiency of DNA evidence supported by corroborating evidence).

153. *See* People v. Rush, 672 N.Y.S.2d 362, 364 (N.Y. App. Div. 1998) (determining that the jury could reasonably find the defendant guilty when the chance that the DNA evidence belonged to another person's profile was 500 million to 1). In *Rush*, a jury had convicted the defendant of rape in the first degree and robbery in the first degree, basing its decision largely on DNA evidence. *Id.* at 363. The court considered whether DNA evidence is "circumstantial in nature and not absolute [and therefore] such evidence cannot alone serve to prove . . . guilt beyond a reasonable doubt under the circumstances presented." *Id.* (internal citations omitted). The court noted that "a jury verdict must be sustained if, after viewing the evidence in the light most favorable to the prosecution, *any* rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt" and that guilt may be established through circumstantial evidence. *Id.* (emphasis in original). Rejecting the defendant's argument that DNA evidence "cannot serve as sole evidence supporting his conviction," the court reasoned that DNA evidence has been "found reliable by the scientific community," is admissible evidence, and "can provide strong evidence of a defendant's presence at and participation in a crime." *Id.* at 364 (internal citations omitted). Noting that the DNA evidence was corroborated as the defendant's by scientific testimony, the court determined that the "the jury could properly credit as establishing the defendant's guilt beyond a reasonable doubt." *Id.*

154. *See id.* (finding that the jury could reasonably find the defendant guilty with DNA evidence alone).

155. *See id.* at 363 ("The principal evidence implicating the defendant in the commission of the crimes was a DNA profile, which revealed that his DNA matched the DNA in a semen sample recovered from the victim.").

individual at random from the population that would have the same set of DNA profiles was less than 1 in 500 million.[156] The only other evidence was the testimony of an acquaintance of the defendant who saw him in the area of the crime three days prior.[157] Even more striking was the fact that the victim identified a courtroom spectator as the perpetrator of the offense, not the suspect.[158] Nonetheless, the trial court placed "unfettered faith in the reliability of DNA evidence."[159]

The Texas Court of Appeals upheld a similar conviction in *Roberson v. State*,[160] relying on *Rush*:

> The court is, therefore, satisfied that the testimony of even one DNA expert that there is a genetic match between the semen recovered from the victim of a rape and the blood of the defendant, a total stranger, and the statistical probability that anyone else was the source of that semen are 1 in 500 million is legally sufficient to support a guilty verdict.[161]

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156. *See id.* at 364 (proposing that the possibility of the DNA matching another person was "virtually nonexistent").

157. *See* Malcom, *supra* note 13, at 333 ("Notably, the only other identification evidence presented by the prosecution was the testimony of an acquaintance of Rush who, three days prior to the crime, saw him in the 'vicinity' where the crime took place." (citing People v. Rush, 630 N.Y.S.2d 631, 632 (N.Y. Sup. Ct. 1995), *aff'd*, 672 N.Y.S.2d 362 (N.Y. App. Div. 1998))).

158. *See id.* ("At trial, the victim identified another individual in the courtroom as the perpetrator, leading the court to exclude the previous photo and lineup identifications of Rush." (citing People v. Rush, 630 N.Y.S.2d at 631–32)).

159. *Id.* at 334.

160. *See* Roberson v. State, 16 S.W.3d 156, 172 (Tex. Crim. App. 2000) ("Giving due deference to the jury's verdict, we conclude that the verdict [based only on a DNA match] is not so contrary to the overwhelming weight of evidence as to be clearly wrong and unjust."). In *Roberson,* the court considered whether DNA evidence could result in the conviction of a defendant without other circumstantial evidence. *Id.* at 159. A jury convicted the appellant in *Roberson* of an aggravated sexual assault charge based on DNA evidence alone, even though the assaulted woman "was unable to identify her assailant at the time of the offense or at the trial." *Id.* at 159–60. The court noted that circumstantial evidence is admissible and reasoned that, when viewing the evidence favorably to the jury's finding, the standard for the legal sufficiency of evidence is whether "any rational trier of fact could have found beyond a reasonable doubt all the essential elements of the offense charged." *Id.* at 164 (internal citations omitted). Given that DNA evidence is admissible and that there was a 1 in 5.5 billion chance that the DNA belonged to a person other than the appellant, the court determined that a jury could have reasonably found the appellant guilty beyond a reasonable doubt and the jury's "verdict [was] not so contrary to the overwhelming weight of evidence as to be clearly wrong and unjust." *Id.* at 163–72.

161. *Id.* at 170.

Most recently, the Tennessee Court of Criminal Appeals in *State v. Toomes*,[162] upheld a defendant's conviction based on DNA evidence with a 1 in 5,128,000,000 probability that his DNA profile would be found within the African-American population; 1 in 22,870,000,000 probability within the Caucasian population; 1 in 90,910,000,000 within the Southeastern Hispanic population; and 1 in 185,700,000,000 within the Southwestern Hispanic population.[163] The victim could not identify Toomes as the person who assaulted her.[164]

Scholars have raised concerns about the legitimacy of these cases and whether they violate a defendant's rights.[165] One scholar argues that "[t]he possibility of human error and manipulated results demands that DNA evidence, by itself, should not be sufficient for conviction."[166] The author asserts that reliability of the DNA evidence requires corroborating evidence, even despite any constitutional or evidentiary argument.[167] Today, DNA evidence faces problems with "poor laboratory proficiency

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162. *See* State v. Toomes, 191 S.W.3d 122, 131 (Tenn. Crim. App. 2005) (finding that DNA evidence, without corroborating evidence, was sufficient to support conviction). In *Toomes*, the court considered whether DNA evidence was sufficient to sustain an aggravated rape conviction. *Id.* at 127. A jury convicted appellant of aggravated rape and aggravated criminal trespass, even though the victim did not know her attacker nor could identify him as appellant at trial. *Id.* at 124. The only evidence connecting appellant with the crime was the DNA evidence taken from the victim using a rape kit. *Id.* at 125–27. The standard of review for the sufficiency of evidence is whether the trier of fact could have reasonably convicted the defendant beyond a reasonable doubt, and circumstantial evidence—such as DNA evidence—may exclusively establish a criminal offense. *Id.* at 128 (internal citations omitted). The court analogized DNA evidence to fingerprint identification for purposes of determining identity, concluding that DNA evidence is "unquestionably reliable" (although not "absolutely infallible") but "accessibility of a defendant to the examined object is highly relevant because it could suggest an innocent reason for a defendant's fingerprints to be on an object." *Id.* at 130–31. The court concluded that there was no innocent reason for semen to be on the victim's body and expert testimony confirmed the statistical improbability of the DNA belonging to a different individual than the appellant. *Id.* at 131. As a result, the court found the DNA evidence sufficient to convict the appellant, despite the lack of corroborating evidence. *Id.*

163. *See id.* at 127 (noting the statistical probability that the DNA belonged to another individual rather than the defendant).

164. *See id.* at 124 ("[The victim] did not know the identity of her attacker, and she could not identify at trial the defendant as the person who assaulted and raped her.").

165. *See generally* Malcom, *supra* note 17, at 338 (noting that "there appears to be a disturbing trend among U.S. state courts to allow convictions based only on DNA evidence").

166. *Id*. at 321.

167. *See id*. (asserting that making a change to require corroborating evidence in addition to DNA evidence "must be made to ensure the credibility of [DNA] evidence that has become such a powerful tool for criminal prosecutions").

testing, contamination, lack of proper laboratory protocols or accreditation, improper techniques, lack of quality control, and broken chains of custody,"[168] as well as problems with temperature control.[169] Additionally, the increasing demand for DNA analysis creates further errors in laboratories due to overworked technicians.[170] Finally, legal scholars fear that jurors may be unreasonably impressed by the DNA evidence and statistics.[171]

The sufficiency of DNA evidence has been compared to that of fingerprint evidence.[172] Courts vary in their use of fingerprint evidence, alone, to convict.[173] Courts in Tennessee and New York have upheld convictions based solely on fingerprinting evidence.[174] More recently, however, fingerprint evidence has lost traction as the "gold standard" of evidence,[175] and scholars caution that courts must not too quickly accept the reliability of DNA for fear of the same demise.[176]

Andrea Roth, a professor at Stanford and scholar on DNA evidence, addresses the appropriate standard of review for convictions based solely on DNA, or "pure cold hits," and suggests a probabilistic standard be used in order to traverse the line between probability and certainty of defendant's guilt.[177] Roth argues "that there exists a point at which the numbers are so

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168. *See* Shelton, *supra* note 19, at 324 (citing Joel D. Liberman et al., *Gold Versus Platinum: Do Jurors Recognize the Superiority and Limitations of DNA Evidence Compared to Other Types of Forensic Evidence?*, 14 PSYCHOL. PUB. POL'Y & L. 27, 31 (2008)).

169. *See id.* at 324 (noting the challenge of laboratory temperature variances because "DNA is very sensitive to environmental conditions").

170. *See id.* at 324–25 ("The overwhelming demand [for DNA testing] may be resulting in poor laboratory practices by inexperienced or overworked technicians to the degree that confidence in DNA testing results is being affected.").

171. *See* Malcom, *supra* note 13, at 324 (citing Kimberlianne Podlas, *"The CSI Effect:" Exposing the Media Myth*, 16 FORDHAM INTELL. PROP. MEDIA & ENT. L. J. 429, 433 (2006) (referring to the "CSI effect" created by television portraying forensic science as "insurmountable")).

172. *See id.* at 328 (describing fingerprint evidence as a "powerful lesson applicable to DNA evidence").

173. *See, e.g.*, *id.* at 325–28 (discussing the use of fingerprint evidence to convict in various jurisdictions).

174. *See id.* at 327 (noting that "[s]ince 1962, courts in Tennessee and New York have upheld convictions based solely on fingerprint evidence" (citing Jamison v. State, 354 S.W.2d 252, 255 (Tenn. 1962)).

175. *See id.* at 328 (noting that "[f]ingerprint evidence, once considered to be the 'gold standard' in identification now appears to be more akin to pyrite, 'fool's gold'").

176. *See id.* (suggesting that courts review the use of DNA evidence cautiously).

177. *See* Roth, *supra* note 21, at 1178–84 (proposing a framework for determining sufficiency of DNA evidence without corroborating evidence).

compelling as to amount to an assertion of certainty rather than probability. When that point is reached, pure cold hit evidence is capable of inspiring an actual belief in the defendant's guilt sufficient to justify conviction."[178] Her argument stems from the need to show the jury that the DNA is so rare in the population that no possibility exists that the DNA is not the defendant's.[179] DNA analysts give such data by calculating the RMP.[180] The strength of the probability depends on the uniqueness of the DNA, as well as the quality of the sample.[181]

Roth suggests that a decision based purely on numerical statistics must inspire certainty in the jury that reaches "beyond a reasonable doubt."[182] The reasonable-doubt standard stems from a requirement of "moral certainty."[183] The introduction of moral certainty into the verdict equation requires that the jury actually believe in the guilt of the defendant, as opposed to blindly following statistics and mathematics.[184] Roth outlines recent studies suggesting that jurors will refuse to convict on statistical evidence if they do not believe in the defendant's actual guilt, despite "a high probability of the defendant's culpability."[185] However, when the probability of a defendant's guilt reaches a certain level, the jurors become more confident.[186] Roth suggests that courts choose a threshold that instills

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178. *Id.* at 5.

179. *See id.* at 7 ("[T]he match is essentially meaningless without some sense of how unusual it is . . . .").

180. *See id.* ("Based on the assumption that the allelic frequencies among the loci are statistically independent, the laboratory multiplies the [26] frequencies together to report for each group a 'random match probability' (RMP), or probability that a random person selected from the population will exhibit the [26]-allele profile.").

181. *See id.* ("The size of the RMP depends on how unusual the alleles in the particular profile are, as well as the quality of the evidence sample.").

182. *See id.* at 18 (noting that the jury must reach their conclusion beyond a reasonable doubt).

183. *See id.* at 32 ("The 'moral certainty' standard evolved into a requirement that the events alleged by the government be 'so certain as not to admit of any *reasonable doubt* concerning them.'" (citing Barbara J. Shapiro, *"To a Moral Certainty": Theories of Knowledge and Anglo-American Juries 1600–1850*, 38 HASTINGS L.J. 153, 158 (1986))).

184. *See id.* at 31 ("[T]he certainty required to justify conviction in a criminal case—'moral certainty' —falls short of the metaphysical certainty of absolute 'mathematical' or 'demonstrative' proof of guilt but still requires that jurors reach an 'actual belief' in the defendant's guilt.").

185. *See id.* at 38–39 (explaining the phenomenon of the "Wells Effect," which shows that jurors hesitate to convict when they can easily simulate a scenario in which the defendant is not guilty).

186. *See id.* at 39–40 ("If jurors experience such unfathomable numbers as 'effectively implying certainty' rather than mere probability, then a sufficiently high source probability

such confidence in the jurors that the defendant's guilt is found beyond a reasonable doubt.[187] Any cold hit cases that do not meet this threshold, as found by a judge, need not go to a jury, because defendants have a right not to be tried on insufficient evidence.[188] In such a situation, there would have to be no other corroborating evidence for the jury to weigh.[189]

III. The Need for Safeguards on DNA Use in Sentencing

As this note has suggested, DNA evidence alone can rarely be sufficient evidentiary evidence at trial to convict a defendant.[190] Part of a DNA case involves the defendant's ability to suggest that the science is not infallible, that labs make mistakes, or that the evidence was collected incorrectly.[191] Defendants must be able to challenge the process of the DNA collection and testing, the chain of custody of the evidence, possible contamination of the evidence, the consequences of a mixture of DNA evidence and the prosecution's expert witness testimony.[192] The

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may have the potential—like other fallible but absolute assertions about a defendant's guilt—to inspire an actual belief in, and thus moral certainty of, guilt." (citing MICHAEL LYNCH ET AL., TRUTH MACHINE: THE CONTENTIOUS HISTORY OF DNA FINGERPRINTING 184, at 345 (2008))).

187. *See id.* at 17–30 (discussing the shortcomings of courts choosing statistical thresholds of DNA source probabilities because juries tend to rely on them when determining guilt beyond a reasonable doubt).

188. *See id.* at 44 ("Assuming the legal community comes to agree that certain source probabilities in cold hit cases are too low to form the basis for a rational juror's actual belief of guilt, judges should be bound to grant motions for acquittal in cases that do not meet a minimum threshold.").

189. *See id.* at 43 (noting that "[u]nlike conflicting eyewitness testimony, a [government case consisting of] 'coldly statistical' [evidence alone] gives jurors 'no opportunity to exercise' their skills of 'perception or intuition,' the very qualities that justify trial by jury to begin with" (citing Charles R. Nesson, *Reasonable Doubt and Permissive Inferences: The Value of Complexity*, 92 HARV. L. REV. 1187, 1196 (1979) and Eleanor Swift, *Abolishing the Hearsay Rule*, 75 CAL. L. REV. 495, 504 (1987))).

190. *See* Kobilinsky, Liotti & Oeser-Sweat, *supra* note 125, at 227 ("If DNA itself were enough to solve the crime, we would not need trials.").

191. *See* Shelton, *supra* note 19, at 323 (admitting that DNA profiling is not infallible and is subject to human error (citing Johnathan J. Koehler, *Error and Exaggeration in the Presentation of DNA Evidence at Trial*, 34 JURIMETRICS J. 23 (1993) and William C. Thompson, *Guide to Forensic DNA Evidence*, *in* EXPERT EVIDENCE: A PRACTITIONER'S GUIDE TO LAW, SCIENCE, AND THE *FJC MANUAL* 195, 231–36 (Bert Black & Patrick W. Lee eds., 1997))).

192. *See* Kobilinsky, Liotti & Oeser-Sweat, *supra* note 125, at 236–37 (presenting defense arguments against admitted DNA evidence).

admissibility of scientific evidence remains with the judge, and although DNA evidence has largely been accepted in criminal cases, each case demands a careful review before using that information to convict.[193] Similarly, courts should not immediately dismiss these issues when DNA matches are introduced at sentencing either.[194]

Standards of proof and admissibility at sentencing less frequently receive attention because courts minimize the fact that constitutional rights of defendants continue to apply after conviction.[195] Evidence admissible at sentencing has always been broader than evidence admissible at trial, due to the fact that defendants at the punishment phase have already been found guilty.[196] Texas, for example, has bifurcated trials with a guilt phase and an innocence phase, as well as a separate punishment phase.[197] The evidence admissible at the punishment stage is broad and:

> may be offered by the state and the defendant as to any matter the court deems relevant to sentencing, including but not limited to the prior criminal record of the defendant . . . and . . . any other evidence of an extraneous crime or bad act that is shown beyond a reasonable doubt by evidence to have been committed by the defendant or for which he could be held criminally responsible, regardless of whether he has previously been charged with or finally convicted of the crime or act.[198]

Although broad, this evidentiary standard still requires the court to find beyond a reasonable doubt that the defendant committed the extraneous offense.[199]

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193. *See*, *e.g.*, *id.* at 238 (noting that "[j]udges have extraordinary responsibility in deciding on the admissibility of scientific evidence and in accepting the credentials of expert witnesses . . . . The judge must maintain an open mind . . . [because i]t is untrue that DNA analysis is the same in every case"); *see also* Malcom, *supra* note 17, at 338 ("The legal community should want and demand more evidence than mere testimony of a genetic match, riddled with the possibility of human error, before tarnishing a defendant with a conviction.").

194. *See id.* (discussing that judges should use caution when considering DNA evidence).

195. *See* Hessick & Hessick, *supra* note 33, at 48 ("With few exceptions, the judiciary has rejected constitutional challenges to non-capital sentencing factors.").

196. *See, e.g.*, U.S. SENTENCING GUIDELINES MANUAL § 6A1.3(a) (2010) (permitting a sentencing judge to consider any relevant and reliable information, even if that information would be inadmissible at trial).

197. *See* TEX. CODE CRIM. PROC. ANN. art. 37.07 (Vernon 2009) (stating verdict procedure in Texas for criminal trials).

198. TEX. CODE CRIM. PROC. ANN. art. 37.07(3)(a)(1) (Vernon 2009).

199. *See id.* (noting that the state may introduce "any other evidence of an extraneous crime or bad act that is shown beyond a reasonable doubt by evidence to have been committed by the defendant or for which he could be held criminally responsible").

Few state courts have analyzed the use of DNA database matches at sentencing.[200] In *Roberson v. State*, the prosecution called one woman at sentencing to testify about the defendant's prior conviction of aggravated sexual assault.[201] The government then presented three witnesses, each testifying to the defendant's commission of an extraneous unadjudicated aggravated sexual assault.[202] None of the women could identify the defendant as the perpetrator of the crimes,[203] but a DNA analyst was called to testify that, the "appellant could not be excluded as the donor of the sperm in each case."[204] "[T]here was a 1 in 5.5 billion chance in each offense that appellant's DNA profile would match another individual."[205] In addition, the appellate court noted in its decision that the four extraneous offenses "revealed a distinctive *modus operandi* that was so unusual as to mark each offense as one person's handiwork or signature."[206] The defense rested without offering any evidence[207] and the trial court sentenced defendant to life imprisonment.[208] The Court found that the DNA evidence was sufficient to convict;[209] however, specific analysis of the unadjudicated offenses at sentencing was not raised as an issue.[210] Despite the lack of

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200. *See, e.g.*, Roth, *supra* note 21, at 4 (noting that whether DNA evidence is sufficient for conviction has "generated little litigation or scholarship").

201. *See* Roberson v. State, 16 S.W.3d 156, 163 (Tex. Crim. App. 2000) ("[The prior victim] related that she was unable to identify appellant based solely on the events that occurred in the early morning hours on the day of the offense.").

202. *See id.* (noting that three women "testified to an extraneous unadjudicated aggravated sexual assault that occurred in their homes").

203. *See id.* ("None of the three women could identify appellant as the perpetrator of the offense in her individual case.").

204. *Id.*

205. *Id.*

206. *Roberson*, 16 S.W.3d at 163 n.11 (citing Lane v. State, 933 S.W.2d 504, 519 (Tex. Crim. App. 1996); Taylor v. State, 920 S.W.2d 319, 322 (Tex. Crim. App. 1996); Barrett v. State, 900 S.W.2d 748, 750 (Tex. App. 1995)); *see also* TEX. R. EVID. 404(b) (noting that "[e]vidence of other crimes, wrongs or acts is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible for other purposes, such as . . . identity").

207. *See* Roberson v. State, 16 S.W.3d 156, 172 (Tex. Crim. App. 2000) at 172 (noting that the defendant offered no evidence contrary to the DNA evidence).

208. *See id.* at 164 (noting that the trial court sentenced the defendant to life imprisonment after he presented no evidence to rebut the DNA evidence).

209. *See id.* at 172 (upholding the trial court's judgment after concluding that the jury verdict based on DNA evidence was "not so contrary to the overwhelming weight of evidence as to be clearly wrong and unjust").

210. *See id.* at 165 (addressing only the admissibility of DNA evidence generally).

case law, sentencing issues will continue to surface as courts apply *Apprendi*, *Blakely*, and *Booker*.[211]

The evolution of sentencing jurisprudence since *Apprendi* suggests federal sentencing has judicial limitations based on defendant's constitutional rights.[212] In turn, DNA evidence used at sentencing needs review and procedural limitations.[213] Despite the slide back towards more judicial discretion, *Apprendi*, *Booker*, *Rita*, and *Gall* have maintained that defendants must continue to be protected by the Fifth Amendment due process clause and the Sixth Amendment "right to a speedy and public trial, by an impartial jury"[214] even during sentencing.[215] A defendant must still be found guilty beyond a reasonable doubt by a jury for every element of a crime for which he is charged.[216] "Since *Winship*, we have made clear beyond peradventure that *Winship*'s due process and associated jury protections extend, to some degree, 'to determinations that [go] not to a defendant's guilt or innocence, but simply to the length of his sentence.'"[217] A defendant's culpability must be found by jury trial, not sentencing.[218]

One reason for finding the New Jersey statute in *Apprendi* invalid stemmed from the decision that the "biased purpose inquiry" was part of the "commission of the offense" [219] and would enhance the sentence above the

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211. *See* Roth, *supra* note 22, at 7 (noting the scarcity of case law concerning sentencing issues and DNA matching).

212. *See, e.g.*, Blakely v. Washington, 542 U.S. 296, 306 (2004) (limiting the judge's sentencing authority to the framework set by the jury's verdict).

213. *See generally* Roth, *supra* note 21 (discussing the limitations of relying solely on DNA evidence to convict).

214. U.S. CONST. amend. VI.

215. *See, e.g.,* Apprendi v. New Jersey, 530 U.S. 466, 476–77 (2000) ("Taken together, these rights indisputably entitle a criminal defendant to 'a jury determination that [he] is guilty of every element of the crime with which he is charged, beyond a reasonable doubt.'" (citing United States v. Gaudin, 515 U.S. 506, 510 (1995); Sullivan v. Louisiana, 508 U.S. 275, 278 (1993); *In re* Winship, 397 U.S. 358, 364 (1970))); *see also Blakely*, 542 U.S. at 309 (maintaining the "jury's traditional function of finding the facts essential to lawful imposition of the penalty").

216. *See Apprendi*, 530 U.S. at 477 (noting the right to have a jury determine guilt beyond a reasonable doubt (citing United States v. Gaudin, 515 U.S. 506, 510 (1995); Sullivan v. Louisiana, 508 U.S. 275, 278 (1993); *In re* Winship, 397 U.S. 358, 364 (1970))).

217. *Id.* at 484 (citing Almenderez-Torres v. United States, 523 U.S. 224, 251 (1998) (Scalia, J., dissenting)).

218. *See id.* at 485 (noting that a jury determines whether a defendant is guilty of "all the elements of an offense" but it may be left to the judge to decide whether to impose the maximum penalty (citing *Almenderez-Torres*, 523 U.S. at 257 n.2)).

219. *See id.* at 496 (noting that "New Jersey's biased purpose inquiry goes precisely to what happened in the 'commission of the offense'").

statutory maximum.[220] As a result, the fact had to be proven by a jury beyond a reasonable doubt.[221] The Court further suggested that "both the purpose of the offender, and even the known identity of the victim, will sometimes be hotly disputed, and that the outcome may well depend in some cases on the standard of proof and the identity of the factfinder."[222] Evidently, the Court recognizes the difference between accepting the validity of a prior conviction that has already been placed in front of a jury and a required fact of that offense that has not.[223] This analysis suggests that the identity of a defendant, a factor required to prove any offense,[224] must be proven beyond a reasonable doubt before used to implement a sentence above the statutory maximum for an extraneous unadjudicated offense.[225] If a DNA database match stood as the sole evidence proving the defendant's identity in an extraneous crime, it would have to be proven beyond a reasonable doubt as well.[226]

The recent decisions applying *Apprendi* safeguard defendant's rights at sentencing.[227] Justice Scalia, delivering the opinion of the Court in *Blakely*, explains that *Apprendi* makes the sentencing process much fairer to criminal defendants because a defendant can no longer:

> [S]ee his maximum potential sentence balloon from as little as five years to as much as life imprisonment . . . based not on facts proved to his peers beyond a reasonable doubt, but on facts extracted after trial from a

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220. *See id.* at 491 (noting that although the jury convicted a defendant of a second-degree offense, the judge could impose a sentence identical to one for a first-degree offense after he conducted a second proceeding following the jury verdict).

221. *See id.* at 490 (stating that "[o]ther than the fact of a prior conviction, any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury, and proved beyond a reasonable doubt").

222. Apprendi v. New Jersey, 530 U.S. 466, 475 (2000).

223. *See id.* at 496 ("[T]he fact that New Jersey, along with numerous other States, has also made precisely the same conduct the subject of an independent substantive offense makes it clear that the mere presence of this 'enhancement' in a sentencing statute does not define its character.").

224. *See, e.g.*, Roberson v. State, 16 S.W.3d 156, 167 (Tex. Crim. App. 2000) (noting that "the State is required to prove [the identity of the accused] beyond a reasonable doubt" (citing Johnson v. State, 673 S.W.2d 190, 196 (Tex. Crim. App. 1984); Rice v. State, 801 S.W.2d 16, 17 (Tex. Crim. App. 1990))).

225. *See supra* notes 212–23 and accompanying text (discussing the importance of a jury finding a defendant guilty beyond a reasonable doubt).

226. *See* TEX. CODE CRIM. PROC. ANN. art. 37.07(3)(a)(1) (Vernon 2009) (stating that the jury must find a defendant guilty of every element of the crime).

227. *See supra* notes 210–212 and accompanying text (discussing *Apprendi*'s effect on subsequent cases).

> report compelled by a probation officer who the judge thinks more likely got it right than got it wrong.[228]

Justice Scalia had previously, in his *Apprendi* concurrence, analyzed the history of sentencing in order to show that *Apprendi* returns to "the status quo that reflected the original meaning of the Fifth and Sixth Amendments."[229] In his view, the status quo of "a 'crime' includes every fact that is by law a basis for imposing or increasing punishment."[230]

Scalia's review of factors constituting elements of a crime included prior convictions.[231] He pointed out that at common law prior convictions had to be included in an indictment if a higher sentence was requested on account of recidivism.[232] "If a fact is by law the basis for imposing or increasing punishment—for establishing or increasing the prosecution's entitlement—it is an element. . . . When one considers the question from this perspective, it is evident why the fact of a prior conviction is an element under a recidivism statute."[233] In one historic 1863 case, *State v. Haynes*,[234] a Vermont court held that a defendant's contested identity in a prior offense should be permitted to be resolved by a jury.[235] If such

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228. Blakely v. Washington, 542 U.S. 296, 311–12 (2004).

229. Apprendi v. New Jersey, 530 U.S. 466, 518 (2000) (Scalia, J., concurring).

230. *Id.*

231. *See id.* at 515–16 (stating that "a crime includes any fact to which punishment attaches").

232. *See id.* at 516 (citing Wood v. People, 53 N.Y. 511, 513 (1873) (holding that "the facts of the prior conviction and of the discharge must be proved to the jury")).

233. *Id.* at 521.

234. State v. Haynes, 35 Vt. 570, 572–73 (1863) (acknowledging that State v. Freeman, 27 Vt. 523, 528 (1855) had anticipated the holding in *Haynes* by suggesting the use of a jury to resolve disputes over identity). In *Haynes*, the court considered whether evidence of a prior conviction should have been presented to a jury rather than at the sentencing stage. *Id.* at 571. Under statutory law, the county court convicted respondent for "furnishing intoxicating liquors;" however, he took exceptions at trial and appealed to the Supreme Court of Vermont. *Id.* at 570–71. After the court overruled the exceptions, the prosecuting attorney entered evidence of previous offenses "of the same character" and moved that the court should convict the respondent. *Id.* at 571. The liquor statute allowed increased sentencing for second and third offenses, but the court noted that *State v. Freeman* suggested that "any issue of fact" might be decided by the jury. *Id.* The court stated that according to *Freeman*, the jury not only decides issues of fact such as "the identity of the respondent with the person named in the record of the former conviction" but also "ascertain[s] what sentence should be imposed." *Id.* at 572. As a result, the court stated that the county court should have considered the previous convictions. *Id.* at 573.

235. *See* Apprendi v. New Jersey, 530 U.S. 466, 509 (2000) ("[I]f a defendant charged with a successive violation of the liquor laws contested identity—that is, whether the person in the record of the prior conviction was the same as the defendant—he should be permitted to have a jury resolve the question." (citing State v. Haynes, 35 Vt. 570, 572–73 (1863))).

limitations were applied today, the prosecution would be required to prove beyond a reasonable doubt at sentencing that the DNA of the unadjudicated crime introduced came from defendant.[236] Courts could go further and require that the unadjudicated crime be proven, with the help of the DNA evidence, beyond a reasonable doubt before the DNA evidence can be introduced at a later sentencing.[237] However, proving sentencing factors beyond a reasonable doubt at sentencing surpasses any evidentiary standard pronounced in *Apprendi*.[238]

Apprendi requires only that facts used to punish the defendant outside the statutory maximum be proven by a jury.[239] As a result, it has been suggested that *Apprendi* requires judges to determine which evidence may raise a punishment outside the statutory maximum before sentencing begins.[240] With regards to DNA, a judge would have to first, determine if the DNA evidence to be introduced at sentencing could raise the sentence above the statutory maximum imposed, and second, if necessary, hold a separate hearing for purposes of admitting the DNA.[241] A mini jury hearing prior to or during the sentencing proceedings would have to be incorporated into the process in order to establish that the DNA "cold hit" matches defendant.[242] Extrapolating from Andrea Roth's recommended standard of proof for DNA, the mini hearing could be obviated by requiring the DNA

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236. *See supra* notes 224–26 and accompanying text (discussing that the identity of the accused, such as evidence of a DNA match, must be proven beyond a reasonable doubt).

237. *See* TEX. CODE CRIM. PROC. ANN. art. 37.07(3)(a)(1) (Vernon 2009) (stating that Texas' evidentiary standard requires the court to find beyond a reasonable doubt that the defendant committed the extraneous offense); *but see* discussion *supra* Part II (asserting that *Apprendi* requires that courts only meet a preponderance of the evidence standard, even if the additional fact used at sentencing is a DNA match to a previous unadjudicated crime that does not raise the statutory maximum).

238. *See id.* at 490 ("*Other than the fact of a prior conviction*, any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury, and proved beyond a reasonable doubt." (emphasis added)).

239. *See id.* at 497 (noting that "any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury").

240. *See e.g.*, Blakely v. Washington, 542 U.S. 296, 304 (2004) (stating that a "judge exceeds his proper authority" if he inflicts a punishment beyond the statutory maximum without additional findings of fact by the jury, implying that all fact-finding questions be resolved before sentencing and requiring judicial foresight (internal citations omitted)).

241. *See supra* notes 231–243 and accompanying text (discussing the circumstances under which DNA evidence should require a mini jury hearing).

242. *See id.* (discussing that defendants need procedural safeguards against judicial abuse, such as trial by jury, because not all "cold hit" DNA matches are the result of a prior conviction).

meet a probabilistic standard.[243] If the offered DNA met the probabilistic standard, it would prove the defendant's identity beyond a reasonable doubt and bypass the need for more proof.[244] If, on the other hand, the DNA evidence did not meet the probabilistic standard, other evidence would be required in order to prove the prior crime and subsequent enhanced sentencing.[245]

It is true that in some circumstances the state may have to bear the additional expense of a separate jury trial during the penalty phase; however, the Supreme Court has recognized this possibility.[246] The Court explains that, "the interest in fairness and reliability protected by the right to a jury trial . . . has always outweighed the interest in concluding trials swiftly."[247] Additionally, procedures such as disclosure of "cold hit" DNA matches prior to trial would lessen the burden on both parties by allowing them to foresee and prepare for a presentencing hearing.[248] DNA evidence of prior offenses should not come up at the last minute because it will ultimately affect sentencing.[249]

If DNA evidence of a possible prior crime will not increase the punishment above the statutory maximum for the convicted offense, there exists no need to hold the mini-sentencing hearing on the DNA.[250] In that

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243. *See supra* notes 157–161 and accompanying text (discussing Roth's suggestion that a probabilistic standard can become the equivalent of the beyond a reasonable doubt standard).

244. *See* Roth, *supra* note 21, at 1184 (proposing that DNA match statistics can provide sufficient evidence of guilt when over a probabilistic threshold because the match then inspires actual belief in the guilt).

245. *See supra* notes 168–169 and accompanying text (suggesting that a defendant has the right not to be tried on insufficient evidence, such as DNA evidence that does not meet the probabilistic standard, and that a jury weighs other corroborating evidence).

246. *See* Blakely v. Washington, 542 U.S. 296, 319 (2004) (O'Connor, J., dissenting) (suspecting that *Apprendi* could result in "additional costs . . . . [If] a legislature desires . . . consideration of [prior bad acts or criminal history] at sentencing . . . [without] impact[ing] a jury's initial determination of guilt, [because] the State may have to bear the additional expense of a separate, full-blown jury trial during the penalty phase").

247. United States v. Booker, 543 U.S. 220, 243 (2005) (citing *Blakely*, 542 U.S. at 313).

248. *See generally* Kobilinsky, Liotti & Oeser-Sweat, *supra* note 125, at 218 (discussing the difficulties in preparing for a DNA case); *see also* Roth, *supra* note 21, at 1136 (stating that "[i]n any case involving a DNA match, no matter how the suspect was initially identified, the match is essentially meaningless without some sense of how unusual it is").

249. *See supra* notes 11–12 and accompanying text (stating that DNA evidence could have a substantial impact on sentencing in states with broad sentencing ranges that give judges broad discretion).

250. *See, e.g.*, McMillan v. Pennsylvania, 477 U.S. 79, 82 (1986) (upholding the

circumstance, the burden of proof must meet a preponderance of the evidence standard.[251] Some may argue that DNA can be admitted in any circumstance because *Apprendi* does not even apply to prior convictions.[252] It is true that the Court in *Apprendi* excludes prior convictions from its requirement of jury trial on any fact increasing the penalty for a crime beyond the statutory maximum.[253] *Almendarez-Torres v. United States*,[254] explains that the goal of allowing prior conviction information at sentencing with very few boundaries stems from the continuing battle against recidivism.[255] The Court has stuck with its 1912 decision that recidivism "does not relate to the commission of the offense, *but goes to the punishment only*, and therefore . . . may be subsequently decided."[256] However, DNA evidence is not necessarily evidence of a prior

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challenged statute because it did not "authoriz[e] a sentence in excess of that otherwise allowed for [the underlying] offense").

251. *See* discussion *supra* Part II (concluding that courts must meet a preponderance of the evidence standard if a DNA match to a previous unadjudicated crime is an additional fact used at sentencing that does not raise the statutory maximum).

252. *See* Apprendi v. New Jersey, 530 U.S. 466, 490 (2000) ("*Other than the fact of a prior conviction*, any fact that increases the penalty for a crime beyond the prescribed statutory maximum must be submitted to a jury, and proved beyond a reasonable doubt." (emphasis added)).

253. *See id.* (stating that "any fact" that increases a criminal penalty must be submitted to a jury, except prior convictions).

254. Almendarez-Torres v. United States, 523 U.S. 224, 226–27 (1998) (concluding that the challenged federal penalty provision in question did not define a separate crime and did not need to be included in the indictment). In *Almendarez-Torres*, the Supreme Court considered whether a federal statute imposed a "separate crime or merely impose[d] an enhanced penalty." *Id.* at 226. The federal grand jury had indicted the defendant for violating 8 U.S.C. § 1326 because he was found in the United States after being deported. *Id.* at 227. The defendant argued that the district court indictment did not mention his earlier conviction and as a result, he could not be punished more than "the maximum authorized for an offender without an earlier conviction." *Id.* Due to the statute's grammatical construction, the court reasoned that Congress intended the statute to constitute a sentencing factor. *Id.* at 229–35. As a result, the Court rejected the defendant's argument that "the Constitution requires Congress to treat recidivism as an element of the offense" by distinguishing the present case from *McMillan v. Pennsylvania*, 477 U.S. 79 (1986), chiefly because unlike *McMillan*, the statute in question did not "alter the maximum penalty for the crime." *Id.* at 239–40. Consequently, the Court "conclude[d] that the subsection is a penalty provision . . . . It does not define a separate crime. Consequently, neither the statute nor the Constitution require[s] the Government to charge the factor that it mentions, an earlier conviction, in the indictment." *Id.* at 226–27.

255. *See id.* at 243 (listing statutory sentencing guidelines requiring a judge to consider an offender's prior record in every case).

256. *Id.* at 244 (quoting Graham v. West Virginia, 224 U.S. 616, 629 (1912)).

conviction.[257] Prior convictions are on a defendant's criminal record as a result of a jury trial finding beyond a reasonable doubt or a guilty plea.[258] "Cold hit" DNA evidence is not a conviction,[259] and defendants need procedural safeguards against judicial abuse.[260] The goal behind evidentiary rules of DNA admissibility—not punishing an innocent person for a crime he did not commit—still exists at sentencing.[261] In turn, sentencing should not open the door for a judge to convict him of other crimes that have not been tried by a jury.[262]

Rose Duffy, a scholar on judicial discretion, writes that, "not all of the Justices have given up on increased Sixth Amendment rights."[263] Justice Scalia is the major proponent for increased Sixth Amendment rights at sentencing: "'[t]he door therefore remains open for a defendant to demonstrate that his sentence, whether inside or outside the advisory Guidelines range, would not have been upheld but for the existence of a fact found by the sentencing judge and not the jury.'"[264] Similarly, Justice Souter promotes new mandatory guidelines in which "a jury finds every fact that is necessary to set the upper range of sentencing discretion."[265]

IV. Conclusion

Not all constitutional rights vanish postconviction, and "courts have recognized an ever-increasing number of constitutional protections at

257. *See* Roth, *supra* note 21, at 1140 (noting that DNA databases also contain mere arrestees in addition to convicted felons and misdemeanants).

258. *See, e.g.*, 39 AM. JUR. 2D *Habitual Criminals and Subsequent Offenders* § 19 (2010) ("The word 'convicted' in a repeat offender statute means the ascertainment of guilt by a plea or verdict." (internal citations omitted)).

259. *See* Roth, *supra* note 22, at 1140 (stating that DNA databases, which provide cold hit DNA evidence, contain both records of arrestees and individuals with prior convictions).

260. *See generally* Hessick & Hessick, *supra* note 33, at 86 (noting that "appellate courts tend to review sentencing decisions for an abuse of discretion" (internal citations omitted)).

261. *See generally* Malcom, *supra* note 17, at 338 (concluding that DNA evidence ought to be admissible in court but cautioning that "[t]he legal community should want and demand more evidence than mere testimony of a genetic match, riddled with the possibility of human error, before tarnishing a defendant with a conviction").

262. *See id.* ("Our legal community should . . . require [in a conviction that DNA evidence have] some corroborating evidence to ensure the reliability of our justice system.").

263. Duffy, *supra* note 42, at 242.

264. *See id.* (citing Gall v. United States, 552 U.S. 38, 60 (2007) (Scalia, J., concurring)).

265. *See id.* (citing *Gall*, 552 U.S. at 61 (Souter, J., concurring)).

sentencing relating to burdens of proof, the right to a jury, the right to remain silent, and the right to counsel."[266] Courts, scholars and legislatures must keep this evolution in mind when determining the evidentiary standard of DNA admissibility at sentencing.[267] DNA evidence is not infallible, and in light of *Apprendi*, a DNA database match should be viewed as an additional fact that must be proved beyond a reasonable doubt by a jury if enhancing the punishment beyond the prescribed statutory maximum.[268] And in states with wide sentencing ranges, DNA evidence of an unadjudicated crime must meet at least a preponderance of the evidence burden of proof to assure a defendant's right not to be sentenced with insufficient evidence.[269] Such a requirement may include the use of witnesses to speak to its reliability and corroborating evidence.[270]

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266. *See* Hessick & Hessick, *supra* note 33, at 76 (citing Carissa Byrne Hessick, *Ineffective Assistance at Sentencing*, 50 B.C. L. REV. 1069, 1100–02 (2009)).

267. *See* discussion *supra* Part II (discussing changes in sentencing jurisprudence after *Apprendi* and the Court's recognition that constitutional rights of defendants exist at sentencing).

268. *See* discussion *supra* Part II.B (examining the precedent available on using DNA evidence alone to convict and proposing that doing so requires an initial finding of a DNA random match probability of 1 in 1,000).

269. *See* discussion *supra* Part II (discussing the author's opinion that DNA evidence of an unadjudicated crime must meet a preponderance of the evidence).

270. *See* Roth, *supra* note 21, at 1138–41 (explaining that at a criminal trial, the prosecution has expert witnesses assess the reliability of DNA evidence but the defense may cross-examine).