

Boling v. Romer: Federal Courts Condone Forced Withdrawal of Blood for DNA Data Banks Despite Constitutional Concerns

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Notes

BOLING V. ROMER:¹ FEDERAL COURTS CONDONE FORCED WITHDRAWAL OF BLOOD FOR DNA DATA BANKS DESPITE CONSTITUTIONAL CONCERNS

I. INTRODUCTION

As scientific knowledge and technology advance, the collection and storage of human tissues escalates.² The increased prevalence of human tissue collection has been greatly motivated by the wide variety of purposes it serves. For example, the United States military stores soldiers' blood samples with the alleged intent to retain them for such purposes as wartime identification,³ and State agencies and health care facilities store Guthrie cards,⁴ umbilical-cord blood,⁵ and tissue samples from newborns.⁶ Today's growing trend in law enforcement encourages and often mandates the development of deoxyribonucleic

1. 101 F.3d 1336 (10th Cir. 1996), *reh'g denied*.

2. See George J. Annas, *Privacy Rules for DNA Databanks: Protecting Coded "Future Diaries,"* 270 JAMA 2346 (1993).

3. See Jon F. Merz, *Psychosocial Risks of Storing and Using Human Tissues in Research*, 8 RISK: HEALTH SAFETY & ENV'T. 235, 235 (1997) (citing *Mayfield v. Dalton*, 901 F. Supp. 300 (D. Haw. 1995)).

4. Guthrie cards are filter paper discs impregnated with capillary blood and varying amounts of phenylalanine controls, named after American microbiologist Robert Guthrie. See MERCK MANUAL OF DIAGNOSIS AND THERAPY 2088 (15th ed. 1987). The Guthrie inhibition assay uses Guthrie cards to test for high plasma phenylalanine (Phe) level together with a normal or low plasma tyrosine (Tyr). See DORLAND'S MEDICAL DICTIONARY 723 (28th ed. 1988). The test is used to detect phenylketonuria (PKU), "a condition in which metabolism of the amino acid Phe is deficient, producing increased Phe in the body with resulting nerve and brain cell damage and severe mental retardation." MELLONI'S MEDICAL DICTIONARY 371 (2nd ed. 1985). States and other agencies store dried blood spots on Guthrie cards in state newborn-screening laboratories. See Jean E. McEwen & Philip R. Reilly, *Stored Guthrie Cards as DNA "Banks,"* 55 AM. J. HUM. GENETICS 196, 196 (1994).

5. See Moshe Zilberstein, *Umbilical-Cord-Blood Banking: Lessons Learned from Gamete Donation*, 349 LANCET 642, 642 (1997) (indicating that states and other agencies store human umbilical-cord blood for various scientific research). Presently, the practice is experimental and raises many privacy concerns, particularly ownership and consent, as the mother consents for she and the minor-newborn. See *id.* at 643.

6. See Merz, *supra* note 3, at 235; see also McEwen & Reilly, *supra* note 4; Eliot Marshall, *Clinical Promise, Ethical Quandary*, 271 SCI. 586 (1996); Jeremy Sugarman et al., *Ethical Aspects of Banking Placental Blood for Bone Marrow Transplantation*, 274 JAMA 1783 (1995); and Martha M. Knoppers & Claude M. Laberge, *Research and Stored Tissues: Persons as Sources, Samples as Persons?*, 274 JAMA 1806 (1995).

acid (DNA)⁷ data banks.⁸ DNA evidence "can establish to a virtual certainty the presence or the absence of a defendant at the scene of a crime."⁹ DNA, found in every human body cell except red blood cells, is the chemical dispatcher for genetic information.¹⁰ Each human cell contains an identical DNA configuration.¹¹ More important, "with the exception of identical twins, no two individuals have the same DNA configuration."¹² The significance is readily apparent: DNA is individual to each and every person. Thus, DNA fingerprinting¹³ technology enhances the forensic sciences, and the resulting accuracy of this evidence aids in positively identifying suspects in criminal cases involving human blood, fluid, or tissue.¹⁴ Criminal law enforcement data banks draw blood samples from prison inmates to store DNA evidence in the form of blood or skin tissue.¹⁵ Almost half of the state legislatures have adopted some form of a DNA data bank, and in 1994, Congress approved the DNA Identification Act¹⁶ which appropriated in excess of forty million dollars over a five-year period to encourage states to establish and maintain DNA data banks.¹⁷ This new trend in establishing these data banks, raises serious issues and questions involving an individual's privacy rights.

7. In 1953, James Watson and Francis H. C. Crick discovered the structure of the DNA molecule by using X-ray data and rules of composition. See George Bundy Smith & Janet A. Gordon, *The Admission of DNA Evidence in State and Federal Courts*, 65 *FORDHAM L. REV.* 2465, 2465 (1997). In 1962, Watson and Crick received the Nobel Prize for their discovery. See *id.*

8. See generally, Harold J. Krent, *Of Diaries and Data Banks: Use Restrictions Under the Fourth Amendment*, 74 *TEX. L. REV.* 49 (1995).

9. Smith & Gordon, *supra* note 7, at 2465.

10. See *id.* DNA is the "nucleic acid . . . constituting the primary genetic material of all cellular organisms." *DORLAND'S MEDICAL DICTIONARY* 444 (28th ed. 1988).

11. See *id.*

12. *Id.*

13. The process is most often called DNA fingerprinting, as the term was coined by Dr. Alec Jeffreys, a pioneer in this area, but it is also known as DNA typing or profiling, among other names. See James P. O'Brien, Jr., Note, *DNA Fingerprinting: The Virginia Approach*, 35 *WM. & MARY L. REV.* 767, 767 n.1 (1994) (citing to Sally E. Renskers, Note, *Trial by Certainty: Implications of Genetic "DNA Fingerprinting,"* 39 *EMORY L.J.* 309, 309 n.3 (1990)); see also Yale H. Yee, Note, *Criminal DNA Data Banks: Revolution for Law Enforcement or Threat to Individual Privacy?* 22 *AM. J. CRIM. L.* 461, 462 (1995).

14. See O'Brien, *supra* note 13, at 767.

15. See *id.* at 86.

16. DNA Identification Act § 210304, Pub. L. No. 103-322, 1994 HR 3355, 108 Stat. 1796 (codified as amended at 42 U.S.C. § 14132 (1994)).

17. See Krent, *supra* note 8, at 86. The DNA Identification Act of 1994 allocates forty million dollars in federal matching grants to states for DNA analysis activities and authorizes the Federal Bureau of Investigation (FBI) director to establish a national DNA identification index. See Jean E. McEwen, *Forensic DNA Data Banking by State Crime Laboratories*, 56 *AM. J. HUM. GENETICS* 1487, 1487 (1995). The national index, the Combined DNA Identification System (CODIS), began as a pilot program in 1990. See *id.*

II. THE CASE

In *Boling v. Romer*, a 1996 decision, the Tenth Circuit Court of Appeals, concurring with the lower court, found that the extraction, analysis, and storage of DNA from prison inmates convicted of a sex offense constituted a reasonable search and seizure under the Fourth Amendment.¹⁸ The Tenth Circuit based its finding on an inmate's diminished privacy rights, the minimal intrusion of the blood tests, and "the legitimate government interest in the investigation and prosecution of unsolved and future criminal acts by the use of DNA in a manner not significantly different from the use of fingerprints."¹⁹ One month later, the Tenth Circuit denied rehearing on the issues of the forced withdrawal of blood for state legislated-DNA data banks, and the restriction of individual privacy rights.²⁰

In *Boling*, plaintiff-appellant Jason Aaron Boling challenged the constitutionality of a Colorado statute that required inmates convicted of a sexual assault offense to provide the state with DNA samples before their release on parole.²¹ Boling also challenged the Colorado Department of Corrections' (DOC) policies toward the implementation of that statute.²² The Colorado statute provides in pertinent part:

As a condition of parole, . . . any offender convicted of an offense for which the factual basis involved a sexual assault . . . [must] submit to chemical testing of his blood to determine the genetic markers thereof and to chemical testing of his saliva to determine the secretor status thereof. Such testing shall occur prior to the offender's release from incarceration, and the results thereof shall be filed with and maintained by the Colorado bureau of investigation. The re-

18. *Boling v. Romer*, 101 F.3d 1336, 1340 (10th Cir. 1996), *reh'g denied* (convicting inmates under Colorado Revised Statute section 17-2-201(5)(g)). The Fourth Amendment states:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

U.S. CONST. amend. IV; *see also* Krent, *supra* note 8, at 49.

19. *Boling*, 101 F.3d at 1340.

20. *See id.* at 1336; *see also* Schlicher v. (NFN) Peters, I & I, 103 F.3d 940 (10th Cir. 1996) (tenth circuit ruling twenty-eight days after *Boling* where the court again ruled that requiring certain convicted felons to provide blood and saliva specimens for a DNA data bank was a reasonable search and seizure under the Fourth Amendment).

21. *See id.* at 1338 (claiming that DOC policies were inconsistent with the language of Colorado Revised Statute section 17-2-201(5)(g)); *see also infra* note 23 and accompanying text.

22. *See Boling*, F.3d at 1338.

sults of such tests shall be furnished to any law enforcement agency upon request.²³

Boling's suit in the District of Colorado raised federal claims under 42 U.S.C. §§ 1983,²⁴ 1985²⁵ and 1988.²⁶

III. LEGAL BACKGROUND

A. DNA Data Banks Developed from DNA Fingerprinting

As DNA technology continues to advance, courts are beginning to accept and rely upon the validity and reliability of DNA evidence.²⁷ For instance, DNA evidence has been used to exonerate twenty-eight convicts including some sentenced to death;²⁸ the first-ever U.S. execution based on DNA tests occurred following a DNA-based conviction of a serial rapist-murderer;²⁹ and the Federal Bureau of Investigation (FBI) matched the DNA of a defendant in the World Trade Center bombing from saliva found on an envelope sent to *The New York Times*.³⁰ As news of these investigations became public knowledge, state legislatures quickly accepted DNA-based evidence as "a reliable scientific technique," and many states passed statutes authorizing the use of such evidence "to prove or disprove one's identification."³¹

23. COLO. REV. STAT. ANN. § 17-2-201(5)(g)(i) (West 1990).

24. 42 U.S.C. § 1983 (1994) (authorizing civil actions for the deprivation of rights, privileges, or immunities protected under the U.S. Constitution and laws). See *Boling*, 101 F.3d at 1338.

25. 42 U.S.C. § 1985 (1994) (authorizing possible action for recovery of damages against those who conspire to interfere with individual's civil rights). See *Boling*, 101 F.3d at 1338.

26. 42 U.S.C. § 1988 (1994) (authorizing proceedings in vindication of civil rights in conformity with the Constitution and laws). See *Boling*, 101 F.3d at 1338.

27. See O'Brien, *supra* note 13, at 767.

28. See EDWARD CONNORS ET AL., CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL (1996); see also Paul C. Giannelli, *The Abuse of Scientific Evidence in Criminal Cases: The Need for Independent Crime Laboratories*, 4 VA. J. SOC. POL'Y & L. 439, 439 (1997).

29. See Giannelli, *supra* note 28, at 439, 478 n.2 (citing *Spencer v. Murray*, 18 F.3d 229 (4th Cir. 1994)). The *Spencer* court matched the DNA found in the defendant's blood to the seminal fluid found on the victim. See *id.*

30. See *id.* at 439-40. DNA tests found defendant Nidal Ayyad's DNA matched the DNA from the saliva found on the envelope containing a letter to the New York Times proclaiming the Liberation Army, 5th Battalion, had bombed the World Trade Center in response to U.S. aid to Israel. *Id.* at 478 n.3; see also generally Andrew Blum, *Trade Center Case Turns on Forensics*, 16 NAT'L L.J. 8 (1993).

31. O'Brien, *supra* note 13, at 767-68 (quoting from Virginia Code section 19.2-270.5); see *infra* note 33 for citations to state statutes adopting DNA-based evidence and DNA data banks.

B. Courts Have Upheld DNA Data Bank Legislation

Based upon the reliability and successes of DNA evidence, state legislatures have enacted DNA fingerprinting and data banking statutes.³² Currently, thirty-two states enacted laws which authorize the formation of criminal DNA data banks.³³ The majority of these statutes establish criminal DNA data banks to aid law enforcement in identifying and convicting sex offenders.³⁴ However, these statutes, enacted under a state's exercise of its police power, arguably infringe privacy interests, and lawsuits were filed to challenge the constitutionality of these statutes.³⁵ "The nation's courts have heard multifarious constitutional challenges to forensic DNA data bank statutes, and yet all state and federal courts agree that the statutes are constitutional."³⁶ One by one, the courts have upheld the constitutionality of forcibly extracting convicted sex offenders' blood for inclusion in state mandated DNA data banks.³⁷ In 1992, the Fourth Circuit decided on this issue in *Jones v. Murray*.³⁸ In this case, Virginia prison inmates challenged a Virginia data bank law, essentially arguing that the data bank law violated their Fourth Amendment rights.³⁹ The Fourth Circuit held that the Virginia legislation did not equate to an unreasonable

32. See O'Brien, *supra* note 13, at 767-68.

33. See ALA. CODE § 36-18-24 (1996); ARIZ. REV. STAT. ANN. § 31-281 (West 1997); CAL. PENAL CODE § 290.2 (West 1997); COLO. REV. STAT. ANN. § 17-2-201(g)(i) (West 1997); CONN. GEN. STAT. ANN. § 54-102g (West 1997); DEL. CODE ANN. tit. 29, § 4713 (1997); FLA. STAT. ANN. ch. 943.325 (West 1996); GA. CODE ANN. § 24-4-60 (1997); HAW. REV. STAT. ANN. § 706-603 (Michie 1997); 730 ILL. COMP. STAT. ANN. 5/5-4-3 (West 1997); IOWA CODE ANN. § 13.10 (West 1996); KAN. STAT. ANN. § 21-2511 (1996); KY. REV. STAT. ANN. § 17.170 (Banks-Baldwin 1997); LA. REV. STAT. ANN. §§ 15:535, 15:536, 15:578 (West 1992); MD. CODE ANN., art. 88B, § 12A (1994); MICH. COMP. LAWS ANN. § 750.520m (West 1991); MINN. STAT. ANN. § 299C.155 (West 1991); MO. ANN. STAT. § 650.050 (West 1997); NEV. REV. STAT. § 179A.075 (1997); N.J. STAT. ANN. § 53:1-20.17 (West 1997); N.Y. EXEC. LAW § 995-c (McKinney 1996); N.C. GEN. STAT. §§ 15A-266 to 266.12 (1995); N.D. CENT. CODE § 31-13-05 (1997); OKLA. STAT. ANN. tit. 74, § 150.27a (West 1995); OR. REV. STAT. § 181.085 (1995); S.D. CODIFIED LAWS § 23-5-15 (Michie 1997); TENN. CODE ANN. § 38-6-113 (1997); UTAH CODE ANN. § 53-5-212.4 (1997); VA. CODE ANN. § 19.2-310.2 (Michie 1997); WASH. REV. CODE ANN. § 43.43.752 (West 1997); W. VA. CODE § 15-2B-4 (1997); WIS. STAT. ANN. § 165.77 (West 1997).

34. See Michael J. Markett, Note, *Genetic Diaries: An Analysis of Privacy Protection in DNA Data Banks*, 30 SUFFOLK U. L. REV. 185, 192 (1996).

35. See *infra* notes 38-43 and accompanying text.

36. Markett, *supra* note 34, at 222-23.

37. See Krent, *supra* note 8, at 86.

38. 962 F.2d 302 (4th Cir. 1992), *cert. denied*, 113 S.Ct. 472 (1992).

39. See *id.* at 303. Title 19.2 of the Code of Virginia "requires convicted felons to submit blood samples for DNA analysis 'to determine identification characteristics specific to the person' and provides for the creation of a data bank of the information for future law enforcement purposes." VA. CODE ANN. 1950 § 19.2-310.2 (Michie 1997); see also *Jones*, 962 F.2d at 303. For the text of the Fourth Amendment, see *supra* note 18.

search and seizure under the Fourth Amendment because prison inmates have a diminished expectation of privacy and the extraction of blood samples is a minimal intrusion.⁴⁰ Moreover, the court found the state's legitimate governmental interest in combating and deterring felony recidivism outweighed the statute's minimal intrusion.⁴¹ One year later in *Ewell v. Murray*, the Fourth Circuit reaffirmed *Jones* and once again upheld the Virginia law.⁴² N.C. GEN. STAT. § 15A-266 (1995).⁴³

In 1995, the Ninth Circuit upheld the constitutionality of an Oregon statute requiring *all* inmates convicted of murder or sex offenses to submit DNA samples for inclusion in a state data bank.⁴⁴ Similar to the Fourth Circuit's findings in *Jones*, the Ninth Circuit determined that the extraction of blood is a reasonable search and seizure because it is a minimal intrusion outweighed by the state government's legitimate interest to prevent recidivism and to identify and prosecute murderers and sex offenders.⁴⁵

The Fourth and Ninth Circuits upheld the constitutional challenges to the Virginia and Oregon statutes, respectively. Despite constitutional concerns over privacy interests and fears of abuse and misuse, the courts condone the forced withdrawal of blood for DNA data banks.⁴⁶ The courts' acceptance of this new legislation prompted the Tenth Circuit's rationale for its decision in *Boling*.

IV. SUMMARY OF THE COURT'S REASONING

In *Boling*, the appellant challenged the constitutionality of Colorado's DNA data bank law under the Fourth, Fifth, Eighth, Ninth, and

40. See *Jones*, 962 F.2d. at 310-11.

41. See *id.* Recidivism is defined as repeated or habitual crime. BLACK'S LAW DICTIONARY 1269 (6th ed. 1990).

42. *Ewell v. Murray*, 11 F.3d 482 (4th Cir. 1993), *cert. denied*, 114 S.Ct. 2112 (1994). In 1994, the Eastern District of North Carolina followed the Fourth Circuit and upheld a North Carolina DNA data bank statute.

43. See *Sanders v. Coman*, 864 F. Supp. 496 (E.D.N.C. 1994). In this case, North Carolina prison inmates challenged the state DNA data bank law, claiming that non-voluntary prisoners forced to give blood samples, violated the Fourth, Eighth, and Fourteenth Amendments. See *id.* at 498. The court held that inmates could be forced to give blood samples for a DNA identification data bank. See *id.* at 501-02. The court found that individualized suspicion was not necessary to obtain samples and that use of reasonable force to ensure compliance was not unconstitutional, since it was not applied for purpose of causing harm or punishment. See *id.* at 499.

44. See *Rise v. Oregon*, 59 F.3d 1556, 1564 (9th Cir. 1995), *cert. denied*, 116 S.Ct. 1554 (1996).

45. See *id.* at 1558-62.

46. See generally *Jones*, 962 F.2d 302; *Rise*, 59 F.3d 1556.

Fourteenth Amendments.⁴⁷ As to the Fourth Amendment claim, the Tenth Circuit followed the Fourth and Ninth Circuits' decisions in *Jones* and *Rise*, respectively.⁴⁸ The Tenth Circuit reasoned that the Colorado DNA statute mandating blood samples be drawn for data banking was a Fourth Amendment search and seizure.⁴⁹ However, in line with both *Jones* and *Rise*, the Tenth Circuit found the taking of blood samples—the search—to be reasonable.⁵⁰ The Tenth Circuit based its reasonableness finding on an inmate's diminished privacy rights,⁵¹ the minimal intrusion of blood and saliva tests,⁵² and the legitimate government interest in the investigation and prosecution of unsolved and future criminal acts by the use of DNA in a manner not significantly different from the use of fingerprints.⁵³ The Tenth Circuit denied the Fifth Amendment claim holding that DNA samples do not amount to self-incrimination because blood samples are not testimonial in nature.⁵⁴

47. See *Boling v. Romer*, 101 F.3d 1336, 1338-41 (10th Cir. 1996), *reh'g denied*.

48. See *id.* at 1339-40.

49. See *id.* at 1339; see also, e.g., *Skinner v. Railway Labor Executives' Association*, 489 U.S. 602 (1989) (“... physical intrusion, penetrating beneath the skin, infringes [a reasonable] expectation of privacy”). In *Skinner*, railway labor organizations challenged the Federal Railroad Administration's regulations for drug and alcohol testing of railway employees. See *id.* at 612. The U.S. Supreme Court found the testing reasonable under the Fourth Amendment, despite neither a warrant nor reasonable suspicion requirement, mainly because the government's compelling interest to protect public safety and commerce outweighed the limited intrusions upon railway employees' privacy. See *id.* at 633.

50. See *Boling*, 101 F.3d. at 1339-40.

51. See *id.* (noting, similar to *Jones*, that inmates have a diminished expectation of privacy in the prison setting); see also *Rise*, 59 F.3d at 1560 (“once a person is convicted of one of the felonies . . . he has lost any legitimate expectation of privacy in the identifying information derived from the blood sampling.”); *Dunn v. White*, 880 F.2d 1188 (10th Cir. 1989) (per curiam), *cert. denied*, 493 U.S. 1059 (1990) (stating that “plaintiff's privacy expectation in his body is further reduced by his incarceration”).

52. See *Boling*, 101 F.3d. at 1339-40 (noting, similar to *Jones* and *Rise*, that a blood test is a minimal bodily intrusion analogous to fingerprinting).

53. See *id.* (noting, similar to *Jones* and *Rise*, that a balancing test is utilized weighing the minimal intrusion against the state's legitimate interest in identifying criminals and reducing recidivism).

54. See *id.* at 1340; see also *Lucero v. Gunter*, 17 F.3d 1347, 1350 (10th Cir. 1994) (holding that urine samples used for drug testing are not testimonial in nature, hence not subject to Fifth Amendment privilege against compulsory self-incrimination). The Supreme Court has held that a blood sample is physical evidence, which is not covered by the Fifth Amendment's privilege against compulsory self-incrimination. See *Schmerber v. California*, 384 U.S. 757, 760-61 (1966) (holding that a state taking blood samples by common medical procedures from persons suspected of drunk driving “involves virtually no risk, trauma, or pain”). The Fifth Amendment privilege protects only testimonial or communicative evidence. See *id.* Thus, the state may require a person to produce blood samples. See *id.* at 771-72.

As to the Eighth Amendment claim, Boling argued that he would be exposed to physical abuse from other inmates if he was forced to submit to DNA Tests, thus disclosing he was a sex offender.⁵⁵ The Tenth Circuit found these allegations were insufficient to support an Eighth Amendment claim.⁵⁶ The court did not describe Boling's Ninth Amendment argument, but simply found the claim "too vague and conclusory."⁵⁷ And, the Fourteenth Amendment equal protection claim that only sex offenders were targeted depriving them of equal protection of the laws was defeated by the Tenth Circuit's rational basis test.⁵⁸ The court reasoned that "a rational relationship exists between the government's decision to classify sex offenders and the government's stated objective to investigate and prosecute unsolved and future sex crimes."⁵⁹

V. ANALYSIS

Boling symbolizes the reduction of individual privacy rights. Despite state and federal courts' contention that governmental interests outweigh the nonconsensual bodily intrusion, legislative statutes allowing states to forcibly extract blood from inmates and store their DNA types in a government data bank invade an individual's privacy.

A. *Constitutional Right to Privacy Challenged: Forcible Extraction of an Inmate's Blood for DNA Samples Constitutes an Unreasonable Search and Seizure*

The Fourth Amendment protects citizens from unreasonable police searches and seizures.⁶⁰ The Tenth Circuit, and other circuits before it,⁶¹ held that the extraction of blood samples from inmates for

55. See *Boling*, 101 F.3d at 1341. The Eighth Amendment states: "Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted." U.S. CONST. amend. VIII.

56. See *id.*

57. *Id.* at 1340. The Ninth Amendment states: "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people." U.S. CONST. amend. IX.

58. See *id.* at 1341. The first section of the Fourteenth Amendment states:

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction, the equal protection of the laws.

U.S. CONST. amend. XIV, § 1.

59. *Boling*, 101 F.3d at 1341.

60. U.S. CONST. amend. IV; see *supra* note 18 and accompanying text.

61. See *supra* notes 38-44 and accompanying text.

DNA fingerprinting was a reasonable search and seizure under the Fourth Amendment.⁶² However, in spite of these holdings, there is still a question as to whether the search and seizure is truly reasonable. The lack of a warrant and probable cause, along with the violation of bodily integrity, call into question the court's reasonableness finding.

1. *Warrant and Probable Cause Requirements of the Fourth Amendment*

The DNA data bank statutes lack both the warrant and probable cause requirements of the Fourth Amendment. However, the Fourth Amendment's warrant and probable cause requirements are fundamental despite the Tenth Circuit's holding that these requirements are unnecessary.⁶³ The Tenth Circuit should have relied on the Supreme Court's balancing test adopted in *Skinner v. Railway Labor Executives' Ass'n*.⁶⁴ The Court's Fourth, Ninth, and Tenth Circuit analysis in *Skinner* is clearly distinguishable from *Boling*.⁶⁵

In *Skinner*, the Federal Railroad Administration (FRA), acting under the auspices of the Secretary of Transportation's statutory authority to adopt safety standards for the railway industry, promulgated regulations testing railway employees for drug and alcohol use.⁶⁶ Under the regulations, the employees were tested if sufficient evidence indicated that "alcohol and drug abuse by railroad employees had caused or contributed to a number of significant train accidents."⁶⁷ The U.S. Supreme Court held the drug and alcohol testing to be a search implicating the Fourth Amendment.⁶⁸ However, despite no warrant or reasonable cause requirements, the search was found reasonable because of the government's compelling interest to promote public safety.⁶⁹ *Boling* is clearly distinguishable from *Skinner*. Railway workers are tested for the specific purpose of ensuring they

62. See *Boling*, 101 F.3d at 1340.

63. U.S. CONST. amend. IV.

64. 489 U.S. 602, 603-04 (1989) (holding that the government's compelling interest to protect public safety and commerce outweighed the minimal physical intrusion to the railway employees caused by drawing a blood sample); see *supra* note 48 and accompanying text.

65. See *Skinner*, 489 U.S. at 603-04.

66. See *id.*

67. *Id.* The Federal Railroad Safety Act of 1970 authorized the Secretary of Transportation to "prescribe, as necessary, appropriate rules, regulations, order, and standards for all areas of railroad safety." Act of Oct. 16, 1970, §§ 431-436, Pub. L. No. 91-458, Title II, § 202, 84 Stat. 971, *repealed by* Pub. L. No. 103-272, § 7(b), July 5, 1994, 108 Stat. 1379.

68. See *Skinner*, 489 U.S. at 603 ("a compelled intrusion into the body for blood to be tested for alcohol content and ensuing chemical analysis constitute[s] [a] search . . .").

69. See *id.*

are not under the influence of dangerous substances while performing employment-related functions that could have a significant impact on public safety.⁷⁰ On the contrary, inmates are tested for post-incarceration identification for possible future criminal activity, as was the case in *Boling*.⁷¹ The extraction of blood samples is unreasonable because the inmates are already incarcerated — posing no threat to public safety.

2. *Forcible Extraction of Blood Violates Bodily Integrity*

The legal analysis surrounding a violation of bodily integrity is twofold: first, whether a nonconsensual search is justified; and second, whether the search is reasonable.⁷² Whether forced extraction is justified should be based upon probable cause.⁷³ For example, in a possible drunk driving accident, the state may conduct a nonconsensual blood-alcohol test without a warrant, provided there is probable cause.⁷⁴ The necessary probable cause in that instance may stem from the accident itself. However, in the case of blood sampling for DNA data banks, the statutes do not require any probable cause and for that very reason should be an unwarranted and unjustified search.

Moreover, the forced extraction of blood samples can only occur after a bodily intrusion. Reasonableness of the bodily intrusion rests upon the level of the intrusion. The analogy of DNA typing as compared to fingerprinting led to the Tenth Circuit's finding that the bodily intrusion involved in blood samples was minimal.⁷⁵ However, in *Schmerber v. California*, the Supreme Court held that "the integrity of an individual's person is a cherished value in our society" and that "the interests in human dignity and privacy which the Fourth Amendment protects forbid any such intrusions on the mere chance that desired evidence might be obtained."⁷⁶ The Supreme Court also noted in a 1985 opinion that forced blood extraction intrudes on the private personal sphere and infringes upon an individual's most personal and

70. See *id.* at 633.

71. *Boling v. Romer*, 101 F.3d 1336, 1339 (10th Cir. 1996), *reh'g denied*.

72. See *Rise v. Oregon*, 59 F.3d 1556, 1565 (9th Cir. 1995) (Nelson, J., dissenting), *cert. denied*, 116 S.Ct. 1554 (1996).

73. See *id.*

74. See *id.* at 1564-65.

75. See *Boling*, 101 F.3d at 1339. Under the auspices of the prisoner's diminished expectation of privacy, and the governmental interest, forcible extraction of blood samples for DNA data banks has been found to be a minimal intrusion. See Market, *supra* note 34, at 204-05.

76. 384 U.S. 757, 772, 769-70 (1966).

deep-rooted expectations of privacy.⁷⁷ The Tenth Circuit could easily have found Colorado's DNA statute unconstitutional following the Court's reasoning in *Schmerber*,⁷⁸ *Winston*,⁷⁹ and even *Skinner*.⁸⁰

B. Boling Poses Serious Potential Threats of Abuse and Misuse

Not only does the Tenth Circuit's decision inhibit an individual's privacy through the extraction of the blood sample, but it also poses serious threats to privacy interests regarding the misuse and abuse of genetic information. There is a serious risk for abuse when you consider the vast amount of genetic information capable of being derived from just one person's DNA.⁸¹ Because DNA serves as the human code, the potential for scientific abuse exists, such as cloning, research abuse, or nonconsensual testing. Some other areas in which potential abuse and misuse may occur are in governmental uses, lack of regulation, evidentiary falsification, and scientific uncertainty.

1. *The Complex Nature of DNA Implicates a Higher Standard of Analysis*

While it may be argued that inmates enjoy a lower expectation of privacy compared to other citizens, DNA's unique characteristics give rise not just to a person's identification but also to their individual life as a human being.⁸² Thus, DNA warrants a higher standard of judicial analysis and protection.⁸³ Therefore, the next question becomes, whose DNA is it? Does the state or the individual own it?

One issue, arguably, is that if you give your blood for medical tests, then the hospital has ownership or at least access to your blood and the results.⁸⁴ However, the results are private and, more important, you freely consented to give a blood sample for a specific purpose. And, that specific purpose most likely did not involve any experimentation beyond the limited test to which consent was given. Another issue involves an individual's property right in his or her DNA.⁸⁵ DNA property rights have never been recognized, but, today, the value of DNA to the pharmaceutical and health care industries

77. See *Winston v. Lee*, 470 U.S. 753, 760 (1985); see also *Rise*, 59 F.3d at 1565.

78. See *supra* note 75 and accompanying text.

79. See *supra* note 76 and accompanying text.

80. See *supra* notes 67-69 and accompanying text.

81. See *Yee*, *supra* note 13, at 462.

82. See *supra* notes 9-14 and the accompanying text.

83. See *supra* notes 32-37 and the accompanying text.

84. See David Dickson, *Whose Genes Are They Anyway?* 381 NATURE 11, 11 (1996).

85. See *id.* at 11-14.

revitalizes this issue.⁸⁶ For example, some consortiums advocate the patenting of gene sequences.⁸⁷

Advocates claim that patents provide for securing the necessary investments required for further research and development which government funds cannot provide.⁸⁸ The patenting of gene sequences could lead to disputes among pharmaceutical and health care industries as to ownership of DNA gene sequences. The individual responsible for the gene sequence may not even be involved in the dispute, and may not be able to control who has ownership to his or her DNA sample. Because of DNA's complexity and debates over ownership rights, the courts, including the Tenth Circuit, must reconsider their findings in light of the complex nature of DNA. The mere traditional balancing tests used by the courts may have to give way to greater concerns, such as an inmate's property interests in his or her genetic markers and the possible serious threats of misuse and abuse.⁸⁹

2. *Boling Permits Potential Government Abuses*

Boling allows states to collect and store unlimited blood samples from prison inmates. Arguably, the court has authorized a state to do anything it wants with the DNA it stores. The potential for abuse is great, especially if the statute does not prescribe any safeguards or confidentiality standards on the use of the blood sample. Even if the court has deemed the taking of the blood sample a reasonable search and seizure, the nature of the DNA data bank allows the government to go beyond the scope of what the court authorized as reasonable.

For example, after the two-year-old daughter of a U.S. Army sergeant was raped and murdered in Baenhausen, Germany, police had no suspects but did have a minute amount of semen left on the vic-

86. *See id.* at 11.

87. SmithKline Beecham and Human Genome Sciences have formed a consortium to map, sequence, and patent as much of the human genome as possible. *See* Arthur L. Caplan & Jon Merz, *Patenting Gene Sequences: Not in the Best Interests of Science or Society*, 312 *BRIT. MED. J.* 926, 926 (1996).

88. *See id.* Professors Arthur Caplan and Jon Merz of the University of Pennsylvania's Center for Bioethics argue against patenting gene sequences because it would limit the intellectual access and exploitation of this resource to a few scientists. *See id.* Moreover, the two bioethicists believe patenting simple segments of the genome, rather than for products and inventions, would be contrary to the public interest. *See id.* Also, many religious leaders oppose patenting "the rich genetic resources of the Earth's biological commons," specifically human genes. *See id.* (quoting a speech given in 1995 by social activist Jeremy Rifkin, Joint Appeal Against Human and Animal Patenting, National Press Club, Washington, D.C.).

89. *See supra* notes 50-52 and accompanying text.

tim's body.⁹⁰ To find the perpetrator, police, lacking a suspect, implemented "a massive DNA screening program of every male who had been near the child's housing complex on the night of her murder."⁹¹ Despite netting the culprit who later pleaded guilty, this large-scale search unreasonably intruded on the innocent male bystanders' individual privacy rights.⁹² Persons seen within the vicinity were subject to a search and seizure without probable cause except being within a certain public area on the night of the crime.⁹³ Physical presence in an area should neither justify nor necessitate an intrusive search that most likely violates the Fourth Amendment. Questions were raised as to an individual's right to be free from unwarranted searches and seizures and, also, the propriety of military authorization of the large-scale search and the future uses of this "DNA repository."⁹⁴

3. DNA Data Banks Lack Sufficient Regulation

Recently, two U.S. Marines refused to contribute DNA samples to the Department of Defense's (DOD) gene bank.⁹⁵ Despite the DOD's contention that DNA records exist solely for the purpose of aiding the identification of troops killed in battle, the two marines "became *suspicious* when the DOD was unable to answer their questions about how the samples would be used."⁹⁶ Responding to this event and public outcry, the DOD modified its DNA data banking policy by: (1) allowing soldiers who leave military service to request their records are destroyed; (2) destroying the records after 50 years rather than the 75 years it had previously promised; and (3) restricting the use of the DNA samples for purposes other than identification only if the donor gives consent or if the specimen is needed for the investigation of a serious crime.⁹⁷ Nevertheless, the Council for Responsible Genetics (CRG)⁹⁸ dismissed the new directive "as little more than window-dress-

90. See Jennifer Sue Deck, Note, *Prelude to a Miss: A Cautionary Note Against Expanding DNA Databanks in the Face of Scientific Uncertainty*, 20 VT. L. REV. 1057, 1058 (1996); see also Rick Atkinson, *DNA Samples Catch American Killer of Toddler in Germany*, WASH. POST, Jan. 1, 1995, at A27.

91. See Deck, *supra* note 89, at 1058.

92. See *id.*

93. See Atkinson, *supra* note 89, at A27.

94. See *id.*

95. See Colin Macilwain, *U.S. Military Tightens Rules on DNA Records*, 380 NATURE 570, 570 (1996).

96. *Id.* (emphasis added).

97. See *id.*

98. The CRG is a political lobbying group whose goals are the responsible and controlled use of genetic sciences and technology. See *id.* The CRG is supporting the two marines in a civil lawsuit against the DOD. See *id.*

ing."⁹⁹ Fearing governmental abuse or misuse, the CRG is concerned that the one million records already contained in the DOD's DNA data bank "might eventually be used to support 'genetic discrimination' inside and outside the military."¹⁰⁰ Furthermore, the lack of substantive procedures and answers regarding military and governmental DNA data banks implicate the possibility of future abuse and misuse. Another example of abuse and misuse was a physician's study wherein DNA extracted from the stored blood of participants was used in the search for genes associated with cardiovascular diseases.¹⁰¹ Though on its face this study appeared altruistic, it raised serious issues, for example, the use of "previously collected biological samples without the consent of donors of this material."¹⁰² Abby Lippman of McGill University's Department of Epidemiology and Biostatistics questioned the cavalier use of conveniently accessible DNA samples for worthwhile disease studies.¹⁰³ Lippman claimed these studies failed because of the use of unknowing and nonconsensual participation in gene hunts and because there is a need for enforceable privacy legislation.¹⁰⁴

4. *Police-Prosecution Bias Toward Falsification of DNA Evidence*

DNA evidence abuses have surfaced in criminal investigations and trials, including perjury by expert witnesses, faked laboratory reports, and testimony based on unproved techniques.¹⁰⁵ "Too many experts in the criminal justice system manifest a police-prosecution bias, a willingness to shade or distort opinions to support the state's case."¹⁰⁶ Illustrative of police-prosecution bias, the former head serologist of the West Virginia State Police crime laboratory falsified test results in more than 100 cases from 1979 to 1989.¹⁰⁷ The victims, now exonerated, were originally sentenced to long prison terms based on

99. *Id.*

100. *Id.*

101. See Abby Lippman, *Nonconsensual Participation in Genetic Studies*, 86 AM. J. PUB. HEALTH 1030 (1996).

102. *Id.* at 1030.

103. See *id.*

104. See *id.*

105. See Giannelli, *supra* note 28, at 441.

106. *Id.*

107. See *id.* at 442; see also *In the Matter of an Investigation of the W. Virginia State Police Crime Lab., Serology Div.*, 438 S.E.2d 501 (W. Va. 1993) (holding that the state could not obtain a conviction based upon a serologist's false evidence, regardless whether the prosecutor using the serologist as his expert knew that the serologist was falsifying state's evidence).

the falsified tests.¹⁰⁸ Upon a review of the crime lab, an investigatory judge found misconduct on a massive scale, including perjury, phony scientific reports, and alteration of laboratory records.¹⁰⁹

5. *Validity and Reliability of DNA Typing*

Questions of the validity and reliability challenge the core of DNA typing.¹¹⁰ Such things like an inadequately managed DNA laboratory could easily cause an individual's rights to be compromised.¹¹¹

In a recent survey of the first nineteen states with legislation establishing DNA data banks, state crime laboratories were asked about their policies and procedures regarding the collection, storage, and analysis of samples.¹¹² The research suggested that:

- (1) the number of samples collected from convicted offenders for DNA data banking has far surpassed the number that have been analyzed;
- (2) data banks have already been used in a small but growing number of cases, to locate suspects and to identify associations between unresolved cases;
- (3) crime labs currently plan to retain indefinitely the samples collected for their data banks; and
- (4) the nature and extent of security safeguards that crime labs have implemented for their data banks vary among states.¹¹³

The survey also found a large disparity between the number of samples collected for data banking and the number of samples analyzed.¹¹⁴ This was due in part to both the high cost of setting up a forensic DNA lab and the fact that crime labs have not, at least historically, been well funded for DNA work.¹¹⁵ This lack of funding raises more questions as to the reliability of the scientific equipment, analy-

108. See Giannelli, *supra* note 28, at 442.

109. See *id.* at 444.

110. See Smith & Gordon, *supra* note 7, at 2477. Forensic scientists must determine whether the techniques used are valid and produces a reliable result. See Deck, *supra* note 89, at 1079-82.

111. See Smith & Gordon, *supra* note 7, at 2477-78. Inadequate laboratory standards and techniques include: insufficient DNA sample sizes, deterioration of the DNA sample, contamination of the DNA sample, improper test procedures, false conclusions, and false negative results. See *id.* at 2478.

112. See McEwen, *supra* note 17, at 1487.

113. *Id.*

114. See *id.* at 1489.

115. See *id.* Of the nineteen states surveyed, eighteen responded. See *id.* Six respondents indicated they had budget line items for their DNA data banks, while most indicated funds were being taken from the crime laboratories' overall operating budgets. See *id.* Also, eight respondents described their DNA data-banking budgets for the 1993-94 fiscal year as "being either very or somewhat inadequate to meet the expectations imposed by their state's DNA data-banking law." *Id.*

sis, and the quality of the laborers. Arguments could be drawn between the poorly funded DNA laboratories and that of careless workmanship, resulting in less-than-desirable testing and storage of DNA evidence. Ultimately, this less than desirable work product could very well be admissible DNA evidence in a criminal proceeding.

VI. CONCLUSION

The Tenth Circuit's affirmation of the Colorado DNA data bank statute poses a serious threat to individual rights. While felons maintain a lower expectation of privacy, the court's decision only ratifies a dangerous precedent. To allow the forcible extraction of blood from convicted felons in the name of protecting the public only further minimizes all individuals' privacy rights. DNA is our genetic building block and individual to each person.¹¹⁶ If the courts or legislature fails to protect privacy interests and possibly property rights, then, at the very least, more strict rules governing the extraction, analysis, and storage must be created. And furthermore, these stringent policies must be adhered to coupled with a governmental agency and some governmental watchdog group to strictly monitor the process. If the court is going to approve the extraction of these samples and gradually whittle away privacy rights, proper safeguards are imperative to preserve the privacy rights that remain.

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116. See *supra* notes 9-14 and accompanying text.