FAMILIAL DNA AND DUE PROCESS FOR INNOCENTS

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ABSTRACT

Ever since genealogical DNA unmasked the Golden State Killer in 2018, the use of this new forensic science has been ubiquitous. Police have solved several hundred cold cases by uploading unidentified crime scene DNA samples to consumer genealogical databases and, with expert assistance, building out family trees from the resulting matches to identify suspects. This practice has raised significant concerns among privacy scholars due to the intimate nature of DNA information and the lack of consent by the parties ultimately identified through their relatives' choice to upload data. Critics argue that the Fourth Amendment bars law enforcement from running warrantless familial DNA searches using consumer databases, even among users who have given their consent. Several states have also passed legislation banning or severely restricting such searches.

This Article argues that the current debate around familial DNA has neglected the due process rights of another person: the innocent third party who is potentially convicted in the absence of accurate, exculpatory DNA evidence. Both the Compulsory Process and Due Process Clauses give a defendant the right to obtain exculpatory evidence in their defense through judicial subpoena and from the government itself under Brady *doctrine. In close cases, the respective scopes of competing constitutional rights should be defined so as to not excessively burden one another. On that basis, this Article argues against any ban on, or categorical constitutional or statutory rule requiring, probable cause for law enforcement to conduct familial DNA searches. The privacy interests raised by critics are legitimate; yet the functional inability for law enforcement to identify unknown suspects due to*

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the lack of probable cause disproportionately burdens defendants whose Compulsory Process and Due Process rights are already limited by existing materiality requirements and inadequate resources. For many innocent defendants, the State itself is the best and only source of investigative resources and potentially exonerating evidence.

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INTRODUCTION

In 2019, after Christopher Tapp had served nearly twenty years of a sentence for the rape and murder of his eighteen-year-old friend Angie Dodge, his conviction was vacated.[1] An Idaho jury convicted him in 1998 largely due to a series of interrogations during which the police attempted to get him to implicate various friends, including through the offer of an immunity deal, which was later withdrawn when it was discovered that one friend had an alibi.[2] During questioning, police—including a former guidance counselor of Tapp's, whom he personally trusted—threatened him with the death penalty and told him that he could not remember the murder because he was repressing it.[3] Tapp was convicted despite DNA tests that had excluded both him and the initially-targeted friend as the source of semen found at the scene of the crime.[4]

A decade after the conviction, the Idaho Innocence Project took up Tapp's case and requested DNA testing on hairs found on the victim's body, which had only been visually inspected previously.[5] The FBI lab found that the DNA on the hair was consistent with that of the semen, meaning that the hair also excluded Tapp. In rejecting Tapp's lawyers' requests for further testing, an appeals judge found that "while DNA testing may be relevant in identifying one of the assailants, such does not make it more probable that Tapp is innocent."[6]

Ultimately, the Idaho Falls police—now with the public support of the victim's mother—worked with the Innocence Project and the private company Parabon Nanolabs to identify the source of the DNA sample.[7] Parabon created a genetic profile from the sample and compared it with profiles submitted to various consumer ancestry databases.[8] Starting with profiles in the database, Parabon was able to use other records to build a family tree that turned out to include a man named Brian Dripps, who had

1. Ken Otterbourg, *Christopher Tapp*, INNOCENCE PROJECT, https://innocenceproject.org/cases/christopher-tapp [https://perma.cc/4YNU-MQM6].
2. *Id.*
3. *Id.*
4. *Id.*
5. *Id.*
6. *Id.*
7. *Id.*
8. *Id.*

lived across the street from the victim and had even been questioned during the early investigation.[9] Using a discarded cigarette butt collected by the Idaho Falls police, Parabon compared Dripps's DNA with the sample from the crime scene and was able to identify Dripps as the source of the DNA.[10] Dripps confessed to the murder and rape, saying that he had acted alone and did not even know Tapp.[11] Christopher Tapp's two-decade nightmare was over.

Tapp's case was at the vanguard of the latest development in forensic science: law enforcement use of familial DNA mapping to identify crime scene samples against the profiles voluntarily uploaded by perpetrators' relatives to direct-to-consumer ("DTC") genealogical sites. Starting with the apprehension of California's infamous Golden State Killer in 2018, familial DNA has been responsible for the police solving a series of high-profile crimes in recent years, including the 1981 New Hampshire murder of Laura Kempton by Ronney James Lee; the 1984 murder of fourteen-year-old Wendy Jerome by Timothy Williams in Rochester, New York; and Sherri Papini's false claims of kidnapping and sex trafficking by fictitious Latina women in Shasta County, California in 2016.[12]

While law enforcement use of DTC databases has brought resolution to many cases, it has also been the source of significant consternation among privacy advocates and scholars. At the start of the DTC revolution, users were not necessarily aware that law enforcement might be able to access their DNA profiles.[13] In the current moment, even the most law-enforcement-friendly DTC companies explicitly allow users to "opt in" or "opt out" of sharing their information with police.[14] Even so, many argue that such

9. *Id.*
10. *Id.*
11. *Id.*
12. Aaron Katersky & Meredith Deliso, *Decades-Old New Hampshire Cold Case Murder Solved Through Genetic Genealogy, Officials Say*, ABC NEWS (July 20, 2023, 11:46 AM), https://abcnews.go.com/US/decades-new-hampshire-cold-case-murder-solved-genetic/story?id=101525486 [https://perma.cc/5KU6-FH2L]; Steven Pappas, *Landmark Conviction: Familial DNA Testing Resolves 1984 Murder Cold Case, A First in NYS*, 13 WHAM (Mar. 8, 2024, 10:35 PM), https://13wham.com/news/local/landmark-conviction-familial-dna-testing-resolves-1984-murder-cold-case-a-first-in-nys [https://perma.cc/FVS6-UF42]; Brittany Johnson, '*That Was Absolutely the Breaking Point': Prosecutor Discusses How DNA Evidence Helped Solve Papini's Case*, KCRA 3 (Sept. 19, 2022, 9:40 PM), https://www.kcra.com/article/prosecutor-says-dna-helped-solve-sherri-papini-case/41287016 [https://perma.cc/QH89-7MB9].
13. Paige St. John, *The Untold Story of How the Golden State Killer Was Found: A Covert Operation and Private DNA*, L.A. TIMES (Dec. 8, 2020, 5:00 AM), https://www.latimes.com/california/story/2020-12-08/man-in-the-window [https://perma.cc/4D25-B9YQ].
14. *See GEDmatch & Community Safety*, GEDMATCH, https://www.gedmatch.com/community-safety/#:~:text=Just%20like%20any%20other%20user,with%20the%20law%20enforcement%20profile [https://perma.cc/KDE8-LFTV]; *IGGM Frequently Asked Questions*, FAMILYTREEDNA, https://help.familytreedna.com/hc/en-us/articles/4413980686863-IGGM-Frequently-Asked-Questions

consent should not include third-party relatives eventually identified through genetic genealogy because these relatives have no control over whether their family members have uploaded their own DNA to a DTC site.[15] As states have begun to regulate in this area, many have explicitly allowed for police access to DTC sites.[16] However, several states have passed statutes restricting law enforcement use of familial DNA. The District of Columbia and Maryland wholly ban familial DNA searches of police databases; in Maryland's case, the ban extends even to searches by private citizens (and, thus, criminal defendants).[17] Montana, meanwhile, prohibits police from conducting familial DNA analysis using either DTC or police DNA databases without probable cause, which may be very difficult to establish in many cases involving an unidentified sample.[18]

The constitutionality of familial DNA searches is governed by the Supreme Court's most recent word on the Fourth Amendment in an era of evolving technology—*Carpenter v. United States*.[19] *Carpenter* invalidated the government's use of a subpoena (rather than a warrant) to access a subject's cell phone location data from their service provider, a practice it had previously justified under the "third-party doctrine" of the Fourth Amendment.[20] The Court held that a person has a reasonable expectation of privacy in the totality of their movements, and that, because carrying a cell phone is effectively involuntary in the modern age, such an expectation is not defeated by the fact that a user's location data is shared with third-party service providers.[21] Critics of unfettered law enforcement access to DTC DNA databases and of familial DNA searches generally point to the increasing ubiquity of both public and private databases and the large number of strangers who can be involuntarily identified through a fairly small number of users.[22] They argue that a person has a reasonable expectation of privacy in their DNA against such non-consensual, indirect

[https://perma.cc/FGJ4-2NGU].

15. *See* Natalie Ram, *Investigative Genetic Genealogy and the Problem of Familial Forensic Identification*, *in* CONSUMER GENETIC TECHNOLOGIES: ETHICAL AND LEGAL CONSIDERATIONS 211, 214 (I. Glenn Cohen et al. eds., 2021); Ayesha Rasheed, *'Personal' Property: Fourth Amendment Protection for Genetic Information*, 23 U. PA. J. CONST. L. 547, 589–90 (2021); Karen J. Kukla, *Direct to Consumer or Direct to All: Home DNA Tests and Lack of Privacy Regulations in the United States*, 13 IP THEORY 31, 32–33 (2023).

16. ARIZ. DEP'T OF PUB. SAFETY SCI. ANALYSIS BUREAU, FAMILIAL DNA ANALYSIS, https://www.azdps.gov/sites/default/files/2023-08/Familial_DNA_Analysis_Flyer_3.pdf [https://perma.cc/YV9X-PEG8].

17. D.C. CODE § 22-4151(b) (2025); MD. CODE ANN., PUB. SAFETY § 2-506(d) (West 2024).

18. MONT. CODE ANN. § 44-6-104(2) (2023).

19. Carpenter v. United States, 585 U.S. 296 (2018).

20. *Id.* at 309.

21. *Id.* at 309–12.

22. *See* Ram, *supra* note 15, at 220.

identification.[23]

This Article is the first to examine this question with regard to a forgotten constitutional stakeholder: the potentially innocent "other" suspect who, like Christopher Tapp, familial DNA might exonerate. While critics on both sides tend to balance the privacy rights of targeted parties against the crime-solving interests of the government, the constitutional framework is more complicated than this given the due process rights of these potential defendants. In Part One, this Article explains the science of forensic DNA generally, familial DNA specifically, and their roles in investigations and exonerations. Part Two presents the Fourth Amendment background to this problem and summarizes the argument that courts should recognize a reasonable expectation of privacy that would prohibit warrantless familial DNA searches, even where DTC users give consent. Part Two also asserts that while this argument is colorable, it is weak. This is due to both standing problems and the fact that the privacy interest in not being identified as the specific depositor of a single DNA sample is not comparable to the interest in the privacy of one's daily movements.

Part Three argues that a falsely accused suspect has a similarly colorable due process right in the availability of familial DNA testing. Such a right derives from three sources: the Compulsory Process Clause, the due process right to exculpatory evidence, and the due process right to post-conviction relief procedures. This Part argues both that defendants themselves should not be legally barred from running familial DNA searches in public or private databases and that the practical realization of their due process rights requires that law enforcement not be so barred either. Part Four concludes that, in close cases, competing constitutional rights must not excessively burden one another. On that basis, this Part argues against any categorical rule substantially preventing law enforcement from conducting familial DNA searches. While legislatures are well-advised to limit the use of this technology to serious cases in which other investigative techniques have failed, they should not adopt bans or probable cause requirements; if they do, they should at least create an explicit process for defense subpoenas. Furthermore, Part Four concludes that courts should not extend *Carpenter* to create a categorical warrant requirement for familial DNA searches of police databases or DTC databases where an initial user has given consent to law enforcement access.

23. *Id.*

I. THE DEVELOPING PRACTICE OF FORENSIC DNA

A. DNA SCIENCE

Deoxyribonucleic acid ("DNA") is a molecule found in cells that contains the genetic code for an organism's development, function, growth, and reproduction.[24] DNA is hereditary, meaning it is passed from parent to child.[25] The information in DNA is stored as a code made up of four chemical bases: adenine ("A"), guanine ("G"), cytosine ("C"), and thymine ("T").[26] Human DNA consists of about three billion bases and more than 99% of those bases are identical across the species.[27] Their sequence determines the information available for building and maintaining the organism.[28]

Variations in code can occur at any point in the genome, including non-coding areas.[29] Scientists have discovered that these non-coding regions contain repeated units of DNA that vary in length between individual subjects; one particular type of repeat, the short tandem repeat ("STR"), is easily measured and compared for identification purposes.[30] The FBI has identified thirteen areas, or "loci," on a chromosome where STRs are found, which U.S. law enforcement now uses to identify individuals—for example, to identify remains, determine paternity, or match a suspect to a forensic sample from a crime scene.[31]

DNA identification involves the use of statistics.[32] The FBI has established the frequency with which each form, or "allele," of the thirteen core STRs naturally occurs in people of different ethnicities.[33] In a specific case, a lab will determine the allele profile of the thirteen core STRs for both the crime scene sample and the suspect's sample. If they do not match, the suspect is excluded.[34] If they have matching alleles at all thirteen STRs, it then becomes possible to make a statistical calculation to determine the frequency with which that genotype arises in the population.[35] The

24. Nat'l Libr. of Med., *What is DNA?*, MEDLINEPLUS, https://medlineplus.gov/genetics/understanding/basics/dna [https://perma.cc/QM4G-XTYC].
25. *Id.*
26. *Id.*
27. *Id.*
28. *Id.*
29. Karen Norrgard, *Forensics, DNA Fingerprinting, and CODIS*, NATURE EDUC.: SCITABLE (2008), https://www.nature.com/scitable/topicpage/forensics-dna-fingerprinting-and-codis-736 [https://perma.cc/Z3H5-4KRB].
30. *Id.*
31. *Id.*
32. *Id.*
33. *Id.*
34. *Id.*
35. *Id.*

probability, for example, of two unrelated Caucasians having identical DNA "fingerprints" is about 1 in 575 trillion.[36] Because there are 5,000 trillion *pairs* of people out of the 100 million Caucasians in the world, roughly eight or nine pairs would be expected to match at the thirteen STR loci.[37]

Given the exceedingly low likelihood of any given person matching the DNA profile associated with a crime scene, the probabilistic science of DNA has generated some of the most reliable evidence known to our justice system.[38] This does not mean that it is always perfect evidence. DNA samples may be small in quantity, improperly preserved, or highly degraded (meaning that analysts can only obtain a partial profile).[39] Furthermore, some crime scene samples contain DNA from multiple sources. All of these issues can confound the effectiveness of DNA fingerprinting as a means of identification. However, in cases in which all thirteen STR loci can be examined and matched, such matches are extraordinarily reliable.[40]

The use of DNA science in crime solving has been facilitated by the rise of DNA databases maintained by law enforcement. The DNA profiles in these databases come primarily from two sources: (1) DNA samples taken from crime scenes where they can be obtained (for example, "rape kits") and (2) samples taken from convicted offenders and, in some states, arrestees. All fifty states statutorily require at least some offenders, especially those convicted of sexual or violent crimes, to submit samples.[41] In addition, thirty states statutorily authorize law enforcement to collect DNA samples from those arrested for certain types of crimes, usually felonies.[42] The FBI maintains the Combined DNA Index System ("CODIS"), a program of support for law enforcement DNA databases nationwide.[43] It includes the

36. Phil Reilly, *Legal and Public Policy Issues in DNA Forensics*, 2 NATURE REVS.: GENETICS 313, 314 (2001).

37. Norrgard, *supra* note 29.

38. *Id.*

39. *Id.* When fewer than thirteen alleles can be examined from a sample, it increases the possibility of a random match. *Id.*

40. *See* Holly A. Hammond, Li Jin, Y. Zhong, C. Thomas Caskey & Ranajit Chakraborty, *Evaluation of 13 Short Tandem Repeat Loci for Use in Personal Identification Applications*, 55 AM. J. HUM. GENETICS 175, 175 (1994); NAT'L COMM'N ON THE FUTURE OF DNA EVIDENCE, NAT'L INST. OF JUST., OFF. OF JUST. PROGRAMS, THE FUTURE OF FORENSIC DNA TESTING: PREDICTIONS OF THE RESEARCH AND DEVELOPMENT WORKING GROUP 5, 35 (2000).

41. Xiaochen Hu, Mai E. Naito & Rolando V. del Carmen, *Pre- and Post- Conviction DNA Collection Laws in the United States: An Analysis of Proposed Model Statutes*, 1 J. CRIM. JUST. & L. 22, 24 (2017).

42. *Id.*; *Figure 1. States That Have Enacted Arrestee DNA Collection Laws in the United States*, NAT'L INST. OF JUST., https://nij.ojp.gov/media/image/10251 [https://perma.cc/EP4Y-HBWZ].

43. *Frequently Asked Questions on CODIS and NDIS*, FBI, https://www.fbi.gov/how-we-can-help-you/dna-fingerprint-act-of-2005-expungement-policy/codis-and-ndis-fact-sheet [https://web.archive.org/web/20240625150854/https://www.fbi.gov/how-we-can-help-you/dna-fingerprint-act-of-2005-expungement-policy/codis-and-ndis-fact-sheet].

National DNA Index System ("NDIS"), which contains the DNA profiles contributed by federal, state, and local participating forensic laboratories.[44] As of February 2024, CODIS had assisted in over 680,122 criminal investigations.[45] One study of Danish data found that police collection of criminal offenders' DNA profiles increases detection probability and reduces recidivism rates over the next year by as much as 43%.[46]

B. DNA AND EXONERATIONS

One of the most important developments flowing from the rise of DNA evidence since the mid-1990s has been its potential for exonerating the wrongfully accused and convicted.[47] A 1996 study found that as many as 25% of the cases sent for DNA analysis in the early days of the technology ended up excluding the primary suspect, demonstrating the significance of DNA technology in avoiding potential wrongful convictions.[48] Between 1989 and 2020, the Innocence Project reports that 375 wrongfully convicted prisoners were freed due to post-conviction DNA testing.[49] This is, unfortunately, due not only to the accuracy of DNA evidence but also to the unreliability of other forms of evidence that have been contributing to false convictions since time immemorial.[50]

One significant factor in wrongful convictions has been the problem of false eyewitness identifications. Sixty-nine percent of DNA exonerations tracked by the Innocence Project involved eyewitness misidentification.[51] This is perhaps unsurprising due to the role of trauma in distorting witness recollections over time[52] and the fact that police practices around line-ups

44. *Id.*

45. *CODIS-NDIS Statistics*, FBI, https://le.fbi.gov/science-and-lab/biometrics-and-fingerprints/codis/codis-ndis-statistics#:~:text=CODIS's%20primary%20metric%2C%20the%20%22Investigation,in%20more%20than%20680%2C122%20investigations [https://web.archive.org/web/20240714204728/https://le.fbi.gov/science-and-lab/biometrics-and-fingerprints/codis/codis-ndis-statistics].

46. Anne Sofie Tegner Anker, Jennifer L. Doleac & Rasmus Landersø, *The Effects of DNA Databases on the Deterrence and Detection of Offenders*, 13 AM. ECON. J.: APPLIED ECON. 194, 221 (2021); *see also* Jennifer L. Doleac, *The Effects of DNA Databases on Crime*, 9 AM. ECON. J.: APPLIED ECON. 165, 165–68 (2017) (showing the significant deterrent effects of state DNA databases).

47. Jon B. Gould & Richard A. Leo, *One Hundred Years Later: Wrongful Convictions After a Century of Research*, 100 J. CRIM. L. & CRIMINOLOGY 825, 829–30 (2010).

48. EDWARD CONNORS, THOMAS LUNDREGAN, NEAL MILLER & TOM MCEWEN, U.S. DEP'T OF JUST., CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL xix–xx (1996).

49. *DNA Exonerations in the United States (1989–2020)*, INNOCENCE PROJECT, https://innocenceproject.org/dna-exonerations-in-the-united-states [https://perma.cc/N2ZT-VGB6].

50. *Id.*

51. *See* Innocence Staff, *How Eyewitness Misidentification Can Send Innocent People to Prison*, INNOCENCE PROJECT (Apr. 15, 2020), https://innocenceproject.org/how-eyewitness-misidentification-can-send-innocent-people-to-prison [https://perma.cc/Q9AS-2UX9].

52. *See generally* Kenneth A. Deffenbacher, Brian H. Bornstein, Steven D. Penrod & E. Kiernan McGorty, *A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory*, 28 LAW & HUM.

and show-ups can often—even unintentionally—prove overly suggestive and encourage bad identifications.[53] Cross-racial identifications are notoriously less reliable than identifications made by witnesses of the same race as the suspect.[54]

False confessions, as exemplified by Christopher Tapp's case, have been identified as a factor in over 25% of DNA exonerations.[55] On average, people who confess to crimes they did not commit have been interrogated for sixteen hours or more.[56] Other factors associated with false confessions include deceptive practices by police, such as lying about evidence, isolation, intimidation, and force.[57] Whatever the particular causes, the problem of wrongful conviction has been found to disproportionately affect Black suspects.[58] The role of DNA in exonerations thus suggests that it improves not only accuracy but also equality in the criminal justice system.

Responding to the implications of DNA science for the wrongfully convicted, all fifty states have enacted statutes dealing with defendants' access to DNA evidence post-conviction.[59] Such statutes generally provide not only a right to post-conviction testing under certain circumstances but also an easing of traditional rules of finality in cases where the results demonstrate innocence.[60] At the federal level, the Innocence Protection Act provides for post-conviction DNA testing in federal cases, and the Justice for All Act creates financial incentives for states to provide for post-

BEHAV. 687 (2004).

53. *See False Confessions Happen More Than We Think*, INNOCENCE PROJECT (Mar. 14, 2011), https://innocenceproject.org/false-confessions-happen-more-than-we-think [https://perma.cc/4TKB-N4FD].

54. *See* Stephanie J. Platz & Harmon M. Hosch, *Cross-Racial/Ethnic Eyewitness Identification: A Field Study*, 18 J. APPLIED SOC. PSYCH. 972, 978 (1988) (showing that 53% of Caucasians correctly identified a Caucasian subject in a field study but only 40% of Caucasians correctly identified a Black subject).

55. *False Confessions*, INNOCENCE PROJECT, https://innocenceproject.org/false-confessions [https://perma.cc/V3UC-ZCED]; *Explore the Numbers: Innocence Project's Impact*, INNOCENCE PROJECT, https://innocenceproject.org/exonerations-data [https://perma.cc/2EKT-3CPZ].

56. *Id.*

57. *Id.*

58. *See Explore the Numbers: Innocence Project's Impact*, *supra* note 55 (showing that 58% of the wrongful convictions recorded by the Innocence Project involved Black exonerees). *But see* Mark Saber, Brooke Nodeland & Robert Wall, *Exonerating DNA Evidence in Overturned Convictions: Analysis of Data Obtained from the National Registry of Exonerations*, 33 CRIM. JUST. POL'Y REV. 256, 267 (2022) (finding that "being Black did not significantly impact the odds of obtaining an exoneration featuring DNA evidence" in Dallas and Harris Counties in Texas).

59. *See* Brandon L. Garrett, *Claiming Innocence*, 92 MINN. L. REV. 1629, 1673–75, 1719–23 (2008) (collecting post-conviction DNA statutes from the forty-six states and the District of Columbia that had been enacted as of 2008); ALA. CODE § 15-18-200 (2024) (providing for post-conviction DNA testing in capital cases only); ALASKA STAT. § 12.73.010 (2024); MASS. GEN. LAWS ch. 278A, §§ 1, 2; MISS. CODE ANN. § 99-39-5 (202); OKLA. STAT. tit. 22, § 1373.5 (2024).

60. *See* Garrett, *supra* note 59, at 1673.

conviction DNA testing.[61]

Increased public attention to the problem of wrongful convictions has also prompted several jurisdictions to create Conviction Integrity Units ("CIUs") within their prosecutor's offices to monitor and investigate potentially wrongful convictions.[62] The creation of the CIU in Dallas County, Texas was the result of the County's DNA retention policy as well as the election of District Attorney Craig Watkins, who made conviction integrity a particular priority.[63] A nationwide study of data from the National Registry of Exonerations between 1989 and 2016 even found that Dallas County was the geographic region with the greatest likelihood of a DNA exoneration occurring.[64]

C. FAMILIAL DNA

An obvious limit to the use of forensic DNA in crime-solving is the fact that the universe of potential matches for crime scene samples comprises only profiles already stored in existing databases. In cases where an unknown perpetrator has no prior record or other reason to have a profile stored, DNA has been less useful. These limitations seemingly dissolved for the first time when police apprehended the Golden State Killer ("GSK"), Joseph DeAngelo, in 2018.

The GSK was a serial rapist and murderer who terrorized California across six counties in the 1970s and 1980s.[65] Escalating from peeping Tom behavior to burglary and finally to home invasion rapes and murders, which often seemed to target couples, the GSK was responsible for at least thirteen murders and over fifty rapes.[66] While initially famous for the horrific nature of his offenses and the length of his escape from justice, DeAngelo—a former police officer—would become equally famous as the first defendant

61. 18 U.S.C. § 3600(g)(2); 42 U.S.C. § 14163a(b)(1)(D).

62. *See* Saber et al., *supra* note 58, at 258.

63. *See id.*

64. *See id.* at 258, 265. Despite the increasing availability of DNA testing, however, one study of fifty cases found that DNA exonerations were met by skepticism among stakeholders in the system—by prosecutors, judges and victims. Anne Richardson Oakes & Julian Killingley, *DNA Exonerations and Stakeholder Responses: A Case of Cognitive Dissonance?*, 90 TENN. L. REV. 109, 110–11 (2022). The study found close to the same degree of skepticism as between two periods: 1990 to 1999 (the very early days of forensic DNA) and 2010 to 2019 (after DNA science had become more ubiquitous). *Id.* at 147. The authors posited that such skepticism may reflect the threat exonerations pose to the value systems and self-belief of such stakeholders, who may have acted in good faith and in genuine but mistaken belief in the exoneree's guilt. *Id.* at 147–48.

65. Paige St. John & Luke Money, *Golden State Killer Given Life in Prison for Rapes, Murders That Terrorized a Generation*, L.A. TIMES (Aug. 21, 2020, 5:17 PM), https://www.latimes.com/california/story/2020-08-21/golden-state-killer-sentencing-justice-victims-serial-murders-rapes [https://perma.cc/SQ9Q-WJW2].

66. *Id.*

identified through familial DNA.[67]

Prosecutors took genetic material preserved from the rape kits of GSK's victims and first sent it to FamilyTreeDNA, a DTC testing company.[68] DTC companies like FamilyTreeDNA allow customers to submit their own DNA through saliva samples and receive genetic information such as countries of origin, health risks, and the names of relatives who have also submitted to the database.[69] Therefore, they contain a different and more varied range of profiles than those available in CODIS as they are unrelated to known crimes. Furthermore, the genetic profiles collected in genealogy databases, instead of consisting of STRs, are unique single nucleotide polymorphism ("SNP") profiles.[70] These are more evenly distributed through a person's genome than STRs and can thus carry information about a person's physical appearance that would not be available from a profile in CODIS.[71]

FamilyTreeDNA created a DNA profile for the GSK's sample which officers hoped would yield the identities of close family relations and, thus, enable them to narrow their search.[72] That attempt yielded only distant relations and proved unhelpful in identifying the killer.[73] However, a civilian genealogy expert assisting the investigative team uploaded the DNA profile to another DTC company, MyHeritage, using her own personal user profile.[74] She also uploaded it to GEDmatch, a then-public site to which users could upload their DNA profiles and seek out family members for free.[75]

The MyHeritage search yielded a pool of second cousins of the killer, one of whom investigators visited at her home in Orange County. She then voluntarily provided a DNA sample, which showed that the killer was related to her through other family members investigators had discovered on a third DTC site, Ancestry.com.[76] This narrowed the pool of suspects down to six

67. *Id.*
68. St. John, *supra* note 13.
69. *Direct-to-Consumer Genetic Testing FAQ for Healthcare Professionals*, NAT'L HUM. GENOME RSCH. INST., https://www.genome.gov/For-Health-Professionals/Provider-Genomics-Education-Resources/Healthcare-Provider-Direct-to-Consumer-Genetic-Testing-FAQ#:~:text=Direct%2Dto%2Dconsumer%20genetic%20tests,risks)%20from%20a%20saliva%20sample [https://perma.cc/65Y6-QXZ4].
70. Christi J. Guerrini, Ray A. Wickenheiser, Blaine Bettinger, Amy L. McGuire & Stephanie M. Fullerton, *Four Misconceptions About Investigative Genetic Genealogy*, 8 J.L. & BIOSCIENCES 1, 3 (2021).
71. *Id.* at 4.
72. *See* St. John, *supra* note 13.
73. *Id.*
74. *Id.*
75. *Id.*
76. *Id.*

men, only one of whom, Joseph DeAngelo, had blue eyes—a feature already known from the original DNA profile. After ten days of surveilling DeAngelo, investigators seized DNA-bearing evidence from his trash can, finally proving him to be the killer.[77]

The GSK story raises obvious privacy concerns around the access afforded to law enforcement by the companies themselves in the first place. Immediately after DeAngelo's arrest, an investigator confirmed only that the officers had uploaded the rape kit profile to the open-source GEDmatch site.[78] For a time, the FBI treated the three private companies as privileged confidential sources, instructing California investigators that they were not to reveal their identities as they assembled charges against DeAngelo.[79]

As it turns out, the companies had widely divergent views about assisting law enforcement. FamilyTreeDNA actively assisted the FBI, giving them access to the site for investigative purposes without knowing specifically which case they were investigating.[80] Their terms of service at the time contained a warning that the company could be required to release users' personal information in response to a "lawful request by public authorities," and their CEO stated that he did not believe assisting the police violated this policy.[81] By contrast, MyHeritage's privacy policy contained the stronger language that information would only be released "if required by law" (suggesting the company would only release information to law enforcement in the face of a warrant or at least a subpoena).[82] Because MyHeritage did not assist law enforcement directly but merely sold its services to a purported consumer, it arguably did not violate its own policy. Its marketing executive noted that their privacy policy "did not explicitly" address this form of access and said "[i]t is possible that the civilian geneticist thought she was not violating our terms of service."[83]

In the wake of the interest generated by the GSK case, most DTC companies have revised their policies to strengthen and clarify the degree of privacy to be expected vis-à-vis law enforcement. For example, MyHeritage now stipulates that "[w]e will not provide information to law enforcement unless we are required by a valid court order or subpoena for genetic information."[84] The popular site 23andMe.com makes an even stronger

77. *Id.*
78. *Id.*
79. *Id.*
80. *Id.*
81. *Id.*
82. *Id.*
83. *Id.*
84. *MyHeritage Privacy Policy*, MYHERITAGE, https://www.myheritage.com/privacy-policy [https://perma.cc/EC34-HGG2].

statement, promising "to use all practical legal and administrative resources to resist requests from law enforcement," though noting that under some circumstances the company "may be required by law to comply with a valid court order, subpoena, or search warrant for genetic or personal information."[85] Furthermore, most sites now prohibit users from uploading DNA belonging to someone other than themselves or a dependent.[86] Even these strengthened policies leave somewhat open-ended the question of how hard companies will resist police requests and, specifically, whether they will take the hardline position of companies like Apple, who refuse to hand over customer data in the absence of a warrant supported by probable cause.[87] Furthermore, it is difficult to imagine how genetic companies could prevent users from uploading a third party's DNA sample under their own name.[88]

There are also two notable outliers in the privacy trend in consumer genetics. GEDmatch (now owned by the Qiagen Corporation) has taken a different approach, allowing law enforcement to upload DNA samples in cases of murder, nonnegligent manslaughter, aggravated rape, robbery, aggravated assault, or when there is a need to identify a dead body.[89] While users must actively "opt in" to have their own DNA profiles matchable by law enforcement, the site actively encourages them to do so, exhorting that users can help "provide answers to those with missing loved ones" and "enable law enforcement to solve violent crimes and exonerate the falsely accused."[90] The GEDmatch site features profiles of crime victims identified and murders solved, along with the story of Christopher Tapp.[91] FamilyTreeDNA has remained the most friendly to law enforcement, now clarifying on its site that it will allow police to create profiles to help identify bodies or perpetrators in violent crimes and requires users affirmatively to "opt *out*" of their data's inclusion in such searches.[92] The state of California now legally requires consumer genetic companies to obtain consent in this manner.[93]

85. *23andMe Guide for Law Enforcement*, 23ANDME, https://www.23andme.com/law-enforcement-guide [https://perma.cc/8M74-Y6CY].

86. *See* Jasper Ford-Monroe, *Why Familial Searches of Civilian DNA Databases Can and Should Survive Carpenter*, 72 HASTINGS L.J. 1717, 1725 (2021).

87. APPLE, APPLE TRANSPARENCY REPORT: GOVERNMENT AND PRIVATE PARTY REQUESTS 1 (2022), https://www.apple.com/legal/transparency/pdf/requests-2022-H1-en.pdf [https://perma.cc/U99B-VVWL].

88. Ford-Monroe, *supra* note 86, at 1725.

89. *Id.*

90. *GEDmatch & Community Safety*, *supra* note 14.

91. *Id.*

92. *IGGM Frequently Asked Questions*, *supra* note 14.

93. CAL. CIV. CODE § 56.181(a)(2)(C)–(D) (West 2024).

As of the end of 2022, 545 cases have been solved using familial DNA.[94] Another dimension of consumer genetic databases worth noting is their demographic differences from CODIS. Black Americans appear to be overrepresented in CODIS relative to the general population.[95] By contrast, people of Northern European ancestry are more heavily represented in consumer databases (perhaps unsurprisingly due to the uncertainty of precise ancestral origins among people of vaguely European descent).[96] One study found that at least 60% of Americans of European descent may be identifiable through a genealogical database of just 1.3 million people.[97]

II. THE PRIVACY ARGUMENT FOR RESTRICTING FAMILIAL DNA

This Section will consider the privacy interests implicated by law enforcement use of familial DNA, starting with the Fourth Amendment framework protecting privacy. It will summarize the scholarly commentary arguing that warrantless familial DNA searches may violate the Fourth Amendment, as well as new state statutory protections that limit such searches. Finally, it will argue that police conducting familial searches of their own databases or of DTC databases with the consent of genetically related users raises colorable but ultimately quite weak Fourth Amendment arguments.

A. THE CONSTITUTIONAL DIMENSION

The debate over familial DNA occurs at a time of high doctrinal instability around the meaning of the Fourth Amendment in a world of constantly changing technology. The Fourth Amendment provides that:

> 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.[98]

94. Michelle Taylor, *How Many Cases Have Been Solved with Forensic Genetic Genealogy?*, FORENSIC MAG. (Mar. 3, 2023), https://www.forensicmag.com/594940-How-Many-Cases-Have-Been-Solved-with-Forensic-Genetic-Genealogy [https://perma.cc/MZ35-2PJ9].

95. *See* Ford-Monroe, *supra* note 86, at 1736 (citing Kim Zetter, *DNA Sample from Son Led to Arrest of Accused 'Grim Sleeper'*, WIRED (July 12, 2010, 7:41 PM), https://www.wired.com/2010/07/dna-database [https://perma.cc/9PYW-SDMU]).

96. *See id.* (citing Antonio Regaldo, *A DNA Detective Has Used Genealogy to Point Police to Three More Suspected Murderers*, MIT TECH. REV. (June 26, 2018), https://www.technologyreview.com/2018/06/26/2600/a-dna-detective-has-used-genealogy-to-point-police-to-three-more-suspected [https://perma.cc/VTJ4-BSB3]).

97. *See* Yaniv Erlich, Tal Shor, Itsik Pe'er & Shai Carmi, *Identity Interference of Genomic Data Using Long Range Familial Searches*, 362 SCIENCE 690, 690 (2018).

98. U.S. CONST. amend. IV.

The Founders adopted the Amendment, which mirrored parallel provisions in state constitutions at the time, in response to the Crown's use of general warrants in the Colonies.[99] Courts issued these warrants allowing Crown agents to search and seize evidence with no limitations.[100] In the infamous cases *Entick v. Carrington* (1765) and *Wilkes v. Wood* (1763), the Crown used these broad warrants to arrest two pamphleteers critical of the government and to seize their books and papers.[101] Ultimately, Carrington and Wilkes won trespass suits against the relevant government.[102]

With this brief history as backdrop, most early cases construing the Fourth Amendment understood it to prohibit only warrantless, trespassory interferences with property, allowing auditory surveillance by law enforcement where they did not physically intrude on the defendant's property.[103] In the watershed 1967 case *United States v. Katz*, however, the Court made a change.[104] In *Katz*, FBI agents had attached a listening device to the outside of a public telephone booth in which the defendant was making a call.[105] Explicitly overruling prior precedent, the Court held that this constituted a warrantless search and announced a new rule: "[w]hat a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. . . . But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."[106] This new test for the existence of a Fourth Amendment search has become known (based on language in Justice Harlan's concurrence) as the "reasonable expectation of privacy" test.[107] To apply it, courts ask, first, whether the defendant had exhibited a subjective expectation of privacy and, second, whether that expectation was "one that society is prepared to recognize as reasonable."[108]

99. Gerard V. Bradley, *Searches and Seizures*, HERITAGE FOUND., https://www.heritage.org/constitution/#!/amendments/4/essays/144/searches-and-seizures [https://perma.cc/D72C-SZR8].

100. *Id.*

101. Wilkes v. Wood [1763] 98 Eng. Rep. 489, 490; Entick v. Carrington [1765] 95 Eng. Rep. 807, 807–08.

102. *Wilkes*, 98 Eng. Rep. at 490; *Entick*, 95 Eng. Rep. at 807–08.

103. *See* Olmstead v. United States, 277 U.S. 438, 466 (1928) (holding that warrantless wiretapping of private telephone conversations did not violate the Fourth Amendment because it did not occur physically on the defendants' property but on a publicly-available phone network); Goldman v. United States, 316 U.S. 129, 134–35 (1942) (holding that evidence obtained by use of a detectaphone, applied to the wall of the room adjoining the office of the defendant, was not unlawfully obtained, despite a prior trespass).

104. Katz v. United States, 389 U.S. 347 (1967).

105. *Id.* at 348.

106. *Id.* at 351–52.

107. *Id.* at 360 (Harlan, J., concurring).

108. Bond v. United States, 529 U.S. 334, 338 (2000).

While *Katz* ostensibly renounced the property-based trespass rule of the Fourth Amendment, the subsequent half-century of Supreme Court jurisprudence has seen, nonetheless, a doctrinal struggle between property- and privacy-based conceptions of the right. Some cases have elaborated on the reasonable expectation of privacy test, recognizing, for example, a reasonable expectation against thermographic surveillance by a heat-sensing device set up across the street from one's home.[109] In other cases, the Court declined to recognize such an expectation against overhead surveillance of property by police aircraft flying at FAA-approved heights[110] or in discarded trash set out for collection.[111] Yet, in still other cases, the Court has held that the *Katz* reasonable expectations test has been "added to, not substituted for, the traditional property-based understanding of the Fourth Amendment" and therefore need not apply when "the government gains evidence by physically intruding on constitutionally protected areas."[112]

One rule of particular relevance to the context of familial DNA is the so-called "third-party" doctrine, which predated and survived *Katz*.[113] The third-party doctrine states that a person has no reasonable expectation of privacy in communications they share with a third party—that the law "permits the frustration of actual expectations of privacy by permitting authorities to use the testimony of those associates who for one reason or another have determined to turn to the police."[114] The third-party doctrine has excluded from the warrant requirement scenarios in which an associate of the defendant has voluntarily worn a wire, as well as transaction records the police obtain from the defendant's bank and call records (so-called "pen" registers) they obtain from the defendant's phone company.[115]

109. Kyllo v. United States, 533 U.S. 27, 40 (2001).

110. *See* Florida v. Riley, 488 U.S. 445, 450–51 (1989); California v. Ciraolo, 476 U.S. 207, 215 (1986).

111. California v. Greenwood, 486 U.S. 35, 37 (1988).

112. Florida v. Jardines, 569 U.S. 1, 11 (2013); United States v. Jones, 565 U.S. 400, 409 (2012). In *Jardines*, the Court relied upon common law trespass concepts to hold it to be a search when a police officer brought a drug-sniffing dog onto a suspect's porch. *Jardines*, 569 U.S. at 8–9. The Court stated that a police officer simply entering a porch to knock on the resident's door fell into the traditional "implied invitation" to enter such a space—the same invitation that renders it not a trespass for Girl Scouts or trick-or-treaters to do the same. *Id.* at 8. However, the Court found, "[t]he scope of a license—express or implied—is limited not only to a particular area but also to a specific purpose." *Id.* at 9. An officer bringing a trained police dog onto a porch for the purposes of sniffing out narcotics, the Court held, violated the implied license and, thus, constituted a Fourth Amendment search. *Id.* at 11–12.

113. *See* Sarah Murphy, *Watt Now?: Smart Meter Data Post*-Carpenter, 61 B.C. L. REV. 785, 794 (2020). *See generally* United States v. White, 401 U.S. 745 (1971).

114. *White*, 401 U.S. at 752.

115. *Id.* at 754; United States v. Miller, 424 U.S. 435, 443 (1976); Smith v. Maryland, 442 U.S. 735, 744 (1979). *But see* Ferguson v. City of Charleston, 532 U.S. 67, 85–86 (2001) (holding that it violated the Fourth Amendment for hospital staff to analyze urine samples they had obtained within the protections of doctor-patient privilege for the purposes of providing incriminating information to law enforcement).

Under both the property and privacy theories of the Fourth Amendment, courts have generally recognized the presumption that if police conduct *does* constitute a search, a warrant is required.[116] However, the Supreme Court has also held that some searches that would otherwise be presumed to require a warrant supported by probable cause are nonetheless constitutional because "the touchstone of the Fourth Amendment is reasonableness."[117] In such cases, the Court weighs the defendant's privacy interests against competing government interests, which usually happens in cases involving either categorical exceptions to the Fourth Amendment or administrative searches.[118] The "reasonableness balancing" model of the Fourth Amendment has created categorical exceptions such as stop-and-frisks based only on reasonable suspicion,[119] searches incident to arrest,[120] and police uses of force in cases where the officer's actions were reasonable based on the facts confronting them.[121] Using such balancing, the Court has also created administrative exceptions for wholly suspicionless searches of parolees, airport security checkpoints, sobriety checkpoints, fire code and public safety inspections, among many others.[122]

As investigative technology has developed at a seemingly geometric rate, however, the Court has struggled to address all seemingly invasive police behavior under the privacy and property tests—especially in light of the third-party doctrine.[123] In *United States v. Jones*, the Court unanimously held that police engaged in a warrantless search by affixing a GPS tracking device to a suspect's car to track its movements.[124] While the majority opinion rested on trespass grounds—that "[t]he Government physically occupied private property for the purpose of obtaining information" by attaching the device,[125] Justice Sotomayor's concurrence suggested that, in

116. *See* Kit Kinports, *The Origins and Legacy of the Fourth Amendment Reasonableness-Balancing Model*, 71 CASE W. L. REV. 157, 157 (2020).

117. Florida v. Jimeno, 500 U.S. 248, 250 (1991).

118. *See* Kinports, *supra* note 116, at 177–81.

119. Terry v. Ohio, 392 U.S. 1, 19–20 (1968).

120. Chimel v. California, 395 U.S. 752, 768 (1969).

121. Graham v. Connor, 490 U.S. 386, 388, 395 (1989).

122. *See* Camara v. Municipal Court, 387 U.S. 523, 540 (1967); Samson v. California, 547 U.S. 843, 846 (2006); Mich. Dep't of State Police v. Sitz, 496 U.S. 444, 447 (1990); United States v. Davis, 482 F.2d 893, 908 (9th Cir. 1973). For an argument that the common probation condition allowing suspicionless searches of probationers' phones is due for Supreme Court consideration, see generally Daniel Yeager, *Certain Certiorari: The Digital Privacy Rights of Probationers*, 50 CONN. L. REV. ONLINE 1 (2017).

123. *See* Paul Ohm, *The Fourth Amendment in a World Without Privacy*, 81 MISS. L.J. 1309, 1325–26 (2012); Stephen E. Henderson, *The Timely Demise of the Fourth Amendment Third Party Doctrine*, 96 IOWA L. REV. BULL. 39, 39–40 (2011); Sherry F. Colb, *What Is a Search? Two Conceptual Flaws in Fourth Amendment Doctrine and Some Hints of a Remedy*, 55 STAN. L. REV. 119, 121 (2002).

124. United States v. Jones, 565 U.S. 400, 404 (2012).

125. *Id.*

the future, the digital age might make it "necessary to reconsider the premise that an individual has no reasonable expectation of privacy in information voluntarily disclosed to third parties."[126] The Court also distinguished between digital data and other types of searches in *Riley v. California*, which dealt with the search of a suspect's cell phone incident to arrest.[127] The Court concluded that "[c]ell phones differ in both a quantitative and a qualitative sense from other objects that might be kept on an arrestee's person," due to the wealth of sensitive information they contain about a person's browsing history, location, relationships, and so forth.[128] It thus held that, absent an emergency, police require a warrant to search the contents of a phone otherwise properly seized incident to arrest.[129]

The future that Justice Sotomayor alluded to in *Jones* seemed finally to arrive in 2018 with *Carpenter v. United States*, in which the Court made the biggest technology-reactive shift in Fourth Amendment doctrine since *Katz*.[130] *Carpenter* involved the 1994 Stored Communications Act ("SCA"), which authorized the Government to compel private companies to disclose telecommunication records when it "offers specific and articulable facts showing that there are reasonable grounds to believe" that the records "are relevant and material to an ongoing criminal investigation."[131] While the SCA required that a magistrate make this determination in order for the government to obtain a subpoena, it was on a reasonable suspicion standard rather than the probable cause necessary for a warrant.[132]

In *Carpenter*, the government obtained subpoenas under the SCA for weeks' worth of cell-site location information ("CSLI") from the defendant's cell phone providers.[133] CSLI data consists of time-stamped records generated several times a minute when a user's phone connects to a cell phone tower.[134] While it does not provide as precise of geographic data as GPS, CSLI data from a subject's phone over a substantial period of time

126. *Id*. at 417 (Sotomayor, J., concurring).
127. Riley v. California, 573 U.S. 373 (2014).
128. *Id.* at 393.
129. *Id.* at 401–02.
130. Carpenter v. United States, 585 U.S. 296 (2018).
131. 18 U.S.C. § 2703(d).
132. By imposing a reasonable suspicion standard, the Stored Communication Act ("SCA") was actually intended to make it more difficult for the government to access third-party electronic records than it would be if normal subpoena law applied. Orin Kerr, *Does* Carpenter *Revolutionize the Law of Subpoenas?*, LAWFARE (June 26, 2018, 6:44 PM), https://www.lawfaremedia.org/article/does-carpenter-revolutionize-law-subpoenas [https://perma.cc/D5NU-6Q4J]. Prior to the SCA, telecom companies had only the narrow Fourth Amendment argument that complying with the subpoena would be unduly burdensome. *Id.*
133. *Carpenter*, 585 U.S. at 302.
134. *Id.* at 301.

provides government analysts with a broad picture of that person's movements.[135]

The government argued that the subpoenas were constitutional under the third-party doctrine; Carpenter had voluntarily shared his location information with his carriers in the same manner a person does their call record or as a person shares their financial transactions with a bank.[136] The Court rejected this argument, holding for the first time that an individual "maintains a legitimate expectation of privacy in the record of his physical movements as captured through CSLI."[137] Importantly (and contrary to some pre-*Jones* precedent),[138] the Court held that there was no distinction for these purposes between public and private movements, even if a subject's public movements would be visible to the naked eye of someone physically following them.[139]

The Court based its rule on five factors specific to the technological context of CSLI data.[140] First, it noted that such data is comprehensive: it provides a record of movement that is "detailed" and "encyclopedic" and constitutes "near perfect surveillance."[141] Second, it is intimate in the sense that a cell phone "faithfully follows its owner beyond public thoroughfares and into private residences, doctor's offices, political headquarters, and other potentially revealing locales."[142] Third, it is inexpensive—especially compared to "traditional investigative tools" like the in-person surveillance approved in earlier third-party doctrine cases.[143] Fourth, it is retrospective in the sense that it allows the government to go back in time and investigate anyone it wishes, without having to determine an investigative target in advance.[144] And, fifth, it is functionally nearly involuntary, due to the fact that cell phones are "indispensable to participation in modern society."[145]

135. *Id.* at 309.
136. *Id.* at 313.
137. *Id.* at 310.
138. United States v. Knotts, 460 U.S. 276, 282 (1983).
139. *Carpenter*, 585 U.S. at 313–14.
140. *See* LAURA HECHT-FELELLA, BRENNAN CTR. FOR JUST., THE FOURTH AMENDMENT IN THE DIGITAL AGE: HOW CARPENTER CAN SHAPE PRIVACY PROTECTIONS FOR NEW TECHNOLOGIES 9–10 (2021) (distilling a five-factor framework for the privacy test from *Carpenter*).
141. *Carpenter*, 585 U.S. at 309, 312.
142. *Id.* at 311.
143. *Id.*
144. *Id.* at 312.
145. *Id.* at 315. *Carpenter* left several significant issues explicitly unresolved. First, its holding was based on the seven days of data actually requested from one of the cell phone providers, leaving open the question of whether a request for a shorter period of data would constitute a search. *Id.* at 310 n.3. Second, the Court stated it did not express a view on the question of "real-time CSLI" or "tower dumps," in which law enforcement download information from all of the devices that connected to a particular cell phone tower during a particular interval. *Id.* at 316.

Some scholars have suggested that *Riley* and *Carpenter* adopt a "mosaic" theory of the Fourth Amendment—a concept the D.C. Circuit, the lower court in *Jones*, had originally imported from the national security context and relied on to exclude the GPS tracking data.[146] Under a mosaic theory, a Fourth Amendment search can arise based on police actions taken over time, even if no individual step taken in isolation would constitute a search.[147] Critics such as Orin Kerr argue that the mosaic theory suffers from problems of administrability and an overreliance on a subject's probabilistic expectations of privacy, which is ill-suited to regulate electronic surveillance.[148] In the wake of *Carpenter*, lower courts have been divided over whether to formally recognize the mosaic theory as a fundamental rule of the Fourth Amendment.[149]

These new iterations of the reasonable expectation of privacy test have sparked broader debate about *Katz* itself. Many critics have advocated for replacing the *Katz* test entirely due to its confusing and cyclical nature.[150] Others have argued that modern Fourth Amendment case law is actually driven by consistent principles which can now be applied to evolving technology. Matthew Tokson, for example, argues that the expectation of privacy turns on the intimacy of the area searched, the amount of information sought, and the cost of the investigation.[151] These factors, relevant in *Carpenter,* are worth bearing in mind while considering how courts apply the recent Fourth Amendment precedent to DNA evidence.

146. United States v. Maynard, 615 F.3d 544, 562 (D.C. Cir. 2010).

147. *See* Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311, 313 (2012).

148. *Id.* at 346.

149. *Compare* United States v. Tuggle, 4 F.4th 505, 517 (7th Cir. 2021) (holding that long-term video surveillance of a suspect's house using pole cameras does not violate his reasonable expectation of privacy and noting that lower courts are not bound by the mosaic theory and that many have disapproved it), *with* United States v. Moore-Bush, 381 F. Supp. 3d 139, 150 (D. Mass. 2019) (granting a defendant's motion to suppress pole camera surveillance footage on the grounds that it allowed the government to "piece together intimate details of [the defendant's] life" and noting that the mosaic theory had effectively been adopted by the Supreme Court).

150. *See, e.g.*, William Baude & James Y. Stern, *The Positive Law Model of the Fourth Amendment*, 129 HARV. L. REV. 1821, 1825–26 (2016); Richard M. Re, *Fourth Amendment Fairness*, 116 MICH. L. REV. 1409, 1447 (2018); Michael J. Zydney Mannheimer, *The Contingent Fourth Amendment*, 64 EMORY L.J. 1229, 1284–87 (2015).

151. *See, e.g.*, Matthew Tokson, *The Emerging Principles of Fourth Amendment Privacy*, 88 GEO. WASH. L. REV. 1, 51–53 (2020) (applying these principles to novel technology and concluding that the Supreme Court would likely find drone surveillance footage and data from smart home devices to implicate the Fourth Amendment but real-time use of facial recognition technology in public places not to).

B. DNA AND THE FOURTH AMENDMENT

Given that traditional forensic DNA technology is nearly thirty years old, it is unsurprising that much of the Fourth Amendment case law concerning it long predates *Carpenter*. As discussed above, early use of forensic DNA relied heavily on databases assembled by law enforcement from perpetrators and suspects who were already lawfully in custody. Broadly speaking, "intrusions into the human body" such as blood draws constitute Fourth Amendment searches.[152] Yet in *Maryland v. King*, the Supreme Court rejected a Fourth Amendment challenge to the Maryland DNA Collection Act ("MDCA"), which allows state and local law enforcement to collect DNA samples from individuals arrested for a crime of violence, an attempted crime of violence, burglary, or attempted burglary.[153]

In *King*, the Court recognized that the intrusion of the DNA swabbing was a search and engaged in a balancing test to determine whether it was reasonable as an administrative exception to the Fourth Amendment (and therefore not requiring probable cause of a crime likely to yield DNA evidence). Specifically, the Court balanced the defendant's privacy interest against "the need for law enforcement officers in a safe and accurate way to process and identify the persons and possessions they must take into custody."[154] Noting that a search incident to arrest is a long-standing exception to the warrant requirement, the Court, nevertheless, did not invoke the doctrine directly (likely because it limits a search to what is necessary to protect officer safety, prevent escape, and preserve evidence).[155] Instead, the Court found that "[w]hen probable cause exists to remove an individual from the normal channels of society and hold him in legal custody, DNA identification plays a critical role in serving those interests."[156] Finding the intrusion on the defendant's privacy through the physical act of swabbing for DNA to be minimal, the Court upheld the MDCA. In dissent, Justice Scalia analogized the collection of DNA from arrestees for whom there was no probable cause of a crime of violence to the general warrants of the Colonial era.[157]

152. Schmerber v. California, 384 U.S. 757, 770 (1966).
153. Maryland v. King, 569 U.S. 435, 443, 465–66 (2013).
154. *Id.* at 449.
155. Chimel v. California, 395 U.S. 752, 762–63 (1969).
156. *King*, 569 U.S. at 450; *see also* United States v. Buller, No. 17-CR-40105, 2018 U.S. Dist. LEXIS 2202, at *14 (D.S.D. Jan. 5, 2018) (applying *King* to uphold an administrative DNA swab, authorized by federal law, of a misdemeanor arrestee and noting that "*King* . . . did not explicitly limit its holding only to serious felonies").
157. *King*, 569 U.S. at 466 (Scalia, J., dissenting).

King left open many questions, such as whether DNA identification analysis of a blood sample originally drawn for a non-identification purpose (such as blood-alcohol analysis) constitutes a search.[158] Lower courts have found some limits to the government's Fourth Amendment authority to perform DNA analysis on samples they've obtained from non-arrest contexts. For example, the Fourth Circuit has held that *King* did "not give a law enforcement agency *carte blanche* to perform DNA extraction and analysis derived from clothing lawfully obtained from the victim of a crime in relation to the investigation of other crimes."[159] Similarly, an Arizona court has held that a defendant's consent to a blood draw for testing for intoxicants did not authorize the police to create a DNA profile from the blood cells to investigate other offenses.[160] Federal district courts have denied government requests to conduct purported administrative DNA swabs for purposes other than the identification and safety rationales stated in *King*.[161] Others, however, have allowed such explicitly evidence-gathering searches on a showing of reasonable suspicion short of probable cause.[162]

While most of the existing DNA-related precedent involves clear police intrusions on the person of the subject for the purpose of collecting samples, and thus clearly trigger Fourth Amendment concerns under either a privacy or trespass conception, the use of consumer DNA databases do not involve bodily invasion. Furthermore, courts generally do not recognize a property interest in one's DNA. In *Association for Molecular Pathology v. Myriad Genetics*, the Supreme Court held that isolated, naturally occurring DNA sequences could not be patented because isolating a gene is not an "act of invention."[163] More directly on point, courts have traditionally declined to recognize a property right in one's own genetic materials that is sufficient to support a conversion action in cases where hospitals have utilized patients' excised cells.[164] Scholars argue that recognizing property rights in DNA

158. *See* State v. Mitcham, 535 P.3d 948, 953 (Ariz. Ct. App. 2023).

159. United States v. Davis, 690 F.3d 226, 246 (4th Cir. 2012) (emphasis added).

160. *Mitcham*, 535 P.3d at 957. The court, however, applied the fruit of the poisonous tree doctrine to reverse the trial court's suppression order, on the grounds that the police had probable cause to arrest the defendant for murder even without the DNA profile and, thus, would have obtained a DNA profile anyway due to Arizona's statute authorizing the DNA collection from suspects arrested for violent crimes. *Id*. at 958–59; *see also* ARIZ. REV. STAT. ANN. § 13-610(K) (1956).

161. *See* United States v. Daughtridge, No. 16-CR-107-1H, 2018 U.S. Dist. LEXIS 153401, at *3–5 (E.D.N.C. Sept. 10, 2018) (rejecting a request, unsupported by cause, for the purposes of "securing evidence").

162. *See* United States v. Hayes, No. 15-CR-29, 2017 U.S. Dist. LEXIS 61945, at *4 (W.D.N.Y. Apr. 24, 2017).

163. Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576, 591 (2013).

164. *See* Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 489–90 (Cal. 1990) (dismissing a splenectomy patient's conversion action after the treating physician collected and commercialized his

would raise a host of problems ranging from the conceptual[165] to the dignitary[166] to the policy-based.[167] Critics of the status quo argue that the rise of consumer genetic companies, with the accompanying privacy concerns, necessitate property-based tools such as conversion actions to ensure good behavior and privacy practices.[168] At least a couple of courts have recently proved receptive to privacy-based conversion claims related to genetic information.[169] Five states—Alaska, Colorado, Georgia, Louisiana, and Florida—have current legislation granting people ownership of their genetic information.[170] Nonetheless, after *Carpenter*, the privacy theory of the Fourth Amendment provides a stronger foundation for the argument that familial DNA database searches trigger the Fourth Amendment.

C. THE CASE FOR GENETIC PRIVACY POST-CARPENTER

The proliferating concerns over genetic privacy sparked by the rise of DTC genetics companies have been particularly salient in the law enforcement context. This Section will review arguments that law enforcement use of DTC genetic databases generally and for familial DNA searches specifically raise Fourth Amendment concerns even when third-party users consent to law enforcement access.[171] It will also survey the state

tissue); Greenberg v. Mia. Child.'s Hosp. Rsch. Inst., Inc., 264 F. Supp. 2d 1064, 1074–76 (S.D. Fla. 2003) (dismissing donors' conversion claims against a hospital who used their voluntarily donated genetic information in research which it subsequently patented and enforced restrictively).

165. *See* I. Glenn Cohen, *The Right Not to Be a Genetic Parent?*, 81 S. CAL. L. REV. 1115, 1151 (2008) (demonstrating that Lockean bases for property rights are inapt in the case of genetic information).

166. Sonia M. Suter, *Disentangling Privacy from Property: Toward a Deeper Understanding of Genetic Privacy*, 72 GEO. WASH. L. REV. 737, 800 (2004) (arguing that it "diminishes the personal value of our genetic information to describe it as a commodity").

167. Jorge L. Contreras, *Direct-to-Consumer Genomics and Personal Health Data*, *in* CONSUMER GENETIC TECHNOLOGIES: ETHICAL AND LEGAL CONSIDERATIONS 51, 64 (I. Glenn Cohen et al. eds., 2021) (arguing that the propertization of genetic data "could have severe consequences for biomedical research, public health, and the health care system well beyond the comparatively small DTC testing industry").

168. *See* Jessica L. Roberts, *In Favor of an Action for Genetic Conversion*, *in* CONSUMER GENETIC TECHNOLOGIES, *supra* note 167, at 39, 50.

169. *Id.* at 49–50 (citing Peerenboom v. Perlmutter, No. 2013-CA-015257, 2017 Fla. Cir. LEXIS 14957, at *10 (Jan. 23, 2017); Cole v. Gene by Gene, Ltd., No. 14-cv-00004, 2017 U.S. Dist. LEXIS 10176, at *5 (D. Alaska June 30, 2017)).

170. *See* Contreras, *supra* note 167, at 51.

171. This Article focuses its analysis on familial searches of DTC databases in which the original user has affirmatively consented to law enforcement searches. A situation with no such consent would give the initial user a potential Fourth Amendment claim after *Carpenter*'s weakening of the third-party doctrine, though, as this Section will argue, an indirectly identified family member should lack standing to raise it. *See* Minnesota v. Carter, 525 U.S. 83, 91 (1998) (holding that third parties lack standing to challenge the constitutional violations of others). A situation without such explicit consent but where a website's Terms of Service stipulated that information was subject to search by law enforcement raises a separate question. After *Carpenter*, it is, again, unclear that the third-party doctrine alone would automatically bar such a claim based merely on use of the database, though the Terms of Service would be relevant to the question of whether the user had a reasonable expectation of privacy in the information

legislative responses to these concerns.

1. The Scholarly Debate

The scholarly concern over privacy issues raised by forensic DNA generally and familial DNA specifically has been widespread with the weight of commentary suggesting that warrantless familial DNA searches explicitly violate *Carpenter* or should at least be otherwise prohibited.[172] Scholars have sought to delineate the nature of the privacy harms suffered by persons who are genetically identified through familial searches.[173] Some argue that privacy violations implicate autonomy interests and result in "people's inability to make choices in accordance with their preferences," a consequence with additional negative emotional effects.[174] Furthermore, because genetic surveillance can be both large-scale and untethered to suspicion, it can also chill the exercise of civil liberties and create the risk of discrimination and selective enforcement.[175]

they shared there. Many courts have held that agreeing to a website's terms of service constitutes a full-blown waiver of Fourth Amendment rights against government searches. *See, e.g.*, Commonwealth v. Dunkins, 229 A.3d 622, 629–30 (Pa. Super. Ct. 2020), *allocatur granted*, 237 A.3d 415 (Pa. 2020) (per curiam). As Orin Kerr argues, however, such decisions are problematic because Terms of Service can define relationships only between private parties, not between a private party and the government. *See* Orin S. Kerr, *Terms of Service and Fourth Amendment Rights*, 172 U. PA. L. REV. 287, 287–88 (2024).

172. *See, e.g.*, George M. Dery III, *Can a Distant Relative Allow the Government Access to Your DNA?: The Fourth Amendment Implications of Law Enforcement's Genealogical Search for the Golden State Killer and Other Genetic Genealogy Investigations*, 10 HASTINGS SCI. & TECH. L.J. 103, 121–28 (2019) (arguing that *Carpenter* applies to familial DNA); Claire Mena, *Another* Katz *Moment?: Privacy, Property, and a DNA Database*, 55 U. MICH. J.L. REFORM 729, 753 (2022) (arguing that *Maryland v. King* should be reevaluated in light of evolving DNA technology); Karen J. Kukla, *Direct to Consumer or Direct to All: Home DNA Tests and Lack of Privacy Regulations in the United States*, 13 IP THEORY 31, 53–54 (2023) (arguing for federal privacy regulations similar to those of the European Union); Jordan Mason, *No Longer Innocent Until Proven Guilty: How Ohio Violates the Fourth Amendment Through Familial DNA Searches of Felony Arrestees*, 69 CLEV. ST. L. REV. 185, 205–09 (2020) (arguing that Ohio's routine familial DNA searches of arrestees violate *Maryland v. King* because they do more than simply "identify" a person but reveal information about his blood relatives and because the governmental interests identified in *King* relate only to the arrestee himself, not to family); Emma Kenny-Pessia, *Ditching "DNA on Demand": A Harms-Centered Approach to Safeguarding Privacy Interests Against DNA Collection and Use by Law Enforcement*, 101 WASH. U. L. REV. 627, 641–56 (2023) (identifying the privacy harms caused by familial DNA collection and proposing legislation to address them); Alexis B. Hill, Note, *I Just Took a DNA Test, Turns Out My Relative's a Murder Suspect: Restoring Fourth Amendment Balance to Direct-to-Consumer DNA Testing Companies*, 89 GEO. WASH. L. REV. 1046, 1046–47 (2021) (arguing that genetic testing companies should be required to include an option for consumers to opt out of law enforcement access that details the consequences of remaining in the law enforcement pool); Caroline Spiers, Note, *Keeping It in the Family: Direct-to-Consumer Genetic Testing and the Fourth Amendment*, 59 HOUS. L. REV. 1205, 1205 (2022) (arguing that the third-party doctrine should be abolished entirely or else not applied to DTC genetic testing). *But see* Teneille R. Brown, *Why We Fear Genetic Informants: Using Genetic Genealogy to Catch Serial Killers*, 21 COLUM. SCI. & TECH. L. REV. 1, 1–2 (2020).

173. *See* Kenny-Pessia, *supra* note 172, at 641–53.

174. Danielle Keats Citron & Daniel J. Solove, *Privacy Harms*, 102 B.U. L. REV. 793, 849 (2022).

175. Neil M. Richards, *The Dangers of Surveillance*, 126 HARV. L. REV. 1934, 1935 (2013); *see also* David Gray & Danielle Citron, *The Right to Quantitative Privacy*, 98 MINN. L. REV. 62, 72 (2013)

Natalie Ram, one of the leading scholars on genetic privacy, argues that, based on the factors the Court identified in *Carpenter*, courts should recognize a Fourth Amendment reasonable expectation of privacy in one's own DNA, even when stored in a third-party database.[176] On the question of intimacy, Ram notes that genetic information is "deeply revealing" as well as "highly detailed and precise about the individual information it discloses."[177] As to comprehensiveness, she notes that the sudden proliferation of consumer genetic databases and the use of genetic information in medical records—while not yet as widespread as cell phone usage—suggests that genetic analysis is a substantially growing part of users' lives.[178] As to expense, Ram points out that the use of genetic data in investigations is cheap, easy, and efficient, similar to CSLI data.[179] Finally, as to voluntariness, she points again to the sudden proliferation of genetic databases to argue that their use "may be approaching an 'inescapable and automatic nature' " in the way that cell phone use once reached fairly quickly.[180] She concludes that these factors all urge that there be a reasonable expectation of privacy in one's *own* genetic information, even when voluntarily shared with third-party databases. Furthermore, she notes that there is a much stronger *property* interest in one's own genetic information than in one's location data—a fact seemingly supported by the user agreements of genetic sites which emphasize the user's "ownership" of their own data, as well as the statutes in the five states that recognize it.[181]

With respect to familial DNA, the argument, of course, becomes more complicated due to the fact that an individual's genetic information could be accessed through a third party voluntarily sharing their information—not only with the database itself but also through "opting in" or choosing not to "opt out" of sharing with law enforcement. Ram argues that in such cases, the target of the investigation who is indirectly identified through a family member's DNA cannot be said to have voluntarily consented to the search, due to the fact that: (1) genetic relatedness is intrinsically involuntary and (2) people rarely have control over the decision-making of even near relations, much less the distant relations through which investigative matches often occur.[182] She thus concludes that, while a law enforcement

(arguing that, under a mosaic theory, the sheer quantity of data susceptible of aggregation in searchable databases may violate privacy even when a smaller amount of the same sort of information might not).

176. Natalie Ram, *Genetic Privacy After* Carpenter*,* 105 VA. L. REV. 1357, 1424 (2019).
177. *Id.* at 1386–87.
178. *Id.* at 1387–88.
179. *Id.* at 1388.
180. *Id.* at 1389.
181. *Id.* at 1390.
182. Ram, *supra* note 15, at 213–14.

search of a consumer database for a *direct* match, voluntarily shared, may be appropriate, searches for indirect matches through third-party relations is not.[183]

2. Legislative Responses

In the U.S., sixteen states have explicitly allowed law enforcement to conduct familial DNA searches, though often with policies limiting the usage to serious crimes or cases in which the public safety is at risk.[184] Other states, however, have passed statutes greatly limiting such searches. The District of Columbia and Maryland bar familial DNA searches of the states' own DNA databases.[185] As to consumer databases, Maryland also has the most detailed statute to date, requiring judicial authorization based on a sworn affidavit by law enforcement with approval of the relevant prosecutor.[186] Familial DNA searches will only be authorized when the crime is murder, rape, a felony sexual offense, or an act presenting "a substantial and ongoing threat to public safety or national security."[187] Furthermore, law enforcement must first attempt to identify a suspect through CODIS, as well as to first pursue "reasonable investigative leads" that ultimately fail to identify them.[188] The law also limits law enforcement to databases that provide explicit notice to users that law enforcement may use it and that "seeks acknowledgement and express consent from its service users" regarding this possibility.[189]

Montana's statute, while more vaguely drafted, appears to severely limit familial DNA searches. It provides that "[a] government entity may not obtain familial DNA search results or search results from partial matching from the [state-maintained] DNA identification index or a consumer DNA database without a search warrant issued by a court on a finding of probable cause."[190] It has another provision requiring the government to obtain a

183. *Id.* at 225.

184. ARIZ. DEP'T OF PUB. SAFETY SCI. ANALYSIS BUREAU, FAMILIAL DNA ANALYSIS, https://www.azdps.gov/sites/default/files/2023-08/Familial_DNA_Analysis_Flyer_3.pdf [https://perma.cc/YV9X-PEG8] (listing Arizona, California, Colorado, Florida, Kentucky, Louisiana, Michigan, Minnesota, New York, North Carolina, Ohio, South Dakota, Texas, Virginia, Wisconsin, and Wyoming); UTAH CODE ANN. § 53-10-403.7 (LexisNexis 2024); *see also* Alexandra Nieto, *Familial Searching: How Implementing Minimum Safeguards Ensures Constitutionally-Permissible Use of This Powerful Investigative Tool,* 40 CARDOZO L. REV. 1765, 1771–76 (2019) (summarizing various state law enforcement policies on familial DNA searches); In re Stevens, 227 N.E.3d 1064, 1070–71 (N.Y. 2023) (upholding the authority of New York's Commission on Forensic Sciences to promulgate regulations allowing for familial DNA searches by law enforcement).

185. D.C. CODE § 22-4151(b) (2025); MD. CODE ANN., PUB. SAFETY § 2-506(d) (West 2024).

186. MD. CODE ANN., CRIM. PROC. § 17-102 (West 2024).

187. *Id.*

188. *Id.*

189. *Id.*

190. MONT. CODE ANN. § 44-6-104 (2023).

warrant even for direct searches of consumer database users, unless "the consumer whose information is sought previously waived the consumer's right to privacy."[191] If Idaho had such a statute during Christopher Tapp's post-conviction proceedings, he would likely remain in prison, as no probable cause would have existed at the time for the Idaho Falls Police to have assisted his family by searching for the DNA of the neighbor who was ultimately identified. In many cases, police could establish probable cause that the owner of the unidentified sample committed a crime (as, for example, when semen is found in the body of a rape victim). At other times, such as when there are large numbers of DNA samples found at a scene, this might be impossible. Furthermore, probable cause must exist for the specific area to be searched.[192] It would often be a preventative burden for police to have to establish probable cause that relatives of the perpetrator have created a searchable account with a particular ancestry site, which would be necessary to establish probable cause that the database contained evidence of a crime.

D. THE FOURTH AMENDMENT ARGUMENT AGAINST FAMILIAL DNA SEARCHES IS WEAK

Any attempt to evaluate the strength of the Fourth Amendment argument against law enforcement use of familial DNA is necessarily complicated by the current instability of Fourth Amendment doctrine generally. Nonetheless, this Section will show that, whichever Fourth Amendment theory one subscribes to, the argument is fairly weak.

With respect to DTC databases in which users have opted in to sharing with law enforcement, the relevant rule is that consensual searches do not require warrants or any degree of suspicion to be reasonable under the Fourth Amendment.[193] It is therefore clear that if Person A submits their DNA sample to MyFamilyTree, opts in to law enforcement searches, and is subsequently identified as a match to a crime scene sample, no constitutional issues arise. If the DNA of said Person A leads the investigators indirectly to their Grandpa B, however, Grandpa may argue—with Ram and other scholars—that his privacy rights were violated because *he* did not consent to the search that led to *his* DNA. One possible response is that, at a physical level, it was not Grandpa's genetic sample that was searched. In Fourth Amendment law generally, a defendant does not have standing to object to

191. *Id.*

192. *See* California v. Acevedo, 500 U.S. 565, 580 (1991).

193. *See generally* Amos v. United States, 255 U.S. 313 (1921); Schneckloth v. Bustamonte, 412 U.S. 218 (1973).

the violation of a third party's constitutional rights.[194] If only Person A was searched, Grandpa has no standing to object. This same argument would apply to familial searches of lawfully collected samples in police databases.

Critics argue, however, that the pervasiveness of technology should change existing Fourth Amendment principles and that there is functional identity between one person's DNA and their family member's, which should change our understanding of standing in these cases. As discussed above, Ram makes a good argument that genetic data obtained through familial searches meets the *Carpenter* factors insofar as it is intimate, comprehensive, and inexpensive, as well as involuntary from the perspective of the family member ultimately identified.[195] Yet there are some compelling counterarguments. As to the intimacy of the data, Jasper Monroe-Jones notes that—unlike location or cell phone data—DNA "cannot reveal anything about a person's *actual* actions, conduct, or character" but only, if anything, predisposition to various traits or diseases.[196] This point is even stronger when coupled with the fact that law enforcement officials who access consumer DNA sites only access the same identification information as other users, which does not include intimate information such as propensity for physical or psychological diseases.[197] While it would be theoretically possible for law enforcement to reconstruct such intimate information from the information they can obtain, states could pass laws specifically prohibiting this practice, which the U.S. Department of Justice's current Interim Policy on Forensic Genetic Genealogy already does.[198] In short, a DNA match in a DTC database only provides one significant piece of information: the fact that a person or their family member was present at the place from which a sample was recovered.

Furthermore, critics may overstate the "inexpensiveness" of familial DNA searches—while putting a DNA sample into a consumer database may be easy, the process of building out family trees based on genetic relationships requires an expert in genetic genealogy and may take months.[199] For now, at least, this process is not realistically comparable to looking at a map of cell tower pings. That said, due to the need for Fourth Amendment doctrine to be durable in the face of evolving technology, it should still be assumed that this technology may become less expensive in the future.

194. *See* Rakas v. Illinois, 439 U.S. 128, 133 (1978).
195. Ram, *supra* note 176, at 1386–90.
196. Ford-Monroe, *supra* note 86, at 1733.
197. *See* Guerrini et al., *supra* note 70, at 10.
198. *Id.*
199. *Id.* at 15.

With the specific *Carpenter* factors only partially apposite to the problem of familial DNA, it is worth recurring to the test *Carpenter* attempts to apply: reasonable expectation of privacy. While it seems clear that Grandpa B cannot consent to Person A's voluntary release of their genetic material to law enforcement, can it be said that he has a reasonable expectation of privacy in another person's body? No authority recognizes such an expectation, which would need to be strong enough to overcome standing principles.[200] It is a weak argument that, even if there is no reasonable expectation of privacy in personal genetic material left in another person's bathroom, there should be a reasonable expectation of privacy in another person's *own* genetic material that happens partially to match one's own. As critics of the *Katz* test's inherent circularity might note, with the increased public awareness of DNA science, such an expectation of privacy is even *less* reasonable than it might have been in, say, 1985.[201]

In addition, the preceding sections have made it clear that trespass-based theories of the Fourth Amendment provide even less traction for constitutional objections to familial DNA searches than does the *Katz* test. Clearly, a search of Person A's sample (or the data it generates) is not a search of Grandpa B's "person," and most existing authorities hold that neither party has a property interest in the genetic sequence itself. Indeed, *Greenberg v. Miami Children's Hospital* arose in Florida—one of only five states with statutes that recognize some form of property interest in genetic test results—and the court nonetheless held that the statute did not create a genetic property interest sufficient for establishing a conversion action.[202] That said, as Jessica Roberts notes, at least a couple of courts have very recently shown receptiveness to conversion claims based on privacy violations involving a plaintiff's *own* genetic material.[203]

At the end of the day, there are colorable arguments on both sides of the question. As Ram argues, there is a mismatch in consent between the DTC user and the familial relation ultimately identified. Yet that mismatch

200. *See* State v. Hartman, 534 P.3d 423, 427 (Wash. Ct. App. 2023) (holding that the defendant did not have standing to challenge police use of familial DNA because there was no privacy interest in commonly held DNA that a relative voluntarily uploaded to a private database); People v. Williams, 178 N.Y.S.3d 420, 422 (Sup. Ct. 2022) (denying a motion to suppress evidence from a familial DNA search of CODIS because the defendant did not "establish that *he* was the victim of an unlawful search"); *see also* Ford-Monroe, *supra* note 86, at 1734; Brown, *supra* note 172, at 29; Antony Barone Kolenc, *"23 and Plea": Limiting Police Use of Genealogy Sites After* Carpenter v. United States, 122 W. VA. L. REV. 53, 100–01 (2019).

201. *See* João Marinotti, *Escaping Circularity: The Fourth Amendment and Property Law*, 81 MD. L. REV. 641, 649–53 (2022).

202. Greenberg v. Mia. Child.'s Hosp. Rsch. Inst., Inc., 264 F. Supp. 2d 1064, 1075–76 (S.D. Fla. 2003).

203. Roberts, *supra* note 168, at 44–45.

complements another one: the mismatch in the sensitivity of the information consensually revealed about the initial user (including their immediately accessible name and contact information) and the information about the ultimately identified, distant relation (the match to a specific crime scene sample, established only after extensive analysis). Given the unique accuracy value of what such a search would reveal—near-certain presence at a crime scene—one could argue for a wholesale DNA carveout to the Fourth Amendment. In such cases, one might say that the crime-solving interests of law enforcement are particularly high relative to the interests of the suspect (privacy in the specific fact of having been at a crime scene). Entertaining such an argument, however, would require engaging in higher-level debates about the nature of the Fourth Amendment generally, which is beyond the scope of this paper.

The next Part will focus instead on one specific countervailing interest: the liberty interest of the falsely accused who could be exonerated through the availability of familial DNA searches to law enforcement. For constitutional purposes, the Due Process rights of this party must be weighed against the Fourth Amendment rights of a third party, and they must be weighed particularly heavily against any sub-constitutional privacy justifications for statutory restrictions on familial DNA searching.

III. THE DUE PROCESS RIGHTS OF THE INNOCENT SUSPECT

This Part will argue that a falsely accused suspect has a colorable due process right in the availability of familial DNA testing. If a legislature or court were to impose a ban or probable cause requirement that could effectively *preclude* law enforcement from using familial DNA to identify unknown third-party suspects, it would impinge on already narrow, yet still cognizable, due process rights designed to protect innocents. The same would be true of any statute preventing private parties, including defendants, from conducting such searches. These rights derive from three sources, which this section will consider in turn: the Compulsory Process Clause, the Due Process right to exculpatory evidence, and the Due Process right to post-conviction relief procedures.

A. THE COMPULSORY PROCESS CLAUSE

The Sixth Amendment guarantees a criminal defendant, among other trial rights, the right "to have compulsory process for obtaining witnesses in his favor."[204] Unlike other Sixth Amendment rights, the Compulsory Process

204. U.S. CONST. amend. VI.

Clause is undertheorized and often overlooked by litigators.[205] The case law on the Clause has been contradictory and confusing, alternating between the rule that it stands for the "accused's 'right to present a defense' " and the idea that it should be subordinate to statutory rules of evidence, such as the rules governing the admissibility of expert testimony, which apply to all litigants alike.[206] It is also limited by the limits of the judicial power itself, which does not extend to the "executive" functions of the police and the prosecution.[207]

The constitutional idea of compulsory process has its origins in the burgeoning trial rights Parliament enacted in the late seventeenth and early eighteenth centuries, specifically for defendants accused of treason.[208] Trial rights in the American colonies initially paralleled and eventually surpassed their British counterparts in scope.[209] Pennsylvania recognized the most expansive rights; its Charter of Privileges, authored by William Penn, provided that "all criminals shall have the same Privileges of Witnesses and Council as their Prosecutors."[210] At the time of the Founding, defendants' trial rights within an adversary system were seen as a means of offsetting the power of the government.[211] Importantly, trial rights also protect truth-generation, and historical commentators emphasize their function of ensuring that innocent defendants are not convicted.[212]

205. Janet C. Hoeffel, *The Sixth Amendment's Lost Clause: Unearthing Compulsory Process,* 2002 WIS. L. REV. 1275, 1276 (2002).

206. *Id.* (citing Washington v. Texas, 388 U.S. 14, 19 (1967)).

207. *See* discussion *infra* Part III.A.3.

208. Robert N. Clinton, *The Right to Present a Defense: An Emergent Constitutional Guarantee in Criminal Trials*, 9 IND. L. REV. 711, 720 (1976). These included the right to notice of charges, the right to counsel, the right to produce witnesses under oath, and the right to compel attendance of involuntary witnesses. *Id.* Eventually Parliament extended the right to have witnesses give sworn testimony to all felony defendants, but there remained a gap between the rights of treason defendants and those in other cases. Hoeffel, *supra* note 205, at 1281.

209. *See* Clinton, *supra* note 208, at 720.

210. Hoeffel, *supra* note 205, at 1281–82 (citing Pennsylvania Charter of Privileges § 5 (1701), *reprinted in* 1 BERNARD SCHWARTZ THE BILL OF RIGHTS: A DOCUMENTARY HISTORY 170–73 (1971)).

211. *Id.* at 1282.

212. *See* WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND: BOOK THE FOURTH 208 (1769) ("It is better that ten guilty persons escape than that one innocent suffer."); *see also* Akhil Reed Amar, *The Future of Constitutional Criminal Procedure*, 33 AM. CRIM. L. REV. 1123, 1132 (1996) ("Truth and accuracy are vital values. A procedural system that cannot sort the innocent from the guilty will confound any set of substantive laws, however just. . . . A Constitution proclaimed in the name of We the People should be rooted in enduring values that Americans can recognize as our values. Truth and the protection of innocence are such values."); Daniel Epps, *The Consequences of Error in Criminal Justice*, 128 HARV. L. REV. 1065, 1081–87 (2015) (surveying the impact of Blackstone's principle).

1. The Subpoena Power

At the time the Bill of Rights was drafted, nine state constitutions included some sort of right for criminal defendants to call witnesses but only two, Massachusetts and New Hampshire, included the subpoena power.[213] Nonetheless, Congress adopted Madison's draft language for the Sixth Amendment, including the subpoena power, with no discussion.[214] While the Supreme Court would not formally consider the scope of the Compulsory Process Clause until the twentieth century, Chief Justice John Marshall, sitting as trial judge in the 1807 treason trial of Aaron Burr, would have the occasion to demonstrate his own understanding.[215] Marshall approved a pre-indictment request for a subpoena of documents in the possession of President Thomas Jefferson without requiring the defense to pre-determine which ones might be material at trial.[216]

The access to subpoenas of third-party witnesses and documents formally granted to most criminal defendants by state and federal rules of criminal procedure is notably narrower than what Justice Marshall understood compulsory process to require.[217] To avail themselves of the court's subpoena power under Federal Rule of Criminal Procedure 17(c), a defendant must show that the evidence sought has "specificity," "relevancy," and "admissibility."[218] A minority of circuits have followed Justice Marshall and held that the admissibility test requires only that evidence be potentially admissible at trial under the rules of evidence.[219] A majority, however, have applied a strict admissibility test, which requires a defendant to establish that the items sought are actually admissible before a subpoena will be enforced.[220] Many states have similarly strict requirements.[221]

213. Stephen Saltzburg, *Compulsory Process Clause*, HERITAGE FOUND., https://www.heritage.org/constitution/#!/amendments/6/essays/157/compulsory-process-clause [https://perma.cc/RS4F-FBW7].

214. *Id.*

215. *Id.*

216. *Id.*

217. The Supreme Court has held that the Compulsory Process Clause provides fewer rights in discovery against the government than does the Due Process Clause under the *Brady* doctrine, discussed in the next Section. Pennsylvania v. Ritchie, 480 U.S. 39, 56 (1987). Thus, this Section focuses its analysis on subpoenas of third-party witnesses and evidence held by third parties.

218. United States v. Nixon, 418 U.S. 683, 700 (1974).

219. *See generally In re* Irving, 600 F.2d 1027 (2d Cir. 1979); United States v. Silverman, 745 F.2d 1386 (11th Cir. 1984).

220. *See* United States v. Rand, 835 F.3d 451, 463 (4th Cir. 2016); United States v. Hang, 75 F.3d 1275, 1283 (8th Cir. 1996). *See generally* Thor v. United States, 574 F.2d 215 (5th Cir. 1978); United States v. Arditti, 955 F.2d 331 (5th Cir. 1992); United States v. Cuthbertson, 651 F.2d 189 (3d Cir. 1981); United States v. Fields, 663 F.2d 880 (9th Cir. 1981).

221. *See, e.g.*, People v. Kozlowski, 898 N.E.2d 891, 902 (N.Y. 2008) (requiring "a good faith factual predicate sufficient . . . to draw an inference that specifically identified materials are reasonably likely to contain information that has the potential to be both relevant and exculpatory").

While proponents of the strict admissibility requirement often describe it as necessary to prevent a defendant from going on a "fishing expedition,"[222] critics point out that it foils the purpose of the Compulsory Process Clause.[223] The defendant may never have seen the evidence sought and therefore be unable to explain how it is admissible, and in many cases, inadmissible evidence may be necessary to obtaining other admissible, exculpatory evidence.[224] The rule in force in a given jurisdiction would therefore dictate whether, in a case where unidentified third-party DNA is recovered at a crime scene, the defendant could avail themself of the subpoena power to seek familial matches in a consumer database. In most cases, it would be impossible to tell in advance whether any matches would exist at all. If they did, they would be more likely to lead to relevant evidence after further testing, rather than be admissible in and of themselves. Regardless, even in a jurisdiction with a potential admissibility rule, statutes limiting familial DNA searches could fully thwart defendants' right to compulsory process for securing evidence. For example, Maryland's rule prohibits any "person" from conducting a familial search of the state DNA database, which would apply to defendants as well as state actors.[225]

2. The Right to Present a Defense and its State-Rule-Based Limitations

Another contested question regarding the Compulsory Process Clause is whether, beyond the right to subpoena witnesses, it gives defendants affirmative rights to put witnesses and evidence on the stand. If so, this would be a colorable basis for arguing that a defendant has a constitutional right to present familial DNA evidence—superior to any state-law prohibitions regulating DNA and at least equal to the Fourth Amendment rights of the identified parties. In 1967, the Supreme Court considered this question for the first time in *Washington v. Texas*, when it considered the constitutionality of two Texas statutes preventing a criminal defendant from offering the testimony of a person charged or convicted as a co-conspirator for the charged crime.[226] The Court first held that the compulsory process right is so fundamental to a fair trial that it is incorporated against the states by the Due Process Clause of the Fourteenth Amendment.[227] It then concluded that it includes the right to "present a defense" to the jury:

222. *See* Bowman Dairy Co. v. United States, 341 U.S. 214, 219–21 (1951).

223. Ken Miller, *Focusing on a Subpoenaed Item's Potential Evidentiary Use (As* Nixon *Intended) Will Permit Rule 17(c) Subpoenas to Promote Fair Trials*, FED. LAW., Jan./Feb. 2018, at 25, 27.

224. *Id.* at 25.

225. MD. CODE ANN., PUB. SAFETY § 2-506(d) (West 2024).

226. Washington v. Texas, 388 U.S. 14, 16 (1967).

227. *Id.* at 17–19.

> The right to offer the testimony of witnesses, and to compel their attendance, if necessary, is in plain terms the right to present a defense, the right to present the defendant's version of the facts as well as the prosecution's to the jury so it may decide where the truth lies. Just as an accused has the right to confront the prosecution's witnesses for the purpose of challenging their testimony, he has the right to present his own witnesses to establish a defense. This right is a fundamental element of due process of law.[228]

The *Washington* Court's test for whether a state evidentiary rule violates this right is whether it is "arbitrary," holding, in this case, that Texas "arbitrarily denied [the defendant] the right to put on the stand a witness who was physically and mentally capable of testifying to events that he had personally observed, and whose testimony would have been relevant and material to the defense."[229] In so doing, the Court noted that the Texas laws had deep common law roots in a rule that once totally barred defense witnesses, which was abolished by the Sixth Amendment but lived on in the form of various restrictions on the testimony of co-defendants.[230]

Washington would be the first of three cases in which the Supreme Court held that the Compulsory Process Clause gave the defendant a broad right to present evidence that is "relevant and material" to telling their side of the story, over state rules that are "arbitrary or disproportionate" to their purpose.[231] These cases explicitly emphasize the Compulsory Process Clause's purpose of assisting the jury in the search for truth.[232] As Janet

228. *Id.* at 19 (emphasis added).

229. *Id.* at 23.

230. *Id.* at 20–22.

231. Rock v. Arkansas, 483 U.S. 44, 55–56 (1987). The second Supreme Court case in this line came in 1986 with *Crane v. Kentucky*, which reversed a trial court's ruling that a defendant could not testify about alleged police coercion around his confession. Crane v. Kentucky, 476 U.S. 683, 691–92 (1986). The trial court had held that the issue of voluntariness had already been litigated during the defendant's failed motion to suppress the confession. *Id.* at 686. While explicitly withholding comment on the strengths or merits of the defendant's proffered testimony, the Court found that the defendant's constitutional right to test the prosecution's case at trial "would be an empty one if the State were permitted to exclude competent, reliable evidence bearing on the credibility of a confession when such evidence is central to the defendant's claim of innocence." *Id.* at 690. In holding that the testimony should have been admitted, the Court emphasized its "relevance" to the defense and the lack of a "rational justification" for its exclusion. *Id.* at 689, 691. Third, and finally, in *Rock v. Arkansas* the Court held that the Arkansas Supreme Court violated the defendant's compulsory process rights by ruling that hypnotically refreshed testimony was *per se* inadmissible. *Rock*, 483 U.S. at 62. It held that the court's *per se* ruling was "arbitrary" and "disproportionate" to the purposes it was designed to serve (in this case, ensuring the reliability of evidence). *Id.* at 55–56. The Court directed that "[i]n applying its evidentiary rules a State must evaluate whether the interests served by a rule justify the limitation imposed on the defendant's constitutional right to testify." *Id.* at 56.

232. *Rock*, 483 U.S. at 54 (quoting Rosen v. United States, 245 U.S. 467, 471 (1918)) (observing that the "truth is more likely to be arrived at by hearing the testimony of all persons of competent understanding who may seem to have knowledge of the facts involved in a case, leaving the credit and weight of such testimony to be determined by the jury or by the court"). In one of the most comprehensive

Hoeffel notes, *Washington* and its progeny appear to stand for the proposition that the accused's right to present a defense is a significant one.[233] When there is a clash between the defendant's right to compulsory process and some state evidentiary rule—even one, as in *Washington,* based in common law—and the opponent of the evidence can test its reliability through the adversarial process, these cases all hold that "the Constitution prefer[s] that the jury hear the evidence."[234]

In other cases, however, the Supreme Court appears to subordinate the defendant's right to put on a case to state laws—to "shrink," as Hoeffel puts it, "the right to little more than a right to put on evidence, as long as it comports with the rules of evidence."[235] For example, in *Chambers v. Mississippi*, the Court decided for the defendant, holding that the combination of Mississippi's hearsay rule excluding statements against penal interest and its so-called " 'voucher' rule," preventing a party from impeaching its own witness, violated Due Process.[236] In doing so, however, the Court did not ask the general question it asked in *Washington* and its progeny—whether the Mississippi rule was "arbitrary" or "disproportionate" to its stated goal of preventing perjured or unreliable testimony. Instead, it turned to the facts of the specific case and determined that the out-of-court statements at issue had "considerable assurance of their reliability."[237]

The Supreme Court further refined its compulsory process rule in cases unrelated to the reliability of evidence. *United States v. Valenzuela-Bernal* involved the pre-trial deportation of a possible defense witnesses—a context more analogous to statutory preclusion of defendants' access to familial DNA searches. The Court held that to establish a violation, a defendant "must at least make some plausible showing of how [the excluded] testimony would have been both material *and favorable* to his defense."[238] Then, in *Taylor v. Illinois*, the Court—while reemphasizing that the Sixth Amendment provides a defendant not only the right to subpoena witnesses but also the right to put them on the stand—rejected the defendant's argument that such a right to exculpatory evidence is absolute.[239] It held that the accused "does not have an unfettered right to offer testimony that is

modern treatments of compulsory process, Janet Hoeffel observes that the *Washington* Court effectively adopted an overbreadth test based on its reasoning that the Texas law "prevent[ed] whole categories of defense witnesses from testifying on the basis of *a priori* categories that presume them unworthy of belief." Hoeffel, *supra* note 205, at 1292 (quoting *Washington*, 388 U.S. at 22).

233. Hoeffel, *supra* note 205, at 1298.

234. *Id.*

235. *Id.*

236. Chambers v. Mississippi, 410 U.S. 284, 294, 298–302 (1973).

237. *Id.* at 300.

238. United States v. Valenzuela-Bernal, 458 U.S. 858, 867 (1982) (emphasis added).

239. Taylor v. Illinois, 484 U.S. 400, 406–11 (1988).

incompetent, privileged, or otherwise inadmissible under standard rules of evidence" and noted that "the trial process would be a shambles if either party had an absolute right to control the time and content of his witnesses' testimony."[240] On that basis, the Court held that the trial court did not violate the Compulsory Process Clause by excluding a defense witness when it found that the defendant had willfully failed to disclose the witness in an attempt to obtain a tactical advantage that would minimize the effectiveness of cross examination.[241]

In practice, the circuits have routinely engaged in fact-specific analysis to uphold trial courts' exclusion of defense evidence as not arbitrary or disproportionate, or on the grounds that the excluded evidence was not material or favorable.[242] Even under a narrow view of the rule, however, it seems a criminal defendant who can show the existence of material, favorable DNA evidence has a Compulsory Process right for the court to subpoena that evidence. In practice, this would require that the defendant receive a crime scene sample from the prosecution as *Brady* material and obtain a subpoena from the court to allow the defense to upload it to a consumer DNA database, regardless of the database's privacy policies.

In a case involving an unknown, third-party genetic sample found at a crime scene, the defendant has an argument that any potential matches to that profile are material in the sense that they would make the identity of a particular perpetrator other than the defendant more or less likely. The challenge, of course, would be in showing that *potential* DNA matches in a consumer database are likely to be *favorable* to a defendant. In most cases, this could not be known reliably ahead of time because the third-party sample could come from someone easily explained away as innocently present at the crime scene. Furthermore, it could not even be known ahead of time whether a consumer database would provide a familial match at all. Finally, even if a

240. *Id.* at 410–11.

241. *Id.* at 416–17; *see also* United States v. Scheffer, 523 U.S. 303, 316–17 (1998) (upholding the Military Rule of Evidence categorically banning exculpatory polygraph evidence against defendant's compulsory process claim because, unlike the hypnotized defendant in *Rock*, he would still be able to testify to "his version of the facts" in which the addition of the polygraph expert would only serve to bolster his credibility).

242. *See, e.g.*, United States v. Crater, 93 F.4th 581, 587–90 (1st Cir. 2024) (upholding the lower court's decision not to enforce defendant's subpoena of government witnesses because it was not material or favorable as at best it could be used only to impeach witnesses the government never called to testify); Cagle v. Branker, 520 F.3d 320, 325 (4th Cir. 2008) (upholding the exclusion of a defense witness' testimony on the grounds that the court had found him to be " 'an opportunistic liar' whom no reasonable jury would believe"); United States v. Corr, 543 F.2d 1042, 1052 (2d Cir. 1976) (noting that it was troubled by the trial court's exclusion of evidence related to valuation of losses in a mail fraud case as it was "relevant to [defendant's] good faith and tended to corroborate part of [defendant's] own testimony" yet finding no error due to "the discretionary nature of the exclusion" and the fact that "the jury had ample opportunity to consider and weigh the defense" through other evidence).

database did contain a familial match, the defense would need an expensive genetic expert to build out a profile of the actual perpetrator from the data of whichever family member had made their identity public. However, the fact that a right is difficult to realize in practice does not in and of itself allow the government to violate it.

3. Constitutional Limitations

Another obstacle for a defendant seeking to make a compulsory process argument for the right to subpoena familial DNA evidence comes from the constitutional separation of powers. The Compulsory Process Clause governs a defendant's rights at trial, not during the course of a police investigation. Courts have largely recognized the right to present a defense as implicating judicial, rather than executive, branch powers.[243] This distinction has extinguished compulsory process clause arguments in situations in which the law limits defendants' ability to conduct investigations for themselves.

For example, as Rebecca Wexler has noted, in cases involving extraterritorial investigations, courts have held against compulsory process challenges the asymmetries between law enforcement and defense investigators created by Mutual Legal Assistance Treaties ("MLATs").[244] An MLAT is a bilateral treaty that commits the signatory nations to reciprocal cooperation in criminal investigations, including waiver, where relevant, of privacy laws that would otherwise prevent the transfer of evidence across borders.[245] MLATs do not, however, provide for defense subpoenas of material protected by such privacy laws, which puts it out of the reach of compulsory process. As one federal court put it, "the right to compulsory process . . . cannot be stretched to include compelling the invocation of treaty process powers available only to the Executive Branch."[246]

Courts have applied similar logic in cases involving conflict between the asserted Sixth Amendment compulsory process rights of a defendant and a potential defense witness who asserts their Fifth Amendment privilege against self-incrimination. Trial courts are deemed to have a duty to protect the witness's Fifth Amendment right, and if a trial court sustains a witness's assertion of the privilege, the defendant lacks the right to force the witness

243. *See* Rebecca Wexler, *Life, Liberty, and Data Privacy: The Global CLOUD, the Criminally Accused, and Executive Versus Judicial Compulsory Process Powers*, 101 TEX. L. REV. 1341, 1383 (2023).

244. *Id.* at 1358.

245. *Id.*

246. United States v. Rosen, 240 F.R.D. 204, 215 (E.D. Va. 2007).

to take the stand only to assert the privilege.[247] If the witness has already testified for the prosecution and asserts the privilege on cross-examination, however, the trial court may strike the direct examination testimony if it finds a "substantial danger of prejudice by depriving [the defendant] of the ability to test the truth of the witness's direct testimony."[248] Otherwise, the case law establishes that in such situations of competing constitutional rights courts have no authority to either compel the government to grant immunity to a defense witness or to grant such immunity themselves.[249] This rule appears based on the idea that immunity is "pre-eminently a function of the Executive Branch."[250]

The MLAT and Fifth Amendment examples suggest that when a statute or competing constitutional right prevents a defendant from fully realizing their compulsory process right, compulsory process is subordinate, and courts even lack the authority to force the government to take "executive" measures to allow the defendant the same end-runs around such rules that the government is allowed to take for itself. The case law is more conflicted when the question presented is whether the Compulsory Process Clause requires a court to compel a witness to give testimony protected by attorney-client privilege. Such cases involve a clash between the constitutional right of the defendant and the statutory right of the witness. The most recent Supreme Court case to touch this question, *Swidler & Berlin v. United States*, left it unresolved.[251] In this case, the court held that attorney-client privilege survives a client's death, but left open the question of whether "exceptional circumstances implicating a criminal defendant's constitutional rights might warrant breaching the privilege."[252] Since then, a minority of courts have held that that a defendant's Sixth Amendment rights (confrontation as well as compulsory process) require the court to pierce attorney-client privilege when the witness's testimony is material.[253] Other courts categorically subordinate the compulsory process right to "traditional testimonial privileges," in a logic similar to that of the Supreme Court in *Chambers*.[254]

247. United States v. Lyons, 703 F.2d 815, 818 (5th Cir. 1983).

248. *Id.* at 819 (quoting United States v. Diecidue, 603 F.2d 535, 552 (5th Cir. 1979)).

249. *See* United States v. Simmons, 70 F.4th 1086, 1089 (8th Cir. 2023); United States v. Dolah, 245 F.3d 98, 105 (2d Cir. 2001).

250. *See* Wexler, *supra* note 243, at 1388 (quoting United States v. Turkish, 623 F.2d 769, 776 (2d Cir. 1980)).

251. Swidler & Berlin v. United States, 524 U.S. 399, 408 n.3 (1998).

252. *Id.*

253. *See* Murdoch v. Castro, 365 F.3d 699, 706 (9th Cir. 2004) ("[T]he attorney-client privilege 'must fall before the right of petitioner to seek out truth in the process of defending himself.' "); State v. Hoop, 731 N.E.2d 1177, 1187 (Ohio Ct. App. 1999).

254. United States v. Serrano, 406 F.3d 1208, 1215 (10th Cir. 2005); People v. Gonzalez, 465 N.Y.S.2d 471, 473–74 (Sup. Ct. 1983).

Still, other courts will engage in some sort of balancing to determine whether the compulsory process right pierces the privilege.[255]

The context of the Stored Communications Act ("SCA") ostensibly provides an example most relevant to the context of familial DNA. Courts have interpreted the SCA to categorically bar defense counsel from subpoenaing U.S. service providers for users' stored electronic communications regardless of how exculpatory the potential evidence might be, while expressly permitting law enforcement to subpoena such information.[256] The government's subpoena power under the SCA is now, as discussed above, limited by *Carpenter*, thus lessening the adversarial asymmetry between prosecution and defense. Even after *Carpenter*, however, some courts have suggested in dicta that a categorical bar on criminal defense subpoenas for electronic communications under the statute might impinge on a defendant's right to compulsory process under certain circumstances, though none have reached the issue.[257] A similar argument would seem to apply to a defendant being statutorily barred from subpoenaing relevant familial DNA evidence from a consumer site.[258]

4. Conclusions on Familial DNA and Compulsory Process

In a case like Christopher Tapp's, an innocent defendant would benefit from the ability to run an unidentified third-party DNA sample through a database to seek matches—direct or familial—that suggest other suspects.[259] To the extent that the companies' own privacy policies barred individuals from uploading DNA other than their own, this would likely require a court-issued subpoena to effectuate. In jurisdictions following the "strict admissibility rule," the defendant would likely be unable to meet the admissibility requirement because it would be impossible to prove ahead of time that such a database would in fact contain matches relevant to the case.

255. *See, e.g.*, United States *ex rel.* Blackwell v. Franzen, 688 F.2d 496, 501 (7th Cir. 1982) (examining the record to determine "whether the probative value of the alleged privileged communication was such that the defendant's right to effective cross-examination was substantially diminished"); Neku v. United States, 620 A.2d 259, 263 (D.C. 1993) (balancing the privileged testimony's "probative value" against the interests the privilege serves and piercing where the probative value is "clear and substantial").

256. Wexler, *supra* note 243, at 1373.

257. *See* Facebook, Inc. v. Wint, 199 A.3d 625, 633–34 (D.C. 2019); Facebook, Inc. v. Superior Ct., 471 P.3d 383, 402 (Cal. 2020).

258. In a similar vein, Jacob McCarty has argued that the Compulsory Process Clause should be held to guarantee defendants access to material video evidence during the "acceptance period" prior to trial. He points to the unique salience of video technology and its heightened likelihood of destruction through routine video retention policies prior to trial. Jacob W. McCarty, *Processing Speed: Expanding the Sixth Amendment Right to Compulsory Process in the Age of Big Data*, 95 TUL. L. REV. 183, 190–91 (2020).

259. The availability of such a sample from investigators in the first place raises separate issues under *Brady* doctrine, discussed in the next Section, *infra*.

In jurisdictions following the "potential admissibility rule," they would likely fare better. Either way, a rule like Maryland's—which prohibits even defendants from conducting familial DNA searches, at least in police databases—wholly extinguishes the right to compulsory process for this type of evidence.

Privacy law scholars have called for an equivalent to the SCA to protect consumers' genetic information,[260] yet courts have noted in the SCA context that the total unavailability of a category of evidence due to lack of subpoena power raises Compulsory Process issues. Critics note that the current admissibility requirement in the subpoena rules of most jurisdictions raises a similar problem, broadly speaking.[261] Should states pass consumer DNA statutes that wholly bar access to such evidence by defendants, these issues would be compounded, and the Sixth Amendment impairment would be even greater. A defendant has a colorable argument that such a statute would be "arbitrary or disproportionate," under *Washington*, to its privacy goal.

B. THE DUE PROCESS RIGHT TO EXCULPATORY EVIDENCE

The Sixth Amendment right to obtain judicial assistance in securing evidence from third parties is, as we have seen, severely limited. However, the Supreme Court has also recognized a Fourteenth Amendment due process right to the government's exculpatory investigative materials that is distinct from—and broader than—the compulsory process right.[262] *Brady v. Maryland* held that due process requires that a prosecutor turn over to the defendant all material, exculpatory evidence in their possession.[263] It further held that failure to do so violates due process even when the prosecutor is not acting in bad faith.[264] Subsequent cases confirmed that evidence tending to impeach prosecution witnesses constitutes material, exculpatory evidence for *Brady* purposes.[265] Regardless of whether the defense requests the evidence, favorable evidence is material "only if there is a reasonable probability that, had the evidence been disclosed to the defense, the result of the proceeding would have been different."[266] Restated, the test is whether

260. *See* Natalie Ram, Christi J. Guerrini & Amy L. McGuire, *Genealogy Databases and the Future of Criminal Investigation: The Police Can Access Your Online Family Tree Research—and Use It to Investigate Your Relatives*, 360 SCIENCE 1078, 1079 (2018).

261. *See, e.g.*, Miller, *supra* note 223, at 26.

262. *See* Pennsylvania v. Ritchie, 480 U.S. 39, 56 (1987).

263. Brady v. Maryland, 373 U.S. 83, 87 (1963). *United States v. Agurs* clarified that this duty exists even without a request from defense counsel where suppression of the evidence would be "of sufficient significance to result in the denial of the defendant's right to a fair trial." United States v. Agurs, 427 U.S. 97, 107–08 (1976).

264. *Brady*, 373 U.S. at 87.

265. Giglio v. United States, 405 U.S. 150, 154 (1972).

266. United States v. Bagley, 473 U.S. 667, 682 (1985).

"the favorable evidence could reasonably be taken to put the whole case in such a different light as to undermine confidence in the verdict."[267] However, evidence is not considered " 'suppressed' by the government when the defendant has access to the evidence before trial by the exercise of reasonable diligence."[268]

1. *Brady* and DNA

The Supreme Court has emphasized that the prosecutor has a duty to learn of any favorable evidence known to "the others acting on the government's behalf," such as the police.[269] It is currently uncertain to what extent a defendant has a *Brady* right to evidence of a third-party's DNA from a CODIS search conducted on DNA found at a crime scene.[270] The sparse case law dealing with such claims has rejected specific arguments on their own facts, finding that the prosecution's failure to disclose CODIS hits under the circumstances could not be "taken to put the whole case in such a different light as to undermine confidence in the verdict."[271] Nonetheless, the reasoning in those cases indicates that if the defendant *can* show materiality, CODIS hits are subject to disclosure under *Brady*.

267. Kyles v. Whitley, 514 U.S. 419, 435 (1995).
268. United States v. White, 970 F.2d 328, 337 (7th Cir. 1992).
269. *Kyles*, 514 U.S. at 437.
270. Garrett, *supra* note 59, at 1659–60.
271. *Kyles*, 514 U.S. at 435; *see, e.g.*, State v. Rosa, 230 A.3d 677, 692–93 (Conn. App. Ct. 2020) (holding that evidence of third-party DNA collected from a sweatshirt near the crime scene was not material because there was no evidence to indicate how long the sweatshirt had been there or that it was even present when police first responded to the crime scene); Dorsey v. Steele, No. 15-08000-CV, 2019 U.S. Dist. LEXIS 166667, at *31–32 (W.D. Mo. Sept. 7, 2019) (rejecting as immaterial the defendant's *Brady* claim based on an undisclosed CODIS hit to a third-party in addition to the hit to the defendant, because (1) the jury was told that 2.3 out of every 1,000 males would not be ruled out by the test, (2) that indeed there had been a hit in this case to yet another third-party they did hear about, and (3) because the evidence connecting other CODIS hits to the crime was weak in comparison to the extensive evidence against the defendant); State v. Knight, 245 N.E.3d 859, 879–80 (Ohio Ct. App. 2024) (holding that *Brady* was not violated because the prosecution eventually provided defense counsel with evidence of a third-party CODIS hit before trial, but that the trial court erred by granting the defendant only a continuance of the trial due to the lengthy delay in disclosure); People v. Jackson, No. B210542, 2010 Cal. App. Unpub. LEXIS 4855, at *8 (June 28, 2010) (finding no *Brady* violation where the withheld CODIS hit was inculpatory rather than exculpatory); Jones v. Comm'r of Corr., 274 A.3d 237, 256 (Conn. App. Ct. 2022) (finding no *Brady* violation because the third-party CODIS hit was not material as (1) the blood evidence was not at the crime scene but was in the victim's locked car some distance from the crime scene, (2) the blood was dry, (3) the victim only recently had purchased the car, and (4) the petitioner did not present testimony or evidence linking a third party to the crime); State v. James, No. A-19-797521-W, 10C265506, 2020 Nev. Dist. LEXIS 165, at *22 (Feb. 21, 2020) (finding no *Brady* violation where there was sufficient independent evidence that the defendant sexually assaulted the victim); State v. Estes, No. CA2013-12-126, 2014 Ohio App. LEXIS 3230, at *P27–28 (July 28, 2014) (finding no *Brady* violation where the state did not disclose the identity of a third party whose DNA was found on heroin paraphernalia because the jury was told the defendant's DNA was not found on it and the jury nonetheless found him guilty, believing that more than one person could have shared a straw).

Brady and its progeny apply to exculpatory evidence that remains in the government's possession, but a separate line of cases governs situations in which the government no longer possesses the evidence in question.[272] In *California v. Trombetta*, the Court held that a defendant complaining of a state's failure to preserve evidence must show, first, that the evidence "possess[es] an exculpatory value that was apparent before the evidence was destroyed" and, second, "[is] of such a nature that the defendant would be unable to obtain comparable evidence by other reasonably available means."[273] Subsequently, the Court added a third element to this test in *Arizona v. Youngblood*, holding that "unless a criminal defendant can show bad faith on the part of the police, failure to preserve potentially useful evidence does not constitute a denial of due process."[274] Numerous states have since adopted statutes requiring law enforcement to preserve DNA evidence.[275] The government's failure to preserve evidence when there is a duty to do so gives rise to a due process violation under some *state* constitutions if the evidence is material.[276]

Youngblood also said in *dicta* that there is no due process right to the government using any "particular investigatory tool," including quantitative testing, to secure exculpatory evidence.[277] This makes it unclear whether a defendant has a *Brady* right to require police to upload unidentified third-party samples into CODIS to search for exculpatory hits. The argument is that, due to the cooperation between local prosecuting authorities and the federal government, which runs CODIS, any data in the database could qualify as evidence "known to" others acting on "the government's behalf."[278] Some courts have adopted this reasoning despite *Youngblood*.[279] Others have rejected such claims but only because of a defendant's failure to

272. United States v. Femia, 9 F.3d 990, 993 (1st Cir. 1993).

273. California v. Trombetta, 467 U.S. 479, 488–89 (1984).

274. Arizona v. Youngblood, 488 U.S. 51, 58 (1988).

275. *See* Garrett, *supra* note 59, at 1669.

276. *See generally* State v. Ferguson, 2 S.W.3d 912 (Tenn. 1999); *Ex parte* Gingo, 605 So. 2d 1237 (Ala. 1992); Thorne v. Dep't of Pub. Safety, 774 P.2d 1326 (Alaska 1989); State v. Matafeo, 787 P.2d 671 (Haw. 1990); Commonwealth v. Henderson, 582 N.E.2d 496 (Mass. 1991); State v. Osakalumi, 461 S.E.2d 504 (W. Va. 1995).

277. *Youngblood*, 488 U.S. at 58–59.

278. *See* NAT'L INST. OF JUST., DNA FOR THE DEFENSE BAR 31 (2012), https://www.ojp.gov/pdffiles1/nij/237975.pdf [https://perma.cc/KQJ8-8DGV].

279. *See, e.g.*, Commonwealth v. Brison, 618 A.2d 420, 424–25 (Pa. Super. Ct. 1992) (acknowledging but not following the *Youngblood* dicta); State v. Schwartz, 447 N.W.2d 422, 427 (Minn. 1989); State v. Hammond, 604 A.2d 793, 806–08 (Conn. 1992) (indicating that state's failure to have DNA tests performed on the vaginal swabs taken from the victim where DNA tests previously performed on the victim's clothing exculpated the defendant may have constituted a breach of duty to disclose exculpatory evidence which could have affected the case's outcome); State v. Thomas, 586 A.2d 250, 253 (N.J. Super. Ct. App. Div. 1991) (suggesting that the state's failure to submit material for DNA analysis may trigger its obligation to reveal exculpatory evidence, as set forth in *Brady*).

show that the testing would have been favorable to the defendant.[280] Yet others have construed *Youngblood* to mean that *Brady* does not include the right to CODIS searches.[281] Regardless, some states have allowed these defense-initiated searches through statute,[282] and individual laboratories have varying policies, some of which provide for running searches for the defense.[283]

In *District Attorney's Office v. Osborne*, the Supreme Court made clear that there is no *substantive* due process right for criminal defendants to access DNA testing.[284] In *Osborne*, the defendant was convicted of kidnapping and sexual assault even though restriction-fragment-length-polymorphism DNA testing had not been performed on semen found in a condom at the scene of the crime.[285] In a 1983 action, Osborne argued that he had a substantive due process right to the state's evidence for the purposes of applying new DNA testing technology that might prove him innocent.[286] The Court rejected that claim on the grounds that "[e]stablishing a freestanding right to access DNA evidence for testing would force us to act as policymakers, and our substantive due process rulemaking authority would not only have to cover the right of access but a myriad of other issues."[287]

A defendant objecting to the suppression of DNA evidence during the discovery process, thus, only has a few clear constitutional arguments. A

280. *See* Mitchell v. Artus, No. 07 Civ. 4688, 2008 U.S. Dist. LEXIS 42604, at *123–24 (S.D.N.Y. June 8, 2008) (rejecting an ineffective assistance claim where the petitioner failed to establish the first *Brady* prong by not demonstrating that the DNA testing on a bloody wooden door saddle would have been "favorable" to him); Leake v. Senkowski, No. 01 Civ. 7559, 2004 U.S. Dist. LEXIS 11939, at *74–75 (S.D.N.Y. June 30, 2004) (holding that the police's failure to collect and test blood samples from bloody stains on the sidewalk and test a bloody sweatshirt did not constitute a *Brady* violation because the petitioner failed to "demonstrate either that the blood evidence, if preserved and tested, would have been 'favorable to' him or that prejudice resulted from the failure to preserve and test it").

281. *See, e.g.*, Batchilly v. Nance, No. 08 Civ. 7150, 2010 U.S. Dist. LEXIS 33031, at *116–17 (S.D.N.Y. Apr. 2, 2010) (holding that failure to test the DNA found on a bitemark was not a *Brady* violation both because the defendant could not demonstrate that the outcome would have been favorable to him, *and* because, per *Youngblood,* the government's failure to run a DNA test does not constitute a *Brady* violation absent bad faith); Derr v. State, 73 A.3d 254, 274–75 (Md. 2013).

282. 725 ILL. COMP. STAT. § 5/116-5 (2005) (allowing defense searches by court order); GA. CODE ANN. § 24-4-63 (West 2010) (providing defense access where "access to the DNA data bank is material to the investigation, preparation, or presentation of a defense at trial or in a motion for a new trial"). Other states permit database access without specifically identifying criminal defendants as those with rights to request such searches. HAW. REV. STAT. ANN. § 844D-82 (West 2024); N.C. GEN. STAT. ANN. § 15A-266.8 (West 2019); CAL. PENAL CODE § 299.5(g)–(h) (West 2011); N.J. STAT. ANN. § 53:1-20.21 (West 2003).

283. NAT'L INST. OF JUST., *supra* note 278, at 148.

284. Dist. Att'y's Off. v. Osborne*,* 557 U.S. 52, 72 (2009).

285. *Id.* at 57–58. A much less precise form of DNA testing was performed, which ruled out over 80% of other members of Osborne's race. *Id.*

286. *Id.* at 72.

287. *Id.* at 73–74

defendant might be able to argue that a CODIS hit on a third party from samples taken at the crime scene was material and exculpatory under *Brady* if they can pass the rather high bar of showing a reasonable probability that the outcome would have been different had it been disclosed. Christopher Tapp, whose own DNA was not found at the crime scene despite the presence of semen from other unknown sources, might have had such an argument if the other sources had been identified but undisclosed. A more challenging case arises when the government conceals the existence of testable samples of biological material that it had not itself tested. *Osborne* dealt only with the post-conviction context, and thus did not foreclose a procedural due process argument, under *Brady,* that a defendant has a right to know about untested samples. It would simply be extraordinarily difficult for a defendant to demonstrate the materiality of as-of-yet untested biological samples. Furthermore, *Youngblood* implies that the argument that *Brady* compels the state to affirmatively test unidentified third-party samples itself may be quite weak, despite some case law to the contrary.

2. Conclusions on *Brady* and Familial DNA

Brady applies only to evidence known to the government, which would seem to render it irrelevant to un-searched consumer DNA databases. Even the strongest view of *Brady* emerging from the case law only requires the government to run searches within CODIS, which includes government-controlled databases. As a practical matter, however, the very existence of *Brady* doctrine renders consumer databases a powerful and promising new source of exculpatory evidence for criminal defendants. *Brady* requires that law enforcement turn over evidence of potentially culpable third parties generated by the familial DNA searches they conduct. Thus, preventing law enforcement from accessing consumer databases without probable cause effectively deprives innocent defendants of critical exculpatory evidence.

The reality is that police and prosecutors have independent motivations to bring the correct guilty party to justice. Some prosecutors even pursue this duty post-conviction, as evidenced by the rise of Conviction Integrity Units and examples of cooperation between the government and the defense that have led to DNA exonerations as technology has improved.[288] Given the obstacles discussed in the prior Section that prevent defendants from subpoenaing familial matches from consumer databases, law enforcement access may be the only meaningful way for the defense ever to obtain it. This is particularly true given the exceedingly high costs of using a familial DNA hit to build out a family tree and identify the actual party who left the sample

288. *See* Bruce A. Green, *Should Prosecutors Be Expected to Rectify Wrongful Convictions?*, 10 TEX. A&M L. REV. 167, 178 (2023).

at the crime scene. Even if a defendant obtained an unnamed third-party sample from the government through a conventional *Brady* disclosure and also obtained a court order to input the sample into a consumer database, most defense teams would lack the resources to hire the forensic experts necessary to do anything useful with the results.

This reality also sits in significant tension with the holding of another watershed Due Process case, *Ake v. Oklahoma.*[289] In *Ake*, the Supreme Court held that the Fourteenth Amendment requires that indigent defendants raising the insanity defense be provided with state-funded psychiatric experts to examine them and testify on their behalf.[290] The *Ake* Court balanced several factors: the private interest affected by the state action, the governmental interest affected if the safeguard were provided and the probable value of the procedural safeguards sought, and the risk of an erroneous deprivation of the affected interest if they were not provided.[291] On the third point, the Court found that in the absence of a qualified psychiatric expert, "the risk of an inaccurate resolution of sanity issues is extremely high."[292] Despite similar accuracy concerns raised by DNA evidence, there is no parallel right to a state-funded forensic expert.[293] This means that even when the government hands over testable biological material to the defense, an indigent defendant's counsel may still lack the means to have it tested.[294]

All considered, as a formal matter, a law or constitutional holding severely restricting law enforcement access to familial DNA searching would most likely not violate *Brady* as courts have construed it. Yet, by effectively blocking the defense's access to potentially valuable exculpatory evidence and to the state's resources for testing it, such laws would indirectly burden the due process values implicated by both *Brady* and *Ake*. In trying to protect the privacy interests of guilty parties, such a rule would inadvertently impact the liberty interests of innocent ones.

289. Ake v. Oklahoma, 470 U.S. 68 (1985).
290. *Id.* at 86–87.
291. *Id.* at 77.
292. *Id.* at 82.
293. Garrett, *supra* note 59, at 1665.
294. *Id.*

C. DUE PROCESS RIGHTS TO POST-CONVICTION PROCEEDINGS UNDER STATE DNA AND INNOCENCE STATUTES

1. The Lack of Constitutional Innocence Claim

The third potential source of due process rights related to familial DNA involves post-conviction appeals on the grounds of innocence. This landscape is governed substantively by the Supreme Court's 1993 decision in *Herrera v. Collins*, which narrowly held that a convicted petitioner's claim of actual innocence does not state a ground for federal habeas relief, absent some independent constitutional violation during the state proceeding.[295] In dicta, the Court left open the possibility that "in a capital case a truly persuasive demonstration of 'actual innocence' made after trial would render the execution of a defendant unconstitutional, and warrant federal habeas relief if there were no state avenue open to process such a claim."[296] The Court emphasized that "the threshold showing for such an assumed right would necessarily be extraordinarily high."[297] A few years later in *Schlup v. Delo*, the Court reaffirmed that no constitutional claim of innocence exists, but it also held that a showing of actual innocence may allow a habeas petitioner to avoid the procedural bar on other, defaulted constitutional claims.[298]

The Court finally addressed the issue of DNA in post-conviction appeals in the 2006 case *House v. Bell*.[299] Paul House was convicted and sentenced to death in Tennessee for the 1985 murder of his neighbor, with the jury finding as an aggravating factor during the death phase that the murder was committed in the course of a rape or a kidnapping.[300] At trial, the prosecution introduced primitive forensic evidence showing that the semen on the victim's nightgown was consistent with House's and that the blood on House's pants was consistent with the victim's, but not his own.[301] The forensic expert testified that the blood sample on the pants excluded 93% of the white population.[302] One of the government's expert witnesses acknowledged that the state did not provide saliva samples from the victim's husband, which would have helped to determine his secretor status and, thus,

295. Herrera v. Collins, 506 U.S. 390, 400 (1993).

296. *Id.* at 417; *see also In re* Davis, 557 U.S. 952, 952 (2009) (transferring an original writ of habeas corpus in a capital case to the federal district court for an evidentiary hearing to determine whether evidence that was unavailable at the time of trial clearly establishes petitioner's innocence).

297. *Herrera*, 506 U.S. at 417.

298. Schlup v. Delo, 513 U.S. 298, 313–17 (1995).

299. House v. Bell, 547 U.S. 518 (2006).

300. *Id.* at 532–33.

301. *Id.* at 528–29.

302. *Id.* at 531.

whether he too could have been a potential source of the collected semen.[303]

After his conviction, House filed a state habeas petition based on ineffective assistance and faulty jury instructions.[304] When the trial court dismissed the petition, House appealed, but only on the jury-instructions ground.[305] After House's conviction was affirmed, he filed a second state habeas claim for ineffective assistance and sought investigative and expert assistance.[306] The Tennessee Supreme Court held that these claims were barred by a statute providing that claims not raised in prior post-conviction proceedings are procedurally defaulted.[307] On federal habeas, the Eastern District of Tennessee held an evidentiary hearing to determine whether House fell within the "actual innocence" exception to the procedural default rule recognized in *Schlup*. Holding that he had failed to demonstrate actual innocence, the Court denied relief, and a divided Sixth Circuit ultimately affirmed.

The Supreme Court granted certiorari to determine, as required by *Schlup*, whether, in light of new evidence, "it is more likely than not that no reasonable juror would have found petitioner guilty beyond a reasonable doubt" in cases where a prisoner asserts innocence to avoid a procedural default.[308] The Court reviewed the new evidence, which reflected the dramatic evolution in DNA technology between 1985 and 2006. First, it noted that DNA testing established that the semen on the victim's nightgown and panties came from her husband and not House.[309] It noted that this would remove sexual assault as a potential motive for the crime and cast doubt on the jury's finding of rape as an aggravating factor for sentencing.[310] Second, it considered the testimony of an Assistant Chief Medical Examiner for the State of Tennessee that indicated that the blood found on House's pants was chemically too degraded and too similar to blood collected during the autopsy to have come from the victim's body on the night of the crime.[311] He concluded that the stains were more likely to have been spilled from vials containing autopsy samples.[312] On the basis of all of this evidence, the Court concluded that "although the issue is close [due to other, non-forensic evidence] . . . this is the rare case where—had the jury heard all the

303. *Id.* at 529.
304. *Id.* at 533.
305. *Id.* at 533–34.
306. *Id.* at 534.
307. *Id.*
308. *Id.* at 536–37 (citing Schlup v. Delo, 513 U.S. 298, 327 (1995)).
309. *House*, 547 U.S. at 540.
310. *Id.* at 540–41.
311. *Id.* at 542.
312. *Id.* at 542–43.

conflicting testimony—it is more likely than not that no reasonable juror viewing the record as a whole would lack reasonable doubt."[313] The Court then remanded for consideration of the merits of House's ineffective assistance claims.[314] While the prosecutor initially vowed to retry House if he successfully overturned his conviction, the prosecutor later dropped the charges after subsequent developments in DNA technology revealed an unknown perpetrator.[315] House had spent over twenty-two years on death row.[316]

While *House* presents a rare case in which evidence of actual innocence had constitutional relevance in a federal habeas appeal, it is important to note how narrow a gateway the case represents. House's substantive appeal was premised not on innocence but on ineffective assistance under the Sixth Amendment—a distinct constitutional error as required by *Herrera*. As in many similar cases, House was attempting to argue that his counsel had been ineffective in failing to discover and present exculpatory evidence at trial.[317] Under *Strickland v. Washington*, a petitioner can make out an ineffective assistance claim if they can show a reasonable probability that counsel's poor performance prejudiced the outcome.[318] However, the *Strickland* test is explicitly deferential to the judgment of counsel, and courts will evaluate the reasonableness of attorney decisions *ex ante*, from the perspective of counsel at the time the decisions were made.[319] It is often the case that—particularly given evolving technology—the absence of exculpatory DNA evidence at trial cannot be attributed to counsel's ineffective assistance. In such cases, given *Herrera*, a petitioner has no constitutional grounds for an appeal.

2. State Post-Conviction Statutes

As discussed in Part I, in response to political demand and the lack of existing remedies, all U.S. states and the federal government have now enacted statutes providing some sort of right to post-conviction DNA testing and for vacatur of sentence on demonstration of innocence.[320] Rules of finality have likewise been displaced by statute in order to permit motions based on new evidence of innocence.[321] As Brandon Garrett shows in a

313. *Id.* at 554.
314. *Id.* at 555.
315. David G. Savage, *DNA Evidence Means Freedom After 2 Decades*, L.A. TIMES (May 13, 2009, 12:00 AM), https://www.latimes.com/archives/la-xpm-2009-may-13-na-court-dna13-story.html [https://perma.cc/HA6V-QVXG].
316. *Id.*
317. *House*, 547 U.S. at 533.
318. Strickland v. Washington, 466 U.S. 668, 687 (1984).
319. *Id.* at 689.
320. *See* Garrett, *supra* note 59, at 1673–75.
321. *Id.*

taxonomic study of such statutes, however, most statutes create various procedural hurdles that a petitioner must surmount before obtaining testing.[322]

Some states focus on the outcome and require a showing that the DNA evidence is at least probative of innocence or, more strenuously, "material," meaning that "a reasonable probability exists that the petitioner would not have been convicted if exculpatory results had been obtained through DNA testing."[323] Garrett notes that such tests would not be insurmountable if interpreted "to simply require that the DNA testing could be probative of innocence" but points out that some courts will "construct flimsy hypothetical scenarios and then hold that, if there exists even a possibility that DNA testing might not exculpate, it should not be granted."[324]

Some states limit post-conviction innocence relief to DNA testing alone, precluding other sorts of scientific evidence of innocence, and others limit the relief only to technology unavailable at trial.[325] A majority of states limit DNA testing to cases involving serious or violent crimes.[326] Many states require that the petitioner be in custody to seek relief.[327] Some exclude those defendants who pled guilty, and some specify that identity must have been at issue in the underlying trial (which, as Garrett notes, precludes relief in cases of guilty pleas).[328] Four states hold that attorney error or failure to exercise due diligence at trial to preclude post-conviction DNA testing (though such defendants might be eligible for a new trial on a *Strickland* claim).[329]

The accessibility of relief under these state statutes raises distinct constitutional due process issues. In *District Attorney's Office v. Osborne,* the Supreme Court recognized that a convicted individual has "a liberty interest in demonstrating [their] innocence with new evidence under state law."[330] The Court affirmed that a state-created right "can, in some circumstances, beget yet other rights to procedures essential to the realization of the parent right."[331] The Sixth Circuit had held below that Alaska had violated Osborne's due process rights under *Brady* by failing to provide the defendant access to the DNA evidence used at trial, because the Alaska

322. *Id.* at 1675.
323. *Id.* at 1676 (quoting ARIZ. REV. STAT. ANN. § 13-4240 (2001 & Supp. 2007)).
324. Garrett, *supra* note 59, at 1677.
325. *Id.* at 1679.
326. *Id.* at 1680.
327. *Id.*
328. *Id.* at 1681.
329. *Id.* at 1682.
330. Dist. Att'y's Off. v. Osborne*,* 557 U.S. 52, 68 (2009).
331. *Id.* (quoting Conn. Bd. of Pardons v. Dumschat, 452 U.S. 458, 463 (1981)).

statute provides a substantive right to be released on a sufficiently compelling showing of new evidence that establishes innocence.[332] The Supreme Court, however, held that *Brady* did not apply post-conviction and that a state "has more flexibility in deciding what procedures are needed in the context of post-conviction relief."[333] The appropriate test, the Court said, is whether Alaska's post-conviction relief procedures "are fundamentally inadequate to vindicate the substantive rights provided" (in this case, the liberty interest in being released under Alaska's innocence statute).[334]

The *Osborne* Court examined Alaska's post-conviction procedures, which provide for discovery in post-conviction proceedings and specified that such discovery is available for those seeking access to DNA evidence.[335] The Alaska post-conviction statute limits discovery to "newly available" evidence and imposes due diligence and materiality limitations.[336] Furthermore, the Court found that Alaska courts had suggested in dicta that in DNA cases, the state constitution may even provide an additional right of access to those who cannot meet the usual post-conviction discovery requirements, though the issue remains unsettled. The Court held that these procedures, which Osborne had not yet exhausted, were "adequate on their face" to the realization of his liberty interest under the post-conviction DNA statute.[337]

Federal courts of appeals have been relying on *Osborne* to find state post-convictions procedures fundamentally adequate and, thus, reject Section 1983 claims based on refusal of post-conviction DNA testing.[338] However, the Second Circuit came to the opposite conclusion about the New York City Police Department's evidence management system in *Newton v. City of New York.*[339] In 1985, Alan Newton was convicted of rape, robbery, and assault based on eyewitness testimony.[340] The rape kit was not tested at trial, but in 1988, Newton moved for an order authorizing his expert to

332. *Id.*
333. *Id.* at 69.
334. *Id.*
335. *Id.* at 70.
336. *Id.*
337. *Id.* at 71.
338. *See, e.g.,* McKithen v. Brown, 626 F.3d 143, 153 (2d Cir. 2010) (holding New York's post-conviction DNA procedures were fundamentally adequate where they required only a showing that had the DNA test been performed at trial, "there exists a reasonable probability that the verdict would have been more favorable to the [petitioner]," an easier standard than that in the Alaska law approved by *Osborne*); Young v. Phila. Dist. Att'y's Off., 341 Fed. Appx. 843, 844 (3d Cir. 2009) (per curium) (holding that there was no due process violation when the state denied DNA testing on the grounds that the defendant could not meet the "assert[ion] of actual innocence" requirement of the Pennsylvania DNA statute after having confessed).
339. Newton v. City of New York, 779 F.3d 140, 156 (2d Cir. 2015)
340. *Id.* at 142–43.

conduct forensic tests on the rape kit pursuant to New York's post-conviction relief statute. The statute authorizes vacatur based on the discovery of new evidence that "could not have been produced by the defendant at the trial even with due diligence on his part and which is of such character as to create a probability that had such evidence been received at the trial the verdict would have been more favorable to the defendant."[341] The New York Supreme Court granted the motion, but the officer of the Chief Medical Examiner Office reported that the rape kit contained no testable sperm.[342]

In 1994, New York passed a post-conviction DNA statute that allows for testing upon the court's determination that "if a DNA test had been conducted on such evidence, and if the results had been admitted in the trial . . . there exists a reasonable probability that the verdict would have been more favorable to the defendant."[343] When Newton made a motion for testing under this statute on the grounds that technological advances since 1988 had rendered smaller samples testable, the court denied his motion after the District Attorney's Office revealed that it had lost the rape kit entirely after the 1988 analysis.[344] Ten years later, upon request from defense counsel, an Assistant District Attorney who had not been involved in Newton's case searched for the rape kit again and found it in a barrel in an NYPD Property Clerk's warehouse in Queens.[345] After Newton had served more than twenty years in prison, new DNA testing of the rape kit exonerated him.[346]

In reviewing the district court's decision to set aside the jury verdict for Newton in a subsequent Section 1983 case, the Second Circuit applied *Osborne* to the facts of the case. It held that, first, like *Osborne,* Newton had a liberty interest in demonstrating his innocence on new evidence.[347] It then turned to the question of whether New York's procedural rules were fundamentally adequate to the realization of this interest. Newton argued that, like Alaska's in *Osborne*, New York *State's* similar procedures were fundamentally adequate, and, unlike *Osborne*, Newton had diligently availed himself of all of them. However, Newton argued that New York *City's* ineffective evidence management system effectively nullified those procedures.[348]

341. N.Y. CRIM. PROC. L. § 440.10(1)(g) (McKinney 2012).
342. *Newton*, 779 F.3d at 143.
343. N.Y. CRIM. PROC. L. § 440.30(1-a)(a)(1) (McKinney 1994).
344. *Newton*, 779 F.3d at 143.
345. *Id.* at 144.
346. *Id.*
347. *Id.* at 147–48.
348. *Id.* at 150.

The Second Circuit agreed. Noting that Newton's action focused not on the State law itself but on the *execution* of the law, the court did "not decide what specific City procedure is necessary to manage and track evidence," but the court reinstated the jury's verdict for Newton.[349] It found that New York's post-conviction DNA statute "is consistent with requiring the NYPD's evidence management system to provide an adequate means to determine if evidence is available for testing and, if so, where the evidence is located."[350]

3. Post-Conviction Statutes and Familial DNA

Newton suggests courts might be open to the argument that state procedures rendering DNA testing of old evidence effectively impossible could violate a defendant's limited due process right to vindicate substantive rights under post-conviction relief statutes. Mismanaged storage procedures are distinctly different, however, from a formal legislative decision to restrict familial DNA searches through consumer sites. If *Osborne* stands for anything, it is the proposition that "[f]ederal courts should not presume that state criminal procedures will be inadequate to deal with technological change."[351] The Court made it quite clear that "the development of rules and procedures" in the area of DNA science should be left in the "hands of legislatures and state courts shaping policy in a focused manner."[352] A convicted prisoner might try to argue that a state statute effectively barring law enforcement from even attempting to re-open a case through familial DNA searches renders its procedures "fundamentally inadequate" under *Osborne* to vindicate their right to state-created post-conviction process. However, given the Court's strong deference to legislatures, this argument is unlikely to prevail. It should be noted from this discussion of post-conviction process, however, that the lack of a constitutional innocence claim and the inapplicability of *Brady* post-conviction emphasize the importance of accuracy in initial criminal adjudications.

CONCLUSION: ADJUDICATING DUE PROCESS IN CONFLICT

Part Two of this Article considered the argument that a subject has a Fourth Amendment right not to be subject to warrantless searches of their family member's DNA within databases, even with the database user's

349. *Id.* at 151.

350. *Id.* at 152. It is important to note that the DNA statute also provides that, for the purposes of a post-conviction court considering a motion to vacate a conviction, "no inference unfavorable to the people may be drawn" from missing or destroyed evidence. *Id.* (quoting N.Y. CRIM. PROC. LAW § 440.30(1-a)(b) (McKinney 1994)). The *Newton* court held that this did not bar a *civil* remedy under § 1983. *Id.*

351. Dist. Att'y's Off. v. Osborne, 557 U.S. 52, 74 (2009).

352. *Id.* at 56.

consent. It agreed with commentators who argue that DNA contains intimate information, and the consent of an actual database user is not logically equivalent to the consent of that user's relatives who may be identified through a familial search. Nonetheless, Part Two concluded that the argument that such searches require a warrant after *Carpenter* is fairly weak. In the first place, the specific privacy interest recognized by *Carpenter* in the totality of one's movements implicates detailed information about one's actual life. By contrast, with the proper limitations on use, a DNA match reveals only one significant piece of information: that a subject left a particular sample in a particular place. More importantly, no authority recognizes a reasonable expectation of privacy in someone else's bodily materials. Familial DNA works because a subject has left their own sample at a crime scene, and the police match it to the profile of a physical sample offered voluntarily by a relative. A suspect does not have a right to bar their spouse from allowing the police to take a sperm sample from their own body after marital intimacy in order to compare it to the sample in a rape kit. In the case of consumer databases, the suspect's connection to the consenting party is even more attenuated and less voluntary. Thus, the idea that the Fourth Amendment allows them to override the third party's use of their own body sample might be somewhat more colorable, but it is still, ultimately, weak.

On the other hand, familial DNA searches implicate the Sixth and Fourteenth Amendment rights of other criminal suspects in cases where unidentified third-party samples are found at crime scenes. Part Three of this Article argued that a criminal defendant has a colorable due process right not to have consumer DNA evidence rendered effectively unattainable by law enforcement. First, any statute preventing criminal defendants from exercising their Sixth Amendment right to subpoena that information would raise compulsory process issues. Even if legislatures or courts only barred law enforcement from conducting such searches, the defendant's access to the subpoena power is heavily limited in many jurisdictions by the materiality and favorability requirements, and any useful hits resulting from such a search would in any case require expensive forensic testing to lead to a specific subject. Thus, the reality is that a defendant is usually only going to access important exculpatory evidence through *Brady,* which would put familial DNA largely out of reach if the police were precluded from conducting searches at all or only with probable cause. In any given case, this problem is also compounded by limited options post-conviction, at which point the Supreme Court has held that *Brady* does not apply and no independent right to DNA testing exists. Law enforcement's ability to access the most accurate evidence on the front end affects a defendant's right to obtain the most important kind of exculpatory evidence under *Brady*.

In *Osborne*, the Supreme Court declined to "constitutionalize" post-conviction DNA testing as a freestanding due process right to protect the liberty interest of a potentially wrongfully convicted party.[353] Innocent defendants would then be especially harmed by an asymmetrical attempt to "constitutionalize" DNA on the front end—during investigations. Should courts recognize, or legislatures adopt, a Fourth Amendment rule that keeps familial DNA away from law enforcement absent probable cause, such defendants would be effectively shut off from the most accurate and valuable evidence at all stages of the criminal process. Like the Fourth Amendment argument, this Sixth Amendment argument is also somewhat weak since most courts do not even recognize a *Brady* right to law enforcement searches of public databases. Nonetheless, because a categorical ban on warrantless searches would essentially render all familial DNA evidence inaccessible, it would inherently block a defendant's access to exculpatory evidence.

The admissibility of familial DNA is, thus, not a due process question in which it makes sense to think of balancing one defendant's rights against purely "government interests" (although the accuracy of DNA evidence certainly makes the government's crime-solving interest particularly high). Rather, there are two potential defendants' liberty interests at stake—one of whom is most likely innocent. Constitutional rights necessarily have limits when they impact other parties' constitutional rights; scholars debate whether these constitute limits on the scope of rights or simply their realization.[354] Many nations' constitutions have general limitation clauses, which set out the specific conditions under which constitutional rights can be limited.[355] However, the United States does not have a general limitation clause and defines certain rights without any limitation.[356] Courts have treated some rights as having implicit limitations, such as when they engage in interest balancing to determine "unreasonableness" under the Fourth Amendment. For other situations, the Supreme Court has adopted its own, much criticized tiered system of scrutiny.[357] Sometimes, though

353. *Id.* at 73.

354. *Compare* AHARON BARAK, PROPORTIONALITY: CONSTITUTIONAL RIGHTS AND THEIR LIMITATIONS 99 (Doron Kalir trans., David Dyzenhaus & Adam Tomkins eds., 2012) ("A limitation of a constitutional right only narrows the ability to realize the right without changing the right's actual boundaries. These limitations are constitutional only if they are proportional, as required by the limitation clause."), *with* ROBERT ALEXY, A THEORY OF CONSTITUTIONAL RIGHTS 38 (Julian Rivers trans., 2002) (arguing that when two constitutional principles are in conflict, or when one is in conflict with the public interest, a special constitutional rule is formed which narrows the scope of the constitutional right).

355. *See, e.g.*, Canadian Charter of Rights and Freedoms § 1, Part I of the Constitution Act, 1982, *being* Schedule B to the Canada Act, 1982 (guaranteeing "the rights and freedoms set out in it subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society").

356. BARAK, *supra* note 354, at 133.

357. *See* Tiffani Lennon, *Stepping Out of the Competing Constitutional Rights Conundrum: A*

inconsistently, courts limit constitutional rights through recourse to some version of John Stuart Mill's harm principle, which holds that the only acceptable limitation on liberty is when it is necessary to prevent harm to others.[358]

Generally, it is true that a constitutional right's lack of limitation clause does not render the right absolute but instead subject to interpretation in harmony with the Constitution's other provisions and other legitimate public interests.[359] This inherently entails courts prioritizing certain rights over others based on the facts of a particular case.[360] In the context of criminal justice, for example, claims of Sixth Amendment deprivations "are subject to the general rule that remedies should be tailored to the injury suffered from the constitutional violation and should not unnecessarily infringe on competing interests."[361] Thus, trial courts have discretion to limit a defendant's Sixth Amendment confrontation right in a particular case through limiting the scope of cross-examination based on potential harms,

Comparative Harm Analysis, 82 DENV. L. REV. 359, 359 (2004); *see also* Ken Hyle, *When Constitutional Rights Clash:* Masterpiece Cakeshop*'s Potential Legacy*, 9 CONLAWNOW 200, 203 (2018) ("The Court's purported fallback to a categorical approach involving levels of scrutiny to resolve cases where constitutional rights collide is flawed in that it creates a hierarchy of constitutional rights . . . Under a traditional level of scrutiny analysis, courts examine government interests and the means necessary to achieve those interests for just one of the two constitutional rights in conflict.").

358. JOHN STUART MILL, ON LIBERTY 80 (David Bromwich & George Kateb eds., 2003); *see* Hill v. Colorado, 530 U.S. 703, 725–29 (2000) (holding that the First Amendment was not violated by a Colorado law limiting abortion protest within eight feet of a person entering a healthcare facility, because the right not to be unduly harmed by being traumatized outweighed the right to free speech); Brandenburg v. Ohio, 395 U.S. 444, 447 (1969) (establishing a three-part test to determine when the government can restrict speech based on (1) imminent harm, (2) likelihood of producing illegal activity, and (3) intent to cause imminent illegality).

359. BARAK, *supra* note 354, at 135.

360. *Id.* at 361 ("Rights that advance the legal system's most fundamental values and that contribute to the personal welfare of each member of the community differ from rights that rely upon general welfare considerations as their only justification."). The U.S. Supreme Court has found limitations to individual rights in cases involving deference to military-decision-making due to the need for national security. *See, e.g.*, Thomasson v. Perry, 80 F.3d 915, 926 (4th Cir. 1996). In cases involving parental decision-making, despite the Supreme Court recognizing a liberty interest in child rearing under the Fourteenth Amendment, where minor and parental interests have conflicted, the winner has been the minor, with the "scope of the state's interest serving as the deciding factor." Courtney Vorwald, *When Parental and Minors' Rights Conflict: Minors' Constitutional Rights & Gay-Straight Alliances*, 13 J. GENDER, RACE & JUST. 465, 476 (2010) (citing Meyer v. Nebraska, 262 U.S. 390, 400 (1923) (holding that the right to raise and educate children is a liberty interest under the Fourteenth Amendment) and Troxel v. Granville, 530 U.S. 57, 88 (2000) (Stevens J., dissenting) (stating that parental rights "have thus never been regarded as absolute" due to the state's *parens patriae* interest). During the Prohibition era the Supreme Court even narrowed the scope of the Fourth Amendment in order to facilitate enforcement of the Eighteenth Amendment. *See* Daniel Yeager, *A History of the Fruit of the Poisonous Tree (1916–1942)*, 67 HOW. L.J. 51, 72–73 (2023). For an argument that U.S. courts should, as in other countries, recognize that two conflicting rights co-exist and allow the democratic political process to mediate them see, JAMAL GREENE, HOW RIGHTS WENT WRONG: WHY OUR OBSESSION WITH RIGHTS IS TEARING AMERICA APART 114–39, 248 (2021).

361. United States v. Morrison, 449 U.S. 361, 364 (1981).

such as harassment of the witness, prejudice, confusion of the issues, the witness's safety, or questioning that is repetitive or only marginally relevant.[362] In *United States v. Stein,* the Second Circuit found a violation of the Sixth Amendment right to counsel where a Department of Justice charging policy caused a private employer to terminate attorneys' fees that they would otherwise have paid for according to the terms of their employees' contracts.[363] While the employees did not have a Sixth Amendment right to employer-funded legal counsel—in the same way that a suspect may not have a right for the police to conduct a familial DNA search—it nonetheless constituted an interference with the employees' exercise of their Sixth Amendment right to mount a defense with their own assets that could not be justified by the state interest in encouraging cooperation by the corporate defendant.[364]

Cases of *competing* constitutional interests are more delicate. In *Nebraska Press Association v. Stuart*, the Court rejected an absolute balancing test between the First and Sixth Amendments where, in order to protect the accused's right to an impartial jury, a trial judge had issued an order restraining members of the press from publishing or broadcasting accounts of the defendant's admissions.[365] The Court noted that "[t]he authors of the Bill of Rights did not undertake to assign priorities as between First Amendment and Sixth Amendment rights, ranking one as superior to the other"[366] and proceeded to balance the nature and extent of pretrial news coverage, potential mitigating measures, and the effectiveness of a restraining order at preventing the danger; ultimately, the Court held for the petitioner journalists.[367]

When courts must adjudicate clashes between the constitutional rights of two criminal defendants, their work is complicated by the fact that the meaning of criminal due process is itself contested. Due process has a specific doctrinal meaning related to the procedures required by the Fifth and Fourteenth Amendments, the latter of which incorporates most rights in the Bill of Rights against the states.[368] It also has a broader meaning that

362. Delaware v. Van Arsdall, 475 U.S. 673, 679 (1986).

363. United States v. Stein, 541 F.3d 130, 157 (2d Cir. 2008) ("[T]hese defendants can easily demonstrate interference in their relationships with counsel and impairment of their ability to mount a defense based on [trial court's] non-erroneous findings that the post-indictment termination of fees 'caused them to restrict the activities of their counsel,' and thus to limit the scope of their pre-trial investigation and preparation.").

364. *Id.* at 156.

365. Nebraska Press Ass'n v. Stuart, 427 U.S. 539, 560–61 (1976).

366. *Id.* at 561.

367. *Id.* at 562, 570.

368. Rosann Greenspan, *Criminal Due Process in the Administrative State,* 14 STUD. L., POL. & SOC'Y 169, 172 (1994).

represents the "principles of civility or fairness that are supposed to underlie procedural and often substantive legal rules."[369] Because of its prominent role in the Bill of Rights, due process has become a distinctly American concept, with jurists in other nations resorting to other concepts such as "procedural justice," "the rule of law," "natural justice," and "fundamental justice."[370]

In *The Limits of the Criminal Sanction*, Herbert Packer famously divides criminal justice thinking into two camps.[371] One, which he refers to as the "Due Process Model," values the observation of fair procedures, even at the expense of letting the guilty go free, while the other, the "Crime Control Model," values accurate determinations of guilt and innocence.[372] Accuracy has, in and of itself, been a value central to constitutionalized criminal due process since the start of the criminal procedure revolution in the mid-twentieth century.[373] Rules about impartiality and reliability, the right to counsel for indigent defendants, the right to cross-examination, and the rule against involuntary confessions all exist to prevent the conviction of innocents due to malicious, lazy, hasty, or overzealous police and prosecutors.[374] In *In re Winship*, the Supreme Court held that the standard of proof beyond a reasonable doubt is a due process requirement in criminal trials on accuracy grounds.[375]

As David Resnick argues, due process serves an important justificatory purpose, providing reasons for subjecting a person to criminal punishment.[376] He notes that "our concern with the subjective probability of correct outcomes reflects a requirement of morality and not simply efficiency or rationality."[377] Thus, while critics tend to pit accuracy values against due process values in cases where fair process requires guilty defendants to go

369. *Id.*
370. *Id.*
371. HERBERT L. PACKER, THE LIMITS OF THE CRIMINAL SANCTION 153 (1968).
372. *Id.*
373. *See* RONALD JAY ALLEN, JOSEPH L. HOFFMAN, DEBRA A. LIVINGSTON, ANDREW D. LEIPOLD & TRACEY L. MEARES, CRIMINAL PROCEDURE: INVESTIGATION AND RIGHT TO COUNSEL 68 (4th ed., 2020) ("Thus, the problem with the mob-dominated trial in *Moore* [*v. Dempsey*], with the absence of any real defense counsel in *Powell* [*v. Alabama*], and with the beating-induced confession in *Brown* [*v. Mississippi*] was the same: All tended to lead to conviction and punishment without regard to whether the defendants were guilty.").
374. *See id.* at 68–69; Thomas C. Grey, *Procedural Fairness and Substantive Rights, in* DUE PROCESS 182, 184 (J. Roland Pennock & John W. Chapman eds., 1977).
375. *In re* Winship, 397 U.S. 358, 367 (1970) ("The preponderance [of the evidence] test is susceptible to the misinterpretation that it calls on the trier of fact merely to perform an abstract weighing of the evidence in order to determine which side has produced the greater quantum, without regard to its effect in convincing his mind of the truth of the proposition asserted.").
376. David Resnick, *Due Process and Procedural Justice*, *in* DUE PROCESS, *supra* note 374, at 206, 214.
377. *Id.* at 215.

free, the protection of innocents is a critical moral component of due process. The availability of DNA evidence inherently implicates accuracy values—not only the broader societal goal of identifying the guilty but also an individual's right not to be punished without justification.

That said, Packer's "Due Process Model" fits the argument that unwarranted familial DNA searches violate the Fourth Amendment rights of the third-party family members identified. Under this view of due process, the absence of "fair play" for the suspect should override the state's interest in crime solving.[378] Some of the Supreme Court decisions that fit this model have been described as premised on "fundamental fairness"—most notably *Rochin v. California*, which excluded evidence found after law enforcement pumped a suspect's stomach against his will and without judicial authorization.[379] In an opinion by Justice Frankfurter, the Court held that the stomach pumping—while producing accurate evidence—violated due process because it "shock[ed] the conscience."[380] The Fourth and Fifth Amendment exclusionary rules in general represent the primacy of fair play over accuracy since they necessarily better protect the procedural rights of the guilty than they do the innocent. However, an unjustly accused party could also argue that principles of fair play and fundamental fairness should prevent them from being criminally convicted without access to a whole body of highly reliable evidence.

It should be noted that there is a third set of due process values beyond these two that is related to the expressive function of criminal procedure and its relationship to public confidence in the justice system. The public will be more likely to support and participate in criminal justice when it believes that the process operates fairly.[381] On that basis, some critics point out that "[a] focus on the individual rights of the defendant to the exclusion of the interests of other participants belies the public's critical role."[382] In this view, a trial is not just a fact-finding mission but serves an "important symbolic

378. *See* Susan Bandes, *Taking Some Rights Too Seriously: The State's Right to a Fair Trial*, 60 S. CAL. L. REV. 1019, 1039 (1987).

379. Rochin v. California, 342 U.S. 165, 166, 174 (1952).

380. *Id.* at 172.

381. Tracey L. Meares, *Everything Old is New Again: Fundamental Fairness and the Legitimacy of Criminal Justice*, 3 OHIO ST. J. CRIM. L. 105, 108 (2005); *see* also Tom R. Tyler & E. Allan Lind, *A Relational Model of Authority in Groups*, *in* 25 ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY, at 115, 140–41 (Mark P. Zanna ed., 1992) (proposing a "group-value" theory of procedural justice based on the idea that people "belong to social groups and . . . are very attentive to signs and symbols that communicate information about their status within their groups," such as whether a procedural system treats people with dignity, neutrality, and warrants trust from those subjected to it).

382. Meares, *supra* note 381, at 116; *see also* Judith Resnik, *Due Process: A Public Dimension*, 39 U. FLA. L. REV. 405, 408 (1987) (arguing "that the interaction between process and public is important and assists in the development of legal norms about the merits of disputes and how disputes should be handled").

function as public expressions of the affected parties' rights to demand that official acts be explained and justified."[383] This concept of due process is particularly important in the case of familial DNA. High-profile cases like the Golden State Killer have increased public awareness of this science, and exonerations like Christopher Tapp's, which was widely covered in true crime media, have created demand for it as a means of recourse for the wrongfully accused and convicted.

Ultimately, the case of familial DNA does not present a simple, bilateral competition between fair Fourth Amendment process for a criminal defendant and public interest in crime-detection; it also implicates the Sixth and Fourteenth Amendment rights of an innocent suspect whose risk of wrongful conviction would be higher in a world with law enforcement access to familial DNA substantially restricted. Should courts consider Fourth Amendment claims challenging familial DNA evidence, they should bear in mind these other defendants when determining whether such searches are reasonable without a warrant. Furthermore, should states seek to regulate law enforcement use of DNA via statute, they should not adopt restrictions as broad as Montana's. Ideally, even if states do restrict law enforcement access, they should at least create a formal subpoena process to clarify how criminal defendants can access this evidence. However, given the limitations on defense testing resources, this mechanism would likely benefit only a minority of defendants and should be supplemented by some degree of law enforcement access.

383. T.M. Scanlon, *Due Process*, *in* DUE PROCESS, *supra* note 374, at 93, 99.