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Our Troubling Failures in Solving Crimes: Rethinking Legal Limits on Crime Investigation

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Abstract

Justice is failing in America. Clearance rates—the rate at which police identify a crime's perpetrator—are tragically low for most crimes, even serious offenses. In 2022, there were around 20,000 criminal homicides in America, with a clearance rate of 52.3 percent. Yet murder has by far the highest clearance rate for serious offenses. Even worse, the conviction rate—the rate at which a crime leads to punishment—is even smaller due to a lack of compelling evidence even when police identify or arrest a culprit. Only about 60 percent of murder clearances lead to a homicide conviction, meaning that, at most, only about a third of murderers are punished in America. The conviction rates for other crimes are much worse: only 7 percent of aggravated assaults and 2.5 percent of sexual assaults end in a conviction, though these low numbers are also likely a product of victim nonreporting in addition to investigative failures.

Even more problematic is the fact that clearance rates are falling. The data suggest that the national homicide clearance rate dropped by almost 40 percent from its peak of 93 percent in 1962 to 54.4 percent in 2022, according to FBI statistics. Indeed, the clearance rate for many offenses has dropped over the last decade. This downward trend is all the more troubling because it comes despite dramatic technical advances in our ability to solve crimes, such as the increasing availability and sophistication of DNA crime scene analysis. It is also troubling because the decrease in clearance rates is occurring despite the fact that

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many jurisdictions have broadened their definition of what counts as a "cleared case."

To make things still worse, it is now clear that clearance rates are significantly lower for crimes in which the victim is Black. Indeed, almost all of the recent nationwide decline in homicide clearance rates comes from unsolved killings of Black victims.

The clearance rate problem is seriously consequential. First, failing to identify a perpetrator necessarily means a failure of justice where a blameworthy offender escapes deserved punishment. But low and decreasing clearance rates also have worrying practical consequences. It allows dangerous offenders to go free and victimize others. But perhaps of greater long-term significance, the tragically low clearance rates damage the criminal law's moral credibility with the community, which in turn tends to increase community resistance, subversion, and vigilantism. Further, low and decreasing clearance rates undermine the general deterrent effect of the criminal justice system, which is likely to produce more crime, which in turn commonly produces lower clearance rates, and so on, creating a tragic downward spiral.

An improvement in clearance rates would not only break that vicious cycle but also present an opportunity to reduce lengthy incarceration, which has its own societal costs. The criminal justice system's general deterrent threat is a function of the seriousness of the punishment threatened times the likelihood of that punishment being imposed. To the extent that the latter (likelihood) can be increased by improving clearance rates, the former (amount) can be reduced, allowing less incarceration while maintaining the same overall deterrent threat.

What can be done to improve our performance in solving crimes? A greater investment in investigative resources (such as laboratories), more detectives, and better training of investigators would all help. But the question for legal policymakers is what changes in law are likely to improve the rate of solving serious crimes? That is the subject of this Article. When one considers the enormous societal costs of low clearance rates, a proper balance of the competing societal interests suggests a change in the current legal rules governing criminal investigation.

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INTRODUCTION

Justice is failing in America. Clearance rates—the rate at which police identify a crime's perpetrator—are tragically low for most crimes, even serious offenses. In 2022, there were around 20,000 criminal homicides in America, with a clearance rate of 52.3 percent.[1] Even worse, the conviction rate—the rate at which a crime leads to punishment—is even smaller due to a lack of compelling evidence even when police identify or arrest a culprit. Only about 60 percent of murder clearances lead to a homicide conviction, meaning that, at most, only

1. FED. BUREAU OF INVESTIGATION CRIME DATA EXPLORER, TABLE 25: PERCENT OF OFFENSES CLEARED BY ARREST OR EXCEPTIONAL MEANS BY POPULATION GROUP 2022, https://cde.ucr.cjis.gov/LATEST/webapp/#/pages/downloads [https://perma.cc/R83E-92FT] (under "Crime in the United States Annual Reports," download the 2022 dataset titled "Offenses Known to Law Enforcement" and open "Table 25" from the list of downloaded documents). *See also America's Declining Homicide Clearance Rates 1965-2022*, MURDER ACCOUNTABILITY PROJECT, https://www.murderdata.org/p/reported-homicide-clearance-rate-1980.html [https://perma.cc/N3N3-KT7N].

about a third of murderers are punished in America.[2] The conviction rates for other crimes are much worse: only 7 percent of aggravated assaults[3] and 2.8 percent of sexual assaults[4] end in a conviction, though these low numbers are likely also a product of victim nonreporting in addition to investigative failures.

2. Data on state murder conviction rates was no longer released after 2006, perhaps because the state or federal authorities found the statistic's downward trend embarrassing. At that time, there were 17,034 murders annually of which 10,337 were officially cleared, *Crime in the United States 2006*, FBI, https://ucr.fbi.gov/crime-in-the-u.s/2006 [https://perma.cc/7DPT-T25M], and of those cleared, 6,240 resulted in a homicide conviction: a conviction ratio of 60 percent for cleared cases and just 36 percent for all murders. SEAN ROSENMERKEL, MATTHEW DUROSE & DONALD FAROLE, BUREAU OF JUST. STAT., U.S. DEPT. OF JUST., NCJ 226846, FELONY SENTENCES IN STATE COURTS, 2006—STATISTICAL TABLES 3 tbl.1.1 (2009), https://bjs.ojp.gov/content/pub/pdf/fssc06st.pdf [https://perma.cc/AP7N-MY2A]. The conviction rate for murder is likely even lower today due to the lower clearance rate.

3. In 2006, there were 1,354,750 aggravated assaults, MICHAEL RAND & SHANNAN CATALANO, OFF. OF JUST. PROGRAMS, U.S. DEPT. OF JUST., NCJ 219413, CRIMINAL VICTIMIZATION, 2006, at 3 tbl.2, https://bjs.ojp.gov/content/pub/pdf/cv06.pdf [https://perma.cc/VE3A-K98A], and 100,560 convictions for aggravated assault. ROSENMERKEL ET AL., *supra* note 2, at 3 tbl.1.1. The low rate of convictions for aggravated assault may be due to fewer resources being devoted to nonhomicide cases, as the difficulty of solving the two are commonly similar. In the case of shootings, for example, nonfatal shootings are cleared 10 percent of the time while fatal shootings are cleared 53 percent of the time in New Orleans, Louisiana. Rod K. Brunson & Brian A. Wade, *"Oh Hell No, We Don't Talk to Police,": Insights on the Lack of Cooperation in Police Investigations of Urban Gun Violence*, 18 CRIMINOLOGY & PUB. POL'Y 623, 626 (2019). Differences in clearance rates are noteworthy considering that the underlying dynamics (e.g., victim-offender relationship) of fatal and nonfatal shootings are incredibly similar. Anthony A. Braga & Philip J. Cook, *The Association of Firearm Caliber with Likelihood of Death from Gunshot Injury in Criminal Assaults*, JAMA NETWORK OPEN, July 27, 2018, at 1, 4, 5 tbl.1. For instance, one article notes, "the only difference between a nonfatal shooting and a homicide might be a combination of aim, luck and a good hospital trauma ward." James Queally & Alexi Friedman, *Staggering Amount of Nonfatal N.J. Shootings Go Unsolved, Statistics Show*, STAR-LEDGER (Dec. 28, 2012, 10:40 AM), https://www.nj.com/news/2012/12/staggering_amount_of_nonfatal.html [https://perma.cc/PY86-GTD8].

4. *The Criminal Justice System: Statistics*, RAPE, ABUSE & INCEST NAT'L NETWORK, https://www.rainn.org/statistics/criminal-justice-system [https://perma.cc/T5RK-WT5M]. Other sources estimate that only 6 percent of rapists will ever spend a day in jail. *Facts and Statistics*, CENTRAL MN SEXUAL ASSAULT CTR., https://cmsac.org/facts-and-statistics/ [https://perma.cc/P5XV-LMD4].

Even more problematic is the fact that clearance rates are falling. The data suggest that the national homicide clearance rate dropped by almost 40 percentage points from its peak of 93 percent in 1962 to 54.4 percent in 2022, according to FBI statistics.[5] Indeed, in many jurisdictions, the clearance rate for numerous offenses has dropped over the last several decades, with a particularly pronounced nationwide decline in recent years.[6] This downward trend is all the more troubling because it comes despite dramatic technical advances in our ability to solve crimes, such as the increasing availability and sophistication of DNA crime scene analysis.[7] It is also troubling because the decrease in clearance rates is occurring despite the fact that many jurisdictions are now more broadly applying their definition of what counts as a "cleared case."[8] For example, one study found that nearly half of the law enforcement agencies providing records to the FBI database cleared more cases through "exceptional means" than by arrest, and at least one department reported solving ("clearing") three times as many rape cases as rape cases in which they actually made an arrest.[9]

To make things still worse, it is now clear that clearance rates are significantly lower for crimes in which the victim is Black.[10] Indeed, almost all of the recent nationwide decline in homicide clearance rates comes from unsolved cases with Black victims.[11]

The clearance rate problem is seriously consequential. First, failing to identify a criminal perpetrator necessarily means a failure of justice where a blameworthy offender escapes punishment. The fact that this occurs so regularly for serious offenses represents a moral failure that

5. Philip J. Cook & Ashley Mancik, *The Sixty-Year Trajectory of Homicide Clearance Rates: Toward a Better Understanding of the Great Decline*, 7 ANN. REV. CRIMINOLOGY 59, 60 (2024).

6. Thomas L. Scott, Charles Wellford, Cynthia Lum & Heather Vovak, *Variability of Crime Clearance Among Police Agencies*, 22 POLICE Q. 82, 83 (2019); Tricia Ennis, *Crime Is Down in CT but So Are Clearance Rates*, CONN. INSIDE INVESTIGATOR (Sept. 26, 2022), https://insideinvestigator.org/crime-is-down-in-ct-but-so-are-clearance-rates/ [https://perma.cc/XR5E-DSEF].

7. *See* OFF. OF THE ATT'Y GEN., U.S. DEPT. OF JUST., *New Crime-Solving Technologies Help Close 'Cold Cases,'* 7 CRIM. L. UPDATE 4, 5 (1999).

8. Shima Baradaran Baughman, *How Effective Are Police? The Problem of Clearance Rates and Criminal Accountability*, 72 ALA. L. REV. 47, 64 (2020).

9. *Id.* at 64–65.

10. Thomas K. Hargrove, *Black Homicide Victims Accounted for All of America's Declining Clearance Rate*, MURDER ACCOUNTABILITY PROJECT (Feb. 18, 2019), https://www.dropbox.com/s/66ae30q9inwcvvt/Black%20Homicides.pdf?dl=1 [https://perma.cc/Q35H-KEF3].

11. *Id.*

anyone who believes in the importance of doing justice will find egregious. But low and decreasing clearance rates also have worrying practical consequences on crime even beyond letting dangerous offenders revictimize their communities. As failures of justice increase, the criminal law's moral credibility with the community decreases, which in turn produces less assistance, cooperation, and internalization of the law's norms and instead provokes resistance, subversion, and vigilantism.[12] Further, as clearance rates go down, the general deterrent effect of the criminal justice system also goes down, which is likely to produce more crime, which in turn produces lower clearance rates, and so on, creating a tragic downward spiral.

An improvement in clearance rates would not only break this vicious cycle but also present a significant opportunity to reduce lengthy incarceration, which has its own societal costs. The criminal justice system's general deterrent threat is a function of the seriousness of the punishment threatened times the likelihood of that punishment being imposed. To the extent that the latter (likelihood) can be increased with improved clearance rates, the former (amount) can be reduced, allowing less incarceration, while maintaining the same overall level of general deterrent effect.[13]

What can be done to increase clearance rates? A greater investment in investigative resources would help, as would better training of investigators. But the question that will interest legal policymakers is what changes in law are likely to improve clearance rates for serious offenses? That is the subject of this Article. When one considers the enormous societal costs of low clearance rates, a proper balance of the competing societal interests suggests a change in the current legal rules.

Part I documents the societal costs of low clearance rates. Parts II, III, and IV investigate an appropriate response to the problem in the context of search and seizure rules, custodial interrogation rules, and limitations on the use of modern investigative technology. For each of these subjects, we provide real-world case examples of the problem, identify the competing interests, explain the nature and extent of the problem, document public concerns about it, describe some of the reforms that some jurisdictions have undertaken or could undertake, and end with our specific recommendation of what we think is the most important and feasible reform to pursue.

12. Paul H. Robinson, *The Moral Vigilante and Her Cousins in the Shadows*, 2015 U. Ill. L. Rev. 401, 453.

13. "To hold the deterrence level constant, a reduction in the probability of punishment must be offset by an increase in the amount of punishment imposed on those who are caught. Thus, for offenses with lower-than-average detection or enforcement rates, the punishment threatened must be correspondingly higher in order to maintain an equivalent rate of deterrence." Paul H. Robinson, Shima Baradaran Baughman & Michael T. Cahill, Criminal Law 78 (5th ed. 2021).

I. The Societal Costs of Low and Falling Clearance Rates: Less Justice, More Crime, and More Racial Inequality in Victimization

The tragedy of our dismal clearance rates extends far beyond the profound impact they have on individual victims. Low clearance rates predominantly impact minority and low-income communities, undermine the criminal law's moral credibility, contribute to crime surges, and degrade the deterrent potential of the legal system.

A. Racial and Economic Disparity in Victimizations and Justice Failures

Tragically, falling clearance rates disproportionately impact racial minorities and low-income communities, making the issue one of racial and economic justice beyond purely criminal justice. Many recent efforts to ensure social justice in the legal system—such as the election of progressive prosecutors and the defund the police movement—ignore the reality that the disadvantaged suffer most from reductions in clearance and conviction rates. It would be a concern if policymakers tolerate chronically low clearance rates because they disproportionately impact disadvantaged communities with less social or political power.

Sadly, a person's odds of becoming a crime victim are directly correlated with their zip code. A study by the Department of Justice found that, from 2008 through 2012, Americans living in households at or above the federal poverty level (less than $15,000 for a couple) had more than double the rate of violent victimization as persons in higher-income households ($75,000 or more).[14] The same study found that members of racial minority groups are statistically more likely to live in low-income homes than white Americans. Of those living in the United States, 11.8 percent are Black, but Blacks make up 19.7 percent of those living in poor households. Similarly, only 14.3 percent of the population are Hispanic or Latino, but they make up 24.7 percent of those living in poor households.[15]

But not only do minority communities suffer more victimizations, they also suffer lower clearance rates for those crimes. This occurs in part because communities with higher crime rates typically suffer lower clearance rates. That is, even if police had the same clearance rates in poor neighborhoods as they do in wealthier neighborhoods, poor

14. Erika Harrell, Lynn Langton, Marcus Berzofsky, Lance Couzens & Hope Smiley-McDonald, Bureau of Just. Stats., U.S. Dep't of Just., NCJ 248384, Household Poverty and Nonfatal Violent Victimization, 2008–2012, at 1, 9 (Nov. 2014), https://bjs.ojp.gov/content/pub/pdf/hpnvv0812.pdf [https://perma.cc/J7B3-8AMB].

15. *Id.* at 9 & tbl.5.

communities would experience more failures of justice simply because more crime occurs in their neighborhoods.[16]

The reality is nonetheless worse. The recent decline in nationwide murder clearance rates is almost entirely due to failures to solve killings with Black victims.[17] Clearance rates for Black homicide victims have dropped by 20 percent over the past five decades, while clearance rates for white homicide victims have *increased* by 5 percent.[18] A 2019 investigation on clearance rates in Chicago showed that homicides where the victim was white were solved 47 percent of the time, while homicides where the victim was Hispanic were solved 33 percent of the time, and homicides where the victim was Black were solved 22 percent of the time.[19] There are several factors that likely contribute to these disparities (such as the type of killing, with street shootings being especially hard to solve), but regardless of the causes, the effect is clear: poor neighborhoods and minority communities suffer failures of justice at highly disproportionate rates.[20]

The tragedy is exacerbated by the fact that low-income communities tend to be less equipped with resources to help people cope with and recover from justice failures. Underfunded schools serving low-income children are less likely to have adequate counseling available for children dealing with trauma,[21] and healthcare facilities typically cannot provide the individualized level of care that victims receive in wealthier neighborhoods.[22] Low-income families are also less likely to have health insurance, adding another barrier for crime victims to

16. *See id.* at 1–2.

17. Hargrove, *supra* note 10.

18. *Id.*

19. Conor Friedersdorf, *Criminal-Justice Reformers Chose the Wrong Slogan*, THE ATLANTIC (Aug. 8, 2021), https://www.theatlantic.com/ideas/archive/2021/08/instead-of-defund-the-police-solve-all-murders/619672/ [https://perma.cc/4MY4-KSZX].

20. *See* ROXANNA ALTHOLZ, INT'L HUM. RTS. L. CLINIC, UNIV. OF CAL, BERKELEY, SCH. OF L., LIVING WITH IMPUNITY: UNSOLVED MURDERS IN OAKLAND AND THE HUMAN RIGHTS IMPACT ON VICTIMS' FAMILY MEMBERS 19–29 (2020), https://www.law.berkeley.edu/wp-content/uploads/2020/01/Living-with-Impunity.pdf [https://perma.cc/6GWY-FP9L].

21. Douglas J. Gagnon & Marybeth J. Mattingly, *Most U.S. School Districts Have Low Access to School Counselors: Poor, Diverse, and City School Districts Exhibit Particularly High Student-to-Counselor Ratios,* CARSEY RSCH., Fall 2016, at 2.

22. Lillian Thomas, *Poor Health: Poverty and Scarce Medical Resources in US Cities,* PITTSBURGH POST-GAZETTE (June 2014), https://newsinteractive.post-gazette.com/longform/stories/poorhealth/1/ [https://perma.cc/RH8P-S5QC].

access needed treatment.[23] Thus, not only are the poor more likely to experience failures of justice, but the mental and emotional harms that result from these failures are likely to be higher due to the lack of resources.

For anyone who takes racial and economic justice seriously and wishes to close unjust disparities, tackling failures of justice is essential. Too often the same advocates who protest police violence and decry the injustices caused by systemic racism in the legal system are nowhere to be found on the issue of solving and punishing serious crime.

B. Increased Failures of Justice Harm the Criminal Law's Credibility

Every failure to capture and punish a serious offender—whether caused by human error or laws that limit effective crime investigation—not only has tragic impacts on crime victims and their families, but also on the criminal justice system's credibility within the larger community. Empirical studies suggest that Americans commonly view false convictions and failures to convict guilty individuals as wrongs of equal magnitude.[24] The equal upset over false convictions and failures of justice is consistent with the many studies that show humans to be deeply committed to having a criminal justice system that will capture offenders and punish them according to the extent of their moral blameworthiness, no more and no less.[25] A justice system that punishes the innocent will lose credibility with the community over time, but studies show the same loss of credibility occurs when the system fails to capture and punish the guilty.[26] When citizens see the criminal justice system routinely failing to apprehend offenders, especially for serious crimes such as murder, their faith in it will deteriorate. As we will explore in the next Subpart, this loss of faith has dire consequences on crime control.

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23. JESSICA C. SMITH & CARLA MEDALIA, U.S. CENSUS BUREAU, P60-253, HEALTH INSURANCE COVERAGE IN THE UNITED STATES: 2014, at 11 (2015); Jennifer Tolbert, Patrick Drake & Anthony Damico, *Key Facts About the Uninsured Population*, KAISER FAM. FOUND. (Dec. 18, 2023), https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/ [https://perma.cc/BG4Y-7L9Q].

24. Brandon L. Garrett & Gregory Mitchell, *Error Aversions and Due Process*, 121 MICH. L. REV. 707, 729–30 (2023).

25. *See* PAUL H. ROBINSON, INTUITIONS OF JUSTICE AND THE UTILITY OF DESERT 18–34 (2013).

26. Paul H. Robinson & Lindsay Holcomb, *The Criminogenic Effects of Damaging Criminal Law's Moral Credibility*, 31 S. CAL. INTERDISC. L.J. 277, 279–94 (2022); *see also* ROBINSON, *supra* note 25, at 25.

C. More Crime

Failures of justice not only impact victims but they also cause higher crime rates. A criminal justice system that fails to apprehend offenders will see a vicious cycle of increased crime rates and lower clearance rates, a disillusionment-noncompliance dynamic, and higher rates of vigilantism.[27]

Repeated failures of justice are not only a moral problem; there is a correlation between high crime rates and low clearance rates. Failures of justice often occur when surges in crime overwhelm the legal system. During times of increased crime, already overworked police and prosecutors have less time to spend investigating and adjudicating each individual case.[28] In addition to high crime rates contributing to low clearance rates, low clearance rates lead to further increases in crime.[29] First, low clearance rates mean more offenders are free to commit further crimes. A study conducted by the U.S. Sentencing Commission estimated that 64 percent of former prisoners convicted for a violent crime were rearrested within eight years.[30] One can only imagine the recidivism rates among those who go uncaught. Given that hundreds of thousands of serious criminals escape justice each year, failing to catch offenders leads to tens or hundreds of thousands of additional avoidable serious crimes each year.

Another practical consequence of repeated failures of justice is what has been called the disillusionment-noncompliance dynamic.[31] This dynamic occurs when a community loses trust in the criminal justice system and responds with increased lawbreaking. The disillusionment-noncompliance dynamic famously played out during America's Prohibition Era. During the 1920s, public distrust in the criminal justice system was at a high due to limited enforcement and compliance with prohibition laws.[32] Consequently, laws far beyond the scope of the

27. Robinson & Holcomb, *supra* note 26, at 279–94.

28. *See* PAMELA K. LATTIMORE, JAMES TRUDEAU, K. JACK RILEY, JORDAN LEITER & STEVEN EDWARDS, NAT'L INST. OF JUST., NCJ 167262, HOMICIDE IN EIGHT U.S. CITIES: TRENDS, CONTEXT, AND POLICY IMPLICATIONS 131–32 (1997), https://www.ojp.gov/sites/g/files/xyckuh241/files/media/document/homicide_trends.pdf [https://perma.cc/9YVV-BGZF].

29. *Id.*

30. U.S. SENT'G COMM'N, RECIDIVISM AMONG FEDERAL VIOLENT OFFENDERS 4–5, 4 tbl.1.1 (2019), https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2019/20190124_Recidivism_Violence.pdf [https://perma.cc/X7UP-L9JH].

31. ROBINSON, *supra* note 25, at 141–88; Robinson & Holcomb, *supra* note 26, at 279–94.

32. Robinson & Holcomb, *supra* note 26, at 279.

Eighteenth Amendment lost their credibility, and individuals committed an increasing number of crimes, including offenses unrelated to alcohol.[33] The dynamic has been verified by various social science studies.[34]

A final consequence of failures of justice is increased rates of vigilantism. Individual acts of vigilantism—where a victim faced with an ineffective criminal justice system takes matters into their own hands—are widely depicted and celebrated in books and films. A famous example is John Grisham's best-selling novel *A Time to Kill*, where protagonist Carl Lee Hailey kills the two white men who brutally raped his young Black daughter because he fears they will be acquitted in the racially divided South.[35] Hailey is celebrated as a hero, and the commercial success of the story likely speaks to our innate desire for justice and admiration for those willing to deliver it.[36] However, vigilantism often works in more subtle ways than Hollywood films or dramatic news stories. "Shadow vigilantism" occurs when people who are disillusioned with the criminal justice system subtly manipulate and subvert the criminal justice system to ensure justice is served.[37] This can take the form of police officers shading the truth during testimony to ensure reliable evidence is not excluded, prosecutors overcharging certain defendants, and even judges abusing their discretion. Laypersons can also engage in shadow vigilantism.[38] Jury members may ignore legal rules to ensure their vision of justice is carried out.[39]

Some might argue that several of these individual acts of shadow vigilantism are morally justifiable if they prevent a failure of justice from occurring. However, this argument overlooks the reality that shadow vigilantism will appear in some cases and not others, introducing arbitrariness into the criminal justice system. This arbitrariness will

33. Paul H. Robinson & Sarah M. Robinson, Pirates, Prisoners, and Lepers: Lessons from Life Outside the Law 141–48 (2015).

34. *See e.g.*, Paul H. Robinson, Geoffrey P. Goodwin, & Michael D. Reisig, *The Disutility of Injustice*, 85 N.Y.U. L. Rev. 1940, 1995–2004 (2010).

35. John Grisham, A Time to Kill (1989).

36. *Id.*; *A Time To Kill* sold 5.5 million copies within four years of its publication. Claudia Eller, *Movie Deal on Unwritten Grisham Book Sets Record: Film: Universal Will Pay $3.75 Million for Rights to Next Legal Thriller by Best-Selling Author of 'The Firm.'*, Los Angeles Times (July 17, 1993, 12:00 AM), https://www.latimes.com/archives/la-xpm-1993-07-17-mn-14067-story.html [https://perma.cc/6VP5-7CQW].

37. *See* Robinson, *supra* note 12, at 404; Paul H. Robinson & Sarah M. Robinson, Shadow Vigilantes: How Distrust in the Justice System Breeds a New Kind of Lawlessness 15 (2018).

38. Robinson, *supra* note 12, at 462–64.

39. *Id.* at 464–66.

likely give rise to disparate outcomes in similar cases and thereby further undermine the criminal law's moral credibility with the community. Since shadow vigilantism is difficult, if not impossible to detect, deterring and punishing this behavior presents a unique challenge.[40] The most promising solution is to reduce failures of justice and eliminate the need for people to manipulate criminal justice processes to get justice.

In conclusion, the failures of justice that come from low clearance rates for serious crimes lead to more crime by fueling the vicious cycle of lower clearance rates further increasing crime rates, giving rise to the disillusionment-noncompliance dynamic, and sparking vigilantism.

II. Legal Rules Governing Search and Seizure

Society faces many trade-offs in creating criminal justice system rules. One of the most pervasive dilemmas is how to strike the proper balance between protecting personal liberties, including the right to privacy, and the importance of doing justice. Criminal investigations commonly require some intrusion into personal liberty and privacy, whether it is searching personal property, monitoring online traffic, or interrogating suspects. Society imposes limitations on the techniques investigators may use, limitations that seek to strike a balance between these interests. But each additional limitation imposed can come at the cost of increasing justice failures. On the other hand, the more unrestricted the investigations are allowed to be, the greater the potential for unjustified infringement upon liberty and abuse of power.

While society must strike a balance, that balance ought to be open for reconsideration if changes in societal circumstances result in the present balance producing undesirable results. And it should arguably be the ordinary citizens, who must live with the results, who should decide the ultimate balance. In reality, however, it is judges, commonly unelected, who create the legal rules that strike the liberty-justice balance that binds us all.[41] These judicially created rules are rarely changed, even if societal circumstances change, as they are said to be based upon the court's interpretation of constitutional requirements. Further, it is highly likely that different communities, faced with different situations, would strike the balance of interests differently from each other. But the present practice of constitutionalizing these balances, especially by the federal judiciary, forces a single rule upon all communities no matter how distinct the situations may be. Although striking the proper balance in criminal investigations is largely beyond the current power of legislatures because courts have undertaken this constitutionalization of the rules, it is nonetheless worth examining

40. *See id.* at 404.

41. *See infra* notes 84–94 and accompanying text.

these issues to determine where the proper balance might lie and to consider how reforms might move toward that end.

The overarching limitation on criminal investigation is found in the Fourth Amendment to the U.S. Constitution, which declares:

> 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.[42]

The Fourth Amendment departed from the English common law which allowed for "writs of assistance," or general warrants, to be issued permitting law enforcement to enter any building to search for illegal goods regardless of whether probable cause or even reasonable suspicion existed.[43] The use of such general warrants by British customs officers to search American colonists' goods for contraband became a source of great resentment that helped lead to the American Revolution.[44]

While the Fourth Amendment clearly bans such general warrants, the proper interpretation of the amendment is not obvious in other aspects, such as exactly when a warrant is needed in the first place and how this relates to reasonableness and probable cause.[45] For example, is a search necessarily or even presumptively unreasonable if it is conducted without a warrant? In practice, such questions have been determined by American courts, raising questions for some about the democratic legitimacy of such rules. Particularly problematic in this approach is that constant judicial refinement and additions have produced a system of rules so complex that often no one really knows beforehand which searches and seizures are permitted and which are not.[46] Some of these judicial rules seem to have little relation to rational policy ends and would likely never have been adopted by a legislature. For example, judicial rulings have variously allowed police to search a car but not the driver and to arrest a suspect but not search the bag

42. U.S. CONST. amend. IV.

43. CONG. RSCH. SERV., THE CONSTITUTION OF THE UNITED STATES OF AMERICA: ANALYSIS AND INTERPRETATION, S. DOC. NO. 103-6, at 1200–05 (1992).

44. *Id.* at 1200.

45. Silas J. Wasserstrom, *The Fourth Amendment's Two Clauses*, 26 AM. CRIM. L. REV. 1389, 1396 (1989).

46. *See infra* notes 84–94 and accompanying text.

he is carrying.[47] Even if a lawyer could master the full complexity of search and seizure rules, the chance of busy police officers, who are usually not legal experts, doing so is slim.

Thus, a rational response by police is to refrain from undertaking searches and seizures where there exists ambiguity, which is common in a complex system based upon subjective concepts of what is "reasonable" or whether there is "probable cause."[48] This must inevitably result in many serious crimes going unsolved. Furthermore, if the police do go ahead with a search and make a mistake, potentially crucial evidence can be excluded under the Supreme Court's 1961 decision in *Mapp v. Ohio*,[49] ruling that evidence gathered in contravention of court-imposed rules must be excluded at trial whether at the state or federal level.[50] It should be no surprise that imposing increasingly strict and complicated search and seizure rules on criminal investigations in the 1960s contributed to a rise in crime and a decline in clearance rates.[51]

A. Case Examples

Consider several examples of the justice-frustrating application of search and seizure limitations.

Earl Bradley, a pediatrician, is first accused of inappropriate contact with patients in 1994.[52] Pennsylvania medical and police authorities investigate but ultimately dismiss the complaint.[53] Bradley moves to Lewes, Delaware, where he opens his own practice and works with low-income families. Accusations of sexual misconduct with patients are soon leveled against Bradley again, but he tells investigators that his patients are simply trying to extort money from

47. *See* United States v. Di Re, 332 U.S. 581, 583–87 (1948) (reasoning that an automobile search justified by probable cause would not necessarily support a search of the car's occupant); United States v. Chadwick, 433 U.S. 1, 3–6 (1977) (prohibiting search of double-locked footlocker that police seized upon warrant-supported arrest of defendant).

48. *See* CONG. RSCH. SERV., *supra* note 43, at 1217–20 (discussing probable-cause jurisprudence).

49. 367 U.S. 643 (1961).

50. *Id.* at 659–60.

51. Raymond A. Atkins & Paul H. Rubin, *Effects of Criminal Procedure on Crime Rates: Mapping Out the Consequences of the Exclusionary Rule*, 46 J. L. & ECON. 157, 174 (2003).

52. Ryan Mavity, *Report Says Red Flags Missed in Bradley Case*, CAPE GAZETTE (May 13, 2010), https://www.capegazette.com/article/report-says-red-flags-missed-bradley-case/2293 [https://perma.cc/DHE6-WBJK].

53. *Id.*

him.[54] In 2004, Bradley's sister, who serves as his medical office manager, alerts the state medical society that parents have complained to her about inappropriate touching of their children by Bradley. Several doctors also report complaints about long and unnecessary vaginal exams of young female patients.[55] But when police in Milford, Delaware, seek a warrant to arrest him in 2005 for inappropriately touching a child patient, the Attorney General's office concludes there is insufficient evidence for an arrest warrant.[56]

This is the history when, in 2008, additional patient complaints are filed, and investigators request a warrant to search his medical office. The court denies the warrant application as lacking sufficient supporting evidence.[57] More complaints of sexual abuse continue to be filed.[58]

In December 2009, a court finally agrees to issue a search warrant to the Delaware State Police.[59] Among the materials they find is a four-gigabyte thumb drive containing images of Bradley abusing children after the original warrant request was denied.[60] It turns out that Bradley has been abusing patients almost constantly, victimizing more than 1,200 children.[61] Their average age was three, but the youngest victim was three months old.[62] Bradley is ultimately charged with 529 criminal counts, which are consolidated into a single indictment upon which he is convicted of twenty-four offenses, including fourteen convictions for rape. He is sentenced to 14 consecutive life terms plus 164 years in prison without the possibility of parole.[63]

54. *Id.*; Alan Judd, *Prestige Protects Even the Worst Abusers,* DAYTON DAILY NEWS (Dec. 14, 2016), https://www.daytondailynews.com/why_abusive_doctors_not_caught/ [https://perma.cc/V9U9-R529].

55. Mavity, *supra* note 52; Judd, *supra* note 54.

56. Mavity, *supra* note 52.

57. Carlin Miller, *Alleged Predator Pediatrician, Earl Bradley, Pleads Not Guilty to 471 Counts of Sexual Abuse*, CBS NEWS (Mar. 25, 2010, 4:59 PM), https://www.cbsnews.com/news/alleged-predator-pediatrician-earl-bradley-pleads-not-guilty-to-471-counts-of-sexual-abuse/ [https://perma.cc/Q7VB-GLAS].

58. State v. Bradley, Nos. 0912011155, 0912008771, 0912011621, 2011 WL 1459177, at *1 (Del. Super. Ct. Apr. 13, 2011).

59. *Id.*

60. *Id.* at *3.

61. Judd, *supra* note 54.

62. *Id.*

63. *Pediatrician Ordered to Spend Life in Prison for Molesting Patients*, CNN (Aug. 26, 2011, 3:23 PM), http://www.cnn.com/2011/CRIME/08/26/delaware.pediatrician/index.html [https://perma.cc/5HCW-AN2P].

Consider another example, from the United Kingdom. In 2014, twenty-four-year-old Junead Khan begins planning to join the Islamic State from his home in Luton, England.[64] Khan is a follower of radical Islamist preacher Anjem Choudary, and police visit Khan's home four times to offer him deradicalization resources as part of an anti-extremism program.[65] Khan turns them down each time and strategizes with ISIS fighters online to kill American servicemen stationed in Britain. He plans to crash his truck into a vehicle with American airmen before killing as many as possible with a knife.[66] If escape proves impossible, he plans to blow himself and others up with a backpack bomb. British police grow increasingly suspicious, and based on collected information amounting to probable cause, he is arrested by undercover officers who trick him into handing over his unlocked phone by posing as company managers.[67] U.K. law allows police to search a suspect's person, home, and phone upon his arrest (the probable cause required to justify his arrest is judged as sufficient justification for the searches).[68] They find over 66,000 messages that reveal the details of his plot. Khan is convicted of plotting terrorism and sentenced to life in prison.[69]

In the United States, police may well have been barred from this search. Even if they had probable cause to arrest the suspect, they cannot search houses, computers, or phones unless they also can affirmatively show probable cause that these contain evidence of his

64. *US Airmen Terror Attack: Junead Khan Found Guilty,* BBC (Apr. 1, 2016), https://www.bbc.com/news/uk-35944661 [https://perma.cc/66D8-MKM8].

65. *Id.*; Martin Evans & Ben Farmer, *How Anjou Choudray, the Firebrand Cleric Linked to a String of Terror Plots, Revelled in the Role of Sharia Law's Agent Provocatuer*, TELEGRAPH (Sept. 6, 2016, 1:42 PM), https://www.telegraph.co.uk/news/2016/08/16/who-is-anjem-choudary-the-firebrand-cleric-linked-to-a-string-of/ [https://perma.cc/BNJ6-GFAH].

66. *US Airmen Terror Attack: Junead Khan Found Guilty*, *supra* note 64.

67. Dominic Casciani, *How Islamic State Group Supporters Targeted the UK*, BBC (Apr. 1, 2016), https://www.bbc.com/news/uk-35893097 [https://perma.cc/ZZ3Z-PJYZ].

68. *See* Police and Criminal Evidence Act 1984, c. 60, §§ 18(4-5), 32(2)(b) (Eng.); Christopher Slobogin, *An Empirically Based Comparison of American and European Regulatory Approaches to Police Investigation*, 22 MICH. J. INT'L L. 423, 426–27 (2001) [hereinafter Slobogin, *Regulatory Approaches*].

69. Alexis Flynn, *U.K. Islamic State Sympathizer Gets Life Sentence*, WALL ST. J. (May 13, 2016, 1:59 PM) https://www.wsj.com/articles/u-k-islamic-state-sympathizer-gets-life-sentence-1463156076 [https://perma.cc/TZ8E-MDNA].

crime.[70] Without Khan's phone messages, U.S. authorities might have been unaware of the details of the attack in time to stop it.

The more demanding U.S. search requirements have allowed terrorists to kill in the past, as in August 2001 when the FBI had Al-Qaeda hijacker-in-training Zacarias Moussaoui in custody.[71] The FBI had reliable information that suggested Moussaoui is an extremist working on a plan to hijack a plane. Because he was in violation of his visa, the FBI arrested him. Over a period of several days, the field agents did everything in their power to try to obtain a warrant to search Moussaoui's computer. Despite the escalating urgency of the field agents' requests, the authorities in Washington repeatedly stated that there was insufficient probable cause to show evidence of a crime would be found on the laptop.[72] As a result, the 9/11 plot went undiscovered; the unsearched evidence might have led investigators to all the 9/11 hijackers.

B. Competing Interests

The issue of search and seizure rules presents an instance where legitimate societal interests exist on each side of the balance.

1. Interests Supporting the Current Search and Seizure Restrictions

- *Privacy Protection.* Current search and seizure rules recognize the importance of individual privacy interests. The right to privacy should not be undervalued. Police intrusions on personal space violate the "negative" freedom to be free of government interference in one's daily life.
- *Guarding Against Police Abuse.* Current legal limitations on the ability of police to search and seize can help protect against police abuse of power and the unjust government harassment of individuals. If police could freely search people and premises whenever they felt like it, there would be enormous opportunity to abuse their power. Strict warrant requirements do much to protect against such abuse.
- *Efficient Use of Police Resources.* Rigorous search rules requiring particularized warrants issued only on probable cause may save police resources by preventing investigators from engaging in time-consuming and resource-intensive wild-goose chases and fishing expeditions that ultimately go nowhere.
- *Judicial Superiority in Fair Decision-Making.* Some could argue that judges are in a better position to make fair rules regarding searches and seizures because they are likely to be more sympathetic to

70. Slobogin, *Regulatory Approaches*, *supra* note 68, at 424.

71. NAT'L COMM'N ON TERRORIST ATTACKS UPON THE U.S., THE 9/11 COMMISSION REPORT 273–76 (2004), https://govinfo.library.unt.edu/911/report/911Report.pdf [https://perma.cc/66JX-R4U7].

72. *Id.*

the rights of suspected criminals than legislators, who are likely more sympathetic to victims or innocent members of society.

2. Interests Supporting Loosening
the Current Search and Seizure Restrictions

- *Greater Justice.* Current search and seizure limits prevent police from solving many crimes that would be solvable under broader investigative authority. Loosening rules would almost certainly lead to more criminals being apprehended and punished, thus ensuring greater justice.
- *More Deterrence and Less Crime.* Bringing more criminals to justice would better deter future crime as well as prevent specific individuals from immediately reoffending.
- *Simplicity and Common Sense.* Current search and seizure rules are often highly complex, defy common sense, and are difficult for police officers to learn and faithfully apply in the field. Needless complexity is never desirable in the law, especially in something as routinely necessary as searching. Simplifying the law around search and seizure rules would help officers know what is legal. Equally important, simplified search and seizure rules would make it easier for citizens to know their rights, and to know under what circumstances they may exercise those rights.
- *Democratic Accountability.* The status quo of search and seizure rules is almost entirely generated by unelected judges at the federal level and does not necessarily reflect the particular community's view of the appropriate balance of the competing interests. Many argue search and seizure rules should reflect the compromise between liberty and justice that the citizens affected by those rules would strike and not the private opinions of judges.[73]

C. The Nature and Extent of the Problem

Current search and seizure restrictions on investigators potentially frustrate justice in several ways, such as by requiring warrants to be based on probable cause with high particularity (showing that there is probable cause that the specific thing to be searched contains evidence of a crime), by being so complex as to be difficult for police to follow with confidence, by having federal judges setting minimum requirements that bind state judges and are largely democratically unaccountable, and by having concrete negative effects on clearance and crime rates. Each of these issues is addressed below.

73. *See e.g.*, José Felipé Anderson, *Accountability Solutions in the Consent Search and Seizure Wasteland*, 79 Neb. L. Rev. 711, 718 (2000).

1. Particularity and Probable Cause

American police are required to obtain warrants based on probable cause. This means police must show a reasonable basis for believing that a person has committed a crime (for an arrest warrant), or that there is a reasonable basis to believe evidence of a crime would be found in a particular place (for a search warrant).[74] Even when exigent circumstances allow police to act without a warrant, there must be probable cause for the officers to conduct the search.[75]

What constitutes a "reasonable" basis in probable cause is somewhat unclear, and the Supreme Court has acknowledged it is not possible to precisely articulate the requirement.[76] The Court found in the 1949 case of *Brinegar v. United States*[77] that probable cause exists whenever the facts and circumstances within the officer's knowledge, based on reasonably trustworthy information, "'[are] sufficient in themselves to warrant a man of reasonable caution in the belief that' an offense has been or is being committed."[78] Of course, "reasonably trustworthy" and "reasonable caution" create enough ambiguity to leave the matter mostly up to the discretion of individual judges.

In addition to being based on probable cause, warrants are required to be particular in that police cannot search a location, such as an arrestee's house, for whatever potentially incriminating evidence might be there. Police must know what they are looking for. For example, in the United States, police cannot get a search warrant for a known criminal's electronic devices under the reasonable belief that there will be records of some illegal activity on the devices unless they can state specifically what they expect to find—whether that be incriminating text messages or child pornography.[79] The same goes for searching a house. U.S. police cannot obtain a general warrant to search a suspect's home, even if they have probable cause to arrest him for a crime, without listing specifically what they expect to find in the house.[80]

The particularity requirement in the Fourth Amendment was an obvious reaction to highly invasive general searches conducted by

74. Brinegar v. United States, 338 U.S. 160, 175 (1949); Illinois v. Gates, 462 U.S. 213, 230 (1983).

75. *See Brinegar*, 338 U.S. at 164.

76. Ornelas v. United States, 517 U.S. 690, 695 (1996).

77. 338 U.S. 160.

78. *Id.* at 175–76 (quoting Carroll v. United States, 267 U.S. 132, 162 (1925)) (alteration in original).

79. *See e.g.*, State v. Henderson, 854 N.W.2d 616, 629–31 (Neb. 2014).

80. *See e.g.*, Groh v. Ramirez, 540 U.S. 551, 557 (2004).

British authorities before the American Revolution.[81] However, the Court's present interpretation of the Fourth Amendment's search requirements may be an overreaction in the sense that it bans any nonparticular search, irrespective of the strength and quality of the evidence against the suspect or the seriousness of the offense. Note, as an alternative view, that the U.K. rules automatically allow the search of a person, their property, and their possessions, upon arrest,[82] as in the Junead Khan case described above. In the United Kingdom, the protection from governmental overreach is provided by the probable-cause requirement for arrest.[83] Once that is established, the balance of societal interests shifts. It is not unreasonable to conclude, as the United Kingdom has, that the privacy interests of a person for which there is probable cause to believe that they have committed an offense may be weighed differently from those of ordinary citizens.

While warrants are normally required to make arrests or engage in searches and seizures, the Court has delineated six major exceptions that allow police to act without a warrant.[84] The *search-incident-to-arrest exception* allows police to search a lawfully arrested suspect and the area immediately under their control to an extent necessary to neutralize threats to officers' safety and to preserve evidence from destruction.[85] The *plain view exception* allows police to seize evidence of a crime that is in plain view of an officer who is lawfully present.[86] The *consent exception* allows police to engage in any search if the owner of the property consents.[87] The *stop-and-frisk exception* (a *Terry* stop) allows police to stop and question an individual on the basis of statable facts giving rise to "reasonable suspicion" (a standard lower than probable cause but higher than mere suspicion).[88] The officer may also frisk the suspect if there is reason to believe they may be carrying a weapon.[89] The *vehicle exception* allows police to search any movable

81. *See supra* notes 43–44 and accompanying text.

82. Police and Criminal Evidence Act 1984, c. 60, §§ 18(4)–(5), 32(2)(b) (UK), https://www.legislation.gov.uk/ukpga/1984/60/data.pdf [https://perma.cc/HNX3-BNPS]; Slobogin, *Regulatory Approaches*, *supra* note 68, at 426–27.

83. Slobogin, *Regulatory Approaches*, *supra* note 68, at 426.

84. *See generally* Craig Hemmens, *Law Enforcement Case Law*, 30 CRIM. JUST. REV. 256 (2005).

85. Chimel v. California, 395 U.S. 752, 762–63 (1969); Frank Rudy Cooper, *Post-Racialism and Searches Incident to Arrest*, 44 ARIZ. ST. L.J. 113, 116 (2012).

86. Horton v. California, 496 U.S. 128, 133–36 (1990).

87. Schneckloth v. Bustamonte, 412 U.S. 218, 248–49 (1973).

88. Terry v. Ohio, 392 U.S. 1, 30–31 (1968).

89. *Id.*

vehicle on the basis of probable cause that the vehicle contains evidence or fruits of a crime.[90] A warrant is not required because delay could allow escape and the destruction of evidence, but the warrantless search must be restricted to areas where the police could reasonably expect to find the evidence they are looking for.[91] (For example, police could not search the glove compartment of a car they have probable cause to suspect is carrying a trafficked child, but they could search it if they were looking for drugs.) Finally, the *exigent circumstances exception* applies when "'the exigencies of the situation' make the needs of law enforcement so compelling that [a] warrantless search is objectively reasonable under the Fourth Amendment."[92] In practice, this allows police to seize evidence, without a warrant, that would likely be removed or destroyed as well as to enter a location in lawful pursuit of a suspect.

Of course, these exceptions have limited effect in the real world because they all require judgment calls by police, often under rapidly changing and difficult circumstances, and any error in judgment means that the evidence obtained will be excluded from use by the prosecution at trial.[93] The reality is that these exceptions to the warrant requirement are not used in many, if not most, of the situations in which they apply.[94] Any warrantless search or seizure may be challenged, and investigators must convince a court that their actions were authorized under one of the exceptions.

By contrast to America's reliance on warrants, other Western countries have not adopted such requirements.[95] Many European countries, such as France and Germany, do not generally require warrants but prioritize acting on reasonable suspicion in order to follow promising leads.[96] In Germany, "[t]he contrast with American search and seizure law is striking. Searches may be performed on mere 'suspicion,' rather than probable cause, and a written search warrant is

90. Carroll v. United States, 267 U.S. 132, 162 (1925); Chambers v. Maroney, 399 U.S. 42, 48 (1970).

91. Wyoming v. Houghton. 526 U.S. 295, 304–05 (1999); Robert Hall, Comment, *The Automobile Inventory Search and* Cady v. Dombrowski, 20 VILL. L. REV. 147, 148 (1974).

92. Mincey v. Arizona, 437 U.S. 385, 394 (1978) (quoting McDonald v. United States, 355 U.S. 451, 456 (1948)).

93. Weeks v. United States, 232 U.S. 383, 398 (1914); Mapp v. Ohio, 367 U.S. 643, 659 (1961).

94. *See* Slobogin, *Regulatory Approaches*, *supra* note 68, at 430–37.

95. *Id.* at 426–29; Christopher Slobogin, *Comparative Empiricism and Police Investigative Practices*, 37 N.C. J. INT'L L. & COM. REG. 321, 323–26 (2011) [hereinafter Slobogin, *Comparative Empiricism*].

96. Slobogin, *Comparative Empiricism*, *supra* note 95, at 323–26.

frequently not used at all in Germany."[97] German police can conduct any search without a warrant if there is a danger that evidence might be lost with delay.[98] As a result, the majority of searches in Germany occur without a warrant.[99] In France, search warrants are not required when investigating serious crimes, and police are allowed to conduct any search that could reasonably aid the investigation, with rules governing how the search may be conducted.[100] And, as noted above, even in the United Kingdom, the originator of many of America's warrant requirements, police have greater latitude, such as being allowed to search an arrestee's property without an additional warrant, as in the Junead Khan case. Many European countries are examples of societies that highly value privacy but strike a different balance on search and seizure rules to better facilitate crime investigation. It should be no surprise that such countries also enjoy higher crime clearance rates.[101]

2. Complexity and Vagueness

The complicated nature of America's judicially created search and seizure rules leads to general incomprehension of the rules among police officers and many accidentally illegal searches, as well as an unwillingness by police to engage in some searches due to the fear of conducting an unlawful search. One study of more than 450 police officers found that they performed "better than chance" on only one of six questions about search and seizure rules.[102] Other studies have found that the "average officer [does] not know or understand proper search and seizure rules" and that officers demonstrate a "widespread inability

97. Craig M. Bradley, *The Exclusionary Rule in Germany*, 96 HARV. L. REV. 1032, 1039 n.26 (1983).

98. *Id.* at 1038.

99. *Id.* at 1038 n.22.

100. *See* Slobogin, *Comparative Empiricism*, *supra* note 95, at 323–26.

101. The German homicide clearance rate is above 90 percent. *Murder Case Clearance Rate of the Police in Germany from 2011 to 2022*, STATISTA (May 9, 2023), https://www.statista.com/statistics/1101828/police-murder-case-clearance-rate/ [https://perma.cc/33XW-ZYN3]. France has an 80 percent clearance rate. Laurent Mucchielli, *Homicides in Contemporary France*, *in* HANDBOOK OF EUROPEAN HOMICIDE RESEARCH: PATTERNS, EXPLANATIONS, AND COUNTRY STUDIES 301, 305 (Marieke C.A. Liem & William Alex Pridmore eds., 2012).

102. Slobogin, *Regulatory Approaches*, *supra* note 68, at 434 (citing William C. Heffernan & Richard W. Lovely, *Evaluating the Fourth Amendment Exclusionary Rule: The Problem of Police Compliance with the Law*, 24 U. MICH. J.L. REFORM 311, 331, 333 (1991)).

to apply the law of search and seizure or police interrogation."[103] The Supreme Court recognizes a "good faith" exception to the exclusionary rule for searches made under a judicial warrant later held to be improperly issued.[104] However, this exception applies only to errors by judges and not to good faith errors made by police officers in conducting a warrantless search, and some state courts do not recognize any "good faith" exception at all.[105]

3. The Federal Judicial Nature of Search and Seizure Rules

The Supreme Court's 1961 decision in *Mapp v. Ohio*[106] radically shifted the landscape of search and seizure restrictions, marking the launch of what some have referred to as the "criminal procedure revolution."[107] Before *Mapp*, the power to decide the scope of search and seizure restrictions was left largely to the states—at least as far as criminal proceedings were concerned.[108] Although states were not free to "affirmatively" endorse police conduct that ran afoul of Fourth Amendment restrictions as interpreted by federal courts, the means of enforcing Fourth Amendment violations were left up to the states.[109] In *Wolf v. Colorado*,[110] the Supreme Court recognized "varying solutions which spring from an allowable range of judgment" on Fourth Amendment issues, and declined to impose the exclusionary rule on the states just twelve years before *Mapp* did so.[111] Before *Mapp*, states had the practical ability to balance the interests at stake in making decisions on search and seizure rules and how strictly to enforce them. The variety of approaches taken by states—which was documented by the

103. *Id.* (quoting Eugene Michael Hyman, *In Pursuit of a More Workable Exclusionary Rule: A Police Officer's Perspective*, 10 PAC. L.J. 33, 47 (1979); L. Timothy Perrin, H. Mitchell Caldwell, Carol A. Chase & Ronald W. Fagan, *If It's Broken, Fix It: Moving Beyond the Exclusionary Rule*, 83 IOWA L. REV. 669, 727 (1999)).

104. United States v. Leon, 468 U.S. 897, 905, 926 (1984).

105. *See id.* at 926; Megan McGlynn, *Competing Exclusionary Rules in Multistate Investigations: Resolving Conflicts of State Search-and-Seizure Law*, 127 YALE L.J. 406, 410, 417–18 (2017).

106. 367 U.S. 643 (1961).

107. Yale Kamisar, Mapp v. Ohio*: The First Shot Fired in the Warren Court's Criminal Procedure "Revolution," in* CRIMINAL PROCEDURE STORIES 45, 45 (Carol S. Steiker ed., 2006).

108. Paul G. Cassell, *The Mysterious Creation of Search and Seizure Exclusionary Rules Under State Constitutions: The Utah Example*, 1993 UTAH L. REV. 751, 759.

109. Wolf v. Colorado, 338 U.S. 25, 28 (1949).

110. 338 U.S. 25 (1949).

111. *Id.* at 28–33.

Supreme Court in both *Wolf* and its 1960 decision in *Elkins v. United States*[112]—reflects the considerable variation in the relevant value judgments across different communities.

After *Mapp,* however, the balancing decision was made for states by the Supreme Court, and all evidence obtained through an illegal search *as defined by the Court*, no matter how reliable or incriminating the evidence and no matter how serious the offense, is subject to the exclusionary rule. States can create additional restrictions on searches, but they are bound by the federal restrictions, which already set demanding requirements limiting investigation. Some on the Court, such as Justice Burger, criticized the application of the exclusionary rule to the states for "inhibit[ing] the development of rational alternatives" by states that would strike a different balancing of the competing interests at stake.[113]

The federal courts' usurpation of the states' role in setting search and seizure rules is problematic as there are strong arguments for why search and seizure rules should be created by the individual states. Nearly every state has an affirmation of the Fourth Amendment in its State Constitution.[114] Why shouldn't each state be free to act for its own community in converting the broad language of the Fourth Amendment into specific rules? Doesn't it seem likely that different state populations would want to strike the privacy-justice balance somewhat differently?

Indeed, this same observation argues for having a democratically elected legislature rather than judges strike the balance.[115] Legislatures are arguably more responsive to changes in those societal judgments than courts, and more likely to evaluate and revise rules based on changing practical effects.[116] By contrast, the judicial doctrine of stare decisis means old decisions on police investigation often continue to govern society even if relevant societal circumstances change and even if the effects of the rules have caused the people of a state to desire a significantly different balance of the competing interests. Such legislative rules would also probably be simpler and easier for police to

112. 364 U.S. 206, 223–24 (1960).

113. Stone v. Powell, 428 U.S. 465, 500 (Burger, C.J., concurring); Yale Kamisar, *In Defense of the Search and Seizure Exclusionary Rule*, 26 HARV. J.L. & PUB. POL'Y 119, 126 (2003).

114. *See* Sydney Goldstein, *Search and Seizure Laws by State*, LAWINFO (Mar. 4, 2021), https://www.lawinfo.com/resources/criminal-defense/search-seizure-laws-by-state.html [https://perma.cc/TX8W-VRN2].

115. *See* Donald A. Dripps, *Justice Harlan on Criminal Procedure: Two Cheers for the Legal Process School*, 3 OHIO ST. J. CRIM. L. 125, 140 (2005).

116. *See id.* at 140–41.

apply. Virtually all these arguments apply not only to search and seizure rules but also to rules governing the interrogation of suspects and the use of new technologies, addressed later in this Article.

Stripping legislatures of their ability to make fundamental decisions on how to limit police investigation is especially problematic because there is no evidence legislatures would not properly consider the liberty interest of their citizens. Indeed, legislatures have shown themselves clearly willing to restrict police in ways the courts have not. Almost every state has varying additional rules on police power beyond what is established by the Supreme Court. For example, Delaware forbids warrants from being executed between 10:00 p.m. and 6:00 a.m. unless a judge rules it necessary.[117] Illinois requires a warrant to be executed within ninety-six hours of its issuance.[118] New Hampshire classifies canine drug sniffs as searches and requires police to have probable cause to use them.[119] Some scholars, activists, and special interest lobbyists continue to push for tighter state legislative restrictions on search and seizures than the federal rules, demonstrating the unfoundedness of fears that legislatures will ignore privacy rights.[120] Just as legislatures can create *additional* restrictions on police investigation, they should also be able to reconsider existing judicial restrictions in light of changing circumstances.

4. Concrete Effects on Justice

Clearly, the nature of the American warrant requirement leads to justice failures by frustrating investigators' ability to follow reasonable leads (that do not amount to probable cause with particularity) and by delaying searches even when particularity and probable cause are satisfied. Quantifying the effect of warrant requirements on justice is difficult, however, as there is almost no data on the subject.

Processing times can be an issue since "drafting and submitting a warrant application may take as long as half a day."[121] If police are forced to take the time to draft and submit a warrant and wait for it to be approved, justice delayed may become justice denied when evidence is lost or destroyed. But while this effect exists, no statistics are kept as to how much evidence may be lost due to the delay from the warrant requirement, and it may not be feasible to gather such statistics.

117. Del. Code Ann. tit. 11, § 2308 (2015).

118. 725 Ill. Comp. Stat. 5/108-6 (2023).

119. State v. Pellici, 580 A.2d 710, 716 (N.H. 1990).

120. Michael E. Keasler, *The Texas Experience: A Case for the Lockstep Approach*, 77 Miss. L.J. 345, 352 (2007).

121. Slobogin, *Regulatory Approaches*, *supra* note 68, at 431.

Additionally, 8 percent of warrant applications are denied, and 5 percent of issued warrants are later deemed invalid, often halting the possibility of further investigation and prosecution.[122] It has been estimated that around 100,000 search warrants are issued in the United States each year,[123] which means that though denials and invalidations are small percentages, these numbers translate into thousands of cases where investigations were likely stymied[124]—8,000 search warrants denied and 5,000 later invalidated.

However, by far the greatest effects on justice created by search and seizure restrictions are the tens or hundreds of thousands of unrecorded instances where investigators need to search but do not apply for a warrant because it is not clear that the warrant would be granted. Many of these searches that do not take place could have brought justice in cases of serious crime, which means the costs of the search and seizure restrictions are invisible but significant. Trying to measure the number of unconducted searches is difficult, but one can get an idea for the size of the effect by looking at data on traffic stops. One study compared the vehicle stop and search rate in Los Angeles, where officers have great discretion in such searches, to the rate in Pittsburgh, where the requirements for a vehicle search are almost warrant-like. In Los Angeles, fifty-three such searches per thousand people were conducted, compared to just six such searches per thousand people in Pittsburgh,[125] even though the latter had a higher violent crime rate.[126] It appears that tightening search requirements leads to an enormous drop-off in the searches police even attempt to perform—certainly more than halving such searches.

The evidence supports the obvious assumption that more restrictive search and seizure rules produce more crime. When the federal search and seizure rules along with the exclusionary rule were imposed on the states in 1961, it caused dramatic effects on crime and clearance rates. A recent empirical study on the effect of the *Mapp* decision found that in jurisdictions where *Mapp* imposed an exclusionary rule that had not previously existed, reports of assault increased by 18 percent, and reports of violent crimes increased by 27 percent in suburban

122. *Id.* at 430.

123. Oren Bar-Gill & Barry Friedman, *Taking Warrants Seriously*, 106 NW. U. L. REV. 1609, 1666 (2012).

124. *Id.*

125. *Id.* at 1667.

126. The violent crime rate in Pittsburgh is reported as having been 899/100,000 in 2010, while Los Angeles's rate was 559/100,000. *Crime in the United States: 2010: Table 6*, FBI, https://ucr.fbi.gov/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/tables/table-6 [https://perma.cc/AT5P-5GFX].

localities.[127] These numbers equal hundreds of thousands of additional victimizations that need not have occurred.[128] It appears that instead of risking violating complex rules police simply declined to search and, thus, caught fewer criminals, leading to more crime as deterrence lessened and the same criminals reoffended. Such increased crime rates have the effect of in turn decreasing clearance rates,[129] which, as discussed in Part I.C, creates a vicious cycle of more crime, more justice failures, and reduced moral credibility of the system, which creates more crime, and so on.

D. Public Concerns

The societal costs of limiting police searches are largely invisible to most Americans because the failures of justice they cause are not likely to make the news. There are exceptions to this, such as the case of Al-Qaeda terrorist Zacarias Moussaoui, where if a search warrant had been issued, it might have stopped the 9/11 attacks.[130] But most of the time, the public is unaware of any specific failure of justice caused by a lack of search authority. The case of Moussaoui and public fears about terrorism did lead to a discussion about loosening the rules around searches through laws like the PATRIOT Act of 2001,[131] which was designed to make investigation of potential terrorism easier.[132]

This legislative expansion of search authority, which was not resisted by the courts, met with public approval in the wake of the 9/11 terrorist attacks. A survey after the Act's passage found that 48 percent of the public claimed that the PATRIOT Act was "about right"[133] and

127. Atkins & Rubin, *supra* note 51, at 173–74.

128. The rate of violent crime increased nearly fivefold between 1960 and 1992. Am. Legis. Exch. Council, Report Card on Crime and Punishment 5 (1994). In 1960, an individual had a one in 622 chance of being a victim of a violent crime and by 1992 the odds were one in 132. *Id.* at 7. In a study by MIT, it was determined that a boy born in 1974 had a greater chance of being a homicide victim than a World War II soldier had of dying in battle. *Id.* at 10.

129. *See* Lattimore et al., *supra* note 28, at 131–33.

130. *See supra* notes 71–72 and accompanying text.

131. Pub. L. No. 107-56, 115 Stat. 272 (2001) (codified as amended in scattered sections of U.S.C.).

132. *See id.* §§ 501–508, 115 Stat. 363–68.

133. David W. Moore, *Public Little Concerned About Patriot Act*, Gallup (Sept. 9, 2003), https://news.gallup.com/poll/9205/public-little-concerned-about-patriot-act.aspx [https://perma.cc/ZQ82-GHYK].

only 22 percent believed that it had gone "too far" towards restricting individual liberties for antiterrorism purposes.[134]

The public often adjusts to the status quo, especially on complicated legal matters like search and seizure, so perhaps a more accurate gauge of public opinion would be to look at the reaction to the Supreme Court opinions that created the current set of judicial rules back when they were not the status quo. That reaction was largely negative with public outrage being sparked by the Warren Court's seeming disregard for the importance of doing justice and of public safety in favor of increasingly detailed limitations on police.[135]

Public concern today over search and seizure rules is usually generated by special interest groups, the majority of which are dedicated to advancing privacy rights.[136] While there are many such groups advocating for further restrictions on search rules, there is no similar-sized lobby pressing for expanding search and seizure authority. This is largely because the failures of justice caused by search and seizure restrictions are mostly invisible to the public.

E. Reforms

As with other judicial rules, significant reforming of search and seizure limitations would require the Supreme Court to revise its jurisprudence. The court has occasionally done so in the past, for example, in recognizing six major exceptions to the warrant requirement, as discussed above.[137] Additionally, legislatures can make some changes to streamline the warrant procurement process. Discussed below are other reforms that have already been undertaken and, at the end of this Subpart, some more ambitious reform proposals.

134. *Id.* Moore explains that Americans largely supported the PATRIOT Act's efforts to thwart terrorism despite the Act raising some privacy concerns. In other words, fear of terrorism may have overpowered concerns about privacy in this instance. *Id.* When the fear of terrorism began to fade, however, support for the PATRIOT Act faded as well, and some of its provisions lapsed in 2020. India Mckinney, *Section 215 Expired: Year in Review 2020*, ELEC. FRONTIER FOUND. (Dec. 29, 2020), https://www.eff.org/deeplinks/2020/12/section-215-expired-year-review-2020 [https://perma.cc/TD9L-6BKX].

135. In 1967, 52 percent of people polled felt that the criminal law system was "too easy" on criminals. Post-*Warren*, in 1981, that number had grown to 83 percent. *See* Off. of Legal Pol'y, *Report to the Attorney General on the Search and Seizure Exclusionary Rule*, 22 U. MICH. J.L. REFORM 573, 611 n.99 (1989) (citing Everett Carll Ladd, *The Freeze Framework*, PUB. OPINION, Aug.–Sept. 1982, at 26).

136. *See, e.g.*, *Search and Seizure*, ACLU, https://www.aclu.org/issues/criminal-law-reform/reforming-police/search-and-seizure [https://perma.cc/W9H6-YWHA].

137. *See supra* text accompanying notes 84–92.

- *Recognize Exceptions to Suppression of Evidence Under the Exclusionary Rule.* Even if the search and seizure warrant requirements are not loosened, the Supreme Court could reduce the societal damage of these requirements by abolishing or limiting the exclusionary rule. While the direct effect of this would not be to improve investigative success, it would at least be likely to improve prosecution success by allowing reliable and probative evidence to be admitted at trial. (Obviously, some alternative mechanism would be required to encourage police compliance with existing restrictions.[138]) On the other hand, it is possible that this shift might reduce the number of instances in which officers presently decline to pursue a search or seizure because, while they think it is authorized, they don't want to risk permanently hobbling the investigation if they are later held to have been mistaken.
- *Simplify the Process of Obtaining Search Warrants.* Some legislative reforms have attempted to simplify the process of obtaining a warrant in the interest of efficiency and justice. For example, police commonly search for criminals who are sexually exploiting children and uploading videos of that exploitation for others to see—but concealing their locations through anonymizing technology.[139] The recordings are located in several jurisdictions, and the investigators would need search warrants in each jurisdiction in order to remotely access the contents of the computers there.[140] To lighten this burden, in 2016, Rule 41 of the Federal Rules of Criminal Procedure was amended by Congress to allow judges to issue warrants to members of law enforcement for the remote search (hacking) of computers or electronics outside of the jurisdiction in which the warrant was issued.[141]

Additionally, warrants sometimes get held up in review at police departments before being sent to judges. Some jurisdictions have implemented reforms that speed up the forwarding of warrant applications, usually by utilizing electronic approval processes that can allow department supervisors to review search requests much faster.[142] Forty-

138. *See* PAUL H. ROBINSON, JEFFREY SEAMAN & MUHAMMAD SARAHNE, CONFRONTING FAILURES OF JUSTICE: GETTING AWAY WITH MURDER AND RAPE ch. 6 (forthcoming Sept. 2024).

139. *Id.*

140. *See* Leslie R. Caldwell, *Rule 41 Changes Ensure a Judge May Consider Warrants for Certain Remote Searches*, U.S. DEP'T OF JUST. (June 20, 2016), https://www.justice.gov/archives/opa/blog/rule-41-changes-ensure-judge-may-consider-warrants-certain-remote-searches [https://perma.cc/FLD8-BLQB].

141. *See id.*

142. ELIZABETH GROFF & TOM MCEWEN, OFF. OF CMTY. ORIENTED POLICING SERVS., IDENTIFYING AND MEASURING THE EFFECTS OF INFORMATION TECHNOLOGIES ON LAW ENFORCEMENT AGENCIES 25

five states have also implemented some form of electronic court submission for warrants.[143] In Utah, for example, electronic warrant applications can be processed and sent to judges within minutes.[144] Besides warrant applications, some jurisdictions now use electronic forms and accept electronic affidavits and other digital forms of evidence.[145] A minority of jurisdictions have implemented an entirely electronic process.[146]

A number of bolder reforms have been imagined but not yet been tried:

- *Recognize Additional Exceptions or Revisions to the Current Rules.* Some commentators have suggested that a consideration of crime severity be added to the Fourth Amendment requirements that would allow greater freedom to search in serious cases (such as by reducing the particularity or probable cause requirements as is already the case in France.)[147] Thus, an invasive search of someone accused of murder would be viewed by courts as more permissible than an invasive search of someone accused of a nonviolent or less serious crime. This could be done either by reducing the extent of probable cause required in serious cases or by increasing the extent of intrusion permitted upon finding probable cause, as in allowing the search of a suspect's phone incident to a probable-cause arrest for a serious offense. Similarly, some scholars advocate for a homicide-scene exception that would allow police to conduct a warrantless search of the surroundings of a homicide scene.[148] Implementing these exceptions might enhance the ability of police to investigate the most serious cases and prevent failures of justice. But

(2008), https://www.govinfo.gov/content/pkg/GOVPUB-J36-PURL-gpo11570/pdf/GOVPUB-J36-PURL-gpo11570.pdf [https://perma.cc/PB9Y-M8MP].

143. ELAINE BORAKOVE & REY BANKS, JUST. MGMT. INST., IMPROVING DUI SYSTEM EFFICIENCY: A GUIDE TO IMPLEMENTING ELECTRONIC WARRANTS ii, 8 (2018), https://www.responsibility.org/wp-content/uploads/2018/04/FAAR_3715-eWarrants-Interactive-PDF_V-4.pdf [https://perma.cc/N7JU-YU92].

144. *Id.* at vii, 41–43; Jessica Miller & Aubrey Wieber, *Warrants Approved in Just Minutes: Are Utah Judges Really Reading Them Before Signing Off?*, THE SALT LAKE TRIB. (Jan. 16, 2018, 3:13 PM), https://www.sltrib.com/news/2018/01/14/warrants-approved-in-just-minutes-are-utah-judges-really-reading-them-before-signing-off/ [https://perma.cc/8NYL-4THP].

145. BORAKOVE & BANKS, *supra* note 143, at ii, 8, 68–76.

146. *Id.* at 9.

147. Jeffrey Bellin, *Crime-Severity Distinctions and the Fourth Amendment: Reassessing Reasonableness in a Changing World*, 97 IOWA L. REV. 1, 6, 18–21 (2011); Slobogin, *Comparative Empiricism*, *supra* note 95, at 323–25.

148. Bruce D. Hausknecht, *The "Homicide Scene" Exception to the Fourth Amendment Warrant Requirement: A Dead Issue?*, 71 J. CRIM. L. & CRIMINOLOGY 289, 291, 294–95, 297–99 (1980).

these reforms, and many others, may be unlikely because they would require the judiciary to amend current constitutional interpretations.

- *Educate Judges on the Societal Costs of Current Judicial Interpretations and on Changes in Circumstances Since the Judicial Interpretation Was First Adopted.* Given the existing judicially controlled system for striking the privacy-justice balance, it could be useful to educate judges on the effect of their interpretations by providing a data-driven analysis of the real-world costs of such interpretations. Such information might include the effects on crime of certain investigative or interrogative rules, the investigative benefits of new technologies, the availability of alternative interpretations of the broad Fourth Amendment language that would strike an updated balance between justice and privacy, and so on. This kind of education would recognize the basic legislative function judges are now playing in limiting police investigation and would strive to provide judges with the kind of information any lawmaker would think appropriate in exercising such a balancing function.

F. Recommendation: Legislatively Codify Existing Search and Seizure Rules

One useful way of clarifying existing search and seizure rules and reasserting some degree of legislative involvement would be for state legislatures (as well as Congress on the federal level) to codify existing search and seizure rules and exceptions into a single comprehensive investigative code. For the most part, the current rules governing search and seizure are embodied in court precedents, rendering them narrow in scope and often leaving gray areas in the law. They do not provide the confidence, breadth, and clarity that a legislative enactment can. The proposal is for legislatures to review existing court precedents and to use them as the basis for enacting a comprehensive investigation code that spells out in one place, with clarity and authority, investigators' powers and limitations. The legislative code would work to fill in gaps in precedent, clarify gray areas, and potentially even push the bounds of some judicial precedents that seem unwise and malleable. Courts may be willing to accept a boundary-pushing legislative rule because courts commonly prefer to avoid overturning democratic enactments. The current status quo of judicial rules results more from legislative abdication of responsibility over search and seizure law than a direct attack on the power of legislatures by courts.

This recommended reform is best suited to reducing justice failures for several reasons. First, by having some degree of legislative involvement in codifying and clarifying search and seizure rules, the rules may end up better reflecting the balance of interests that the community would support, or at least would be seen as more legitimate. Second, even if no restrictions are removed, the clarity provided by a legislative code would likely make police more efficient and decisive in

performing searches within their authority. There would be fewer occasions where investigators would not search, even though the law actually allows it, because they are unsure about the exact location of the legal boundary (and the cost of exceeding it can be impunity for serious offenses). The clarity of such a legislative code would also make the job of courts easier by giving judges a firmer basis for their adjudication of individual cases. Finally, it is much easier to change a legislative code in response to changing circumstances than it is for courts to reverse past outmoded opinions on their own, given the general judicial obligation to follow precedent.[149] Nothing in the proposal would take away the courts' current authority to declare a search or seizure unconstitutional.

Some jurisdictions have already implemented such a reform. Internationally, the United Kingdom began a comprehensive codification of its court precedents with the Law Commissions Act of 1965,[150] and later specifically codified its search and seizure laws in the Search, Seizure, and Detention Crime Act of 2002.[151] It is the United Kingdom's judicial and parliamentary stance that codification provides clarity and safeguards for law enforcement that court precedents fail to guarantee.[152] In fact, the United Kingdom has adopted what have been called "Police Acts," which are a body of laws that essentially codify the rules governing most aspects of an officer's daily conduct.[153]

While U.S. states do not possess the power of parliament to override courts, at least ten states, including New York, Texas, and Florida, have codified at least some search and seizure exceptions into statutory law.[154] Such codification has even been used to clarify gray areas in court precedent. After the Supreme Court found that a cellphone could not be searched incident to arrest in the 2014 case of *Riley v. California*,[155] Texas codified the circumstances under which police may search a cellphone without a warrant. These include circumstances such as the phone's having been reported as stolen, an existing life-

149. Leslie G. Scarman, *Codification and Judge-Made Law: A Problem of Coexistence*, 42 IND. L.J. 355, 365–66 (1967).

150. *Id.* at 355.

151. Proceeds of Crime Act 2002, c. 29, § 47 (UK), https://www.legislation.gov.uk/ukpga/2002/29/part/2/data.pdf [https://perma.cc/XM2W-4E9H].

152. Scarman, *supra* note 149, at 355–56.

153. *See, e.g.*, *Police Legislation*, POLICE-INFO.CO.UK, https://www.police-information.co.uk/Docs/legislation/index.html [https://perma.cc/UJ2V-YFLF] (providing a comprehensive list of the most important Police Acts in the United Kingdom).

154. Goldstein, *supra* note 114.

155. 573 U.S. 373, 386 (2014).

threatening situation, or the phone's being in possession of a known fugitive or previously convicted criminal.[156] Courts have so far not overturned this legislative rule governing the search of cellphones without a warrant, generally finding that the various situations in which such cellphone searches are undertaken might arguably be justified under one or another of the warrant exceptions currently recognized.[157] This would seem to support the suggestion above that courts are likely to give a certain deference to democratically enacted search and seizure rules, especially if they seem within the general range of existing constitutional interpretations.

The proposed comprehensive codification could have potentially prevented failures of justice in cases like Earl Bradley, mentioned above, and tragedies like 9/11.[158] Considering that multiple complaints of unnecessary sexual touching were filed against Bradley, it is possible that a codified law on search warrants would have made clear that such multiple complaints—especially those alleging suspicion of child abuse, a serious offense—are sufficient for a search warrant of the suspected predator's electronic devices. Additionally, a search law could have made clear that in cases of reasonably suspected terrorist activity on the part of an already arrested suspect, a search of the suspect's electronic devices and communications should be authorized. Such a clarification might have prevented 9/11.

Regardless of one's beliefs on the proper balance between liberty and justice in search and seizure laws, a codification of such laws can only be beneficial by providing some degree of democratic input, informed by practical consequences, and taking account of shifts in technology and culture. It would always remain the case, of course, that courts would have the constitutional authority to reject any aspect of the legislative rules.

III. Legal Rules Governing Custodial Interrogation

Every American probably knows from television that the police cannot simply interrogate a suspect in custody without first reading them their "*Miranda* rights." These include the right to remain silent, a warning that any statement can and will be used against them in court, and the right to have a lawyer present during questioning. Only if a suspect acknowledges he understands and waives these rights can

156. Tex. Code Crim. Proc. Ann. art. 18.0215(d) (West 2022).

157. *See* Erica L. Danielsen, Note, *Cell Phone Searches After* Riley*: Establishing Probable Cause and Applying Search Warrant Exceptions*, 36 Pace L. Rev. 970, 986–87 (2016).

158. *See supra* Part II.A.

custodial questioning proceed.[159] Statements or confessions obtained without such a waiver will likely be excluded from evidence under the exclusionary rule no matter how volitional and no matter how reliable they are. Moreover, post-arrest silence cannot be used against a defendant even to impeach an "ambush defense"—a story carefully constructed after arrest to be consistent with the facts the prosecution will be allowed to present at trial—that was never mentioned when investigators asked.[160]

American arrest warnings were designed by the Supreme Court in the 1966 case of *Miranda v. Arizona*[161] to uphold procedural justice by informing people of their constitutional rights, specifically the Fifth Amendment right against self-incrimination and the Sixth Amendment right to legal counsel.[162] The *Miranda* warnings largely replaced the Court's previous voluntariness test that dated back to common law and focused on excluding only unreliable confessions where there was an indication of coercion.[163] Many have questioned who benefits most from the replacement of this standard by *Miranda*. As one scholar notes, the *Miranda* warnings go "far to protect noncooperation and cover-up by the most knowledgeable, cunning, and steely criminals, while providing only minimal safeguards for those who are uneducated, unintelligent, or easily coerced."[164] This view is supported by the fact that juvenile suspects, who are less likely to have criminal records, waive their *Miranda* rights at notably higher rates than their adult counterparts.[165]

Evidence suggests that confessions are needed for conviction in almost a quarter of all cases,[166] and measures that limit reliable,

159. Miranda v. Arizona, 384 U.S. 436, 444 (1966).

160. *See* Chris Blair, Miranda *and the Right to Silence in England*, 11 TULSA J. COMP. & INT'L L. 1, 2–3, 12–13 (2003).

161. 384 U.S. 436 (1966).

162. *Id.* at 442, 444–45.

163. Bram v. United States, 168 U.S. 532, 541–42, 548 (1898); Dickerson v. United States, 530 U.S. 428, 431–32, 435–36, 444 (2000) (explaining that voluntariness is only one inquiry in the *Miranda* warning procedure and declining to overturn the precedent case).

164. Scott W. Howe, *Moving Beyond* Miranda*: Concessions for Confessions*, 110 NW. U. L. REV. 905, 906 (2016) (citing Richard A. Leo, *Inside the Interrogation Room*, 86 J. CRIM. L. & CRIMINOLOGY 266, 286 (1996); William J. Stuntz, Miranda*'s Mistake*, 99 MICH. L. REV. 975, 977 (2001)).

165. Approximately 90 percent of juveniles waive their *Miranda* rights, while about 80 percent of adults waive them. Barry C. Feld, *Real Interrogation: What Actually Happens When Cops Question Kids*, 47 LAW & SOC'Y REV. 1, 11 (2013).

166. Paul G. Cassell, Miranda's *Social Costs: An Empirical Reassessment*, 90 NW. U. L. REV. 387, 433, 434 tbl.2 (1996).

voluntary, and uncoerced confessions will regularly lead to avoidable failures of justice. This fact moved Justice Byron White to dissent from the *Miranda* decision stating, "[i]n some unknown number of cases the Court's rule will return a killer, a rapist or other criminal to the streets and to the environment which produced him, to repeat his crime whenever it pleases him."[167] The extent of these justice failures has become clearer since the advent of *Miranda*. Research on the decline in confessions and crime clearance rates reveals thousands of justice failures are routinely caused by the *Miranda* warnings.[168] Suspects have a right to remain silent, but society may wish to reconsider the consequences of so aggressively encouraging silence.[169] Consider two examples of the costs.

A. Case Examples

Swedi Iyombelo has been communicating with an eighteen-year-old female online. In February 2019, the two agree to meet in Bingham County, Idaho. When the woman arrives, however, she is confronted by a group of four men who gang-rape her. She goes to the police, and all four are arrested and when interviewed make incriminating statements. The defendants' attorneys argue that the County Sheriff who arrested the men did not use the proper language in advising them of their *Miranda* rights. According to the sheriff's office, "[o]ne of our deputies made an error while telling two of the four suspects their Miranda rights when he told them they had a right to an attorney 'in court'—instead of just saying they had a right to an attorney."[170] Based on the wording error, the court suppresses the incriminating statements, and instead of facing life in prison, the four men are allowed to plead guilty to a misdemeanor and put on probation. A spokesman for the office writes, "[i]t was an honest mistake that had a horrible consequence."[171]

167. *Miranda*, 384 U.S. at 542 (White, J., dissenting).

168. Paul G. Cassell & Bret S. Hayman, *Police Interrogation in the 1990s: An Empirical Study of the Effects of* Miranda, 43 UCLA L. REV. 839, 847–48 (1996).

169. Paul G. Cassell & Richard Fowles, *Still Handcuffing the Cops? A Review of Fifty Years of Empirical Evidence of* Miranda*'s Harmful Effects on Law Enforcement*, 97 B.U. L. REV. 685, 687 (2017) (quoting *Miranda*, 384 U.S. at 504, 517 (Harlan, J., dissenting)).

170. Tommy Simmons, *Miranda Rights Error Undercuts Evidence in Case of Boise Teens Initially Charged with Rape*, IDAHO PRESS (Sept. 27, 2019), https://www.idahopress.com/news/local/miranda-rights-error-undercuts-evidence-in-case-of-boise-teens-initially-charged-with-rape/article_ace36bdd-a2c1-55f4-bd43-12b395836c7a.html [https://perma.cc/SS35-5QYU].

171. *Id.*

Consider another example. On August 18, 1995, Brian Argent goes to a nightclub in East London with his wife. At some point, an intoxicated Tony Sullivan asks Argent's wife to dance.[172] Argent is furious. Sullivan slips away. When Argent leaves the club, he sees and stabs an unresisting Sullivan seven times with a knife before leaving him to die in the gutter. Later that day, police arrest Argent at his house for the killing and ask him for his side of the story. Argent refuses to answer any questions then or at any subsequent time during the investigation. At trial, he offers an elaborate story, worked out with his wife, about how he left the club early and never met Sullivan. Prosecutors argue that, if that were the case, why wouldn't Argent ever have mentioned any of this to police when they first came to arrest him for stabbing Sullivan? The prosecution argues that he never mentioned any such story because it was fabricated after the fact as the best story he could come up with consistent, with the facts that would be presented at trial. English law allows post-arrest silence to be used to impeach a defendant's credibility, so the jury is allowed to hear about Sullivan's failure to ever mention his story, and they choose to disbelieve him. They convict him of murder.[173] In the United States, however, Argent's failure to mention any part of his elaborate story when asked by investigators would have to be hidden from the jury, so the prosecution could not effectively impeach the credibility of his fabricated alibi.

B. Competing Interests

Citizens will want to consider both sides of the interests in tension here, because they will suffer the consequences of either too many or too few restrictions on interrogation rules.

1. Interests Supporting the Current Restrictions on Interrogation Warnings

- *Encouraging the Use of Fifth and Sixth Amendment Rights.* Current interrogation rules centering around the *Miranda* warnings encourage suspects to invoke their right to remain silent and consult a lawyer. To the extent this is considered an interest society values, then the status quo upholds it to at least some degree. Perhaps encouraging the use of such rights is innate to respecting human dignity, but that is not entirely clear since it might be argued that respecting human dignity merely requires not engaging in coercion.
- *Preventing False or Coerced Confessions.* Current interrogation rules may help prevent false or coerced confessions, although there

172. R. v. Argent [1996] EWCA (Crim) 1728 (Eng.), https://www.casemine.com/judgement/uk/5a938b3e60d03e5f6b82baf5 (last visited Apr. 5, 2024).

173. *Id.*

is little evidence that *Miranda* warnings do this.[174] The standard of voluntariness required in confessions, established by the Supreme Court long before *Miranda*, already prevented police from using coerced confessions in court regardless of whether *Miranda* warnings were given.[175] Some may argue that *Miranda* warnings constitute an extra care in interrogation that is important because wrongful conviction rates in the United States are supposedly so high.

Consider a few popular estimates. "One in every 8.3 people put on death row has been wrongfully convicted and sentenced to death in the U.S. since executions resumed in the 1970s."[176] "Studies estimate that between 4-6% of people incarcerated in US prisons are actually innocent."[177] "Between 2% and 10% of convicted individuals in US prisons are innocent."[178] But these numbers are highly dubious, with a more careful nonideological analysis suggesting that, in reality, the true rate of wrongful convictions is something around 0.031 percent,[179] and this results from a wide range of errors in the system, not particularly unreliable incriminating statements.[180]

- *Forcing Police to Rely on Better Evidence.* By making confessions harder to obtain, interrogation rules such as *Miranda* warnings may force police to rely on better evidence and build stronger cases, thus benefiting justice as a whole and preventing false convictions. However, while nonconfession convictions might be attractive, most serious offenders will not voluntarily confess after getting a

174. Cassell, *supra* note 166, at 473–83.

175. *Brown v. Mississippi* established the basis for the Fourteenth Amendment "voluntariness" doctrine as the due process test for assessing the admissibility of confessions in state cases. 297 U.S. 278, 283, 285–87 (1936).

176. Tiffany Thai, *Death Penalty Abolition Group Charges Wrongful Conviction Rates Mean U.S. Should Abolish the Death Penalty*, THE DAVIS VANGUARD (Jan. 22, 2022), https://www.davisvanguard.org/2022/01/death-penalty-abolition-group-charges-wrongful-conviction-rates-means-u-s-should-abolish-the-death-penalty/ [https://perma.cc/K5J9-DG8J].

177. *Beneath the Statistics: The Structural and Systemic Causes of Our Wrongful Conviction Problem*, GA. INNOCENCE PROJECT, https://www.georgiainnocenceproject.org/general/beneath-the-statistics-the-structural-and-systemic-causes-of-our-wrongful-conviction-problem/ [https://perma.cc/S97N-KVUT].

178. Andriana Moskovska, *33 Startling Wrongful Convictions Statistics [2021 Update]*, THE HIGH CT. (Oct. 13, 2021), https://thehighcourt.co/wrongful-convictions-statistics [https://perma.cc/M8M7-REBE].

179. Paul G. Cassell, *Overstating American's Wrongful Conviction Rate? Reassessing the Conventional Wisdom About the Prevalence of Wrongful Convictions*, 60 ARIZ. L. REV. 815, 846–47, 855 (2018).

180. *Id.* at 848–51.

Miranda warning, and many, if not most, serious offenses cannot be successfully prosecuted without relying to some extent upon an offender's incriminating statements.[181] Further, as to the quality of the evidence, some would argue that there is no stronger evidence than a reliable voluntary confession (or admission of damaging information).

2. Interests Supporting Relaxing Current Restrictions on Interrogation Warnings

- *Doing Justice.* Encouragement to stay silent mainly benefits guilty criminals, whose interests are adversarial to society, and there is no societal value in criminals' staying silent. Encouraging suspects to talk to police is likely to lead to more crimes being solved by confessions or damning admissions. Historical confession rates suggest *Miranda* led to a drop in confessions.[182] Thus, replacing *Miranda* warnings with other rules could lead to a rise in confessions or incriminating statements and thereby an increase in justice for serious offenses.
- Miranda*'s Ineffectiveness. Miranda*'s stated justification was reducing coercion in interrogation, but there is little evidence to suggest that *Miranda* warnings promote this goal.[183] After all, reading words on a page does not prevent police from physically threatening suspects (no matter how illegally) before, during, and after *Miranda* warnings regardless of whether the suspect waives their rights. Moreover, when suspects do waive their rights, police can still engage in manipulative interrogation techniques that some may consider verbal coercion. If judged by its own aims, *Miranda* does not appear to be a success.[184] Most innocent suspects, and many naïve first-time offenders, will waive their *Miranda* rights, but suspects with past arrests are more likely to ask for a lawyer and remain silent—showing that *Miranda* disproportionately benefits career criminals.[185]
- *Greater Deterrence and Less Crime.* Increasing clearance rates through encouraging reliable confessions and incriminating admissions would contribute to deterring future criminals and make society safer.

181. *See* Paul G. Cassell, The Nat'l Ctr. for Pol'y Analysis, NCPA Policy Report No. 218, Handcuffing the Cops: Miranda's Harmful Effects on Law Enforcement 5, 7 (1998), https://www.ncpathinktank.org/pdfs/st218.pdf [https://perma.cc/2VZG-KAL3].

182. For a more detailed discussion of this effect, see *infra* Part III.C.1.

183. Cassell, *supra* note 166, at 473–78.

184. *Id.* at 438–40.

185. Paul G. Cassell, *Tradeoffs Between Wrongful Convictions and Wrongful Acquittals: Understanding and Avoiding the Risks*, 48 Seton Hall L. Rev. 1435, 1472–74 (2017); Richard A. Leo, *The Impact of* Miranda *Revisited*, 86 J. Crim. L. & Criminology 621, 655 (1996).

- *Saving Justice-System Resources.* Proving a crime via confession or damaging statement is the most cost-effective means of obtaining convictions. Even if investigators and prosecutors manage to prove a crime without a confession or incriminating statement, such nonconfession investigations take more time, use more resources, and are less likely to end in plea agreements, thus necessitating more expensive trials.

C. The Nature and Extent of the Problem

1. *Miranda*'s Effects on Confession and Clearance Rates

Miranda's requirements contributed to a notable decrease in confession rates,[186] thus reducing the success of police investigations, resulting in lower crime clearance rates and fewer convictions. When caught, criminals often panic and make incriminating statements either confessing to the crime or attempting to deny the crime in a way that reveals damaging information. *Miranda* warnings are a saving grace to many offenders by giving them an opportunity to calculate how best to escape justice. Even if a guilty suspect chooses to waive their rights and talk to police in a bid to mislead investigators, as many do, the *Miranda* warnings still put suspects in a tactical mindset and prime them to cease answering questions during the interrogation. In essence, *Miranda* warnings could have been taken straight from a criminal's best-practices handbook. And criminals have been taking full advantage of *Miranda*.

Some studies suggest confession rates may have fallen from 55 to 60 percent before the *Miranda* decision to 30 to 40 percent after *Miranda*'s implementation, a reduction of 20 to 25 percent.[187] Another estimate suggests that confession rates dropped by roughly 16 percent.[188] Interestingly, a similar drop in confession rates was observed in the United Kingdom after the adoption of the 1984 PACE Act[189] which led to a requirement that police read arrest warnings similar to *Miranda*.[190] This suggests that *Miranda*-type warnings do indeed affect confession rates. Some pro-*Miranda* scholars have estimated that *Miranda* has only reduced confession rates by as little as 4 percent or 9.1 percent, but even these extremely conservative

186. Cassell & Fowles, *supra* note 169, at 691–93, 699.

187. Cassell & Hayman, *supra* note 168, at 871–72.

188. Cassell, *supra* note 166, at 437, 445.

189. Police and Criminal Evidence Act 1984, c. 60 (UK), https://www.legislation.gov.uk/ukpga/1984/60/data.pdf [https://perma.cc/HNX3-BNPS].

190. Cassell, *supra* note 166, at 420.

estimates show *Miranda* as having a nontrivial effect in tens of thousands of cases.[191]

Statistics on the number of U.S. felony cases resolved by confession are not reported, except by a few cities, and even those few statistics are hardly current, but they are consistent at a rough estimate of 33 percent of cases.[192] Since police make about 500,000 violent crime arrests each year, this would suggest about 167,000 violent crimes each year are resolved by confession.[193] In other words, even if *Miranda*'s confession loss rate was only 10 percent, it would mean that *Miranda* is producing around 18,000 fewer confessions just in cases of violent crime each year.[194] If the loss rate is actually 25 percent, it would mean a loss in more than 55,000 violent crime confessions a year. These calculations do not even consider the much greater loss of confessions for crimes categorized as nonviolent, such as for theft, arson, fraud, certain sex offenses, and many others.

Such decreases in confession rates have in turn reduced crime clearance and conviction rates. It is estimated that confessions are necessary to obtain a conviction in about 24 percent of cases.[195] Assuming that *Miranda* caused a decrease in confessions by 16.1 percent, one scholar and former federal district court judge estimates that convictions in 3.8 percent of cases involving an interrogation were lost purely due to *Miranda*.[196] He estimated that *Miranda* caused the clearance rate for violent crimes to decrease by 6.7 percent, or 28,000 a year,[197] with even more significant decreases for nonviolent crimes (where investigators would be less likely to spend limited resources

191. Slobogin, *Regulatory Approaches*, *supra* note 68, at 448.

192. Cassell & Hayman, *supra* note 168, at 842, 851–52, 872–73 (citing Richard H. Seeburger & R. Stanton Wettick, Jr., Miranda *in Pittsburgh—A Statistical Study*, 29 U. PITT. L. REV. 1 (1967)) (Salt Lake City data was used; there were 219 suspects in the study, which was conducted in 1994; Pittsburgh was used in a study with 157 suspects in 1966).

193. *Crime in the United States: 2019: Table 29*, FBI, https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/tables/table-29 [https://perma.cc/8TRP-SBHW]. One-third of 500,000 is 167,000. While the FBI data is not entirely complete, it is the best source available for this data.

194. Because if 167,000 violent crime confessions occur each year after *Miranda*, and *Miranda* reduced confession rates by ten percent, then the unreduced number of confessions would have been about 185,000.

195. Cassell, *supra* note 166, at 391, 433, 434 tbl.2.

196. *Id.* at 437–38.

197. CASSELL, *supra* note 181, at 10; Stephen J. Schulhofer, *Miranda's Practical Effect: Substantial Benefits and Vanishingly Small Social Costs*, 90 NW. U. L. REV. 500, 545 (1996).

proving the crime if they could not get a confession).[198] More recent empirical work upped these estimates, with research suggesting 213,000 additional violent crimes (other than murder and rape) would have been cleared in 2012 alone without *Miranda*.[199] Much more conservative estimates suggest that *Miranda* only decreased convictions by 1.1 percent, but even that conservative figure means 4,700 lost violent-crime convictions a year.[200]

Regardless of which estimates are used to determine how many convictions have been sacrificed, *Miranda* has clearly had tangible implications on confession rates, clearance rates, and conviction rates. Since *Miranda* was adopted in 1966, the overall justice costs of the decision have been staggering for society. Even using the most conservative estimates available, at least 260,000 serious violent criminals since *Miranda* have escaped conviction purely due to the decision.[201] More reliable estimates would put that number well over a million. Considering that most of these violent criminals who escape because of *Miranda* went on to reoffend, the overall cost to society is incalculable in terms of human misery. If the *Miranda* Court could have seen the full costs of its decision—as Justice White foresaw in his dissent[202]—a very different decision might have been made.

2. The Problem of Ambush Defenses

The Supreme Court has found that the Fifth Amendment right against self-incrimination includes a right not to have post-*Miranda* silence used to impeach a defendant's testimony at trial.[203] This encourages a popular technique among guilty defendants: the ambush

198. Paul G. Cassell & Richard Fowles, *Handcuffing the Cops? A Thirty-Year Perspective on* Miranda*'s Harmful Effects on Law Enforcement*, 50 STAN. L. REV. 1055, 1126 ("Our regression equations and accompanying causal analysis suggest that, without *Miranda*, the number of crimes cleared would be substantially higher—by as much as 6.6-29.7% for robbery, 6.2-28.9% for burglary, 0.4-11.9% for larceny, and 12.8-45.4% for vehicle theft.").

199. Cassell & Fowles, *supra* note 169, at 732 & tbl.5.

200. Schulhofer, *supra* note 197, at 545–46.

201. *See id.* at 546. 4,700 lost violent criminal convictions multiplied by 56 years (1966 to 2022) equals 263,200 lost violent criminal convictions. If the true number of lost violent criminal clearances each year is 28,000, the number becomes 1,568,000, which, even accounting for the lag between clearance and conviction rates, would still be well over a million.

202. *See supra* note 167 and accompanying text.

203. Griffin v. California, 380 U.S. 609, 615 (1965) (holding that the Fifth Amendment privilege against self-incrimination "forbids either comment by the prosecution on the accused's silence or instructions by the court that such silence is evidence of guilt").

defense.[204] An ambush defense is where a defendant will stay silent until they are aware of the prosecution's case, at which point they will construct a believable story to present at trial that fits as well as possible the prosecution's admissible evidence,[205] as in the Brian Argent case above.[206] Guilty defendants often make the mistake of speaking too soon and telling false stories to police that do not account for all the facts that will become known to investigators. The ambush defense can be a powerful tactic for obtaining a false acquittal unless prosecutors are able to point out to the jury that the defendant inexplicably never mentioned any of this exculpating story to investigators. Of course, once the jury knows they are dealing with an ambush defense, the credibility of the defendant is in question unless the defendant can provide some reasonable explanation for why they said nothing to investigators about these compelling exculpatory facts.

As noted, the U.S. rule prohibits prosecutors from making any reference to the defendant's earlier silence, so prosecutors have no way of impeaching an ambush defense. This makes it particularly difficult to prosecute rape cases, where an ambush defense alleging consensual sex is all but impossible to disprove without bringing up the defendant's previous failure when questioned to explain such a consensual encounter. Unlike in the United States, the United Kingdom's interrogation rules limit the possibility of ambush defenses by allowing post-arrest silence to be used to impeach a defendant if they choose to testify with a new story at trial.[207] As a result of this, the U.K. variation of arrest warnings includes a right to remain silent but also a warning that staying silent can harm a suspect's defense if they do not mention now something they later rely on in court.[208]

3. The Judicial Nature of the Rules

The judicial nature of interrogation rules raises its own problems, as mentioned in Part II.B.3 of this Article, relating to search and seizure. Requiring *Miranda* warnings was an act of judicial policymaking, as acknowledged by the Court itself, directed at reducing coercion in interrogation. Such blatant lawmaking provoked outrage at the time[209] and still raises separation of powers concerns. While courts should prevent the use of coerced confessions at trial, it is less clear why they, instead of legislatures, should decide on the exact procedures by

204. *See* Blair, *supra* note 160, at 12–13.

205. *Id.*

206. *See supra* Part III.A.

207. William T. Pizzi, Trials Without Truth 58–59 (1998).

208. *Id.*; *Being Arrested: Your Rights*, GOV.UK, https://www.gov.uk/arrested-your-rights [https://perma.cc/M4XX-M7J3].

209. *See infra* Part IV.D.

which coerced confessions should be avoided. Letting the legislature set the specific procedures would not take away from courts' authority to exclude any confession determined to be coerced, as courts already did before *Miranda*. Setting the specific procedures to avoid coerced confessions, which involves striking the balance between shielding suspects and promoting justice, is arguably better done by a legislature because it is in a better position to evaluate the effects of one policy approach versus another, and in a better position to adapt to changes in societal circumstances, including resulting significant reductions in clearance and conviction rates for serious offenses. The judicially imposed nature of *Miranda* rules also largely prevents state legislatures from exploring alternative reforms aimed at better preventing coercion and promoting reliable confessions. The constitutionalizing of *Miranda*'s quasi-legislative policy has prevented useful experimentation with any other variations in interrogation rules across the country.[210]

4. *Miranda*'s Ineffectiveness

Regardless of who should make interrogation rules, many if not most legal scholars agree that *Miranda* failed to produce its intended benefit of stopping coerced confessions.[211] A quick word of warning about one's rights will not help much if police are determined to make a suspect's life miserable until they get a confession. Further, the fact that juveniles waive their rights at higher rates than adults indicates that the warnings do little to shield those most likely to be manipulated or coerced.[212] Police can easily rattle off *Miranda* rights while heating up the suspect with an iron poker, so to speak. It is hard to see the logic behind thinking that a *Miranda* warning will stop false confessions, but it is self-evident that it will stop many guilty criminals from providing reliable confessions and incriminating statements. There is a general sense that *Miranda* is a failed fix of the coercive interrogation problem.[213] The only clear advantage *Miranda* has for the legal system is allowing the court to primarily look at a simple box check (whether the defendant was read and waived their rights) in determining whether a statement was coerced. Even if a statement was truly coerced, so long

210. Darryl K. Brown, *Permitting Post-*Miranda *Questioning in Exchange for Regulating Interrogation Tactics*, 54 Tex. Tech. L. Rev. 1, 16–19 (2021) (arguing that *Miranda* stalled state policymakers from trying alternative interrogation systems).

211. *See, e.g.*, Erwin Chemerinsky, *Why Have Miranda Rights Failed?*, Democracy J. (June 27, 2016, 6:25 PM), https://democracyjournal.org/arguments/why-have-miranda-rights-failed [https://perma.cc/9LWX-VTUJ]; Cassell, *supra* note 166, at 478.

212. Feld, *supra* note 165, at 11–12.

213. Cassell, *supra* note 166, at 473.

as the defendant was read their *Miranda* rights, it is possible the court might simply not investigate other aspects of the confession because the formula was followed. This has even led some proponents of defendants' rights to call for reforming *Miranda* due to its lack of substantive protections against coercion.[214]

D. Public Concerns

There was an initial public outcry at the *Miranda* decision in 1966, which was seen as yet another example of an out-of-touch Court's soft-on-crime policies.[215] "Even certain supporters of the Warren Court had admitted that *Mapp* and *Miranda* were among the Court's 'self-inflicted wounds.'"[216] North Carolina Democratic Senator Sam Ervin complained that "[e]nough has been done for those who murder, rape and rob. . . . It is time to do something for those who do not wish to be murdered, raped or robbed."[217] Senate hearings on *Miranda* saw a stream of witnesses who vigorously criticized the decision.[218] The public outrage led to Congress's attempt to overrule *Miranda* in a 1968 law allowing confessions obtained without a *Miranda* warning to still be admitted as evidence as long as they were not coerced. The Supreme Court responded by overturning the law.[219]

Over time, however, the American public has become accustomed to police warning suspects of their rights.[220] Americans ultimately want incompatible things. People would like to have the assurance that if they end up in the hands of the law, they will have the best chance of escaping conviction through a smart use of their rights. At the same time, people would like to maximize the chance of others getting convicted when they commit crimes.

214. Chemerinsky, *supra* note 211.

215. Steven B. Duke, *Does* Miranda *Protect the Innocent or the Guilty?* 10 CHAP. L. REV. 551, 552 (2007).

216. Jerold H. Israel, "*Criminal Procedure, the Burger Court, and the Legacy of the Warren Court*," *in* NEITHER CONSERVATIVE NOR LIBERAL: THE BURGER COURT ON CIVIL RIGHTS AND LIBERTIES 80, 81 (Francis Graham Lee ed., 1983).

217. LACKLAND H. BLOOM, JR., DO GREAT CASES MAKE BAD LAW? 276 (2014) (quoting LIVA BAKER, MIRANDA: CRIME, LAW AND POLITICS 201 (1983)).

218. *Id.*

219. Dickerson v. United States, 530 U.S. 428, 432 (2000).

220. *Supreme Court's Miranda Decision*, GALLUP (June 27, 2000), https://news.gallup.com/poll/2779/supreme-courts-miranda-decision.aspx [https://perma.cc/54ZZ-HDTZ].

E. Reforms

Reform is not impossible. The Supreme Court has recognized exceptions to its interrogation rules, and other policies have been put in place to reduce coercion that might be capable of replacing *Miranda*. Other countries also offer alternative models of interrogation rules designed to avoid coerced confessions but to allow use of reliable confessions and damaging admissions.

- *Recognize a Public Safety Exception to* Miranda. The Supreme Court has agreed over time that there are, in fact, valid situations in which officers should not be obligated to read a suspect their *Miranda* rights due to public safety concerns. The public safety exception originated from *New York v. Quarles*.[221] In order for a situation to qualify for the exception, it must be a "situation where concern for public safety must be paramount to adherence to the literal language of the prophylactic rules enunciated in *Miranda*."[222] State courts have followed suit in adopting the exception. For example, the New York Court of Appeals upheld the public safety exception in *People v. Doll*,[223] in which Scott Doll was arrested after police saw him walking the street with wet blood stains on his clothes, hands, and shoes.[224] Fearing that someone was gravely injured, "[the police] continued to question [Doll] despite his request for legal assistance."[225] Doll was charged and convicted of second-degree murder; his appeal failed.[226] In these cases, the safety of bystanders or other at-risk individuals is deemed more important than the reading of *Miranda* rights. One could argue this same logic undermines *Miranda* in other ways, as a suspect's silence and ability to mount an ambush defense to serious offenses significantly endangers public safety and justice.
- *Record All Interrogations.* Police officers in the United States have found that audio or videotaped interrogations are useful because they provide evidence that no coercion took place and thus increase the chances that a confession will be admitted at trial (if *Miranda* warnings were given).[227] Additionally, 59.8 percent of police departments surveyed during a National Institute of Justice study found that the implementation of taping "increased the amount of incriminating

221. 467 U.S. 649, 651 (1984).

222. *Id.* at 653.

223. 998 N.E.2d 384, 387–88 (N.Y. 2013).

224. *Id.* at 385–86.

225. *Id.* at 386.

226. *Id.* at 387.

227. Thomas P. Sullivan, *Electronic Recording of Custodial Interrogations: Everyone Wins*, 95 J. CRIM. L. & CRIMINOLOGY 1127, 1127–30 (2005).

information obtained from suspects."[228] Some scholars argue that recording interrogations should entirely replace *Miranda* as videotapes allow for a better judgement to be made on whether a confession was coerced while not encouraging suspects to stay silent.[229] As of May 2021, twenty-seven states and the District of Columbia require custodial interrogations to be recorded.[230]

- *International Approaches to Police Interrogations.* Other countries also have arrest warnings and interrogation rules, but they are commonly formulated to be less justice frustrating. In the United Kingdom, as noted above, the arrest warning includes a warning that staying silent can harm a suspect's defense if they do not mention now something they later rely on in court.[231] A criminal suspect's post-arrest-warning silence may also be used to draw negative inferences, as in the Argent case, in several countries beyond the United Kingdom, such as Australia,[232] Singapore,[233] and Israel.[234]

In addition to its less justice-frustrating arrest warning, U.K. solicitors (synonymous to the counsel that one is entitled to when invoking U.S. *Miranda* rights) are instructed not to prevent questioning during an interrogation but rather ensure that "interviews" are conducted fairly.[235] Some U.S. scholars call for lawmakers to take inspiration from this particular instruction to counsel.[236]

While an estimated 108 countries or jurisdictions around the world have adopted arrest warnings of some sort, the exact nature of these warnings differ.[237] In addition, the United Nations has adopted the International Covenant for Civil and Political Rights (ICCPR), which

228. Slobogin, *Regulatory Approaches*, *supra* note 68, at 450.

229. Cassell & Fowles, *supra* note 169, at 838, 840–41.

230. Roman Battaglia, *Bill Filed to Require Recording of Police Interrogations*, DEL. PUB. MEDIA (May 28, 2021, 12:23 PM), https://www.delawarepublic.org/politics-government/2021-05-28/bill-filed-to-require-recording-of-police-interrogations [https://perma.cc/C4DJ-UPGG].

231. *See supra* notes 183–84 and accompanying text.

232. Yvonne Daly, Anna Pivaty, Diletta Marchesi & Peggy ter Vrugt, *Human Rights Protections in Drawing Inferences from Criminal Suspects' Silence*, 21 HUM. RTS. L. REV. 696, 697 (2021).

233. *Id.*

234. § 28, The Criminal Procedure Law, 5766–1996 (Isr.), https://www.nevo.co.il/law_html/law00/98568.htm (translated by Google Translate).

235. PIZZI, *supra* note 207, at 57.

236. Slobogin, *Regulatory Approaches*, *supra* note 68, at 442–43, 455.

237. Steven Aftergood, *The Right to Remain Silent Around the World,* FED'N OF AM. SCIENTISTS (June 30, 2016), https://fas.org/publication/miranda/ [https://perma.cc/8M32-QE7F].

specifically mentions the right to remain silent during interrogations.[238] Importantly, the ICCPR does not require countries to tell detained individuals about this right so long as it is respected if invoked.[239] As of April 2024, 174 countries have ratified the covenant.[240]

More ambitious reforms have also been proposed:

- *Incentivize Talking to Police.* One proposal to strike a different balance between individual liberties and justice is informing all suspects of their *Miranda* rights while at the same time incentivizing them to give statements and confessions by reducing the severity of sentences by a certain percentage if they do so.[241] While this may prevent giving a criminal their "just deserts" by failing to give a full sentence, it could also prevent a complete justice failure in which an offender walks away with no sentence at all. The logic of this trade-off is mirrored in the U.S. Sentencing Commission's sentencing guidelines that formally authorize a specific downward departure when an offender pleads guilty,[242] and such discounts for guilty pleas are of course standard practice in the United States through plea bargaining.
- *Eliminate* Miranda *and Allow Legislative Alternatives.* Some scholars argue that *Miranda* is a hopelessly failed policy that should be discarded since it increases crime and failures of justice without reducing coercion.[243] Eliminating *Miranda* warnings would in some sense not be a radical step for the Supreme Court, which has found that *Miranda* warnings are not a personal constitutional right but rather a judicially mandated prophylactic measure against coercion.[244] The Court would merely have to find its prophylactic measure ineffective, which it arguably has been, to return the issue of interrogation rules to state legislatures, which could then come up with alternative arrest warnings and interrogation rules. Regardless of the resulting legislative interrogation rules, the courts would still have the authority, of course,

238. G.A. Res. 2200 (XXI) A, International Covenant on Civil and Political Rights, art. 14, ¶ 3(g) (Dec. 16, 1966).

239. David Dixon & Nicholas Cowdery, *Silence Rights*, 17 AUSTL. INDIGENOUS L. REV. 23, 23 (2013).

240. Ratification Status of the International Covenant on Civil and Political Rights, U.N. TREATY COLLECTION, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-4&chapter=4&clang=_en [https://perma.cc/8B3F-6BZS].

241. Scott W. Howe, *Moving Beyond* Miranda*: Concessions for Confessions*, 110 NW. U. L. REV. 905, 947 (2016).

242. U.S. SENT'G GUIDELINES MANUAL § 3E1.1 (U.S. SENT'G COMM'N 2023).

243. William T. Pizzi & Morris B. Hoffman, *Taking* Miranda*'s Pulse*, 58 VAND. L. REV. 813, 840–41, 844–46, 849 (2005).

244. Vega v. Tekoh, 597 U.S. 134, 141–50 (2022) (holding that a defendant who is not read their *Miranda* rights cannot sue the officer civilly).

to reject any confession that was coerced, under a due process voluntariness standard that is already used to reject coerced confessions made after *Miranda* warnings.

F. Recommendation: Adopt the U.K. Version of the Miranda *Warning (Allowing a Defendant's Silence to Be Used to Impeach an "Ambush Defense")*

A tried-and-true reform that would be feasible to implement without overturning the *Miranda* framework would be to adopt the United Kingdom's version of arrest warnings that mention the right to stay silent but allow for and warn suspects that post-arrest silence can be used to undermine the credibility of a defendant's testimony at trial. The United Kingdom adopted its current arrest warnings in the Criminal Justice and Public Order Act of 1994,[245] which authorized the current arrest warning that says, among other things, "You do not have to say anything. But it may harm your defence if you do not mention now something which you later rely on in court. Anything you do say may be given in evidence."[246]

The U.K. law outlines several situations where adverse inferences can be made at trial based on the accused's silence.[247] We propose allowing such inferences only in the instance where the accused fails to mention an important fact that he later states in testimony and that he could have been reasonably expected to mention at the time of interrogation. Importantly, under the U.K. system, a conviction cannot be based solely upon silence,[248] and our recommendation similarly would only allow a defendant's silence to be used to impeach his testimony at trial—not used as affirmative proof of guilt.[249] The advantages of this approach are exemplified by the Brian Argent case mentioned earlier. Prosecutors were allowed to cast doubt on Argent's false alibi, arguing that, if the alibi were real, Argent would have quickly given it to police when first questioned about the murder.[250]

245. Criminal Justice and Public Order Act 1994, c. 33, § 34(1)(a) (UK), https://www.legislation.gov.uk/ukpga/1994/33/data.pdf [https://perma.cc/XSW8-5KKF].

246. PIZZI, *supra* note 207, at 58–59 (quoting CODE OF PRACTICE FOR THE DETENTION, TREATMENT AND QUESTIONING OF PERSONS BY POLICE OFFICERS, Code C § 10.5).

247. Criminal Justice and Public Order Act 1994, c. 33, § 35 (UK), https://www.legislation.gov.uk/ukpga/1994/33/data.pdf [https://perma.cc/XSW8-5KKF].

248. *Id.*

249. *Id.*

250. *See supra* Part III.A.

While the Supreme Court has allowed post-*Miranda* silence to be used at trial in a few special situations,[251] allowing post-*Miranda* silence to call into doubt an ambush defense would require overturning the 1976 case of *Doyle v. Ohio*,[252] but the Court might be willing to reevaluate its old precedent if state legislatures were to enact the U.K. version of *Miranda* warnings. It is not at all obvious why the Fifth Amendment right against self-incrimination is violated by allowing prosecutors to introduce the fact of the defendant's previous silence if the defendant specifically chooses to testify in an ambush defense. This is especially the case since the Court does allow for pre-*Miranda* silence to be used to impeach a defendant. For example, if a murderer later claims self-defense at trial, a prosecutor can cast doubt on that story by bringing up the fact that he did not suggest this to police at the time of his arrest but before he was read his *Miranda* rights.[253] The current distinction in U.S. jurisprudence makes little sense and expanding the ability to impeach trial testimony based on prior unreasonable silence could help avoid false acquittals, especially in cases like rape where credibility is often the main issue for the jury.

The advantages of our recommended reform are several. First, it would make fabricated ambush defenses harder and rarer. Second, it is not radical because it allows the court to maintain the *Miranda* framework, which makes adjudicating cases of alleged coercion easy by looking to whether police have checked the box for arrest warnings. Third, the addition of a warning that staying silent may be harmful could incentivize some criminals to talk, thus increasing rates of incriminating statements or confessions, thereby reducing failures of justice.

IV. LEGAL LIMITATIONS ON THE USE OF MODERN INVESTIGATIVE TECHNOLOGY

Technology continues to rapidly change our world, and the criminal justice system is only beginning to take advantage of these new opportunities. A hundred years ago, investigators relied solely on witnesses and obvious physical evidence such as an abandoned weapon or footprints. Today, technology allows investigators to review surveillance footage, pinpoint suspects' locations using location tracking, utilize

251. *See, e.g.*, United States v. Goldman, 563 F.2d 501, 502–04 (1st Cir. 1977) (finding the defendant's *Miranda* rights waiver during his interrogation permitted the prosecutor to introduce evidence of the defendant's silence).

252. 426 U.S. 610 (1976).

253. Maria P. Hirakis, *You Have the Right to Remain Silent, and it* Can and Will Be *Used Against You: Addressing Post-Arrest Pre-Miranda Silence*, 38 TOURO L. REV. 323, 339–40 (2022).

artificial intelligence (AI) algorithms to instantly identify faces, and employ the tiniest fragments of DNA evidence to search millions of profiles to find criminals. Technological advancement is opening a brave new world for law enforcement, but this world is full of debates on how to balance the interests of justice and privacy. Many shudder at the notion of increased police and government surveillance. This fear has resulted in an array of corporate, cultural, and legal restrictions on law enforcement's ability to utilize technology in solving crimes.[254] In addition to public concerns about privacy infringements, police are often slow to adopt helpful technologies because they are unaware or unable to acquire new technology due to budget constraints. Despite these barriers, new technologies have the potential to significantly reduce justice failures, and it should be up to society to determine how to best balance the competing interests over their use. This Part examines the competing interests raised by using new technology and the public's conflicting opinions on it, before examining restrictions on its use in the three areas in which it could provide the greatest potential investigative benefit: biometrics (focusing on DNA evidence), surveillance systems (such as closed-circuit television (CCTV) cameras), and data analytics (focusing on facial recognition algorithms).

A. Competing Interests

There are numerous important interests in tension when formulating proper restrictions on investigative use of technology, but they might be summarized this way.

1. Interests Opposing Investigative Use of New Technologies

- *Privacy.* New technologies, especially surveillance technologies, may encroach on citizens' personal privacy. Many Americans intrinsically dislike being surveilled or having their data recorded and kept in government databases.[255] While most people accept sacrificing privacy

254. For example, some companies have announced they would stop the sale of facial recognition software to police and called for federal regulation of the technology. Lauren Feiner & Annie Palmer, *Rules Around Facial Recognition and Policing Remain Blurry*, CNBC (June 14, 2021, 10:52 AM), https://www.cnbc.com/2021/06/12/a-year-later-tech-companies-calls-to-regulate-facial-recognition-met-with-little-progress.html [https://perma.cc/4L75-RSRW]. Some jurisdictions, like Virginia, prohibited law enforcement from using facial recognition technology. Carolina Rabinowicz, *Approaches to Regulating Government Use of Facial Recognition Technology*, JOLT DIG. (May 4, 2023), https://jolt.law.harvard.edu/digest/approaches-to-regulating-government-use-of-facial-recognition-technology [https://perma.cc/2WEB-DGC4].

255. *See* Brooke Auxier et al., *Americans and Privacy: Concerned, Confused, and Feeling Lack of Control over Their Personal Information*, PEW RSCH. CTR. (Nov. 15, 2019), https://www.pewresearch.org/internet/2019/11

when investigators already have enough evidence to obtain a warrant for such intrusion, many are concerned with how new technologies allow police to gather more information without a warrant. Privacy advocates also worry about the collection and use—with or without warrants—of uniquely personal information such as DNA. Everyone has a slightly different definition and valuation of privacy, but there is clearly a tension between government investigative power and a sphere of personal privacy. However, questions remain such as whether society should even recognize an offender's privacy interest in covering up their crime and whether innocent people should be willing to sacrifice privacy in certain areas if it brings significant increases in doing justice. People are likely to come to different conclusions on these questions, often based on purely subjective, cultural, or generational considerations.

- *Limited Government.* Closely connected to privacy concerns is the value of limited government. If the police can know practically everything a person does, this allows the government to have a potentially tyrannical control over the populace. The current surveillance and police state in China[256] is a warning of how governments can weaponize the gathering of information against their citizens. At the same time, it is not entirely clear that keeping information out of the hands of the government will prevent tyranny since a government resolved to tyrannize its citizens can quickly find a way. Most modern governments possess the technical abilities to become police states with disturbingly little trouble; it is their lack of resolve to do so generated by democratic accountability that prevents them. There is also a separate interest in keeping information out of even the most trustworthy government's hands if that information could be used by individual bad actors within the government to humiliate, extort, or blackmail individual citizens.[257] However, in either case, it may be that limited government is not so much achieved by limiting the technical abilities of the state to collect information, but rather by creating and enforcing legal limitations on the use of that information.
- *Concerns over Fairness, Accuracy, and Reliability.* New technologies that involve big data and AI, such as facial recognition technology, raise questions of fairness and reliability in their outputs. Any data program is only as good as its inputs, as well as the fairness and accuracy of its analytics. For example, facial recognition technology could, depending upon input data, be more accurate for Caucasians

/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/ [https://perma.cc/WLU2-G7YY].

256. *Xi Jinping Builds a 21st-Century Police State*, Economist (Sept. 14, 2023), https://www.economist.com/china/2023/09/14/xi-jinping-builds-a-21st-century-police-state [https://perma.cc/F7MV-DVHZ].

257. *See* Auxier et al., *supra* note 255.

than African Americans, resulting in racially disparate results.[258] Some new technologies still raise questions over reliability and accuracy, though these fears are often overblown, as shown later in the examination of facial recognition algorithms.[259] New technologies can also be useful even if they are not 100 percent accurate. Note, for example, that polygraph (lie detector) tests have long been usefully employed by investigators despite having lower accuracy rates than almost any newer technology.

- *Concerns over Effectiveness and Cost.* Adopting new technology is often expensive and time-consuming. Police have limited resources, so the decision to invest in new technology carries with it the opportunity cost of using those resources in other ways. For example, it might serve some police departments better to simply hire more detectives instead of installing expensive CCTV cameras or license plate readers. Some new technologies are relatively inexpensive (such as expanding and integrating DNA databases), but others can involve significant expense (such as installing thousands of new cameras). New technology is often flashy, but scarce resources mean police must consider the opportunity costs involved.

2. Interests Supporting Greater Investigative Use of New Technologies

- *Greater Justice Through Apprehending More Criminals.* New technologies make it easier to catch and convict criminals in many circumstances, thus ensuring that more crimes end in arrest and conviction. Improved forensic science and better DNA databases have already led to significant improvements in solving crime.[260] Along with increased justice also comes greater public faith and confidence in the legal system as better adjudication of justice increases the law's moral credibility with the community. It may well be worth some privacy incursions to increase justice, especially for serious crimes.
- *Monitoring the Public Sphere, Not the Private Sphere.* While a private sphere is important, privacy has always had limits. Many new technologies simply better monitor things done in the public sphere as opposed to shrinking the private sphere. For example, many things done publicly in the past (such as walking outside one's house or driving on the roads) were not so much private as simply not normally recorded. The use of CCTV cameras and automatic license plate readers have arguably not turned the private into public but merely ensured that

258. Natasha Singer & Cade Metz, *Many Facial-Recognition Systems Are Biased, Says U.S. Study*, N.Y. Times (Dec. 19, 2019), https://www.nytimes.com/2019/12/19/technology/facial-recognition-bias.html [https://perma.cc/DF34-BVN8].

259. *See infra* note 272 and accompanying text.

260. *See, e.g.*, *infra* Part IV.C.1 (discussing the Golden State killer, who was apprehended using DNA results from an ancestry-tracing website).

public activities can be recorded and potentially used in criminal investigations. Offenders committing inculpatory deeds in public were always at risk of being seen by police or witnesses, and new technologies have simply increased that risk. It would be hard to argue that offenders have a right to better odds of not being caught.

- *Greater Deterrence and Public Safety.* As more criminals are caught, and the perception grows that new technology makes it harder to get away with crimes, deterrence may increase and crime rates may correspondingly fall. New technology can even prevent crimes about to be committed. For example, CCTV cameras can allow police to see that a crime is about to occur, or an ankle bracelet can alert police to a parolee violating their terms of release. By decreasing crime, new technologies also reduce the worst possible violations of liberty and privacy for citizens—serious crime. Many may believe it is worth sacrificing a small amount of perceived privacy to investigators in exchange for reducing the chance that others and themselves are forced to suffer crimes like murder, rape, or robbery.
- *Increased Reliability of Evidence.* New forms of evidence such as DNA and surveillance footage are more reliable than witness testimony, which research has shown is often surprisingly fallible.[261] New technology not only helps catch offenders, it also minimizes the risk of wrongful convictions based on less reliable forms of evidence. For example, reviewing surveillance footage can easily show who was the aggressor in a violent altercation instead of forcing investigators to sort through a hash of conflicting stories.
- *Shielding Innocents from Privacy Intrusions.* Related to the above point, new technologies can actually shield innocent would-be suspects from investigative intrusions by sending police down fewer rabbit trails. For example, CCTV footage or DNA results can quickly rule out potential suspects, thus preventing lengthier investigations into innocent suspects' private lives as might have occurred in the past. New technologies such as DNA testing can even clear previously wrongly convicted and imprisoned suspects, thus ending the worst possible form of government intrusion on liberty and privacy.
- *Efficiency and Saving Resources.* New technology often represents a more efficient and less costly way to gather evidence and conduct investigations. For example, it is easier to simply review CCTV footage than to question all potential witnesses in a neighborhood. Algorithms can also automate data collection and review, allowing human effort to be spent elsewhere on police investigations where only

261. Hal Arkowitz & Scott O. Lilienfeld, *Why Science Tells Us Not to Rely on Eyewitness Accounts*, SCI. AM. (Jan. 1, 2010), https://www.scientificamerican.com/article/do-the-eyes-have-it/ [https://perma.cc/Y6T7-UP6P].

human judgment will suffice. While adopting certain technologies may be costly in the short term, they can decrease costs in the long run.

- *Publicly Discussed Implementation Versus Slow Creep.* History suggests that new, useful technologies are often eventually adopted by law enforcement even in the face of initial opposition,[262] so it makes sense for society to have a robust discussion of the issue now and arrange a clear and agreed-upon implementation of new technology rather than leaving adoption to the inevitability of a slow, haphazard, and inefficient creep. In any democratic society, the views of ordinary people should decide the proper balance of competing interests when striking compromises on whether and how a new technology should be used.

B. Public Views on Investigative Use of Technology

The most publicly debated competing interests in determining the proper investigative use of technology pits privacy against justice and safety. These competing interests are reflected in divided public opinion. While ordinary people usually instinctively understand how new technology may affect privacy, they may not realize how useful such technology is in achieving justice.

1. Public Support for Prioritizing Safety and Justice Over Privacy

Most people want the best of both worlds: use of available technology to catch criminals with no infringement upon their own personal privacy. Since this is not achievable, there are balances that must be struck. On some issues, the public supports prioritizing justice and safety over privacy—especially when it comes to the privacy of offenders. For example, in 1998, a poll found that 66 percent of people believed that "police should . . . be allowed to collect DNA information from suspected criminals, similar to how they take fingerprints," and another survey in 2000 found that 80 percent supported "a national DNA databank with DNA collected from all criminals."[263] Evidently, a vast majority of citizens would not agree with many of the current restrictions limiting the collection of DNA from arrestees. The public view is more complicated when it comes to using innocent people's DNA, but data collected in 2019 indicates that 48 percent of Americans believe that DNA testing companies should "share customers' genetic

262. *See, e.g.*, Ian Cobain, *Killer Breakthrough—The Day DNA Evidence First Nailed a Murderer*, GUARDIAN (June 8, 2016), https://www.theguardian.com/uk-news/2016/jun/07/killer-dna-evidence-genetic-profiling-criminal-investigation [https://perma.cc/HWU5-JSU9].

263. Paul R. Brewer & Barbara L. Ley, *Media Use and Public Perceptions of DNA Evidence*, 32 SCI. COMMC'N 93, 94 (2010).

data with law enforcement agencies to help solve crimes," while only 33 percent are opposed.[264]

More Americans than not appear comfortable with an expansion of police use of DNA beyond the limits of current restrictions. Such restrictions have often provoked confusion and opposition among law enforcement and commentators. For example, Ann Coulter, a commentator hardly known for favoring government power, summed up opposition to policies preventing investigators from accessing ancestry DNA databases: "I'm sorry, but why? . . . [DNA companies don't] want to lose the business of skittish serial killers?"[265] The privacy arguments against access to DNA databases often appear paranoid to those who point to the obvious concrete benefits to justice and safety of allowing law enforcement to search all available records. After all, if one is not a criminal, how much does one have to fear from police searching for a match in a database containing one's DNA?

When it comes to surveillance, public opinions shift based on the exact extent of the surveillance and its purpose. The greatest public support is for antiterrorism surveillance even if it means sacrificing the privacy of all. For example, a 2019 poll found that 49 percent of Americans believe "it is acceptable for the government to collect data about all Americans to assess who might be a potential terrorist threat," compared with 31 percent who felt that was unacceptable.[266] However, other surveys have found that when asked about surveillance in general, about two-thirds of Americans oppose warrantless surveillance of phone, email, and text messages.[267]

Even though there appears to be a consensus among justice officials that outright bans are a mistake, it is easy for privacy advocates to present the public with the stark choice of unlimited use of a new technology or a complete ban. But it need not be all or nothing; the

264. Andrew Perrin, *About Half of Americans Are OK with DNA Testing Companies Sharing User Data with Law Enforcement*, PEW RSCH. CTR. (Feb. 4, 2020), https://www.pewresearch.org/fact-tank/2020/02/04/about-half-of-americans-are-ok-with-dna-testing-companies-sharing-user-data-with-law-enforcement/ [https://perma.cc/2Z8J-JYSK].

265. Ann Coulter, *Why Is Ancestry.com Protecting Serial Killers?*, COURIER (July 11, 2021), https://wcfcourier.com/opinion/columnists/why-is-ancestry-com-protecting-serial-killers/article_89133c7b-4b60-52fd-a22e-368321dc3901.html [https://perma.cc/W5BA-X5PA].

266. Auxier et al., *supra* note 255.

267. Eric Tucker & Hannah Fingerhut, *Americans Warier of U.S. Government Surveillance: AP-NORC Poll,* ASSOCIATED PRESS (Sept. 7, 2021, 9:47 AM), https://apnews.com/article/technology-afghanistan-race-and-ethnicity-racial-injustice-government-surveillance-d365f3a818bb9d096e8e3b5713f9f856 [https://perma.cc/QQ2M-JZ94].

most publicly popular option may be to pursue new technology while also adding appropriate legal safeguards.

2. Public Support for Prioritizing Privacy Over Justice

However, privacy advocates and many in the public continue to prioritize privacy over the crime-solving potential of modern technologies, often because of fears over the possibility for new technology to be abused. These fears are often grounded in specific instances where police surveillance technology has been used to target and track individuals without any legal justification. In Detroit, for example, police officers have been caught, on occasion, using surveillance technology for personal purposes, including stalking women and "estranged spouses."[268] In other cases, camera operators have used the technology to spy on women, and a study in Great Britain found that "one in 10 women were targeted for entirely voyeuristic reasons."[269] Such cases have led many to fear CCTV surveillance. Fears about the abuse of license plate recognition technology exist as well, rooted in the case of a D.C. police officer who used license plate readers to identify and blackmail individuals at a gay club in 1997.[270] Privacy advocates usually generalize from such specific, usually already illegal, instances to create fears of mass abuse based on the wide reach of technology. For example, the executive director of the Center on Privacy and Technology at Georgetown Law warns against license plate reading technology because "[i]t's powerful stuff, and it's not under control."[271] Such claims may be vague, but they often resonate with the public.

Sometimes, public opposition to new technology is based on a faulty understanding of data or lack of knowledge with respect to the technology, as is the case with fears over the potential inaccuracy or racial bias of facial recognition technology. Studies have shown that "some developers [have created] highly accurate identification algorithms for which false positive differentials are undetectable."[272] For

268. *What's Wrong with Public Video Surveillance?*, ACLU (Mar. 2002), https://www.aclu.org/other/whats-wrong-public-video-surveillance [https://perma.cc/8FGN-772E].

269. *Id.*

270. *Id.*; Avis Thomas-Lester & Toni Locy, *Chief's Friend Accused of Extortion*, WASH. POST (Nov. 26, 1997), https://www.washingtonpost.com/wp-srv/local/longterm/library/dc/dcpolice/stories/stowe25.htm [https://perma.cc/4JAW-6V9Z].

271. Tanvi Misra, *Who's Tracking Your License Plate?*, BLOOMBERG (Dec. 6, 2018, 9:31 AM), https://www.bloomberg.com/news/articles/2018-12-06/why-privacy-advocates-fear-license-plate-readers [https://perma.cc/KCF6-QHJR].

272. PATRICK GROTHER, MEI NGAN, KAYEE HANAOKA, NAT'L INST. OF SCI. AND TECH., U.S. DEP'T OF COM., NISTIR 8280, FACE RECOGNITION

example, in some algorithms developed in Asia, there was no dramatic difference in false positives between Asian and Caucasian faces.[273]

Members of the public may also oppose the use of new technology out of fears over a lack of transparency. For example, some privacy advocates point to the fact police and prosecutors rarely disclose their use of facial recognition technology, potentially making it "difficult, if not impossible to ensure that defendants are able to exercise" their constitutional rights.[274] The public generally is ill informed about police use of technology and has little understanding of how it works. Such opposition could potentially be overcome with more openness, which would not interfere with the benefits of such technology.[275]

Others in the public simply fear the effects of increased surveillance or monitoring based on the claim that "[w]hen citizens are being watched by the authorities—or aware they might be watched at any time—they are more self-conscious and less free-wheeling."[276]

Americans appear evenly split as to their level of concern about privacy versus justice and safety, at least as far as generic surveillance is concerned. A 2015 poll found that 52 percent of Americans are very or somewhat concerned about government surveillance, while 46 percent are not very or not at all concerned about such surveillance.[277] Of course, this even split on a generic question about surveillance obscures actual public support or disapproval for specific new investigative technologies. For example, one might support increased use of DNA, CCTV, and facial recognition technology while still being concerned about excess government surveillance and strongly opposing warrantless surveillance of personal internet activity. A common

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VENDOR TEST (FRVT) PART 3: DEMOGRAPHIC EFFECTS 3 (2019), https://nvlpubs.nist.gov/nistpubs/ir/2019/nist.ir.8280.pdf [https://perma.cc/FCN9-C823].

273. *NIST Study Evaluates Effects of Race, Age, Sex, on Face Recognition Software*, NAT'L STANDARD OF INSTS. AND TECH. (Dec. 19, 2019), https://www.nist.gov/news-events/news/2019/12/nist-study-evaluates-effects-race-age-sex-face-recognition-software [https://perma.cc/93HY-TRL3].

274. *Civil Rights Concerns Regarding Law Enforcement Use of Face Recognition Technology*, NEW AM. (June 3, 2021), https://www.newamerica.org/oti/briefs/civil-rights-concerns-regarding-law-enforcement-use-of-face-recognition-technology/_[https://perma.cc/GY6G-R249].

275. Christopher G. Reddick, Akemi Takeoka Chatfield & Patricia A. Jaramillo, *Public Opinion on National Security Agency Surveillance Programs: A Multi-Method Approach*, 32 GOV'T INFO. Q. 129, 138 (2015).

276. *What's Wrong with Public Video Surveillance?*, *supra* note 268.

277. Lee Rainie & Mary Madden, *Americans' Views on Government Surveillance Programs*, PEW RSCH. CTR. (Mar. 16, 2015), https://www.pewresearch.org/internet/2015/03/16/americans-views-on-government-surveillance-programs/[https://perma.cc/7XST-GEAC].

mistake is assuming that there is a single "pro" or "anti" privacy or surveillance position when most reasonable people would prefer a balance that involves increased use of technology in some areas, while maintaining or establishing strong restrictions in others.[278]

It is easy for activists to present the public with an all-or-nothing choice between unrestricted use or a complete ban on new technology, but the most popular option is likely to be pursuing the new technology while ensuring the existence of appropriate legal safeguards.

The public is most likely to support the use of new technology when they believe it is being adopted with oversight and safeguards in place. For example, 83 percent of American voters support Congress passing a national-data-protection bill to ensure Americans' sensitive data is used properly by government agencies.[279] This suggests advocates of new technology should push for its adoption within the context of commonsensical regulation designed to assuage public fears.

C. Restraints on the Use of Biometrics and Forensics (Including DNA)

The greatest advance in investigative technology over the last century has been the proliferation of forensic and biometric data collection and analysis, most commonly through the use of fingerprints and DNA evidence. For such evidence to be effective at solving crimes, police need databases large enough to include potential suspects. This process is well advanced for fingerprints as the FBI created the Integrated Automated Fingerprint Identification System (IAFIS) in 1999, establishing a "national, computerized system for storing, comparing, and exchanging fingerprint data in a digital format."[280] IAFIS currently contains fingerprint data for over 185 million individuals (collected from arrestees, federal job applicants, and military personnel).[281] Information from this database is used annually to identify in excess of 300,000 fugitives.[282]

278. Auxier et al., *supra* note 255.

279. Sam Sabin, *States Are Moving on Privacy Bills. Over 4 in 5 Voters Want Congress to Prioritize Protection of Online Data,* MORNING CONSULT (Apr. 27, 2021, 12:01 AM), https://morningconsult.com/2021/04/27/state-privacy-congress-priority-poll/ [https://perma.cc/C6DB-S9R2].

280. U.S. GEN. ACCT. OFF., GAO-04-260, INFORMATION ON TIMELINESS OF CRIMINAL FINGERPRINT SUBMISSIONS TO THE FBI 4 (2004).

281. *Automated Fingerprint Identification System (AFIS) Overview—A Short History*, THALES GRP. (June 25, 2023), https://www.thalesgroup.com/en/markets/digital-identity-and-security/government/biometrics/afis-history [https://perma.cc/UA3U-UZ8U].

282. FBI, U.S. DEP'T OF JUST., THE FBI STORY: 2011, at 98 (2011), https://www.fbi.gov/file-repository/stats-services-publications-fbi-story-fbistory2011.pdf/view [https://perma.cc/Q9PW-4FXW].

The use of DNA databases is not as advanced. The Combined DNA Index System (CODIS), which is managed by the FBI, is an umbrella term describing the search software and support infrastructure for the criminal justice system's DNA databases at the federal, state, and local levels.[283] In 2021, CODIS added its 20 millionth DNA sample.[284] Since its inception in 1998, CODIS has aided in 545,000 investigations.[285] All states participate in CODIS, but the regulations on whose DNA may be collected for investigative purposes is determined by the individual state, with some taking DNA from all arrestees and others collecting only the DNA of individuals convicted of serious offenses.[286] Laws governing investigator use of private genetic ancestry databases, by which police can identify a perpetrator directly or through a relative's DNA, also differ by state. Some states have proposed banning police searches of private databanks entirely,[287] while others have moved to make their use a more regular part of investigations.[288] While privacy advocates fear a world in which citizens' DNA is accessible to law enforcement, such a world would make it significantly harder for murderers and rapists to escape justice. Research has shown that allowing the police access to larger pools of DNA samples is directly correlated with increased crime-solving effectiveness and that, as fewer

283. *Combined DNA Index System (CODIS)*, FBI, https://le.fbi.gov/science-and-lab/biometrics-and-fingerprints/codis [https://perma.cc/GRR7-M85J].

284. *The FBI's Combined DNA Index System (CODIS) Hits Major Milestone*, FBI (May 21, 2021), https://www.fbi.gov/news/press-releases/the-fbis-combined-dna-index-system-codis-hits-major-milestone [https://perma.cc/R9TA-YPBE].

285. *Id.*

286. NAT'L CONF. OF STATE LEGISLATURES, DNA ARRESTEE LAWS 1 (2016), https://leg.mt.gov/content/Committees/Interim/2015-2016/Law-and-Justice/Meetings/Apr-2016/Exhibits/ncsl-arrestee-dna-laws-april-2016.pdf [https://perma.cc/7FJY-G44H].

287. For example, the Maryland legislature sought to ban law enforcement from accessing DNA databases entirely. This ban, however, ultimately failed. Lindsey Van Ness, *DNA Databases Are Boon to Police but Menace to Privacy, Critics Say*, STATELINE (Feb. 20, 2020, 12:00 AM), https://stateline.org/2020/02/20/dna-databases-are-boon-to-police-but-menace-to-privacy-critics-say/ [https://perma.cc/N9MK-YMGQ].

288. *See* James Rainey, *Familial DNA Puts Elusive Killers Behind Bars. But Only 12 States Use It*, NBC NEWS (Apr. 28, 2018, 6:00 AM), https://www.nbcnews.com/news/us-news/familial-dna-puts-elusive-killers-behind-bars-only-12-states-n869711 [https://perma.cc/3JAX-69PH].

DNA samples are added to databases, correspondingly fewer serious crimes are solved.[289]

As in most cases of police use of technology, there is a trade-off between privacy and justice. But police databases record only those particular DNA alleles necessary to uniquely identify an individual, as opposed to the whole of a person's genetic code with information about their health, personality, etc.[290] Thus, the DNA recorded in police databases is akin to a genetic fingerprint, not a complete genetic analysis of the individual.[291] This makes the privacy intrusion from a DNA database little more than the intrusion from a fingerprint database, but with even greater crime-solving abilities. Unlike a fingerprint, DNA can allow for familial searching to reveal a killer's relatives, allowing investigators to zero in on a perpetrator even if their individual DNA is not in any database. While most police databases are not currently configured for familial DNA searching,[292] it can solve otherwise impossible cases and catch even the cleverest criminals. Consider a case example of how one of America's worst killers was found after escaping justice for decades.

1. Case Example

From 1974 to 1986, a killer-rapist stalks the California night, committing at least 13 murders, over 50 rapes, and some 120 burglaries. He is known by many names—the Visalia Ransacker, the East Area Rapist, the Original Night Stalker, and the Golden State Killer.[293] Police simply cannot find him. The man's preferred crime is targeting couples. His modus operandi (MO) is breaking into a home and raping the woman for hours while her bound partner listens from another room. The attacker often takes breaks during the rape to eat from the couple's refrigerator, ransack their house, and threaten them with death. He then kills them both and vanishes into the night. In 1986, the attacker retires. His only mistake is leaving DNA evidence, but even when the use of DNA analysis becomes feasible, searches of the available police

289. Shelby Kail, *The Unintended Consequences of California Proposition 47: Reducing Law Enforcement's Ability to Solve Serious, Violent Crimes*, 44 PEPP. L. REV. 1039, 1059–60 (2017).

290. *See 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://perma.cc/ZQU3-XYVZ].

291. *See id.*

292. Rainey, *supra* note 288.

293. Alex Bell, *Golden State Killer: Prosecutor Looks Back on the Many Masks of Joseph DeAngelo*, ABC10 (Dec. 11, 2023, 8:57 PM), https://www.abc10.com/article/news/crime/golden-state-killer-new-details/103-54b4796a-57e4-472e-8dca-e0f6b423a046 [https://perma.cc/TWA9-MRWJ].

databases produce no results.[294] In 2018, California forensics specialist Paul Holes has the idea of uploading the attacker's DNA to the ancestry-tracing website GEDmatch to find the killer through his relatives. Based on the results, Holes draws up twenty-five possible family trees and eliminates suspects one by one until he finds former police officer Joseph James DeAngelo, then seventy-two.[295] After his DNA is found to match the killer's, DeAngelo is convicted and sentenced to life in prison.[296] An earlier advent of familial DNA searching could have avoided the enormous human suffering caused by DeAngelo's crimes. But privacy advocates are furious at the police's use of the ancestry database, and a combination of new government rules and private DNA company policies make it much harder in the future for police to find and stop such killers using ancestry tracing.[297]

2. The Nature and Extent of the Problem

Past practice has shown DNA databases are extremely useful at bringing serious offenders to justice, but there still exists an enormous disparity in the breadth of DNA samples collected when compared to fingerprints, with the rules varying widely by state. The fact that DNA samples are not collected from all arrestees in most states, while fingerprints are, is a costly disparity that allows thousands of serious criminals to escape justice each year.[298]

294. Justin Jouvenal, *To Find Alleged Golden State Killer, Investigators First Found his Great-Great-Great-Grandparents*, WASH. POST (Apr. 30, 2018, 6:22 PM), https://www.washingtonpost.com/local/public-safety/to-find-alleged-golden-state-killer-investigators-first-found-his-great-great-great-grandparents/2018/04/30/3c865fe7-dfcc-4a0e-b6b2-0bec548d501f_story [https://perma.cc/C2CJ-ZRXN]; Peter Crooks, *Chasing Evil*, DIABLO MAGAZINE (May 8, 2020), https://www.diablomag.com/people-style/people/chasing-evil/article_9efb68ea-3e74-5401-9ece-af7529a92c12.html [https://perma.cc/GL54-5FBX].

295. Jouvenal, *supra* note 294.

296. Bell, *supra* note 293.

297. *See* Andrea Marks, *DNA Search Method that Caught Golden State Killer No Longer Available*, ROLLING STONES (May 23, 2019), https://www.rollingstone.com/culture/culture-news/dna-search-method-that-caught-the-golden-state-killer-no-longer-available-839315/ [https://perma.cc/D2DQ-P94R].

298. *See* BECKI R. GOGGINS & DENNIS A. DEBACCO, SEARCH GRP. & BUREAU OF JUST. STATISTICS, U.S. DEP'T OF JUST., NCJ 305602, SURVEY OF STATE CRIMINAL HISTORY INFORMATION SYSTEMS, 2020, at 2–3, 9–10 (2022), https://www.ojp.gov/pdffiles1/bjs/grants/305602.pdf [https://perma.cc/R9JX-HBWH]; Charlotte Spencer, *What Is the Arrestee DNA Collection Law in Your State?*, BIOMETRICA (May 27, 2021), https://www.biometrica.com/what-is-the-arrestee-dna-collection-law-in-your-state/ [https://perma.cc/V4DC-8SHQ].

a. The Effectiveness of DNA Databases and the Societal Costs of Restrictions

Restrictions on the construction and use of DNA databases are particularly problematic because the use of such databases is often the only way to solve many serious crimes, especially cold cases. DNA databases not only offer ways to catch dangerous repeat offenders, but some research suggests they also may deter crime more broadly as criminals fear the results of increased crime-investigation effectiveness.[299]

Increased DNA collection and investigative access to DNA databases has improved success in identifying offenders for serious crimes even when that DNA is collected from those convicted of less serious crimes. DNA in New York's criminal DNA database has mostly been collected from those convicted of minor crimes, and when DNA from New York murder investigations without a suspect was analyzed, 82 percent of those results led back to DNA previously placed into the system from an offender convicted of a "lesser" offense.[300] It is the rare offender who goes from law-abiding citizen to murderer or rapist without any intermediate convictions for less serious crimes; over one third of all alleged rapists have prior convictions,[301] and over 70 percent of arrested murderers have been previously arrested.[302] Collecting DNA from all those convicted or even arrested for lesser crimes increases the likelihood that serious offenders will be caught. When Arizona implemented arrestee DNA collection for all felonies and some misdemeanor charges, criminal DNA match rates almost doubled.[303]

299. Jennifer L. Doleac, *The Effects of DNA Databases on Crime*, 9 AM. ECON. J: APPLIED ECON. 165, 200 (2017). While correlation is not causation, the rise of DNA databases across the United States in the first decade of the twenty-first century coincided with a decrease in both violent and property crimes, with violent crime falling by 17 percent in that period, leading some to suggest a partial causal connection. *Id.* at 166.

300. NAT'L INST. OF JUST., U.S. DEP'T OF JUST., NCJ 207203, DNA IN "MINOR" CRIMES YIELDS MAJOR BENEFITS IN PUBLIC SAFETY 2–3 (2004) https://www.ojp.gov/pdffiles1/nij/207203.pdf [https://perma.cc/8MM9-HERS].

301. *Perpetrators of Sexual Violence: Statistics*, RAPE, ABUSE & INCEST NAT'L NETWORK, https://www.rainn.org/statistics/perpetrators-sexual-violence [https://perma.cc/RW7T-7JKT].

302. This statistic is based on Illinois data from 1990–2001. Philip J. Cook, Jens Ludwig & Anthony A. Braga, *Criminal Records of Homicide Offenders*, 294 J. AM. MED. ASS'N 598, 598–99 (2005).

303. What used to be 370 matches in a year increased to over 700 following the implementation of the policy. *See* JULIE E. SAMUELS, ELIZABETH H. DAVIES & DWIGHT B. POPE, JUST. POL'Y CTR., COLLECTING DNA AT ARREST: POLICIES, PRACTICES, AND IMPLICATIONS, FINAL TECHNICAL

California provides a case study in the dangers of restricting the collection of arrestee DNA. In 2011, California's intermediate appellate court decided in *People v. Buza*[304] that the collection of DNA from felony arrestees without a warrant or probable cause of the offender's having committed past crimes violated the Fourth Amendment.[305] In the months immediately following the decision, the state's DNA uploads decreased from 19,294 to 7,946 per month (a 59 percent decrease), and police DNA matches decreased from 501 to 215 per month (a 57 percent decrease), showing how essential arrestee DNA collection had been in solving crime.[306] Hundreds of criminals, many of them serious offenders, escaped justice every month as a result of the new restrictions. In 2018, the California Supreme Court reversed the appellate court's decision and allowed felony arrestee DNA collection,[307] but the benefits of this reversal were largely mitigated by California's passing Proposition 47 in 2014, which reclassified many felonies into misdemeanors.[308] Since California's DNA-collection laws do not allow DNA collection from misdemeanor arrestees, the growth of the state's DNA databases was significantly curbed. As one might expect, after the passage of Proposition 47, fewer cold cases were solved due to the resulting limitations on DNA collection.[309]

b. State Diversity in Collection of DNA

In the federal system, every arrestee has their DNA collected, regardless of crime severity or whether the arrest ends in conviction.[310] According to the U.S. Supreme Court, states and the federal government have wide constitutional latitude in authorizing the collection of DNA from offenders and arrestees.[311] However, despite this wide legal

REPORT 50 (2013), https://www.ojp.gov/pdffiles1/nij/grants/242812.pdf [https://perma.cc/6XRR-LMLK].

304. 129 Cal. Rptr. 3d 753 (Cal. Ct. App. 2011)

305. *Id.* at 781–82.

306. *Impacts of Buza Decision on CAL-DNA Submissions and Hits June 2011-March 2012*, CAL. DEP'T OF JUST., (Apr. 30, 2012), https://oag.ca.gov/sites/all/files/agweb/pdfs/bfs/buza_effects_table.pdf [https://perma.cc/95CA-RNZ3].

307. People v. Buza, 413 P.3d 1132, 1155 (Cal. 2018).

308. Kail, *supra* note 289, at 1053–55.

309. *Id.* at 1058–59.

310. 28 C.F.R. § 28.12(a) (2023).

311. The 2013 decision in *Maryland v. King* compared taking DNA to taking an arrestee's photographs or fingerprints. 569 U.S. 435, 465–66 (2013). The Court specifically approved taking DNA from anyone arrested on a "serious offense," but as the dissent notes, the logic of the decision means

latitude to construct arrestee DNA databases, many states have lagged behind the federal government in taking advantage of the crime-solving potential of DNA collection. This is particularly problematic because almost all serious violent crimes are state, not federal, offenses, and so state rules are the major determiner of the size of DNA databases.[312]

In 2013, twenty-six states had enacted laws allowing DNA collection from arrestees of serious crimes.[313] By 2018, after the Supreme Court's decision specifically authorizing this, the number had increased to thirty states.[314] As of 2021, thirty-three states allow DNA collection from at least some arrestees. Among these thirty-three states, fifteen generally allow collection from only arrestees of certain serious felonies, twelve allow collection from any felony arrestee, and six also allow for collection from misdemeanor arrestees.[315] The rules across the remaining states range from barely utilizing DNA collection to allowing it in all convictions: five states limit DNA database additions to only felons convicted of enumerated sexual offenses,[316] while eleven states add all persons, with even misdemeanor convictions, to their databases.[317] Then there are additional state-by-state differences with respect to issues

that DNA also could be taken from a misdemeanor arrestee. *See id.* at 481 (Scalia, J., dissenting); SAMUELS, DAVIES & POPE, *supra* note 303, at 11–12.

312. The federal government has jurisdiction to criminalize and punish only those criminal offenses that touch upon a federal interest, such as damaging federal property, or involve multiple states, as in multistate drug conspiracies. CHARLES DOYLE, CONG. RSCH. SERV., R43023, CONGRESSIONAL AUTHORITY TO ENACT CRIMINAL LAW: AN EXAMINATION OF SELECTED RECENT CASES 1–2 (2013). The Tenth Amendment of the U.S. Constitution reserved to the states all powers not specifically granted to the federal government. U.S. CONST. amend. X.

313. Thea Denean Hall, Public Perception and Privacy Issues with DNA Regulations and Database in Alabama (2016) (Ph.D. dissertation, Walden University) (ScholarWorks); Richard Wolf, *Supreme Court OKs DNA Swab of People Under Arrest*, USA TODAY (June 3, 2013, 7:08 PM), https://www.usatoday.com/story/news/politics/2013/06/03/supreme-court-dna-cheek-swab-rape-unsolved-crimes/2116453/ [https://perma.cc/98K3-NUHW].

314. Brenda Holmes, *Steuerwald Says New Law Linked Over 200 DNA Samples to Crimes: Indiana State Police Match DNA to Unsolved Rape Case*, IND. HOUSE OF REPRESENTATIVES REPUBLICAN CAUCUS (Apr. 17, 2018), https://www.indianahouserepublicans.com/news/press-releases/steuerwald-says-new-law-linked-over-200-dna-samples-to-crimes/ [https://perma.cc/7PEU-N3JK]. *See also* NAT'L CONF. OF STATE LEGISLATURES, *supra* note 286.

315. Spencer, *supra* note 298.

316. Sarah B. Berson, *Debating DNA Collection*, 264 NAT'L INST. OF JUST. J., Nov. 2009, at 10.

317. Hall, *supra* note 313, at 24–25.

such as juvenile offenders and whether DNA records are automatically expunged if charges are not filed or the case ends in acquittal.[318]

There is also the problem of patchwork DNA databases because some states do not cooperate or consolidate with the national CODIS network. Some areas of the country, such as Palm Bay County, Florida, and Bensalem Township, Pennsylvania, have local DNA databases that collaborate only with nearby jurisdictions.[319] While many states and localities are gradually passing laws to expand their DNA databases, such databases are still often fragmented and prevent nationwide searches, which is where DNA evidence has the maximum potential to solve serious crimes.

c. A More Efficient System: The Example of the United Kingdom

Large countries are not doomed to inefficient and patchwork DNA collection systems, nor do they have to embrace authoritarianism to construct broader national DNA databases. The United Kingdom has a vast national DNA database (NDNAD) comprised of DNA from previous offenders and arrestees that includes 10 percent of the U.K. population.[320] In 2001, the passage of Britain's Criminal Justice and Police Act[321] allowed the United Kingdom to maintain the DNA even of individuals who had been acquitted or whose cases had been dropped, and another amendment in 2003 authorized the current practice of collecting DNA from all arrestees.[322] These expansions proved to be extremely useful for solving serious crimes and increasing clearance rates, as the stored DNA profiles matched to 88 murders and 116 rapes in the five years after the 2001 law was implemented.[323] In the two years after the 2003 amendment, four more murders and three more rapes were solved by analyzing the expanded DNA (of individuals who were

318. Spencer, *supra* note 298; Berson, *supra* note 316, at 11.

319. *See* Jason Kreag, *Going Local: The Fragmentation of Genetic Surveillance*, 95 B.U. L. REV. 1491, 1510, 1552–54 (2015).

320. "Currently, nearly 6 million samples are stored, although one in seven of these are estimated to be duplicates, but that is still approaching 10% of the population . . . ." PETER D. TURNPENNY, SIAN ELLARD & RUTH CLEAVER, EMERY'S ELEMENTS OF MEDICAL GENETICS AND GENOMICS 351 (2022).

321. Criminal Justice and Police Act 2001, c. 16 (UK), https://www.legislation.gov.uk/ukpga/2001/16/data.pdf [https://perma.cc/9AX9-92TU].

322. *Id.* § 82; Duncan Carling, *Less Privacy Please, We're British: Investigating Crime with DNA in the U.K. and the U.S.*, 31 HASTINGS INT'L & COMPAR. L. REV. 487, 495 (2018). Though the DNA of arrested, but not convicted, persons is eventually deleted if they are not implicated in any new crimes. *Id.* at 496.

323. Carling, *supra* note 322, at 496.

arrested but never charged).[324] Hundreds more extremely serious crimes have been solved since then, and tens of thousands of other crimes besides murder and rape have been solved thanks to the United Kingdom's expanded DNA database.[325]

d. Restrictions on Access to Genetic Ancestry DNA Databases

Privacy advocates have successfully lobbied some states, as well as private DNA ancestry companies, to restrict investigative access to DNA samples stored in ancestry databases. After the identification of the infamous Golden State Killer with genetic ancestry tracing from the website GEDmatch in 2018, some states restricted investigative access. In Maryland, investigators are allowed access to such DNA databases only with a judge's permission and then only for cases of rape and murder.[326] In Montana, investigators need a search warrant to access the database.[327] A proposed bill in Utah aimed to ban genetic genealogy searches by police entirely, but it ultimately failed to pass.[328] The U.S. Department of Justice has also restricted the use of such ancestry databases by federal investigators.[329]

Genetic ancestry companies have also taken action to limit investigative access. GEDmatch, which was used to identify the Golden State Killer, now restricts law enforcement from using its services and allows police access only to those records that users have expressly opted in for law-enforcement use.[330] Only about 14 percent of GEDmatch users

324. *Id.*

325. *See* Helen Wallace, *The UK National DNA Database: Balancing Crime Detection, Human Rights and Privacy*, 7 EUR. MOLECULAR BIOLOGY ORG. REPS. S26, S27 (2006).

326. Sarah Chu & Susan Friedman, *Maryland Just Enacted a Historic Law Preventing the Misuse of Genetic Information*, INNOCENCE PROJECT (June 1, 2021), https://innocenceproject.org/maryland-passes-forensic-genetic-genealogy-law-dna/ [https://perma.cc/6VAC-KVH2].

327. Virginia Hughes, *Two New Laws Restrict Police Use of DNA Search Method*, N.Y. TIMES (May 31, 2021), https://www.nytimes.com/2021/05/31/science/dna-police-laws.html [perma.cc/3B64-P3GC].

328. Van Ness, *supra* note 288; *HB 340: Legitimizing Law Enforcement's Access to DNA*, LIBERTAS INST., https://libertas.org/bill/hb-340-legitimizing-law-enforcement-access-to-dna/ [https://perma.cc/FUH9-4P9R]; Jessica Miller, *Utahns, Lawmaker Disagree on Police Use of DNA Databases*, SALT LAKE TRIB. (Feb. 17, 2020, 10:17 AM), https://www.sltrib.com/news/2020/02/17/utah-lawmaker-wants-stop/ [https://perma.cc/7N4Y-8DPJ].

329. Van Ness, *supra* note 288.

330. Jon Schuppe, *Police Were Cracking Cold Cases with a DNA Website. Then the Fine Print Changed*, NBC NEWS (Oct. 25, 2019, 9:53 AM),

have affirmatively opted in, substantially reducing the data available to police.[331] Of course, that percentage would likely have been much higher if the company set the default as allowing law-enforcement access and asked customers to opt out if they wished to. Three other DNA testing companies have together lobbied Congress for increased restrictions on law-enforcement access to their databases.[332] After GEDmatch restricted police access to customer DNA profiles, the chief of forensic services at the Florida Department of Law Enforcement emphasized that the change simply meant that now, as a direct result, "[t]here are cases that won't get solved or will take longer to solve."[333]

These efforts to restrict police access are not supported by a majority of the public. As mentioned earlier, a 2020 study by Pew Research Center found that 48 percent of those polled believe that DNA testing companies should "'share customers' genetic data with law enforcement to help solve crimes," while only 33 percent of those polled opposed such data sharing.[334] Carol Dodge, whose daughter's killer was found using GEDmatch, spoke for many when she argued that "[p]eople who have a clean conscience shouldn't have a problem" with law enforcement's use of the databases to solve crimes.[335]

3. Reforms

Several reforms have been proposed or undertaken to expand and integrate investigative use of DNA databases.

- *Collect DNA from More Offenders.* As mentioned above, many states have slowly expanded the range of offenders from whom DNA may be collected. Thirty-three states and the federal government have laws allowing DNA samples to be collected from individuals arrested (but not convicted) of some or all crimes.[336] A conservative reform

https://www.nbcnews.com/news/us-news/police-were-cracking-cold-cases-dna-website-then-fine-print-n1070901 [https://perma.cc/26K7-YQYL].

331. Van Ness, *supra* note 288.

332. Alex Gangitano, *DNA Testing Companies Launch New Privacy Coalition*, THE HILL (June 25, 2019, 6:00 AM), https://thehill.com/regulation/lobbying/450124-dna-testing-companies-launch-new-privacy-coalition/ [https://perma.cc/XQB3-WG7W].

333. Schuppe, *supra* note 330.

334. Perrin, *supra* note 264.

335. Terry Spencer, *Use of Online DNA Databases by Law Enforcement Leads to Backlash and Website Changes*, PUB. BROAD. SERV.: NEWSHOUR (June 7, 2019, 6:29 PM), https://www.pbs.org/newshour/nation/use-of-online-dna-databases-by-law-enforcement-leads-to-backlash-and-website-changes [https://perma.cc/ER3F-59GY].

336. Spencer, *supra* note 298; *see also* NAT'L CONF. OF STATE LEGISLATURES, *supra* note 286.

proposal is to expand DNA collection to all those convicted of any offense (even misdemeanors). A more impactful proposal is collecting DNA from all arrestees as is done by the federal government, some states, and the United Kingdom.

- *Encourage Citizens to Join DNA Databases.* While there are many restrictions on police use of genetic ancestry databases, there are also groups working to convince Americans to voluntarily join such databases and opt in to allow police to search their profiles. For example, the Institute for DNA Justice is an advocacy group that strives to get all 26 million Americans who have taken DNA tests to upload their results to services like GEDmatch or FamilyTreeDNA and to opt in to allow police use.[337] If even a small proportion of people did this, the resulting DNA coverage would allow many more criminals to be found through relatives. As noted previously, such an expanded database would not only assist in finding criminals but also shield innocent persons by ruling them out as potential suspects.
- *Consolidate DNA Databases.* One major advantage that U.K. investigators have over U.S. police is the country's consolidated police database. Currently, many but not all state and local police DNA databases are incorporated into the CODIS network. Incorporating all government DNA databases into CODIS would involve little privacy infringement since the information is already being stored in a state or local database and may already be accessible to local investigators, but consolidation would significantly improve the crime-solving benefit of the database for all investigators, including local ones.
- *Update Police Database Software and Guidelines to Allow for Familial Searching.* Typical police DNA databases do not use software enabled to run a familial search (such as the one used to identify the Golden State Killer), unlike ancestry databases that are specifically configured for this purpose. For example, CODIS (the software used by the FBI's national DNA database) does not allow familial searching but only individual identification.[338] There have been efforts to update database software, but so far with limited success, in part because of strict guidelines around familial DNA searches. Such a software update would substantially increase the chance of investigators finding a lead.

337. Michele Hanisee, *New DNA Tool Helps Identify Murder Victims and Elusive Killers and Rapists*, ASS'N OF DEPUTY DIST. ATT'YS (Aug. 28, 2019), https://www.laadda.com/2019/08/28/new-dna-tool-helps-identify-murder-victims-and-elusive-killers-and-rapists/ [https://perma.cc/J7WL-U2ZL].

338. BUREAU OF JUST. ASSISTANCE, U.S. DEP'T OF JUST., AN INTRODUCTION TO FAMILIAL DNA SEARCHING FOR STATE, LOCAL, AND TRIBAL JUSTICE AGENCIES (2016), https://bja.ojp.gov/sites/g/files/xyckuh186/files/media/document/an_introduction_to_familial_dna_searching1.pdf [https://perma.cc/GJ27-VAGC].

The United Kingdom has already updated its software to run such familial searches, but police are allowed to conduct a familial DNA search only in serious cases.[339] Running familial searches on existing criminal DNA databases is likely to be particularly useful because criminality is correlated within families (i.e., having a close relative engaged in crime increases an individual's chance of also engaging in crime).[340] As a result, the odds are good that even a first-time serious offender may have a relative's DNA already in the database.

4. Recommendation: Enlarge Databases but Limit Their Use to Investigation of Serious Offenses

Expanding the reach of police DNA databases is as critical to advancing justice in the twenty-first century as fingerprint databases were in the twentieth century. At the same time, many in the public are wary of unchecked police DNA access, even as research suggests expanding DNA databases may effectively deter people from committing crimes.[341] Thus, our view is that the best reform to balance justice and privacy in this instance may be for states to mandate the collection of DNA from all arrestees (and the uploading of such DNA to the national CODIS database), but to limit the use of such an enlarged DNA database to only the investigation of felonies, or perhaps only violent crimes—as in the United Kingdom, which in 2012, passed the Protections of Freedom Act that limited the use of DNA to the investigation of felonies.[342]

To the extent that people see DNA collection as a privacy intrusion of some sort, this approach would respect that perceived interest and ensure that the perceived privacy sacrifice had a significant payoff in doing justice in serious cases. The limitation might also assure people that their DNA would not be used to link them to minor crimes they could potentially imagine themselves having committed. With such

339. *Id.*

340. For example, children with criminal parents are 2.4 times more likely to engage in criminality themselves. *See* Sytske Besemer, Shaikh I. Ahmad, Stephen P. Hinshaw & David P. Farrington, *A Systematic Review and Meta-Analysis of the Intergenerational Transmission of Criminal Behavior*, 37 AGGRESSION & VIOLENT BEHAV. 161, 170 (2017).

341. Keith Humphreys, *To Deter Criminals, Expand DNA Databases Instead of Prisons*, WASH. POST (Dec. 19, 2017, 6:00 AM), https://www.washingtonpost.com/news/wonk/wp/2017/12/19/to-deter-criminals-expand-dna-databases-instead-of-prisons/ [https://perma.cc/UA2G-SRGB].

342. Protection of Freedoms Act 2012, c. 9 (UK), https://www.legislation.gov.uk/ukpga/2012/9/enacted/data.pdf [https://perma.cc/VK2E-J5BW]. The legislation also added a further limitation that the DNA of those arrested—but not charged or convicted—would be deleted from the database after a set period of time if no new arrests take place. *Id.*

limits in place, measures to expand the database (as suggested in some of the reforms and proposals discussed above) could perhaps be taken as well. The most valuable such additional reform would be to authorize familial searching of present law enforcement DNA databases, as is allowed in the United Kingdom for serious crimes, thus greatly expanding the investigative effectiveness of existing DNA records.

Law enforcement and governments should also do more to educate the public on the critical fact that police DNA databases only store a genetic fingerprint—with the possibility for familial matching—instead of more personal DNA data, such as information on health conditions.[343] This knowledge, combined with legal safeguards mentioned above about investigative use of DNA, should allay most of the public's privacy concerns, especially when the expanded databases have a significant effect in catching serious offenders. Such knowledge might even motivate some to volunteer their DNA. The United Kingdom has a standing policy of calling for volunteers to submit their DNA samples to be added to the NDNAD, a successful venture that has prompted much participation including by many crime victims.[344] States should also consider requiring government jobseekers to provide DNA samples just as they are required to provide fingerprints; the provision of such DNA would allow for better background checks by seeing if a jobseeker's DNA matches an unsolved crime.

Looking back at the Golden State Killer case, it is clear how an expanded DNA database could ensure that serial killers are caught much sooner in the future. Under our recommended reform, a modern DeAngelo—who was a former government employee—would have been required to submit his DNA when hired and would have been immediately caught as soon as DNA was pulled from a crime scene. Moreover, if any of his relatives were arrested or hired by the government, their DNA would allow police to narrow in on the killer without having to use private ancestry databases.

Consider how one man was able to wreak such destruction—at least 13 murders, over 50 rapes, and some 120 burglaries—because police failed to catch him early in his criminal career. As noted earlier, most murderers and rapists have previous arrests or convictions, making it critical to collect such offenders' DNA at the time of their first arrest. Catching offenders at the beginning of their serial criminality could

343. While it is not expected that the individuals who voluntarily submit their DNA for addition to the database are the individuals at high risk of committing the serious offenses discussed above, it remains beneficial to have their DNA in the database in case they do commit such felonies later or in case their relatives do.

344. SELECT COMMITTEE ON THE CONSTITUTION, SURVEILLANCE: CITIZENS AND THE STATE, 2008-9, HL 18-1, at 43 (UK), https://publications.parliament.uk/pa/ld200809/ldselect/ldconst/18/18.pdf [https://perma.cc/P3ZG-YAZZ].

avoid tens or hundreds of thousands of serious offenses. People have good reason to care about their privacy, but one would have to be hard-hearted to oppose the minor privacy intrusion of being in a DNA database when doing so could avoid so much human misery and suffering.

D. Restraints on the Use of Surveillance Technologies (Including CCTV)

Big Brother is watching, but he often solves crimes with what he sees. The rise of surveillance technology in the form of CCTV cameras, license plate readers, and phone tracking has opened a wealth of new clues for solving crimes, but these technologies often remain unused due to unfamiliarity with their investigative effectiveness or opposition from privacy advocates. CCTV cameras have been around for decades, but their crime-solving and crime-deterring potential is only beginning to be fully realized. In addition to generally reducing crime by spreading the notion that police are watching,[345] surveillance cameras are now an essential part of finding suspects, building cases, and making arrests.

A study of homicide investigations in Vancouver, Canada, using a sample of solved cases revealed that police reviewed surveillance footage for clues in 90 percent of investigations (and the footage was the direct source for identifying the perpetrator in 13 percent of the homicide cases).[346] The London Borough of Hackney, an early adopter of CCTV cameras, reported cameras were involved in producing 27,000 arrests over the course of twelve years of use.[347] Today, surveillance footage is an essential part of the modern police tool kit. Even when witnesses exist for a crime, CCTV has the benefit of providing a more reliable version of events in court than witness testimony, which experts recognize is often far more flawed and biased than many realize.[348]

Similar to CCTV, automated license plate readers (ALPR) are specialized cameras designed to recognize the license plates of passing cars and to check those plates against those of fugitives or of plates

345. *See* Eric L. Piza, Brandon C. Welsh, David P. Farrington & Amanda L. Thomas, *CCTV Surveillance for Crime Prevention: A 40-Year Systematic Review with Meta-Analysis*, 18 CRIMINOLOGY & PUB. POL'Y 135, 141, 150 (2019).

346. Dale Weidman, Does DNA and Video Surveillance Assist in Solving Homicides?, at 18, 29 (2017) (M.A. thesis, University of the Fraser Valley), https://arcabc.ca/islandora/object/ufv%3A5513/datastream/PDF/view [https://perma.cc/457E-YBHN].

347. Matthew P.J. Ashby, *The Value of CCTV Surveillance Cameras as an Investigative Tool: An Empirical Analysis*, 23 EURO. J. CRIM. POL'Y & RSCH. 441, 442–43 (2017).

348. *See generally* Thomas D. Albright, *Why Eyewitnesses Fail*, 114 PROC. NAT'L ACAD. SCIS. 7758 (2017).

associated with a recent crime.[349] License plate readers have been crucial in solving a wide range of serious crimes, including murder.[350] Such plate reading technology is particularly effective when placed in police squad cars allowing them to automatically spot cars that police are searching for, as is often done in the United Kingdom.[351] Obtaining meaningful results with fewer resources benefits everyone, and license plate reading technology clearly does this. One study found that such automated plate readers have resulted in "six to seven times the national average arrest rate per officer and two to three times the number of [offenses brought to justice] compared to conventional policing."[352]

However, the swiftest, most effective, and most concerning form of location tracking derives from the device most people carry in their pockets. Police can pinpoint a mobile phone's location via triangulation, allowing police to view a suspect's location and movements if they know his or her phone number.[353] Police can even use a device known as the

349. U.S. DEP'T OF HOMELAND SEC., AUTOMATED LICENSE PLATE READER (ALPR) (2021), https://www.dhs.gov/sites/default/files/publications/2021_st_alprfactsheet_20210105_final508.pdf [https://perma.cc/NSP9-EEF7].

350. *See* Kyle Cheromcha, *Florida Uber Driver in Stolen $250,000 Ferrari Busted by Cop's License Plate Reader*, THE DRIVE (Jan. 2, 2018, 12:23 PM), https://www.thedrive.com/news/17284/florida-uber-driver-in-stolen-250000-ferrari-busted-by-cops-license-plate-reader [https://perma.cc/TGX6-73ML]; Trey Couvillion, *License Plate Reader Spots Stolen Car, Man Arrested After Brief Pursuit*, WBRZ 2 (Mar. 24, 2018, 11:14 AM), https://www.wbrz.com/news/license-plate-reader-spots-stolen-car-man-arrested-after-brief-pursuit/ [https://perma.cc/8CWA-YVUH]; BAY CITY NEWS, *License Plate Cams Lead Sausalito Police to Vehicle Stolen from San Jose*, ABC 7 NEWS (Apr. 28, 2018), https://abc7news.com/sausalito-license-plate-cameras-readers-lead-to-stolen-car/3403545/ [https://perma.cc/643B-6KKP]; James W. Jakobs, *License Plate Reader Helps Fresno Police Catch Stolen Car Suspect*, ABC 30 (July 24, 2018), https://abc30.com/license-plate-reader-helps-fresno-police-catch-stolen-car-suspect/3816438/ [https://perma.cc/S8SP-5VCT]; Brynn Carman, *License Plate Recognition Cameras Help Nab Criminals at Impressive Rates, Despite Privacy Concerns*, KRDO (Dec. 7, 2023, 11:55 AM), https://krdo.com/news/local-news/top-stories/2023/12/07/license-plate-recognition-cameras-help-nab-criminals-at-impressive-rates-despite-privacy-concerns/ [https://perma.cc/L6P9-YLSK].

351. *Automatic Number Plate Recognition (ANPR)*, POLICE.UK, https://www.police.uk/advice/advice-and-information/rs/road-safety/automatic-number-plate-recognition-anpr/ [https://perma.cc/HUL3-39S7].

352. Alina Haines, The Role of Automatic Number Plate Recognition Surveillance Within Policing and Public Reassurance, at 61 (2009) (Ph.D. thesis, University of Huddersfield), https://eprints.hud.ac.uk/id/eprint/8760/.

353. ADAM BATES, CATO INSTITUTE POLICY ANALYSIS NO. 809: STINGRAY: A NEW FRONTIER IN POLICE SURVEILLANCE 4–5 (2017), https://

"stingray" to search an area for all nearby phones and then use these collected phone numbers to identify who the numbers belong to.[354] Between 2008 and 2015, Baltimore police alone used phone triangulation to help solve 176 homicide cases, 118 shootings, and 47 rapes in addition to hundreds of other crimes.[355] Tracking suspects' cellphones is an increasingly common form of police investigation across the country. "It's how we find killers," the FBI Director noted in 2014.[356]

Regardless of the technology in question, when police are slow in utilizing new forms of surveillance technology, or are legally prevented from doing so, criminals who could have been caught escape justice. Consider the following case examples.

1. Case Examples

On February 11, 2015, eighteen-year-old Josiah Zachery receives a text from a fellow Franklin Hill gang member who works on a snow shoveling crew in Boston. Twenty-one-year-old Kenny Lamour, a member of the rival Thetford Avenue Buffalos gang, has just joined the shoveling crew, and Zachery has been instructed to dispose of the man. Zachery rides the Boston subway with his MBTA Charlie Card, which tracks his movements whenever he swipes it in a station. At 10:30 am, Zachery arrives in Jamaica Plains and calmly walks up to the shoveling crew.[357] He guns down Lamour then takes off running through neighboring yards. Police arrest Zachery as a potential suspect for being in the location, but he denies being involved and tells a false story.[358] Police then use his Charlie Card number to access the MBTA data on his movements that morning and review CCTV footage of what he was

www.cato.org/sites/cato.org/files/pubs/pdf/pa-809-revised.pdf [https://perma.cc/SZY4-WE3Z].

354. *Id.*

355. Brad Heath, *Police Secretly Track Cellphones to Solve Routine Crimes,* USA TODAY (Aug. 24, 2015, 7:51 AM), https://www.usatoday.com/story/news/2015/08/23/baltimore-police-stingray-cell-surveillance/31994181/ [https://perma.cc/X5NY-JQJ3].

356. *Id.*

357. Commonwealth v. Henley, 171 N.E.3d 1085, 1096–97 (Mass. 2021); David Ertischek, *Life Terms with Possible Parole for Two Convicted in Jamaica Plain Murder*, JAMAICA PLAIN NEWS (Dec. 4, 2017), https://www.jamaicaplainnews.com/2017/12/04/life-terms-with-possible-parole-for-two-convicted-in-jamaica-plain-murder/29704 [https://perma.cc/2EQ8-8L8D].

358. Antonio Planas, *Cops: Slay Suspect Story a Snow Job,* BOS. HERALD (Nov. 18, 2018, 12:00 AM), https://www.bostonherald.com/2015/02/13/cops-slay-suspect-story-a-snow-job/ [https://perma.cc/V7T7-S2N8].

wearing and carrying in the stations.[359] The evidence disproves Zachery's story and allows police to get a warrant to search his phone, where they discover further evidence of the murder plot.[360] Zachery is convicted of murder but appeals on the grounds that the MBTA data on him should not have been searched without a warrant.[361] While Zachery loses his appeal,[362] privacy advocates persuade the Massachusetts state legislature in 2021 to ban police from accessing MBTA location data without a warrant, thus making justice less likely in similar cases.[363] Under the new law, police would not have had probable cause to search Zachery's phone, as it was the MBTA data that gave them probable cause for the phone search warrant.

In another case, on December 6, 2017, Massachusetts police install a pole camera outside the home of suspected drug dealer Nelson Mora. The camera runs continuously for 169 days and allows police to monitor Mora's front door and the sidewalk next to his house to discover his contacts.[364] As a result, police find the other members of Mora's drug ring and put their houses under surveillance with similar pole cameras to keep unraveling the criminal organization.[365] On May 22, 2018, police raid multiple locations across Massachusetts, arresting thirteen people, including Mora, and seizing thousands of oxycodone and fentanyl pills, stashes of heroin and cocaine, and almost half a million dollars in cash.[366] Mora seeks to have all the evidence excluded, claiming the pole cameras were an illegal search, even though they were directed only at

359. *Henley*, 171 N.E.3d at 1101.

360. *Id.* at 1096.

361. *Id.* at 1097.

362. *Id.* at 1122.

363. *New Massachusetts Law Protects Personal Transit Data From Warrantless Searches*, ELEC. PRIV. INFO. CTR. (Jan. 20, 2021), https://epic.org/new-massachusetts-law-protects-personal-transit-data-from-warrantless-searches/ [https://perma.cc/H9YW-NE8N].

364. Commonwealth v. Mora, 150 N.E.3d 297, 301–02 (Mass. 2020); Douglas Ankney, *Massachusetts Supreme Judicial Court Announces Use of Pole Cameras for Extended Surveillance of Residence Constitutes Search Under State Law*, CRIM. LEGAL NEWS (Dec. 15, 2020), https://www.criminallegalnews.org/news/2020/dec/15/massachusetts-supreme-judicial-court-announces-use-pole-cameras-extended-surveillance-residence-constitutes-search-under-state-law/ [https://perma.cc/J78Z-HD72].

365. *Mora*, 150 N.E.3d at 302.

366. Paul Leighton, *Wiretaps, Undercover Buys Led to Big Drug Bust*, SALEM NEWS (May 24, 2018), https://www.salemnews.com/news/local_news/wiretaps-undercover-buys-led-to-big-drug-bust/article_9c438b22-4c83-573e-a148-3083787c7160.html [https://perma.cc/L7JR-CZ3Z].

locations in public view.[367] The Massachusetts Supreme Court agrees and finds warrantless pole cameras a violation of Massachusetts' state constitution, and reverses Mora's conviction.[368]

2. The Nature and Extent of the Problem

Many U.S. jurisdictions currently restrict a variety of surveillance technologies, including the use of CCTV, automatic license plate readers, and cellphone tracking. All these technologies have proven useful in obtaining reliable and compelling evidence in cases of serious crimes, but their adoption has been resisted to some extent in the United States by privacy activists and others. Compared to the United States, some European countries, especially the United Kingdom, have done more to use surveillance technologies and reap their justice and crime-control benefits.

a. Restrictions on the Use of CCTV

In the United States, the two biggest restraints on the installation and use of CCTV cameras are financing and privacy concerns.[369] The Fourth, Fifth, and Fourteenth Amendments, which consider issues of privacy, anonymity, and equal protection under the law, may inhibit the installation of CCTV cameras aimed at certain locations (such as private homes) and may limit police access to privately owned and operated CCTV cameras.[370] While cameras aimed at purely public

367. Julie Manganis, *SJC: Police Will Need Warrants for Remote Surveillance*, Gloucester Daily Times (Aug. 6, 2020), https://www.gloucestertimes.com/news/local_news/sjc-police-will-need-warrants-for-remote-surveillance/article_e3da100f-01f6-51d8-8ef4-2c037a9bafbd.html [https://perma.cc/E9J2-N5QA].

368. *Mora*, 150 N.E.3d at 312–13; Ankney, *supra* note 364.

369. *See* Gary C. Robb, *Police Use of CCTV Surveillance: Constitutional Implications and Proposed Regulations,* 13 U. Mich. J. L. Reform 571, 574–76 (1980).

370. The Fourth Amendment seems to be the primary potential restraint, but some have argued that even the First Amendment provides a barrier to surveillance camera use, as well. *See* Nancy G. La Vigne, Samantha S. Lowry, Joshua A. Markman & Allison M. Dwyer, Evaluating the Use of Public Surveillance Cameras for Crime Control and Prevention 25, 53 (2011), https://www.urban.org/sites/default/files/publication/27556/412403-evaluating-the-use-of-public-surveillance-cameras-for-crime-control-and-prevention_1.pdf [https://perma.cc/Z8GW-DUR6]; Jennifer Mulhern Granholm, *Video Surveillance on Public Streets: The Constitutionality of Invisible Citizen Searches,* 64 U. Det. L. Rev. 687, 710 (1987); Gillian Vernick, *Supreme Court Asked to Consider Whether Long-Term Pole Camera Surveillance Constitutes Search Under Fourth Amendment*, Reps. Comm. for Freedom of the Press (Oct. 18, 2021), https://www.rcfp.org/scotus-pole-camera-surveillance/ [https://perma.cc/HVW2-TCVS].

spaces (such as an intersection) are clearly constitutional, courts have issued conflicting rulings on the constitutionality of their use when aimed at spaces where there might be some expectation of privacy. For example, in 2019, a federal district court in Massachusetts ruled that police violated the Fourth Amendment when they used a surveillance camera to track visitors to a home over an eight-month period,[371] only for this decision to be reversed in 2020 by the U.S. Court of Appeals for the First Circuit.[372] While court precedents leave some uncertainty with respect to the use of surveillance cameras, their increasing prevalence and use strengthen the argument in favor of their constitutionality based on a decreasing expectation of privacy—the expectation of privacy being a key factor in the constitutional analysis.[373] Given that such pole cameras are only observing a public space that a police officer would be free to observe, it is not immediately obvious why using the camera rather than a live officer leads to a privacy violation.[374]

Even when there is no legal bar to cameras—as is the case for most CCTV street cameras—public opinion in some communities can limit their use. When the city of Washington, D.C., installed more cameras in high-crime neighborhoods in 2006, some community members were concerned that their privacy would be violated and that the "cameras would be subject to misuse."[375] However, the community's concerns were allayed by guidelines preventing the targeting of people "based on their race, gender, sexual orientation, disability, or other distinguishing characteristics."[376] Many of the concerns over CCTV are ultimately concerns over abuse by individual bad actors, but that is an argument for careful monitoring of police, not for a ban on CCTV installation that could produce reliable and compelling evidence leading to more justice and less crime.

Partly due to opposition from privacy activists, CCTV coverage in many U.S. cities lags behind other parts of the world, especially Asia. Perhaps typical for a U.S. city would be New York's 7.88 cameras per

371. United States v. Moore-Bush, 81 F. Supp. 3d 139, 140 (D. Mass. 2019). *See also Mora*, 150 N.E.3d at 312–13.

372. United States v. Moore-Bush, 963 F.3d 29, 47 (1st Cir. 2020). *See* Joseph Lanuti, *Caught Holding the Bag: Constitutional Limits on Live Video Surveillance*, 55 AM. CRIM. L. REV. ONLINE 1, 3 (2018).

373. Lanuti, *supra* note 372, at 3–4.

374. *But see* Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311 (2012); Robert Fairbanks, Note, *Masterpiece or Mess: The Mosaic Theory of the Fourth Amendment Post-Carpenter*, 26 BERKELEY J. CRIM. L. 71 (2021).

375. LA VIGNE ET AL., *supra* note 370, at xi.

376. *Id.*

1,000 people,[377] compared to London's 13.21 and Singapore's 17.94 cameras per 1,000 people.[378]

A U.K. study shows that CCTV surveillance footage has helped solve numerous serious crimes including kidnapping, murder, and assault and has been especially useful when other forms of evidence, such as DNA evidence, were not available.[379] A study in Milwaukee found that clearance rates were 82 percent higher for violent crimes occurring on street intersections with PTZ (pan-tilt-zoom) cameras than at intersections without the cameras.[380] Washington D.C.'s Metropolitan Police Chief Peter Newsham explained that CCTV camera technology is "one of the advances in technology that has been most significant in helping law enforcement," noting that CCTV footage advanced the investigation in 70 percent of homicide cases and "contributed to closing 40 percent" of homicide cases in D.C. in 2018.[381] In Vancouver, Canada, murder suspects are tracked with CCTV footage in 41 percent of cases and CCTV identifies murder suspects in 13 percent of cases.[382]

377. This is one camera for every 126 people. Paul Bischoff, *Surveillance Camera Statistics: Which Cities Have the Most CCTV Cameras?*, Comparitech (May 23, 2023), https://www.comparitech.com/vpn-privacy/the-worlds-most-surveilled-cities [https://perma.cc/KP7S-PPLN]; Jurgita Lapientyé, *This Is the Most Heavily Surveilled City in the U.S.: 50 CCTV Cameras Per 1,000 Citizens*, CyberNews (Nov. 15, 2023, 12:53 PM), https://cybernews.com/editorial/this-is-the-most-heavily-surveilled-city-in-the-us-50-cctv-cameras-per-1000-citizens [https://perma.cc/GA53-6L69].

378. This is one camera for every seventy-six people in London and one camera for every fifty-five people in Singapore. Bischoff, *supra* note 377.

379. Fiona Brookman, Helen Jones, Robin Williams & Jim Fraser, The Use of CCTV During Homicide Investigations: Contributions, Challenges, and Risks 3–4, 8 (2020), https://pure.southwales.ac.uk/ws/portalfiles/portal/3994343/HIFS_Project_Research_Insight_3._The_Use_of_CCTV_during_Homicide_Investigations_Contributions_Challenges_and_Risks_April_2020_.pdf [https://perma.cc/PY9F-9ZT6].

380. Lily Robin, Bryce E. Peterson & Daniel S. Lawrence, Urban Inst., Public Surveillance Cameras and Crime: The Impact of Different Camera Types on Crimes and Clearances 8 (2020), https://www.urban.org/sites/default/files/publication/101649/public_surveillance_cameras_and_crime.pdf [https://perma.cc/C7BC-TLW5].

381. Natalie Delgadillo, *Amid Spiking Homicide Rate, D.C. Will Spend $5 Million To Install New Security Cameras Around the City*, dcist (Nov. 25, 2019, 4:51 PM), https://dcist.com/story/19/11/25/amid-spiking-homicide-rate-d-c-will-spend-5-million-to-install-new-security-cameras-around-the-city/ [https://perma.cc/83D9-Y56E].

382. Weidman, *supra* note 346, at 29. Similarly, an Australian study found that the use of CCTV cameras on rail networks increased crime clearance rates by 18 percent. Anthony Morgan & Christopher Dowling, Austl.

While there is little doubt that increased CCTV coverage does improve clearance rates, it is hard to identify the exact extent of improvement, but even a small increase would have a significant impact in absolute numbers. For example, if the United States adopted more blanket CCTV coverage resulting in a mere four-percentage-point increase in the clearance rate, that would translate to *an additional 50,000 violent crimes solved each year.*[383] Some people no doubt would feel more comfortable without CCTV, but is avoiding that discomfort really worth 50,000 or more avoidable failures of justice in violent criminal cases every year?

There are numerous high-profile examples of the importance of CCTV's bringing justice. For example, the Boston Marathon bombers were identified using CCTV cameras.[384] To solve the case, police used a combination of Boston's public surveillance cameras and cameras from private retailers.[385] In 2014, Maryland police shared their CCTV footage with Philadelphia police who used it to locate a man who had abducted a young woman.[386] Police in London pieced various surveillance footage clips together to finally catch the London Nail Bomber, who let off three bombs around the city in 1999.[387] Also in London, CCTV footage was responsible for identifying the killers who brutally murdered two-year-old James Bulger in 1993.[388] More recently, it was

INST. OF CRIMINOLOGY, *Does CCTV Help Police Solve Crime?*, TRENDS & ISSUES IN CRIME & CRIM. JUST., April 2019, at 10 (2019).

383. The government's prepandemic victimization statistics showed about two million violent crimes excluding simple assault. RACHEL E. MORGAN & ALEXANDRA THOMPSON, BUREAU OF JUST. STAT., U.S. DEPT. OF JUST., NCJ 301775, CRIMINAL VICTIMIZATION, 2020, at 1 (2021), https://bjs.ojp.gov/sites/g/files/xyckuh236/files/media/document/cv20.pdf [https://perma.cc/MY39-SZ9C].

384. Kate Dailey, *The Rise of CCTV Surveillance in the US,* BBC (Apr. 29, 2013), https://www.bbc.com/news/magazine-22274770 [https://perma.cc/F2GK-VUY8].

385. Elizabeth Kennedy, *Boston Marathon Leverages Surveillance for Security*, SECURITY101 (Apr. 14, 2016), https://www.security101.com/blog/boston-marathon-leverages-surveillance-for-security [https://perma.cc/KWY8-YFVP].

386. Greg Botelho, *Trail of Videos, Receipts, Tips Lead Police to Philadelphia Woman, Alleged Abductor*, CNN (Nov. 6, 2014), https://www.cnn.com/2014/11/06/justice/philadelphia-abduction/index.html [https://perma.cc/WT3T-PKNL].

387. Marco Margaritoff, *David Copeland: The Neo-Nazi Terrorist Behind the London Nail Bombings,* ALL THAT'S INTERESTING (May 27, 2021), https://allthatsinteresting.com/david-copeland [https://perma.cc/SW5K-B63V].

388. Daniel Rennie, *James Bulger, The Toddler Who Was Tortured and Murdered by Two Boys*, ALL THAT'S INTERESTING (Nov. 9, 2023),

CCTV footage that caught and confirmed the brutal beating of Tyre Nichols by five Memphis police officers in 2023.[389] The footage from a pole camera gave a clear view of the unjustified beating, which the criminal officers might otherwise have argued was warranted based on the limited perspective provided by body cameras.[390] Nichols's case highlights how CCTV can actually hold police accountable, a benefit likely to be appreciated by those concerned with limiting police abuses and yet another reason to install more CCTV in high-crime areas where police use-of-force incidents are more common.

In addition to solving crimes, CCTV can deter crime, thus increasing public safety and short-circuiting the possibility of justice failures. A study by the U.K. College of Policing found that the installation of CCTV may reduce crime generally by 13 percent.[391] The experience from many cities appears to support this. Atlanta, the U.S. city with the highest number of police CCTV cameras per person (12,800 total),[392] has seen crime decrease by as much as 20 to 50 percent in the locations where cameras are operating.[393] International data suggests the same dynamic. For example, in Montevideo, Uruguay, crime decreased by 20 percent in areas of the city where cameras were installed.[394]

There are over 50 million CCTV cameras in the United States,[395] but most are private. Police may or may not be able to get access to

https://allthatsinteresting.com/james-bulger-case [https://perma.cc/RX7F-NTXY].

389. Mariah Timms & Zusha Elinson, *More Cities Turn to Surveillance Cameras, Like One That Caught Tyre Nichols Beating*, WALL ST. J. (Feb 3, 2023, 12:47 PM), https://www.wsj.com/articles/cameras-like-one-that-captured-tyre-nichols-beating-are-multiplying-across-u-s-11675398852?mod=djem10point [https://perma.cc/MW5U-8R9R].

390. *Id.*

391. *Closed-Circuit Television (CCTV)*, COLL. OF POLICING (Oct. 1, 2021), https://www.college.police.uk/research/crime-reduction-toolkit/cctv [https://perma.cc/5TSD-GENM].

392. Lapientyé, *supra* note 377.

393. Jennifer Brett, *'Real-Time Crime Fighting.' Around 11,000 Cameras Watch Over Atlanta*, ATLANTA J.-CONST. (Nov. 1, 2019), https://www.ajc.com/news/local/real-time-crimefighting-around-000-cameras-watch-over-atlanta/qlF76c7sgdwBvtIa3luX8H/ [https://perma.cc/KT9P-VB4N].

394. Martin Rossi & Ignacio Munyo, *Police-Monitored Cameras and Crime*, VOXEU (June 30, 2019), https://cepr.org/voxeu/columns/police-monitored-cameras-and-crime [https://perma.cc/AK9C-WJHH].

395. Sidney Fussell, *When Private Security Cameras Are Police Surveillance Tools,* WIRED (Aug. 11, 2020, 3:27 PM), https://www.wired.com/story/private-security-cameras-police-surveillance-tools/ [https://perma.cc/M8DC-GD84].

this footage, and in any case, any access will be after the fact rather than the real-time coverage police CCTV provides. However, some high-crime cities have worked to integrate these private cameras into the police surveillance system. For example, Newark, Baltimore, San Francisco, and Detroit have public-private CCTV camera agreements that allow increased sharing of video footage with police for crime-solving purposes.[396] To address an increase in crime near gas stations, police in Detroit partnered with gas stations around the city to install CCTV cameras with real-time footage streaming to police departments.[397] The project, known as Project Green Light, now gives police direct access to over 700 cameras installed at roughly 500 businesses.[398] Such partnerships between police and privately controlled cameras have even successfully targeted lesser crimes—like "porch piracy" (stealing delivered packages).[399]

Such partnerships are important because police in the United States normally will need consent or a warrant to access private CCTV footage.[400] In contrast, a police officer in the United Kingdom, which has more CCTV coverage than the United States, must be granted access to private CCTV footage if the potential footage "is evidence in relation to an offence which he is investigating or any other offence," according to section 19 of the Police and Criminal Evidence Act of 1984.[401]

Another notable restriction on CCTV camera installation in the United States is the lack of funding. CCTV installation and maintenance can be expensive, and some in the United Kingdom are worried that the "CCTV bubble is likely to burst unless extra revenue can be found to maintain public systems."[402] One-time grants are often not

396. *Id.*

397. *Id.*

398. *Id.*

399. Emma Freire, *Bring Your Own Camera*, CITY J. (Aug. 19, 2022), https://www.city-journal.org/article/bring-your-own-camera [https://perma.cc/LTJ2-JE2S].

400. Jennifer Kraus, *Can Law Enforcement Access Your Home Security Cameras? Consumer Reports Finds Out*, NEWS CHANNEL 5 NASHVILLE (May 24, 2023, 8:05 AM), https://www.newschannel5.com/news/can-law-enforcement-access-your-home-security-cameras-consumer-reports-finds-out [https://perma.cc/Z29E-Q4UH].

401. Police and Criminal Evidence Act 1984, c. 60, § 19 (UK), https://www.legislation.gov.uk/ukpga/1984/60/data.pdf [https://perma.cc/HNX3-BNPS].

402. *The CCTV Crime Prevention Bubble Is Set to Burst Unless Extra Money Can Be Found to Maintain Public Systems, Argues Peter French*, 1 IN 12

enough as the annual cost of maintaining a CCTV network can be 8 to 12 percent of the initial installation cost.[403] Private funding sources are unreliable, and many local governments in the United States choose not to fund potentially politically contentious surveillance technology.[404]

b. Restrictions on Automatic License Plate Readers

Automated license plate readers (ALPR) are a combination of camera plus software that automatically flags suspect cars by sifting through camera snapshots of passing cars' license plates and flagging those cars with plates police are searching for.[405] As a result, ALPR systems allow police to quickly identify cars likely driven by wanted suspects.[406] Police might receive notification of the license plate of a drunk driver or robbery suspect and immediately input it into the ALPR system to identify the car as soon as it passes an ALPR camera. ALPR technology has been essential in solving crimes such as shootings, hit and runs, kidnappings, and homicides.[407] One study found that ALPR technology increased the recovery of stolen vehicles by

(Mar. 7, 1998), https://www.1in12.com/publications/cctv/bubble.html [https://perma.cc/X6WB-TBN9].

403. *Pricing a CCTV Maintenance Contract (Annual Contract)*, Learn CCTV.com, https://learncctv.com/pricing-a-cctv-maintenance-contract/ [https://perma.cc/26ZY-WVST].

404. *Indiana Lawmakers Reluctant to Enact Policy for Surveillance Technology*, Ind. Law. (Feb. 2, 2023), https://www.theindianalawyer.com/articles/indiana-lawmakers-reluctant-to-enact-policy-for-surveillance-technology [https://perma.cc/R4FA-WAB6].

405. Uses of ALPR include "traffic enforcement, parking management, tollbooth operations, secure area access control, collection of delinquent taxes and fines, homeland security and terrorist interdiction, America's Missing: Broadcasting Emergency Response (AMBER) alerts, gang and narcotic interdiction, the identification of suspended and revoked drivers, and the recovery of stolen vehicles." *See* Murat Ozer, *Automatic License Plate Reader (ALPR) Technology: Is ALPR a Smart Choice in Policing?*, 89 Police J.: Theory, Prac. & Principles 117, 117 (2016).

406. *Id.* at 118.

407. *See, e.g.*, *7 Cases Solved Thanks to ALPR Data*, Police 1 (June 12, 2018, 3:06 PM), https://www.police1.com/police-products/traffic-enforcement/license-plate-readers/articles/7-cases-solved-thanks-to-alpr-data-doayALt3VGwqCIN5/ [https://perma.cc/JL85-F46D]; *News Stories About Law Enforcement ALPR Successes September 2017—September 2018*, Int'l Ass'n of Chiefs of Police, https://www.theiacp.org/sites/default/files/ALPR%20Success%20News%20Stories%202018.pdf [https://perma.cc/4JNK-DN9C]; *PDAA Testimony on HB 317 and HB 1509 Before the House Transportation Committee*, Pa. Dist. Att'ys Ass'n (Aug. 13, 2019), https://www.pdaa.org/pdaa-testimony-on-hb-317-and-hb-1509-before-the-house-transportation-committee/ [https://perma.cc/EL6C-7PPJ].

68 percent, increased arrests by 55 percent, and increased officer productivity by 50 percent.[408]

While no states ban the use of ALPR technology by police,[409] one significant limitation on ALPR technology for solving crime is legal limitations on its long-term storage, prompted either by economic or privacy concerns. Scanning the license plates of passing cars produces reams of data, and every state has different provisions dictating how long ALPR data can be stored. For example, Arkansas allows ALPR data to be stored for up to 150 days, but Maine allows for ALPR data to be stored for only twenty-one days, which poses serious risks to criminal investigations that often seek to analyze the movements of suspects weeks or months in the past.[410] Massachusetts is now considering deleting ALPR data after only fourteen days, "except in connection with a specific criminal investigation based on articulable facts linking data to a crime."[411] In New Jersey, on the other hand, ALPR data can be stored for up to five years, and some states store the data indefinitely.[412]

Additionally, many law enforcement agencies in the United States do not share their ALPR data as police do in the United Kingdom. In fact, only 43 percent of U.S. departments are part of a regional ALPR system, and only 40 percent share ALPR data with any other agencies.[413] This lack of information sharing can substantially decrease

408. DAVID J. ROBERTS & MEGHANN CASANOVA, INT'L ASS'N OF CHIEFS OF POLICE, AUTOMATED LICENSE PLATE RECOGNITION (ALPR) USE BY LAW ENFORCEMENT: POLICY AND OPERATIONAL GUIDE, SUMMARY 6 (2012), https://www.ojp.gov/pdffiles1/nij/grants/239605.pdf [https://perma.cc/PC3L-PJUA].

409. As of 2022, at least sixteen states had statutes that directly regulated ALPR usage in some way. For a list of state statutes that explicitly address the use of ALPR, see *Automated License Plate Readers: State Statutes*, NAT'L CONF. OF STATE LEGISLATURES (Feb. 3, 2022), https://www.ncsl.org/technology-and-communication/automated-license-plate-readers-state-statutes [https://perma.cc/9989-R9TC].

410. *Id.*

411. Mike Maharrey, *Massachusetts Bill Would Limit ALPR Data Use and Retention, Help Block National License Plate Tracking Program*, TENTH AMEND. CTR. (Apr. 10, 2023), https://blog.tenthamendmentcenter.com/2023/04/massachusetts-bill-would-limit-alpr-data-use-and-retention-help-block-national-license-plate-tracking-program/ [https://perma.cc/89BF-HNE3].

412. ROBERTS & CASANOVA, *supra* note 408, at 8–9. A significant number of states only store data for less than six months. *Id.* at 9. Currently, eight states legally limit how long data can be retained, while other states discard data due to space constraints. *See* NAT'L CONF. OF STATE LEGISLATURES, *supra* note 409.

413. ROBERTS & CASANOVA, *supra* note 408, at 6.

the ability to solve crimes, as cars often move between police jurisdictions. As ALPR use in the United States increases,[414] the importance of integrated and shared ALPR systems increases.

As with other police technologies, the United Kingdom offers an example of earlier adoption and a more integrated national system. U.K. police forces utilize Automated Number Plate Recognition (ANPR) technology (the equivalent of American ALPR technology), and there are currently roughly 11,000 to 13,000 ANPR cameras throughout the United Kingdom, submitting around 50 million ANPR records to national ANPR systems every day.[415] Additionally, beginning in 2001, 100 percent of police forces in England and Wales (of which there are forty-three) were provided with vans equipped with ANPR technology.[416]

Opposition to expanding ALPR technology makes little sense from a privacy perspective as the same data could be gathered by a police officer sitting in a squad car and manually typing in the license plates going past. ALPR technology is not an additional infringement on privacy but simply allows police to be far more efficient at existing license plate monitoring efforts in the public sphere. It seems unlikely that the community would want to recognize a right to inefficient policing.

c. Restrictions on Access to Cellphone Tracking

Tracking a cellphone's location through triangulation is a powerful tool to find criminals and solve crimes. Tracking can either be done with real-time tools that imitate cell towers ("stingrays") or by accessing past triangulation data stored by a cell service provider. Seeing whether a particular phone was near a crime scene at the time of the crime can allow police to quickly filter or identify suspects. When

414. For a description of ALPR's rapid growth in the United States, see Ángel Díaz & Rachel Levinson-Waldman, *Automatic License Plate Readers: Legal Status and Policy Recommendations for Law Enforcement Use*, BRENNAN CTR. FOR JUST. (Sept. 10, 2020), https://www.brennancenter.org/our-work/research-reports/automatic-license-plate-readers-legal-status-and-policy-recommendations [https://perma.cc/9SEU-WAPL].

415. Jasmine, *ANPR Cameras: What Are They and What Do They Do?*, FLUXPOSURE (Apr. 20, 2021), https://www.adrianflux.co.uk/blog/2021/04/what-are-anpr-cameras.html [https://perma.cc/3J3C-PLVN]; *Automatic Number Plate Recognition (ANPR)*, METRO. POLICE, https://www.met.police.uk/advice/advice-and-information/rs/road-safety/automatic-number-plate-recognition-anpr/ [https://perma.cc/2JZ3-LKHW].

416. IRWIN M. COHEN, DARRYL PLECAS & AMANDA V. MCCORMICK, UNIV. COLL. OF FRASER VALLEY, A REPORT ON THE UTILITY OF THE AUTOMATED LICENSE PLATE RECOGNITION SYSTEM IN BRITISH COLUMBIA 2 (2007), https://www.ufv.ca/media/assets/ccjr/publications/ALPR.pdf [https://perma.cc/V8N4-EPF7].

police have a specific cellphone number under suspicion, they can obtain the phone location history from the cell service provider (though after 2018, a warrant is now required[417]). Police can also scan for the location of all nearby phone numbers, or the presence of a specific phone number, in real time using a portable briefcase-sized device known as the "stingray" which imitates a cell tower and thus receives location data from nearby phones.[418] In 2015, the U.S. Department of Homeland Security noted that cellphone tracking raises privacy concerns, but also noted that such practices "are invaluable law enforcement tools."[419] In Baltimore alone, investigators used cellphone tracking in solving 176 homicides, 118 shootings, and 47 rapes between 2008 and 2015.[420]

Before 2018, limitations on police access to cellphone location data stored by service providers was a state-by-state issue with some states requiring warrants and others not. However, in 2018, the Supreme Court ruled in *Carpenter v. United States.*[421] that cellphone location data is protected by the Fourth Amendment despite being held by a third party (a cellphone service provider).[422] This built on the Court's 2012 decision in *United States v. Jones,*[423] which prevented police from putting GPS location trackers on vehicles without a warrant.[424] Police must now obtain a warrant or show exigent circumstances (such as when pursuing an actively fleeing suspect or when actively trying to recover a kidnapped person) in order to access such third-party cellphone location data.[425] The new restrictions are likely to limit the

417. Carpenter v. United States, 585 U.S. 296, 300–02 (2018).

418. Heath, *supra* note 355.

419. Memorandum on Department Policy Regarding the Use of Cell-Site Simulator Technology from Alejandro N. Mayorkas, Deputy Sec'y, U.S. Dep't of Homeland Sec., to Sarah Saldaña, Assistant Sec'y et al. (Oct. 19, 2015), https://www.dhs.gov/sites/default/files/publications/Department%20Policy%20Regarding%20the%20Use%20of%20Cell-Site%20Simulator%20Technology.pdf [https://perma.cc/MR3G-QZ35].

420. Heath, *supra* note 355.

421. 138 S. Ct. 2206 (2018).

422. *Id.* at 2223.

423. 565 U.S. 400 (2012).

424. *Id.* at 404; Nina Totenberg, *High Court: Warrant Needed for GPS Tracking Device*, NPR (Jan. 23, 2012, 3:00 PM), https://www.npr.org/2012/01/23/145656654/top-court-police-need-warrant-for-gps-tracking [https://perma.cc/J2UD-GVQ8].

425. *Carpenter*, 138 S. Ct. at 2223; Nina Totenberg, *In Major Privacy Win, Supreme Court Rules Police Need Warrant to Track Your Cellphone*, NPR (June 22, 2018, 10:41 AM), https://www.npr.org/2018/06/22/605007387/supreme-court-rules-police-need-warrant-to-get-location-information-from-cell-to [https://perma.cc/NGP9-EPGH].

effectiveness of cellphone location data as an investigative tool because police may not have established the probable cause required for a warrant in the earlier stages of an investigation, which is when cellphone location data can be most useful to sort through a large number of possible suspects. However, the ruling in *Carpenter* left a legal gray zone around the use of real-time tracking via stingrays as it is unclear whether temporarily intercepting signals meant for a cell tower violates a reasonable expectation of privacy.[426] As a result, state regulations and lower court opinions vary as to whether police need a warrant before using a stingray.

However, even with warrant requirements in place, there are still ways for police to exploit geolocation data from phones to find initial suspects. Police can apply for a "geo-fence warrant,"[427] which is a type of reverse search warrant that allows police "to search a database to find all active mobile devices within a particular geo-fence area."[428] This can enable police to request location data from companies like Google or Uber for a list of all users who may have been in the proximity of a crime scene. However, such geo-fence warrants do not provide the universal coverage that cellphone triangulation does, as many people will not have their location data turned on at all times.[429] Geo-fence warrants are a promising new way to find suspects, but they raise constitutional issues that have yet to be settled. In fact, some privacy activists argue the entire category of reverse search warrants is unconstitutional as it borders on general warrants by not targeting a specific individual but rather a location where a crime is known to have occurred.[430]

426. Deepali Lal, *Criminal Procedure—Technology in the Modern Era: The Implications of* Carpenter v. United States *and the Limits of the Third-Party Doctrine as to Cell Phone Data Gathered Through Third-Party Doctrine as to Cell Phone Data Gathered Through Real-Time Tracking, Stingrays, and Cell Tower Dumps*, 43 U. ARK. LITTLE ROCK L. REV. 519, 531 (2021).

427. Lisa Myers, *Four Law Enforcement Terms That Every Legal Secretary Should Know*, NW. CAREER COLL. (Mar. 4, 2021), https://www.northwestcareercollege.edu/blog/four-law-enforcement-terms-that-every-legal-secretary-should-know/ [https://perma.cc/2VJ4-QG5D].

428. *Id.*

429. Bryan McMahon, *How the Police Use AI to Track and Identify You*, THE GRADIENT (Oct. 3, 2020), https://thegradient.pub/how-the-police-use-ai-to-track-and-identify-you/ [https://perma.cc/PMS6-X8B7].

430. Leslie Corbly, *Geofences Aren't the Only Reverse Warrants*, LIBERTAS INST. (July 1, 2022), https://libertas.org/justice-and-due-process /geofences-arent-the-only-reverse-warrants/ [https://perma.cc/52EZ-39T3].

3. Reforms

Many reforms have been undertaken or proposed to authorize or expand the use of modern surveillance technology, where constitutionally permissible. The challenge in many instances is how to overcome suspicions that exaggerate the potential problems of technology and understate its benefits.

- *Prevent Possible Abuse by Anonymizing License Plate Readers.* Many fears about CCTV and license plate readers center on possible abuse in targeting innocent individuals. When it comes to license plate reading technology, some have proposed—and some police have already adopted[431]—a reform that makes ALPR cameras initially reveal only vehicle registration information from scanned license plates, rather than revealing personal information as well. Then, if the registration provides a match and reveals a "basis for further police action," the officer can request and obtain, perhaps on approval of a senior officer, "'personal information' of the registered owner, including name, address, social security number, and if available, criminal record."[432] This would reduce the chances of abuse by preventing individual officers from using ALPR to target innocent individuals as was done to patrons of a gay club in Washington, D.C., in 1997 by a rogue officer.[433]
- *Create Guidelines and Oversight for CCTV Use.* As with ALPR systems, some of the resistance to CCTV installation arises from fear that it may be abused. States, municipalities, and individual police departments can combat this fear by creating guidelines for the use of CCTV that will promote strict internal oversight of how police use CCTV footage and to prevent public cameras from being used voyeuristically or on the personal whims of investigators.

4. Recommendation: Fund Increased Use of CCTV Where Community Does Not Object

As is perhaps already apparent, we recommend making greater use of modern surveillance technology that does not expand the public sphere but simply better records what occurs in it. We support

431. *See, e.g.*, Nola Valente, *City of Katy to Implement New Technological Layer of Security*, CMTY. IMPACT (Mar. 19, 2020, 8:30 AM), https://communityimpact.com/houston/katy/public-safety/2020/03/19/city-of-katy-to-implement-new-technological-layer-of-security [https://perma.cc/2XUF-D2X9]; POLICE EXEC. RSCH. F., "HOW ARE INNOVATIONS IN TECHNOLOGY TRANSFORMING POLICING?" 28–34 (2012), https://www.policeforum.org/assets/docs/Critical_Issues_Series/how%20are%20innovations%20in%20technology%20transforming%20policing%202012.pdf [https://perma.cc/M6G5-QV8X].

432. Díaz & Levinson-Waldman, *supra* note 414.

433. Thomas-Lester & Locy, *supra* note 270.

expanded and integrated CCTV and ALPR networks, and highly recommend greater sharing of surveillance data between law enforcement agencies. In most instances, such sharing is not likely to alter the extent of a privacy intrusion but will significantly increase the investigative benefits of existing data collection. When it comes to other forms of surveillance such as cellphone tracking, where courts currently make the rules, our view is the same one we present in chapter 6 of our forthcoming book[434]: we would prefer legislatures to make these rules democratically, based on the balance of interests most supported by the community. However, we recognize it will often be more practical for investigators and policymakers to focus on adopting new technology that is not currently heavily restricted by courts.

Even when there are few judicial limits on a technology, however, the broader question is how to ensure that communities are satisfied with the balance between justice and privacy that is struck in deciding whether to adopt modern surveillance technologies and how they will be used. Since surveillance involves a specific privacy trade-off for the locality's residents, it makes the most sense to let individual communities decide (normally through their elected representatives on municipal councils) the extent to which they want the installation of CCTV cameras and other surveillance technologies. Some communities may decide they wish more surveillance than others, and such democratic variation is the best way to ensure communities are satisfied with the balance of interests. What matters most is that increased CCTV coverage remains a voluntary action undertaken by the community it is intended to protect. While, in 2013, 78 percent of Americans viewed added street surveillance as a good idea, this support varies widely depending on the community.[435] Any community ought to be free to choose less privacy intrusion and more criminal victimization of its members, as long as that decision truly represents the community (and not a minority of vocal activists).[436]

Even when communities wish for more surveillance to advance justice and safety, funds dedicated for surveillance technology are

434. ROBINSON ET AL., *supra* note 138.

435. Mark Landler & Dalia Sussman, *Poll Finds Strong Acceptance for Public Surveillance*, N.Y. TIMES, (Apr. 30, 2013), https://www.nytimes.com/2013/05/01/us/poll-finds-strong-acceptance-for-public-surveillance.html [https://perma.cc/7NFU-YHCT].

436. It makes sense to leave the decision up to elected representatives as opposed to direct ballot initiatives because elected legislators are more likely to be able to review the empirical evidence in favor of CCTV than the population at large while still being aware of their communities' valuation of privacy. Municipal leaders can also decide what sort of conditions or guidelines should be applied to the use of CCTV footage when making the decision to install more cameras.

scarce, particularly given chronic inadequate police financing and ideologically motivated budget cuts. The lack of funding for CCTV is especially pertinent given rising violent crime rates across the United States.[437] This means state and federal funding is likely necessary to permit wider CCTV adoption. States currently spend surprisingly little on policing, with police department expenditures constituting a mere 1 percent of states' total budget allocation.[438] Spending more on local technology grants would be a way to increase local funding without creating extra bureaucracy. In providing these state and federal grants, priority should be given to those communities with the highest crime-to-CCTV ratio—in other words, those communities most likely to benefit from the increases in justice and safety produced by greater CCTV coverage.

This proposal is not wholly novel. There already exist funds that offer grants for CCTV system implementation. Such funds include the Department of Justice–sponsored "Justice Assistance Grant," the Department of Homeland Security's "Homeland Security Grants," and the Community Oriented Policing Services' (COPS) "Secure our Schools" program, all three of which offer some funds related to surveillance and CCTV investments.[439] Unfortunately, these grants are typically too small to significantly aid CCTV adoption, and they also fail to take into account community opinion, which should be an essential component of the decision to add more surveillance.[440] Internationally, Germany has made major strides towards increasing

437. Thomas Abt, Rachel Kleinfeld & Robert Muggah, *Solving America's One-of-a-Kind Murder Problem*, CARNEGIE ENDOWMENT FOR INT'L PEACE (May 17, 2022), https://carnegieendowment.org/2022/05/17/solving-america-s-one-of-kind-murder-problem-event-7877 [https://perma.cc/NL7D-C6ZP].

438. *Criminal Justice Expenditures: Police, Corrections, and Courts*, URB. INST., (Feb. 27, 2023), https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/state-and-local-backgrounders/state-and-local-expenditures [https://perma.cc/4Q77-9JKZ].

439. Daniel del Soldato, *How to Find Grants for Mobile Surveillance Cameras,* WIRELESS CCTV (Aug. 1, 2021) https://www.wcctv.com/how-to-find-grants-for-mobile-surveillance-cameras/ [https://perma.cc/6CPW-BQD5].

440. For example, grants to low-income housing associations awarded by the U.S. Department of Housing and Urban Development range from $50,000 to $250,000. U.S. DEP'T OF HOUS. & URB. DEV., 2023 EMERGENCY SAFETY AND SECURITY AWARDS (2023), https://www.hud.gov/sites/dfiles/PIH/documents/FY23-ESSG-Awards.pdf [https://perma.cc/H7Q5-UWX7]. In comparison, a 55-camera system in York City, Pennsylvania, would cost $3.4 million to set up and an additional $500,000 each year to maintain. Logan Hullinger, *York City, Pa., Mulls Cost of Citywide Surveillance System*, GOV'T TECH. (Aug. 17, 2021), https://www.govtech.com/public-safety/york-city-pa-mulls-cost-of-citywide-surveillance-system [https://perma.cc/2548-E88Z].

CCTV use across the country, with the national parliament granting 180 million euros to install CCTV in high-risk areas.[441] Notably, the national government in Germany left it to more local decision-makers as to whether CCTV cameras should be added.[442]

An additional benefit of this proposal is that a community's vote to install more CCTV can aid judges in interpreting whether a police request for surveillance violates a right to privacy since part of the judicial consideration is whether a person's subjective expectation of privacy is recognized by the community.[443] In the case of Nelson Mora, for example, the Massachusetts Supreme Court might not have found the pole cameras violated a constitutional privacy right if the community had explicitly voted to install such cameras.[444]

E. Restraints on the Use of Data Analytics (Including Facial Recognition Algorithms)

In a world where technology allows police to collect enormous quantities of data, analytical tools, like artificial intelligence (AI) algorithms that employ machine learning, are a critical way for police to efficiently find the needles in the haystack.[445] While the future likely holds many useful crime-solving algorithms, one of the most useful current algorithms is facial recognition software that allows police to quickly sort through reams of surveillance footage to identify relevant images and find suspects in a wide range of cases, including murders.[446]

441. *The Federal Government and Deutsche Bahn Agree on Additional Measures to Step Up Security in Railway Stations*, FED. MINISTRY OF THE INTERIOR & CMTY. (Dec. 13, 2020), https://www.bmi.bund.de/SharedDocs/pressemitteilungen/EN/2020/12/sicherheit-bahnhoefe-en.html [https://perma.cc/F2CS-5DJW].

442. *See* Philip Oltermann, *Germany to Expand CCTV Network in Wake of Berlin Attack*, GUARDIAN (Dec. 21, 2016, 1:39 PM), https://www.theguardian.com/world/2016/dec/21/germany-to-expand-cctv-network [https://perma.cc/B7JH-63DC].

443. The expectation of privacy test originated from *Katz v. United States* where Justice Harlan created a two-part test: (1) an individual has exhibited an actual (subjective) expectation of privacy, and (2) the expectation is one that society is prepared to recognize as reasonable. 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

444. *See* Commonwealth v. Mora, 150 N.E.3d 297, 312–13 (Mass. 2020).

445. Kayla Matthews, *How Data Analytics Is Solving Murders*, MEDIUM (July 22, 2019), https://towardsdatascience.com/how-data-analytics-are-solving-murders-1cdac5432d6e [https://perma.cc/YQ8X-7DYD].

446. Amy Harmon, *As Cameras Track Detroit's Residents, a Debate Ensues Over Racial Bias*, N.Y. TIMES (July 8, 2019), https://www.nytimes.com/2019/07/08/us/detroit-facial-recognition-cameras.html [https://perma.cc/WLJ8-AV7V].

Of course, algorithms and data analytic tools are only as good as their input data, and opposition to police algorithms often stems from the fear that such tools may produce biased or inaccurate results due to biased inputs. The result of such fears has sometimes been restrictions or bans on technology such as facial recognition. However, in a world where data analysis is increasingly essential to justice and is constantly improving, algorithms will increasingly become powerful and even essential parts of crime investigation. The only real question is how they should be regulated and adopted.

1. Case Example

Danueal Drayton is arrested three times in Connecticut for violence against women. While on probation for the most recent assault, he moves to New York, where he begins dating Zynea Barney. Barney quickly tires of his controlling nature and calls off the relationship. This is too much for Drayton, who becomes enraged. In his rage, he attacks her, screaming, "'F***ing b***h, I'm going to kill you, I'm going to kill you. . . . I told you, it's just me and you."[447] Some bystanders intervene, and police are called. Drayton is not arrested. A few days later, he attacks her again and is arrested and released a week later. Two weeks later, Drayton goes on a Tinder date with a nurse from Queens. He beats the woman to death and flees.[448]

New York police use his Tinder photo with facial recognition software to locate his driver's license and thereby identify him. From there, they follow his credit card use to the purchase of an airline ticket to California. The trail stays warm, and when the California authorities arrest him, Drayton is with a woman who is tied up. She tells police she is being held against her will and has been a hostage for two days. The facial recognition software also links him to a second woman who was raped during a Tinder encounter. Drayton eventually confesses to six killings.[449] Without police use of facial recognition technology (FRT), Drayton might have escaped justice, and it seems likely that other innocent women would have been killed.

447. Hannah Parry, *'Stop Lying. You Knew What You Were Doing': Tinder Serial Killer's Ex-Girlfriend Says His Claims 'Voices' Made Him Do It Is Just a Ploy for Insanity Plea*, DAILY MAIL (Aug. 1, 2018, 4:33 PM), https://www.dailymail.co.uk/news/article-6016821/Tinder-serial-killers-ex-says-claims-voices-ploy-insanity-plea.html [https://perma.cc/MAE9-SNW6].

448. *Id.*

449. *Id.*

Despite its usefulness, California passed a three-year ban on most police uses of FRT over privacy and bias concerns. Fortunately, the ban expired in 2023.[450]

2. The Nature and Extent of the Problem

The use of computer algorithms in crime investigation has enormous potential to avoid failures of justice in serious cases, but that potential is far from being realized, often because of gross misunderstandings among the public about how algorithms function and their level of accuracy.

a. Benefits from the Use of Facial Recognition Technology

The technology has already proved extremely useful for police. In New York, the use of FRT found potential matches in 1,851 cases and led to arrests in 998 cases in 2018. A significant number of these crimes included rape, assault, or murder.[451] Indiana police officers have noted how essential the technology is to solving cases, especially when traditional leads are limited and all investigators have is an image of the suspect, which is not an uncommon situation.[452]

While the technology is still not widely used in the United States, where it has been used it has proved useful in successfully identifying suspects.[453] Some European countries have used the technology more widely. The United Kingdom, for example, has relied significantly on FRT since 2018, particularly in London which is already heavily covered by CCTV.[454] The new technology will enable London's police

450. Titus Wu, *California at Crossroads Over Policing and Facial Recognition*, BLOOMBERG L. (Mar. 29, 2023, 5:19 AM), https://news.bloomberglaw.com/privacy-and-data-security/california-at-crossroads-over-policing-and-facial-recognition [https://perma.cc/2BKA-BRG9].

451. *See* James O'Neill, *How Facial Recognition Makes You Safer*, N.Y. TIMES (June 9, 2019), https://www.nytimes.com/2019/06/09/opinion/facial-recognition-police-new-york-city.html [https://perma.cc/F7HR-RVXQ].

452. *See, e.g.*, Julie Bosman & Serge F. Kovaleski, *Facial Recognition: Dawn of Dystopia, or Just the New Fingerprint?*, N.Y. TIMES (May 18, 2019), https://www.nytimes.com/2019/05/18/us/facial-recognition-police.html [https://perma.cc/9HCJ-KGRV].

453. A program used in Florida, for example, has had over "400 successful outcomes since 2014." Jennifer Valentino-DeVries, *How the Police Use Facial Recognition, and Where it Falls Short*, N.Y. TIMES (Jan 12, 2020), https://www.nytimes.com/2020/01/12/technology/facial-recognition-police.html [https://perma.cc/J9NG-EZLW].

454. Samuel Woodhams, *London is Buying Heaps of Facial Recognition Tech*, WIRED (Sept. 27, 2021, 6:00 AM), https://www.wired.co.uk/article/met-police-facial-recognition-new [https://perma.cc/ZP6B-FD7H]; Bischoff, *supra* note 377.

force "to process . . . images from CCTV feeds, social media, and other sources" to identify and locate suspects.[455] In Geneva in 2021, the World Economic Forum issued a white paper that examined a variety of situations in which FRT could be useful, and developed policies aimed at maximizing its effective and responsible use.[456] The white paper states, "The development of FRT presents considerable opportunities for socially beneficial uses, mostly through enhanced authentication and identification processes, but it also creates unique challenges."[457]

b. Restrictions on the Use of Facial Recognition Technology

While facial recognition can be extremely useful in the investigation of serious crimes, it also has the potential to create problems when a person is incorrectly identified. Detroit's experience highlights the benefits and potential downsides of FRT. On the one hand, Detroit police have used FRT to catch and charge a shooter with three counts of first-degree murder, but they also incorrectly arrested and held a man for thirty hours because of a faulty facial recognition match for a shoplifting he did not commit.[458]

It is important to remember though that every crime-investigation tool is imperfect, and it is not uncommon that innocent persons will be inconvenienced as investigators pursue leads. Witnesses, for example, commonly misidentify perpetrators, and innocent persons can be detained and questioned as a result.[459] By contrast, the accuracy rate of the good facial recognition technology is 99.97 percent,[460] dramatically

455. *Id.*

456. *See generally* WORLD ECON. F., A POLICY FRAMEWORK FOR RESPONSIBLE LIMITS ON FACIAL RECOGNITION: USE CASE: LAW ENFORCEMENT INVESTIGATIONS (2021), https://unicri.it/sites/default/files/2021-10/A%20Policy%20Framework%20for%20Responsible%20Limits%20on%20Facial%20Recognition%20.pdf [https://perma.cc/5FWQ-49E7].

457. *Id.* at 4.

458. Harmon, *supra* note 446; Miriam Marini, *Farmington Hills Man Sues Detroit Police After Facial Recognition Wrongly Identifies Him*, DET. FREE PRESS (Apr. 13, 2021, 4:31 PM), https://www.freep.com/story/news/local/michigan/2021/04/13/detroit-police-wrongful-arrest-faulty-facial-recognition/7207135002/ [https://perma.cc/3ASB-4NRP].

459. The human accuracy rate for face recognition is 78 percent. Miguel Cedeno Agamez, Aging Effects in Automated Face Recognition 2 (2016) (M.S. thesis, Purdue University), https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1911&context=open_access_theses [https://perma.cc/W5S4-AP5N].

460. *See, e.g.*, *How Effective is Facial Recognition?*, NEC (Aug. 4, 2021), https://www.nec.co.nz/market-leadership/publications-media/how-effective-is-facial-recognition [https://perma.cc/ACC9-EWGC];

higher than the vast majority of criminal investigation methodologies.[461] Thus, if one is concerned about minimizing inconvenience to innocent persons, use of FRT ought to be much preferred over other traditional investigative mechanisms, such as reliance upon eyewitnesses.

Restrictions on police use of FRT have been passed by several states and municipalities as a result of lobbying by privacy advocates and those fearing that facial recognition algorithms may be biased or inaccurate. For example, in 2019, California placed a three-year moratorium on most police use of FRT.[462] In 2021, Virginia completely banned the use of FRT by police but then replaced the ban with strict guidelines allowing police to search only for matches on specific individuals they have cause to suspect. This limitation, while likely permitting the search needed in the Drayton case discussed above, still dramatically curtails FRT's usefulness in other areas, such as identifying suspects in the first place.[463] Some members of Congress in 2021 proposed a similar law that would ban U.S. government agencies or law enforcement agencies from using FRT without a warrant.[464] In seventeen communities across the country—including Sommerville, Massachusetts; San Francisco, Oakland, and Berkeley, California; and Portland, Oregon—municipalities have banned all use of FRT by government agencies, including police departments.[465]

461. Jonathan Jones, *Forensic Tools: What's Reliable and What's Not-so-Scientific*, PUB. BROAD. SERV.: FRONTLINE (Apr. 17, 2012), https://www.pbs.org/wgbh/frontline/article/forensic-tools-whats-reliable-and-whats-not-so-scientific/ [https://perma.cc/7ETR-7DST].

462. Feiner & Palmer, *supra* note 254. The ban was not renewed but other legislation to limit FRT use has been introduced. Titus Wu, *California at Crossroads Over Policing and Facial Recognition*, BLOOMBERG L. (Mar. 29, 2023, 5:19 AM), https://news.bloomberglaw.com/privacy-and-data-security/california-at-crossroads-over-policing-and-facial-recognition [https://perma.cc/6846-UH43].

463. Denise Lavoie, *Virginia Lawmakers OK Lifting Ban on Facial Technology Use*, ASSOCIATED PRESS (Mar. 10, 2022, 5:37 PM), https://apnews.com/article/technology-virginia-crime-legislature-f3f2af850745911014b950d951c3c464 [https://perma.cc/E768-WGS3].

464. Drew Harwell, *Senators Seek Limits on Some Facial-Recognition Use by Police, Energizing Surveillance Technology Debate*, WASH. POST (Apr. 21, 2021, 7:29 PM), https://www.washingtonpost.com/technology/2021/04/21/data-surveillance-bill/ [https://perma.cc/527E-MS6R].

465. *State Facial Recognition Policy*, ELEC. PRIVACY INFO. CTR., https://epic.org/state-facial-recognition-policy [https://perma.cc/Y3M5-9F6K]; Nathan Sheard & Adam Schwartz, *The Movement to Ban Government Use of Face Recognition*, ELEC. FRONTIER FOUND. (May 5, 2022), https://www.eff.org/deeplinks/2022/05/movement-ban-government-use-face-recognition [https://perma.cc/2TET-PAD7].

Moreover, in October 2023, several U.S. Representatives introduced a bill to Congress with the objective to place limits, and under some circumstances, prohibit the use of FRT by law enforcement authorities. The bill would require police to seek a warrant to use FRT and thus allow use only after an investigation establishes probable cause. The bill would also prohibit law enforcement officials from using a positive facial recognition match as the sole basis upon which probable cause can be established.[466] In other words, the bill essentially destroys a primary use of the technology in identifying potential suspects in the first place.

Some private companies have also refused to sell FRT products to law enforcement in order to avoid the disapproval of political opponents of the technology. In 2020, Microsoft decided against selling FRT to law enforcement agencies due to claimed privacy concerns, the current lack of federal regulation of FRT, and concerns that FRT could lead to wrongful arrests and convictions.[467] Around the same time, Amazon and IBM also decided to prohibit the sale of FRT to police departments, citing the lack of federal regulation.[468]

But opposition to FRT seems to be based largely on public misconceptions. From a privacy perspective, facial recognition does not record any more of a citizen's life than is already available through CCTV cameras, photographs, or witness observation. Facial recognition simply makes police vastly more efficient at sorting through camera footage, much like ALPR makes the process of searching through license plates vastly easier.

Additionally, fears over accuracy and racial bias in facial recognition are wildly overstated. Advances in accuracy over the last several years have made false positive identifications extremely rare and made the discrepancy between accurately identifying Caucasians and non-Caucasians miniscule. Fears of racial disparity began with a 2012 study showing the accuracy rate for matching faces overall was 94.4 percent but was only 88.7 percent for Blacks and 89.5 percent for women (raising concerns about gender disparity as well).[469] But even the lowest

466. Edward Graham, *House Dems Seek Guardrails for Law Enforcement's Use of Facial Recognition*, Nextgov/FCW (Oct. 30, 2023), https://www.nextgov.com/emerging-tech/2023/10/house-dems-seek-guardrails-law-enforcements-use-facial-recognition/391619/ [https://perma.cc/Q4VM-4BDD].

467. Jay Greene, *Microsoft Won't Sell Police Its Facial-Recognition Technology, Following Similar Moves by Amazon and IBM*, Wash. Post (June 11, 2020, 2:30 PM), https://www.washingtonpost.com/technology/2020/06/11/microsoft-facial-recognition/ [https://perma.cc/PT2R-GUMK].

468. *See* Feiner & Palmer, *supra* note 254.

469. Brendan F. Klare, Mark J. Burge, Joshua C. Klontz, Richard W. Vorder Bruegge & Anil K. Jain, *Face Recognition Performance: Role of*

accuracy rate, of 88.7 percent, is dramatically higher than most crime investigation methodologies, such as relying on witness recollection at the beginning of an investigation.

As it turns out, further research revealed that those disparities were caused by the greater prevalence of certain faces in original training set data used to develop the technology, not from a flaw in the technology itself.[470] For example, facial recognition algorithms developed in East Asia have higher accuracy for Asian faces than non-Asian faces.[471] However, as far back as 2018, advances in FRT had brought the accuracy rate up to 99.97 percent, and false matches were almost never due to race or gender but due to aging or injury.[472] Also, as noted earlier, some developers have provided highly accurate identification algorithms for which false positive differentials are negligible.[473]

There is little question that FRT has greater benefits for solving crime perpetrated by people of all races than the downside of a trivial number of false identifications which, while regrettable, have not led to false convictions and rarely lead to mistaken arrests.[474] Many in the public, however, have been led to oppose such technology based on a faulty understanding of these facts.

Internal failure to implement is another major limitation on FRT. Even if the above misperceptions are corrected, and legal and corporate restrictions are removed, it seems likely that FRT, as with many modern technologies, is likely to fall far short of its potential to prevent justice failures simply because police departments fail to appreciate its potential or lack the training or funding to take advantage of it.

Demographic Information, 7 IEEE TRANSACTIONS ON INFO. FORENSICS AND SEC. 1789, 1797 (2012).

470. *See id.* at 1798.

471. Jacqueline G. Cavazos, P. Jonathon Phillips, Carlos D. Castillo & Alice J. O'Toole, *Accuracy Comparison Across Face Recognition Algorithms: Where are We on Measuring Race Bias?*, 3 IEEE TRANSACTIONS ON BIOMETRICS, BEHAV. & IDENTITY SCI. 101, 102 (2021).

472. *How Effective is Facial Recognition?*, supra note 460; Agamez, supra note 460, at 1–2.

473. *See supra* note 272 and accompanying text.

474. As of April 2024, the ACLU was aware of only seven wrongful arrests in the United States due to facial recognition technology—a trivially small number. Nathan Freed Wessler, *Police Say a Simple Warning Will Prevent Face Recognition Wrongful Arrests. That's Just Not True*, ACLU (Apr. 30, 2024), https://www.aclu.org/news/privacy-technology/police-say-a-simple-warning-will-prevent-face-recognition-wrongful-arrests-thats-just-not-true [https://perma.cc/HS9Y-9VJQ].

3. Reforms

Some reforms have been proposed or undertaken to further the adoption of crime algorithms, including the use of facial recognition systems.

Adoption of such police algorithms requires creating best practice guidelines and regulations. One of the main concerns for community members and technology companies is the lack of regulation on the use of facial recognition technologies and other algorithms, which creates a fear that they exist in a black box.[475] Many concerns over police algorithms could be addressed if states created a set of regulations, or at least guidelines, for the use of algorithms by investigators to ensure accuracy and proper use. For example, the best-practice regulations on FRT could provide that police should only use FRT algorithms that have been tested to a high degree of accuracy across all racial groups.[476] With such best-practice guidelines established, it could be easier to obtain funding and community support for the use of such technologies. Some organizations have already drafted guidelines for police use of FRT.[477]

4. Recommendation: Fund Use of Facial Recognition Where Community Does Not Object

Facial recognition technology is especially useful as an addition to an existing CCTV system, so it makes sense to incentivize its adoption in a similar manner to our recommendation for CCTV adoption presented in the previous section. As with CCTV, communities should be allowed to decide the extent to which they wish to allow FRT. Those communities supportive of increased CCTV adoption are likely to be supportive of facial recognition as well once it is understood that such algorithms merely multiply the effectiveness of existing CCTV cameras and image databases. Once a local governing body approves the use of FRT, the training and funding necessary to implement the software ought to be supplied in part through state and federal grants, as in our proposal for CCTV adoption. Additionally, these funding grants can specify the accuracy, usage, and transparency standards any proposed facial recognition technology must meet to qualify.

CONCLUSION

Persistently low and falling crime clearance rates show that something needs to be changed in America's legal system. Failures of

475. *See generally* Feiner & Palmer, *supra* note 254.

476. Brian E. Finch, *The Trouble with Facial Recognition Doesn't Justify a Ban*, WALL ST. J. (Dec. 15, 2020, 6:19 PM), https://www.wsj.com/articles/the-trouble-with-facial-recognition-doesnt-justify-a-ban-11608074354 [https://perma.cc/7TAB-ZTAE].

477. WORLD ECON. F., *supra* note 456, at 14.

justice have a profound impact on criminal justice and deserve more attention than they currently receive. Justice failures disproportionately impact low-income and minority communities, creating unjust racial disparities, and cause more crime by contributing to a cycle of reduced clearance rates and higher crime rates, thus giving rise to the disillusionment-noncompliance dynamic, as well as by sparking vigilantism. Given the high costs of failures of justice, legal scholars and policymakers ought to reconsider current restrictions on effective criminal investigation. Rethinking the search and seizure restrictions and the custodial interrogation rules as well as encouraging the adoption of new crime-solving technologies could significantly increase clearance rates and lead to justice being served in tens or hundreds of thousands of additional serious criminal cases each year. A good starting point would be for legislatures and judges to consider adopting the recommended reforms that we propose here, which we believe better strike the proper balance among competing interests in light of changed societal circumstances.