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## Policing, Technology, and Doctrinal Assists

Bennett Capers

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## POLICING, TECHNOLOGY, AND DOCTRINAL ASSISTS

*Bennett Capers*\* \*\*

## Abstract

Sounding the alarm about technology, policing, and privacy has become an almost daily occurrence. We are told that the government’s use of technology as a surveillance tool is an “insidious assault on our freedom.” That it is “nearly impossible to live today without generating thousands of records about what we watch, read, buy and do—and the government has access to them.” The message is clear. Big Brother is watching. And we should be afraid.

But the police use of technology, or what this Article terms “techno-policing,” does not have to be dystopian. This Article challenges conventional thinking and offers an entirely new way to think about technology and policing. Deployed properly, techno-policing—from the use of simple smartphone applications such as FaceTime and Google Hangout, to the deployment of high-tech surveillance cameras, terahertz scanners, Big Data, and Automated Suspicion Algorithms—can enhance the warrant requirement and the goals of transparency and accuracy. And at this time when crime levels are relatively low and there are growing demands for police accountability—think Black Lives Matter—techno-policing can enhance legitimacy. Most importantly, techno-policing can provide much needed doctrinal assists where Fourth Amendment doctrine alone has proved inadequate, shortsighted, and unfair.

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\*\* Stanley A. August Professor of Law, Brooklyn Law School. B.A. Princeton University; J.D. Columbia Law School. Assistant U.S. Attorney, Southern District of New York 1995–2004. E-mail: bennett.capers@brooklaw.edu. This Article benefited from presentations at University of Texas Law School, Chicago-Kent Law School, and Brooklyn Law School. I am also grateful to fellow participants in the “Deconstructing Ferguson” Working Group at the Institution of Social and Policy Studies at Yale University, where I had the opportunity to share some of my ideas. And of course, many people provided invaluable comments during the writing of this Article, including Alafair Burke, Kimberly Bailey, Jennifer Laurin, Susan Morse, Michael Rich, Narcisso Saavedra, Christina Mulligan, Christopher Slobogin, L. Song Richardson, Laurent Sacharoff, Erika Thomas-Yuille, Seth Forman, Kaaryn Gustafson, Tracey Meares, and Jocelyn Simonson. Lastly, I owe a special thanks to my research assistants Steven Ballew, Jared Smith, Herberth Melendez, Janeen Hall, and Tobias Schad, my research librarian Kathleen Darvil, and to Brooklyn Law School for its generous research grant.

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INTRODUCTION

Sounding the alarm about technology, the Fourth Amendment, and privacy has become an almost daily occurrence. We are told that the government’s use of technology as a surveillance tool is an “insidious assault on our freedom.”<sup>1</sup> That it is “nearly impossible to live today without generating thousands of records about what we watch, read, buy and do—and the government has access to them.”<sup>2</sup> That so long as “Fourth Amendment privacy is parasitical on private-sphere privacy, the former must die as its host dies, and this host is undoubtedly faltering today in the networked, monitored, and digitized world we are learning to call our own.”<sup>3</sup> In short, that privacy is becoming like “the eight-track player, something we once had but which isn’t of use.”<sup>4</sup> The message is clear: Big Brother is watching. We should be afraid.

But the police use of technology, or what this Article terms “techno-policing,” does not have to be dystopian. For too long we have fixated with foreboding on the government’s use of technology vis-à-vis its citizens, and the inadequacy of Fourth Amendment doctrine to rein in that use. We have only begun to “flip the script,” so to speak, and think about

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1. CHRISTOPHER SLOBOGIN, *PRIVACY AT RISK: THE NEW GOVERNMENT SURVEILLANCE AND THE FOURTH AMENDMENT* ix (2007).

2. DANIEL J. SOLOVE, *NOTHING TO HIDE: THE FALSE TRADEOFF BETWEEN PRIVACY AND SECURITY* 2 (2011).

3. Jed Rubenfeld, *The End of Privacy*, 61 STAN. L. REV. 101, 118 (2008).

4. Anne Cassidy, *Who’s Watching You?*, GEO. L. RES IPSA LOQUITUR, Spring/Summer 2015, at 20, 27 (quoting David Cole).

the ability of citizens to insist on the use of technology such as body cameras to make policing more accountable. But body cameras should be the start, not the end, of the use of technology. Focusing for now on the Fourth Amendment's regulation of searches and seizures, this Article argues that it is time to harness technologies—from simple smartphone applications like FaceTime and Voice Memos, to the deployment of terahertz scanners, to Big Data and Automated Suspicion Algorithms, to the use of dedicated short-range communications technology—that can also further Fourth Amendment protections.<sup>5</sup> Most importantly, where Fourth Amendment doctrine has proved inadequate, these technologies can provide doctrinal assists.

This Article unfolds in four parts, beginning with simple technology and progressing to more complex technology. The primary objective of each part, though interconnected, is also different. In Part I, the focus is the heart of the Fourth Amendment—the warrant requirement—and the “assists” that simple communication platforms such as the smartphone applications FaceTime and Google Hangout can provide. By way of example, Part I focuses on two exceptions to the warrant requirement that have in effect swallowed the rule—the automobile exception and the exigency exception—and demonstrates how technology can get us closer to the original understanding of the Fourth Amendment.

Part II turns to technologies that can provide another doctrinal assist: transparency. Again, the call for police officers to wear body cameras is well-known. “Copwatching”—the practice of citizen groups organizing to monitor and record the police—is less well-known, but is also receiving attention.<sup>6</sup> This Part accordingly focuses on two other technologies that can aid in transparency. The first is of a piece with body cameras and copwatching: public surveillance cameras. To be sure, public surveillance cameras can capture and make visible police use of excessive force. But equally important and more generally, public surveillance cameras can make visible, and hence reviewable, everyday police interactions with citizens. For example, one of *Terry v. Ohio*'s<sup>7</sup> most glaring flaws is that it allows officers to justify *ex post* stops based on reasonable suspicion.<sup>8</sup> After all, *Terry* requires “articulable”

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5. In a way, this project shares much with author David Brin's observation that it is already far too late to prevent the government use of surveillance cameras and databases: “The *djinn* cannot be crammed back into its bottle . . . . The real issue . . . will be how mature adults choose to live—how they can compete, cooperate, and thrive—in such a world. A transparent society.” DAVID BRIN, *THE TRANSPARENT SOCIETY: WILL TECHNOLOGY FORCE US TO CHOOSE BETWEEN PRIVACY AND FREEDOM?* 8–9 (1998).

6. See generally Jocelyn Simonson, *Copwatching*, 104 CALIF. L. REV. 391 (2016) (describing the phenomenon of organized copwatching).

7. 392 U.S. 1 (1968)

8. *Id.* at 30.

suspicion,<sup>9</sup> not articulated suspicion. Public surveillance cameras can do some of the work in presenting a record, *ex post*, of whether officers were justified in their actions *ex ante*. A second technology, digital audio recorders, can address another recurring Fourth Amendment problem: determining the validity of consent and leveling the playing field with respect to consent. Both of these technologies, insofar as they aid transparency, can also bring attention to areas of policing that lie outside the scope of the Fourth Amendment and increase perceptions of legitimacy.

Part III turns to newer surveillance technology—terahertz scanners, facial recognition software, Big Data, and Automated Suspicion Algorithms, to name a few—and to yet a third objective: accuracy. It focuses on stop-and-frisks as a policing tool. Given the sheer volume of innocent citizens subjected to forcible stops and widespread evidence of racial profiling, the overuse and misuse of this policing tool is particularly troubling. Part III demonstrates that here too technology can provide a doctrinal assist to curb the overuse and misuse of stop-and-frisks by increasing accuracy.

Finally, Part IV turns to the role legislators and courts can play in facilitating the adoption of rights-enhancing technology. It then anticipates and addresses potential counter-arguments.

For too long, the conventional thinking among Fourth Amendment scholars has been that technology will usurp what little privacy we have left. In short, scholars have seen technology as the enemy. But citizens too can use technology, and use it in ways that are rights-enhancing and even privacy-enhancing. The ambition of this Article is to show how.

## I. WARRANTS

To understand the role technology—in this case simple communication platforms such as FaceTime and Google Hangout—can play as a doctrinal assist in restoring the Fourth Amendment to its original meaning, it makes sense to begin with *Johnson v. United States* and what the warrant requirement used to mean. Over a half a century ago, in *Johnson v. United States*,<sup>10</sup> the Court articulated one of the strongest justifications for requiring a warrant:

The point of the Fourth Amendment, which often is not grasped by zealous officers, is not that it denies law enforcement the support of the usual inferences which reasonable men draw from evidence. Its protection consists of requiring that those inferences be drawn by a neutral and detached magistrate instead of being judged by the officer

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9. *Id.* at 21.

10. 333 U.S. 10 (1948).

engaged in the often competitive enterprise of ferreting out crime. Any assumption that evidence sufficient to support a magistrate's disinterested determination to issue a search warrant will justify the officers in making a search without a warrant would reduce the Amendment to a nullity and leave the people's homes secure only in the discretion of police officers. . . . When the right of privacy must reasonably yield to the right of search is, as a rule, to be decided by a judicial officer, not by a policeman or government enforcement agent.<sup>11</sup>

This reasoning still makes sense. Nor is this the only reason to prefer a warrant. Others include forcing officers to rationalize the basis for a search;<sup>12</sup> avoiding hindsight bias on the part of courts;<sup>13</sup> reducing unjustified searches or seizures where the evidence is in fact insufficient to establish probable cause,<sup>14</sup> or where prudence militates against a search;<sup>15</sup> deterring abuses of authority by despotic or capricious officers;<sup>16</sup> and providing assurances to those searched that the officer has the legal authority to in fact engage in the search.<sup>17</sup> And yet, the last several decades have witnessed an explosion of exceptions that swallow the supposedly "categorical"<sup>18</sup> and "cardinal principle"<sup>19</sup> that warrantless searches violate the Fourth Amendment. Indeed, the warrant requirement has been so watered down that Justice Antonin Scalia remarked upon it in his concurrence in *California v. Acevedo*,<sup>20</sup> stating: "Even before today's decision, the 'warrant requirement' had become so riddled with exceptions that it was basically unrecognizable. In 1985, one commentator catalogued nearly 20 such exceptions . . . ."<sup>21</sup>

But things do not have to be this way, especially considering that many of the exceptions to the warrant requirement developed out of the difficulty of securing a warrant quickly rather than out of a principled

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11. *Id.* at 13–14 (footnotes omitted).

12. Oren Bar-Gill & Barry Friedman, *Taking Warrants Seriously*, 106 NW. U. L. REV. 1609, 1641–47 (2012).

13. *Beck v. Ohio*, 379 U.S. 89, 96 (1964); Bar-Gill & Friedman, *supra* note 12, at 1614.

14. Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 411 (1974).

15. *Cf. Welsh v. Wisconsin*, 466 U.S. 740, 750 (1984) (noting that an offense could be so minor as to not justify a warrantless search, even though probable cause exists).

16. *Id.* at 751; see SOLOVE, *supra* note 2, at 127.

17. *Illinois v. Gates*, 462 U.S. 213, 236 (1983).

18. *California v. Acevedo*, 500 U.S. 565, 582 (1991) (Scalia, J., concurring).

19. *Mincey v. Arizona*, 437 U.S. 385, 390 (1978).

20. 500 U.S. 565 (1991).

21. *Id.* at 582 (Scalia, J., concurring) (citing Craig M. Bradley, *Two Models of the Fourth Amendment*, 83 MICH. L. REV. 1468, 1473–74 (1985)).

belief that warrants should be excused.<sup>22</sup> Current, widely available technology already makes securing a warrant in minutes relatively easy.<sup>23</sup> This technology can provide a doctrinal assist in getting us back to warrants. The two examples below—the automobile exception to the warrant requirement and the exigency exception to the warrant requirement—illustrate this precisely.<sup>24</sup>

### A. *The Automobile Exception*

The automobile exception, which permits warrantless searches of automobiles, made complete sense when the Court created the exception in 1925, in *Carroll v. United States*.<sup>25</sup> It makes almost no sense now. And much of this has to do with the facts and technology then and now.

In December 1921, federal prohibition agents were patrolling the highway between Detroit and Grand Rapids, a known bootlegging area given its proximity to Canada, when they passed the “Carroll boys” in an Oldsmobile roadster.<sup>26</sup> Recognizing the Carroll boys as men they had tried to purchase bootleg from a few months earlier,<sup>27</sup> the agents followed the men for some sixteen miles before stopping them and conducting a warrantless search of the vehicle.<sup>28</sup> Behind the seats, the agents found 68 bottles of whiskey and gin.<sup>29</sup> Based on this evidence, which was admitted against the Carroll boys at trial, the two men were convicted of transporting intoxicating liquor.<sup>30</sup>

The problem was that their vehicle had been searched without a warrant, which the Court had long held to be necessary under the Fourth Amendment before a search could be conducted.<sup>31</sup> The Court avoided this

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22. To put this differently, even if one insists, as the Court has increasingly done, that the “touchstone of the Fourth Amendment is reasonableness,” one should factor in the ease in securing a warrant in determining whether Government action is reasonable. *Florida v. Jimeno*, 500 U.S. 248, 250 (1991).

23. *Missouri v. McNeely*, 133 S. Ct. 1552, 1572–73 (2013).

24. These two examples are not meant to be exhaustive. One can easily imagine technology providing a role with respect to other judicially created exceptions to the Fourth Amendment, such as officers’ blanket ability to conduct warrantless felony arrests in public. *See generally* *United States v. Watson*, 423 U.S. 411 (1976) (interpreting the Fourth Amendment to permit warrantless arrests in public so long as an officer has probable cause to believe the suspect has committed or is committing a felony).

25. 267 U.S. 132 (1925).

26. *Id.* at 135, 160.

27. The agents had first tried to purchase bootleg from the men two months earlier. *Id.* at 135.

28. *Id.* at 136.

29. *Id.*

30. *Id.* at 162.

31. 3 WAYNE R. LAFAVE, SEARCH AND SEIZURE: A TREATISE ON THE FOURTH AMENDMENT § 7.2(a)–(b) (5th ed. 2012).

problem by fashioning what has come to be known as the automobile exception.<sup>32</sup> Writing for a 7–2 Court, Chief Justice William Taft conceded that in “cases where the securing of a warrant is reasonably practicable, it must be used,”<sup>33</sup> but held that the warrant requirement could be excused where a “vehicle can be quickly moved out of the locality or jurisdiction in which the warrant must be sought.”<sup>34</sup>

Hence, the *Carroll* Doctrine. So long as an automobile, or for that matter any motorized vehicle, is readily mobile and officers have probable cause to believe it contains evidence of criminal activity, they may search it.<sup>35</sup> Indeed, the exception itself has grown. Subsequent cases applying the automobile exception have made clear that officers may also search the personal belongings of a vehicle’s occupants, if such belongings are capable of concealing the object of the search.<sup>36</sup> Officers may even search an unoccupied vehicle without a warrant.<sup>37</sup>

The automobile exception has grown in another way as well. A series of cases—*Whren v. United States*,<sup>38</sup> in which the Supreme Court gave its imprimatur to pretextual traffic stops;<sup>39</sup> *Michigan Department of State Police v. Sitz*,<sup>40</sup> in which the Court greenlighted suspicionless checkpoints;<sup>41</sup> and *United States v. Place*<sup>42</sup> and *Florida v. Harris*,<sup>43</sup> under which an alert by a narcotics detection dog amounts to probable cause<sup>44</sup>—have contributed to making warrantless automobile searches a matter of routine.<sup>45</sup> Indeed, a particularly odd state of affairs now exists: at the same

32. *Carroll v. United States*, 267 U.S. 132, 153 (1925).

33. *Id.* at 156.

34. *Id.* at 153. The Court relied in part on the founding era history of not requiring warrants for maritime searches. *Id.* at 150–51.

35. *Pennsylvania v. Labron*, 518 U.S. 938, 940 (1996) (citing *Carroll*, 267 U.S. at 153).

36. *E.g.*, *Wyoming v. Houghton*, 526 U.S. 295, 307 (1999).

37. *See generally* 3 LAFAVE, *supra* note 31, § 7.2(a)–(b) (examining the application of the *Carroll-Chambers* moving vehicle exception).

38. 517 U.S. 806 (1996).

39. *Id.* at 817–18.

40. 496 U.S. 444 (1990).

41. *Id.* at 455.

42. 462 U.S. 696 (1983).

43. 133 S. Ct. 1050 (2013).

44. *Id.* at 1059.

45. Much of this is traceable to the federal government, which in 1986 began training federal agents and local police in ways to convert routine traffic stops into car searches for drugs. *See* Gary Webb, *Driving While Black*, ESQUIRE (Jan. 29, 2007), <http://www.esquire.com/news-politics/a1223/driving-while-black-0499/>; *see also* David Rudovsky, *Law Enforcement by Stereotypes and Serendipity: Racial Profiling and Stops and Searches Without Cause*, 3 U. PA. J. CONST. L. 296, 304 (2001) (noting that many “policing programs” have permitted “suspicionless stops and searches” on the theory that “the more stops and searches that are conducted . . . more drugs, weapons, and intelligence will be secured”). The automobile exception even makes



time officers have gained more options for conducting warrantless searches of vehicles, citizens increasingly use cars in ways we associate with privacy and intimacy.<sup>46</sup> As one commentator put it, our cars *are* our second homes.<sup>47</sup> “Our vehicles . . . are rolling offices, living rooms, and eating areas.”<sup>48</sup> And yet because of the automobile exception, these “rolling offices, living rooms, and eating areas” can be easily searched based solely on an officer’s *ex post* articulation that probable cause existed. In short, responding to one type of technology—the advent of the automobile<sup>49</sup>—the Court carved an exception to the warrant requirement that now, almost a century later, seems decidedly outmoded and counter to the long-standing preference for warrants.

However, technology need not be a one-way street. Just as technology in *Carroll* justified excusing the warrant requirement, technology today justifies reinstating it. Put another way, rather than infringing on our Fourth Amendment protections and our “right to be let alone,”<sup>50</sup> technology can be deployed to further Fourth Amendment protections by reinvigorating the warrant requirement. Recall that in *Carroll*, because the car was in transit, “seizure [was] impossible except without a warrant.”<sup>51</sup> Recall, too, Chief Justice Taft’s language emphasizing the impracticality of securing a warrant for a moving vehicle and his admonishment that in “cases where the securing of a warrant is reasonably practicable, it must be used.”<sup>52</sup> While securing a warrant for an automobile may have been impractical and hence unreasonable in

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appearances in popular culture with songs such as Jay-Z’s “99 Problems.” JAY-Z, *99 Problems*, on *THE BLACK ALBUM* (Def Jam Records 2003).

46. This is not to suggest that the association of cars with intimacy is entirely new. It has been around for some time, as Professor Carol Sanger points out in her brilliant essay. See generally Carol Sanger, *Girls and the Getaway: Cars, Culture, and the Predicament of Gendered Space*, 144 U. PA. L. REV. 705 (1995) (discussing how the law has transformed society’s treatment of the automobile and the impact the transformation has had on the women demographic).

47. Tim Lott, *The Car, Our Second Home*, GUARDIAN (Nov. 23, 2013, 2:15 PM), <http://www.theguardian.com/lifeandstyle/2013/nov/23/the-car-our-second-home>.

48. David A. Harris, *Car Wars: The Fourth Amendment’s Death on the Highway*, 66 GEO. WASH. L. REV. 556, 576 (1998) (“Put simply, no activity is common to more Americans than driving or riding in a car.”); Note, *Warrantless Searches and Seizures of Automobiles*, 87 HARV. L. REV. 835, 840 (1974) (“That the automobile is an extension of its owner’s personality is evident in American society.”).

49. As professor Orin Kerr has observed, scholars tend to focus on current technology when considering the Fourth Amendment and sidestep the fact that the Court has always had to respond to technological advances, such as the invention of the automobile. See Orin Kerr, *An Equilibrium-Adjustment Theory of the Fourth Amendment*, 125 HARV. L. REV. 476, 503 (2011).

50. *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting), *overruled in part by Katz v. United States*, 389 U.S. 347 (1967).

51. *Carroll v. United States*, 276 U.S. 132, 156 (1925).

52. *Id.* at 156.

1925 when *Carroll* was decided, and even in 1999 when the Court last decided a significant automobile exception case,<sup>53</sup> the same can hardly be said today, when both cars *and* phones are mobile, when nearly 100% of large and mid-size police departments have some type of in-field computer access<sup>54</sup> and a growing number are outfitting officers with tablets and smart phones,<sup>55</sup> and when an officer on the road can reach a magistrate anywhere with the press of a finger. Indeed, with other technologies—for example, the automatic license plate reader technology used with surveillance cameras in many jurisdictions,<sup>56</sup> the potential use of dedicated short-range communications technology by the police to slow down or disable vehicles,<sup>57</sup> and the possibility of GPS tracking via a car’s own OnStar tracking system or the deployment of high-tech drones<sup>58</sup>—the likelihood of a car being able to quickly move out of the jurisdiction—part of the original argument for the automobile exception<sup>59</sup>—will soon be miniscule. If the underlying rationale for the

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53. *Wyoming v. Houghton*, 526 U.S. 295, 307 (1999) (holding that the police may also search the belongings of a vehicle’s occupants under the automobile exception).

54. See BRIAN A. REAVES, U.S. DEP’T OF JUSTICE, LOCAL POLICE DEPARTMENTS, 2007, at 23 (2010), <https://www.bjs.gov/content/pub/pdf/lpd07.pdf>. Since 2007, departments of all sizes have significantly increased their use of in-field computer systems. See BRIAN A. REAVES, U.S. DEP’T OF JUSTICE, LOCAL POLICE DEPARTMENTS, 2013: EQUIPMENT AND TECHNOLOGY, 2013, at 5 (“About 9 in 10 local police officers were employed by a department that provided in-field computerized access to vehicle and driving records.”).

55. See Melanie Basich, *Tablets: The Handheld Option*, POLICE MAG. (Nov. 15, 2012), <http://www.policemag.com/channel/technology/articles/2012/11/the-handheld-option.aspx>; Tatiana Schlossberg, *New York City Police to Be Equipped with Smartphones and Tablets*, N.Y. TIMES (Oct. 24, 2014), <http://www.nytimes.com/2014/10/24/nyregion/new-york-city-police-to-be-equipped-with-smartphones-and-tablets.html>; Eric Sun, *Why Police & Fire Are Moving to Phones and Tablets*, PUBLIC EYE (June 23, 2014), <http://www.publiceyes.com/blog/police-fire-phones-tablets/>.

56. I. Bennett Capers, *Crime, Surveillance, and Communities*, 40 FORDHAM URB. L.J. 959, 960–64 (2013) (citing locales that use the technology).

57. Such technology has already been patented. See Vehicle Slowdown Control via Short Range Wireless Comm’n, U.S. Patent No. 8239076 (filed Mar. 31, 2008); see also John R. Quain, *Ford Demo of Car-to-Car Communication Shows What Happens When Cars Talk*, FOXNEWS (Feb. 4, 2014), <http://www.foxnews.com/tech/2014/02/04/what-happens-when-cars-talk-to-each-other/>.

58. Such drones are already in development. In one prototype by BMW:

[A] larger “ePatrol” vehicle is equipped with up to three individual drones that can be deployed to follow suspected criminals in high-speed chases across busy highways. Once one of the smaller can catch up with a targeted car, those individual drones would then be able to send an impulse to startle the driver.

*Cop Cars to Be Replaced with Drones by 2025*, RT: AM. (Nov. 23, 2012, 7:34 PM), <http://www.rt.com/usa/cop-patrol-drone-la-442/>.

59. *Carroll v. United States*, 267 U.S. 132, 153 (1925).

automobile exception is the impracticability of securing a warrant due to a car's mobility, current technology renders that rationale superannuated.<sup>60</sup>

Consider just one possibility: the use of the communication platforms FaceTime or Google Hangout. With FaceTime, a popular App, an officer can make video calls over Wi-Fi from an iPhone (or iPad, iPod touch, or Mac computer) to a magistrate judge's device. The officer can also make FaceTime calls over cellular networks on an iPhone or iPad. The Apple website describing FaceTime says it all: "[B]e there in person, even when you're not."<sup>61</sup> Indeed, the officer need not even look up the number for a magistrate: any law enforcement agency can remotely send contact information for every magistrate to every officer's phone. Other communications platforms like Google Hangout and Skype include even more functionalities. Google Hangout and its platform allow for communication among multiple users—a call can include the officer, a magistrate, and a prosecutor, for example—and allows the instantaneous sharing of photos and videos.<sup>62</sup> Google Hangout would also allow the officer, or affiant, to immediately "see" that a magistrate is available. Perhaps most importantly, Google Hangout can be used in conjunction with Google Drive, which allows documents to be jointly viewed and jointly edited. Lastly, it permits a recording of the conversation to be immediately saved onto the platform, so that it is later available for evidentiary purposes. And of course, FaceTime and Google Hangout are simply examples.<sup>63</sup> Law enforcement agencies are already working with software companies to fashion technology for their needs.<sup>64</sup> As such, one can easily imagine communication platforms tailored to assist technopolicing.

Technology has other advantages over traditional paper affidavits and warrants. A judge can ask follow-up questions to better ascertain whether

60. Scholars have long argued that the automobile exception should apply only in situations where officers are unable to obtain a warrant. *See, e.g.,* Arnold H. Loewy, *Cops, Cars, and Citizens: Fixing the Broken Balance*, 76 ST. JOHN'S L. REV. 535, 566 (2002).

61. *Use FaceTime with Your iPhone, iPad, or iPod Touch*, APPLE SUPPORT, <https://www.apple.com/ios/facetime/> (last modified May 31, 2016).

62. *Hangouts*, G SUITE, <https://gsuite.google.com/products/hangouts/> (last visited Jan. 20, 2017).

63. Other communication platforms include Oovoo, Adobe Acrobat Connect, Ekiga, WebEx, and AT&T Connect. *See* Nadeem Unuth, *Top Video Conferencing Applications and Services*, LIFEWIRE (Apr. 1, 2016), <https://www.lifewire.com/top-video-conferencing-apps-3426687>.

64. *See Law Enforcement Equipment and Technology*, NAT'L INST. JUST. (Mar. 28, 2014), <http://www.nij.gov/topics/law-enforcement/technology/pages/welcome.aspx> (noting that the agency "sponsors a broad array of research and development of equipment and technology for police").

probable cause in fact exists. The judge can observe the demeanor of the affiant to assist her in her credibility determination. Equally important, the demeanor of the affiant can be preserved for discovery and review. In other words, with current technology, the word “automobile” need not be “a talisman in whose presence the Fourth Amendment fades away and disappears,”<sup>65</sup> as Justice Stewart feared.

### B. *The Exigency Exception*

Technology can also further Fourth Amendment protections with respect to the exigency exception, which “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.”<sup>66</sup> The problem is that the exigency exception, like the automobile exception discussed above, is often applied in a way that has little to do with its rationale. Indeed, in a certain sense exigent circumstances can take on a talismanic quality on par with abracadabra or hocus-pocus: an officer need only articulate *ex post* some emergency, no matter his role in creating the emergency, to be able to search or seize what otherwise would have required a warrant.<sup>67</sup>

The readily available communications platforms discussed in connection with the automobile exception could play a similar role here. With the use of a platform like FaceTime or Google Hangout, an officer can secure a warrant almost instantaneously. Rather than basing his determination that an exigency exists on his own estimation alone—an estimation which will likely be influenced by the officer’s interest in conducting a search<sup>68</sup>—available technology suggests that an officer should be required, when feasible, to articulate the basis for the exigency *ex ante* and seek a judge’s approval.<sup>69</sup>

Indeed, a recent exigent circumstances case suggests the Court is beginning to recognize the potential technology has in making the

65. *Coolidge v. New Hampshire*, 403 U.S. 443, 461–62 (1971).

66. *Kentucky v. King*, 563 U.S. 452, 460 (2011) (quoting *Mincey v. Arizona*, 437 U.S. 385, 394 (1978)).

67. Like every exception that bypasses the warrant requirement, the exigency exception suffers from the problems previously identified, including hindsight bias. *See supra* notes 10–11 and accompanying text. There is another problem as well: There is only a weak mechanism to deter officers from overestimating the exigency. If the officers over-estimate the exigency but find contraband, courts will likely conclude that the exigency existed in order to avoid suppression. On the other hand, if the officers overestimate exigency but find nothing, no one will be the wiser, since this failure is unlikely to come to the attention of a judge.

68. The exclusionary rule is predicated on the assumption that officers are interested actors, an assumption reflected in the Federal Rules of Evidence. *See* FED. R. EVID. 803(8) advisory committee’s note (excluding police reports from public records exception to hearsay ban).

69. *See* Bar-Gill & Friedman, *supra* note 12, at 1614, 1641–47.

warrant requirement a real requirement again. *Missouri v. McNeely*<sup>70</sup> involved the warrantless drawing and testing of blood of a suspected intoxicated driver.<sup>71</sup> Missouri's argument was simple: given the natural metabolization of alcohol in the bloodstream, there should be a blood-testing exception allowing the warrantless drawing of blood in cases where there is probable cause to believe a suspect has engaged in drunk driving.<sup>72</sup> And there was precedent on Missouri's side. Decades earlier, in *Schmerber v. California*,<sup>73</sup> the Court upheld a warrantless blood-test of a drunk driver where the officer reasonably believed "he was confronted with an emergency, in which the delay necessary to obtain a warrant, under the circumstances, threatened 'the destruction of evidence.'"<sup>74</sup> The *McNeely* Court distinguished *Schmerber*, however, noting that what may have once been reasonable under the Fourth Amendment in "an era when cell phones and e-mail were unknown"<sup>75</sup> was not necessarily reasonable today given the "advances in the 47 years since *Schmerber* . . . that allow for the more expeditious processing of warrant applications."<sup>76</sup> The Court observed:

[P]olice can often request warrants rather quickly these days. At least 30 States provide for electronic warrant applications. In many States, a police officer can call a judge, convey the necessary information, and be authorized to affix the judge's signature to the warrant. Utah has an e-warrant procedure where a police officer enters information into a system, the system notifies a prosecutor, and upon approval the officer forwards the information to a magistrate, who can electronically return the warrant to the officer. Judges have been known to issue warrants in as little as five minutes. And in one county in Kansas, police officers can e-mail warrant requests to judges' iPads; judges have signed such warrants and e-mailed them back to officers in less than 15 minutes.<sup>77</sup>

Unfortunately, aside from its decision in *Missouri v. McNeely*, the Court has been slow in recognizing how this warrant-facilitating technology can restore the warrant requirement more broadly, especially since the Court has separately ruled that the Fourth Amendment permits officers to temporarily secure or "freeze" a location in order to allow them

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70. 133 S. Ct. 1552 (2013).

71. *Id.* at 1557.

72. *Id.* at 1568.

73. 384 U.S. 757 (1966).

74. *Id.* at 770 (quoting *Preston v. United States*, 376 U.S. 364, 367 (1964)).

75. *McNeely*, 133 S. Ct. at 1574 (Roberts, C.J., concurring).

76. *Id.* at 1561.

77. *Id.* at 1572–73 (citations omitted).

the time to apply for and obtain a warrant from a judicial officer.<sup>78</sup> The Court's slow-footedness can be seen in its recent exigency case, *Kentucky v. King*.<sup>79</sup> *King* involved the paradigmatic exigency situation—the possible destruction of drug evidence.<sup>80</sup> Not knowing which of two apartments a seller of crack cocaine had entered, officers chose the apartment on the left, from which the smell of marijuana was emanating.<sup>81</sup> The officers banged on the door and announced their presence. After hearing “people inside moving” and “things . . . being moved inside the apartment,” the officers made a forced entry and conducted a warrantless search, counting on the exigency exception.<sup>82</sup> In fact, it turned out the officers had entered the wrong apartment.

The Court's description of the post-entry events is revealing:

At that point, the officers announced that they “were going to make entry inside the apartment.” [Officer] Cobb then kicked in the door, the officers entered the apartment, and they found three people in the front room: respondent Hollis King, respondent's girlfriend, and a guest who was smoking marijuana. The officers performed a protective sweep of the apartment during which they saw marijuana and powder cocaine in plain view. In a subsequent search, they also discovered crack cocaine, cash, and drug paraphernalia.

*Police eventually entered the apartment on the right. Inside, they found the suspected drug dealer who was the initial target of their investigation.*<sup>83</sup>

King objected to the admission of evidence found in his apartment.<sup>84</sup> Specifically, King argued that the exigency exception excusing the warrant requirement should not apply to situations where the police deliberately create the exigent circumstances (in his case by banging on his door) or where it should be reasonably foreseeable to police that their actions will lead to exigent circumstances.<sup>85</sup> The Court, however, rejected these arguments, and held that the exigency exception will apply so long as “the police do not gain entry to premises by means of an actual or threatened violation of the Fourth Amendment.”<sup>86</sup> Because the police did

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78. See *Illinois v. McArthur*, 531 U.S. 326, 331–33 (2001).

79. 563 U.S. 452 (2011).

80. *Id.* at 456.

81. *Id.*

82. *Id.*

83. *Id.* at 456–57 (emphasis added) (footnote omitted) (citations omitted).

84. *Id.* at 457.

85. *Id.* at 468.

86. *Id.* at 469.

not violate the Fourth Amendment by banging on King's door, the exigency exception justified the police forcing entry once the officers heard movement that lead them to believe drug-evidence was being destroyed.<sup>87</sup> While there are reasons to be critical of the Court's ruling, the point raised here is slightly different and goes to the role developing technology can play in providing a doctrinal assist by making the warrant requirement, especially when it comes to the home,<sup>88</sup> an actual requirement again.

Consider again the sequence of events. Officers, hoping to arrest an individual who had just sold crack cocaine to an undercover officer, know that he is in one of two apartments. Although the Court has declined to reduce probable cause to mathematics, instead stating that "probable cause is a fluid concept"<sup>89</sup> based on the "totality of the circumstances,"<sup>90</sup> the general assumption is that "probable cause involves *less* than a '50%+' likelihood of accuracy."<sup>91</sup> If that is true, even before knocking on the apartment door, the officers could have applied to a magistrate for a warrant to search *either or both apartments*.<sup>92</sup> Equally important, that magistrate could have issued a warrant, or more practically, suggested the officers simply surveil both apartments and arrest the target when he exited. Either option would be preferable to our growing practice of allowing officers free rein to conduct warrantless searches.

87. *Id.* at 469–70.

88. The home has long enjoyed special protection under the Fourth Amendment. As the Court recently stated, "[W]hen it comes to the Fourth Amendment, the home is first among equals. At the Amendment's 'very core' stands 'the right of a man to retreat into his own home and there be free from unreasonable governmental intrusion.'" *Florida v. Jardines*, 133 S. Ct. 1409, 1414 (2013) (quoting *Silverman v. United States*, 365 U.S. 505, 511 (1961)); *see also* I. Bennett Capers, *Home Is Where the Crime Is*, 109 MICH. L. REV. 979, 980 (2011) (reviewing JEANNIE SUK, *AT HOME IN THE LAW: HOW THE DOMESTIC VIOLENCE REVOLUTION IS TRANSFORMING PRIVACY* (2009)) (discussing shifts in "how the law perceives the home").

89. *Maryland v. Pringle*, 540 U.S. 366, 370–71 (2003); *Illinois v. Gates*, 462 U.S. 213, 232 (1983).

90. *Pringle*, 540 U.S. at 371.

91. JOSHUA DRESSLER & ALAN C. MICHAELS, *UNDERSTANDING CRIMINAL PROCEDURE* § 8.07[A] (5th ed. 2010) (emphasis added); *see also Pringle*, 540 U.S. at 371.

92. Setting this aside, there was another point at which a warrant could have been obtained. Recall again the sequence. The officers, after hearing what sounded as if the occupants might be attempting to destroy evidence, forced entry and found three occupants in the front room. The officers then conducted a protective search to ensure their own safety, during which they observed some marijuana and powder cocaine in plain view. All of this is currently permitted by a strong exigency exception and weak warrant rule. But consider the next sentence: "In a subsequent search, they also discovered crack cocaine, cash, and drug paraphernalia." *Kentucky v. King*, 563 U.S. 452, 457 (2011). Clearly, with the three occupants in custody, any exigency that may have existed had come to an end. Put differently, the "subsequent search" could not possibly be justified by the exigency exception, especially since the Court has given officers the ability to secure a location until a warrant is obtained. *See id.*

To be clear, this Article is not suggesting that available technology will eliminate exigent circumstances in every case. For example, it is hard to imagine technology reducing the exigent circumstances exception that would allow officers to intervene in a crime in progress.<sup>93</sup> But it does suggest that the possibility of quickly securing a warrant by recourse to available technology should play a role in determining the constitutionality of any search.<sup>94</sup>

This Section ends by turning to another technology case, *Riley v. California*,<sup>95</sup> the Court's recent decision barring the automatic search of iPhones found on arrestees.<sup>96</sup> Though decided under another Fourth Amendment exception—the search incident to arrest exception—the case is pertinent to the discussion of exigency for two reasons. One, the search incident to arrest exception is, to a certain extent, a specialized application of the broader exigency exception that allows a warrantless search.<sup>97</sup> The thinking is that an arrestee may be automatically and immediately searched in order to prevent the arrestee from destroying evidence on his person or grabbing a weapon to use against the officers.<sup>98</sup> Two, the specific issue of exigency repeatedly surfaced in *Riley*. The State of California, supported by other government amici, raised the specter that permitting officers to search iPhones was necessary because of the risk that a cohort of the defendant could, within seconds, remotely delete the data.<sup>99</sup> But even here, the Court recognized that technology, though adding a wrinkle to the search incident to arrest doctrine,<sup>100</sup> also

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93. For example, exigent circumstances may still exist in situations where police are summoned to intervene in an ongoing domestic violence crime.

94. This was precisely the problem in *Mincey v. Arizona*, in which a suspect shot an undercover officer who was trying to make a purchase of narcotics in the suspect's home. 437 U.S. 385, 387 (1978). The officers were entitled to conduct a warrantless entry into the home to provide medical assistance. *Id.* at 392–93. They were also entitled to sweep the premises in order to secure their own safety. *Id.* The officers were not entitled, absent a warrant, to continue searching the premises after the exigency had ended. *Id.*; see also *Flippo v. West Virginia*, 528 U.S. 11, 14 (1999) (ruling that search of suspect's home, following an emergency, was not justified by exigency exception and that items found during the search must be suppressed).

95. 134 S. Ct. 2473 (2014).

96. *Id.* at 2485.

97. DRESSLER & MICHAELS, *supra* note 91, § 12.01.

98. *Chimel v. California*, 395 U.S. 752, 763 (1969). Indeed, it is precisely because of this assumed exigency that the search incident to arrest exception has its own time limitation. The search must in fact occur incident to the arrest in order to fall within the exception. A search conducted later in time—for example, several hours after an arrest—normally does not fall under the search incident to arrest exception. See *Preston v. United States*, 376 U.S. 364, 365, 367–68 (1964).

99. *Riley*, 134 S. Ct. at 2486–87.

100. *Id.* at 2495. The Court essentially created an exception to an exception. Although the search incident to arrest exception allows officers to fully search an arrestee and use any evidence



adds a solution that furthers Fourth Amendment goals. The Court essentially noted that technology can be a doctrinal assist.<sup>101</sup> As the *Riley* Court put it, “Recent technological advances . . . [make] the process of obtaining a warrant more efficient.”<sup>102</sup> In short, obtaining a warrant is easier, and quicker, and thus can minimize any claimed exigency.<sup>103</sup> Again, the task is to apply that reasoning across the board.

## II. TRANSPARENCY

Techno-policing can also function as a doctrinal assist with respect to another goal: transparency in policing, which is critical to accountability and democratic policing<sup>104</sup> and one of the keystones of the President’s Task Force on 21st Century Policing.<sup>105</sup> The calls for officers to wear body cameras are by now well-known.<sup>106</sup> There is also growing interest in copwatching. What has remained under the radar is the role another technology, public surveillance cameras, can play in increasing transparency and enhancing citizens’ rights. To be sure, public surveillance cameras can capture and make visible police use of excessive force. But far more broadly, public surveillance cameras can play a significant role in remedying some of the juridical gaps left by the Court’s Fourth Amendment decisions governing so-called “consensual encounters” and *Terry* stop-and-frisks.

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found, the Court ruled that the exception will not apply to electronic devices capable of storing large amounts of data. *See id.*

101. *Id.* at 2494–95.

102. *Id.* at 2493.

103. *Id.* at 2487. Indeed, the Court invoked technology in another respect. In response to the argument from California and amici that the exigency exception should apply because of the risk of remote data wiping, the Court noted that “Faraday bags”—cheap, lightweight bags made of aluminum foil—could be used to isolate the phone from radio waves and remote wiping. *Id.* In short, the Court concluded that the existence of technology such as Faraday bags can mitigate exigency. *Id.*

104. There is a rich literature on transparency in policing and its importance to democratic policing. Three important articles are: Barry Friedman & Maria Ponomarenko, *Democratic Policing*, 90 N.Y.U. L. REV. 1827, 1848–49 (2015) (arguing that transparency “is critical to accountability” and democratic policing); Erik Luna, *Transparent Policing*, 85 IOWA L. REV. 1107, 1120 (2000) (arguing for “systematic visibility of policing decisions and concomitant justifications” as a means of making law enforcement more democratic and trustworthy); Simonson, *supra* note 6 (championing copwatching as a tactic for making police actions more transparent and contributing to democratic policing).

105. *See* PRESIDENT’S TASK FORCE ON 21ST CENTURY POLICING, FINAL REPORT OF THE PRESIDENT’S TASK FORCE ON 21ST CENTURY POLICING 12 (2015), [http://www.cops.usdoj.gov/pdf/taskforce/taskforce\\_finalreport.pdf](http://www.cops.usdoj.gov/pdf/taskforce/taskforce_finalreport.pdf).

106. For an early call for the police use of body cameras, see David A. Harris, *Picture This: Body-Worn Video Devices (Head Cams) as Tools for Ensuring Fourth Amendment Compliance by Police*, 43 TEX. TECH. L. REV. 357, 359–60 (2010).

A different technology, digital audio recorders, provides another doctrinal assist. In *Schneekloth v. Bustamonte*,<sup>107</sup> the Court read the Fourth Amendment as permitting searches and seizures based on consent alone, so long as the consent itself is voluntary.<sup>108</sup> Importantly, the Court rejected any requirement that the person “consenting” be advised of her right to refuse consent.<sup>109</sup> But while the “voluntariness” standard may seem easy to articulate, it has proved difficult to apply with integrity for a host of reasons. Here again simple technology—simple digital recordings—can play a crucial role in assisting courts in determining the validity of, and leveling the playing field with respect to, consent.

And of course, insofar as both technologies—public surveillance cameras and digital audio recorders—aid in transparency, they serve another purpose as well: they can significantly increase perceptions of legitimacy.

#### A. *Public Surveillance Cameras, Encounters, and Stop-and-Frisks*

Perhaps more than any other technology, public surveillance cameras can make visible, and hence reviewable, every day police interactions with citizens. In particular, such cameras can play a crucial role in enhancing the rights of citizens by filling gaps in current Fourth Amendment jurisprudence. After all, the Court has held that citizen–police interactions, at least where a reasonable citizen would feel free to terminate the encounter, are “consensual encounters” and thus outside of the protection of the Fourth Amendment.<sup>110</sup> The Court has also held that, consistent with the Fourth Amendment, police can forcibly stop and frisk someone so long as the officer has articulable suspicion of criminal activity.<sup>111</sup> But the line between a consensual encounter and a *Terry* stop is notoriously blurry, so much so that the Court itself is often unable to agree if and when the line has been crossed.<sup>112</sup> To further complicate matters, whether a hypothetical reasonable person would in fact have felt free to terminate the encounter or whether the officer in fact had reasonable, articulable suspicion both involve standards that can be (and have been) manipulated and articulated after the fact. Lastly, since there are rarely witnesses other than the civilian and the police, court determinations about the propriety of a stop or frisk almost always turn on the testimony of the officer. Not only does this standard tip the scales

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107. 412 U.S. 218 (1973).

108. *Id.* at 228.

109. *Id.* at 228–35 (holding that knowledge of right to refuse consent is unnecessary).

110. *See, e.g.*, *Florida v. Bostick*, 501 U.S. 429 (1991); *INS v. Delgado*, 466 U.S. 210 (1984); *United States v. Mendenhall*, 446 U.S. 544 (1980).

111. *Terry v. Ohio*, 392 U.S. 1, 30 (1968).

112. *See, e.g.*, *Mendenhall*, 446 U.S. at 552–58 (1980).

against citizens, it does so in the face of widespread evidence that officers engage in “testilying.”<sup>113</sup> In short, public surveillance cameras can do much of the work in presenting a record, *ex post*, of whether officers were justified in their actions, *ex ante*.

To show the work public surveillance cameras can do, it makes sense to begin with the work cameras are already doing. Although rarely noticed or remarked upon, public surveillance cameras are already integral to law enforcement.<sup>114</sup> For example, New York City aggregates and analyzes data from approximately 3,000 surveillance cameras around the city and allows the police to scan license plates, cross-check criminal databases, measure radiation levels, “and more.”<sup>115</sup> Washington, D.C., is in the process of consolidating over 5,000 cameras into one network called the Video Interoperability for Public Safety.<sup>116</sup> Chicago, with at least 2,250 surveillance cameras, has Operation Virtual Shield, which includes biometric technology.<sup>117</sup> Baltimore has CitiWatch, which includes over 400 cameras equipped with low light, pan, tilt, and zoom capabilities.<sup>118</sup> Even small towns have turned to surveillance cameras. A survey from just under a decade ago listed over two hundred towns in thirty-seven states that were either using or planning to use public surveillance cameras.<sup>119</sup>

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113. See COMM’N TO INVESTIGATE ALLEGATIONS OF POLICE CORRUPTION AND THE ANTI-CORRUPTION PROC. OF THE POLICE DEP’T, CITY OF N.Y., COMMISSION REPORT 36 (1994). “Testilying” is a term coined to describe police perjury and other false statements. See Joe Sexton, *New York Police Often Lie Under Oath, Report Says*, N.Y. TIMES (Apr. 22, 1994), <http://www.nytimes.com/1994/04/22/us/new-york-police-often-lie-under-oath-report-says.html?pagewanted=all&mcubz=3>; see generally I. Bennett Capers, *Crime, Legitimacy, and Testilying*, 83 IND. L.J. 835 (2008). For a discussion of the prevalence of testilying, see *infra* notes 133–37 and accompanying text.

114. See, e.g., Steve Henn, *In More Cities, a Camera on Every Corner, Park, and Sidewalk*, NPR (June 20, 2013, 2:57 AM), <http://www.npr.org/sections/alltechconsidered/2013/06/20/191603369/The-Business-Of-Surveillance-Cameras>.

115. Joe Coscarelli, *The NYPD’s Domain Awareness System Is Watching You*, N.Y. MAG. (Aug. 9, 2012, 8:50 AM), <http://nymag.com/daily/intelligencer/2012/08/nypd-domain-awareness-system-microsoft-is-watching-you.html>; accord Rocco Parascandola & Tina Moore, *NYPD Unveils New \$40 Million Super Computer System That Uses Data from Network of Cameras, License Plate Readers and Crime Reports*, N.Y. DAILY NEWS (Aug. 8, 2012, 8:50 PM), <http://www.nydailynews.com/new-york/nypd-unveils-new-40-million-super-computer-system-data-network-cameras-license-plate-readers-crime-reports-article-1.1132135>.

116. *D.C. Police Set to Monitor 5,000 Cameras*, WASH. TIMES (Apr. 9, 2008), <http://www.washingtontimes.com/news/2008/apr/9/dc-police-set-to-monitor-5000-cameras/>.

117. BILGE YESIL, VIDEO SURVEILLANCE: POWER AND PRIVACY IN EVERYDAY LIFE 38 (2009).

118. *Id.* at 35.

119. Lisa Hoffman, *Under Surveillance: Government Spy Cameras Proliferate*, PRISONPLANET (June 23, 2006), <http://www.prisonplanet.com/articles/june2006/230606Surveillance.htm>; Charlie Savage, *US Doles Out Millions for Street Cameras*, BOS. GLOBE

And the technology is quite advanced. Consider Hawkeye II. Hawkeye II uses aerial cameras with a total resolution of 192 megapixels to provide continuous coverage of entire cities.<sup>120</sup> Perhaps more important, with the click of a button, it has the ability to zoom in after the fact and then scroll backwards and forward in time.<sup>121</sup> Consider how it has been used in just one city, Dayton, Ohio.<sup>122</sup> On a June day in Dayton, police received reports of an attempted robbery at a bookstore and of shots fired at a sandwich shop.<sup>123</sup> A surveillance team turned to Hawkeye II cameras hovering two miles above the city.<sup>124</sup> Using the time of the calls, the team was able to zoom in on the locations and study them frame by frame to piece together a narrative.<sup>125</sup> The analysis of the Hawkeye II camera surveillance, with its rewind and fast forward capability, allowed the team to track the movements of a man from the bookstore following the attempted robbery, to the sandwich shop, to a Family Dollar store, to a gas station, to his home.<sup>126</sup> As the *Washington Post* put it, police “used the detailed map of the man’s movements, along with other evidence from the crime scenes, to arrest him for all three crimes.”<sup>127</sup>

The point here is not to weigh in on whether, with the proliferation of cameras, we have lost some privacy. The answer is likely yes, though it is a loss that sometimes escapes notice. Nor is the point to lament how Fourth Amendment doctrine—with its insistence that there can be no reasonable expectation of privacy in public spaces<sup>128</sup>—has both enabled and facilitated the proliferation of surveillance cameras. Rather, the point is more radical: At the same time that cameras reduce some privacy, such

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(Aug. 12, 2007), [http://archive.boston.com/news/nation/washington/articles/2007/08/12/us\\_doles\\_out\\_millions\\_for\\_street\\_cameras/](http://archive.boston.com/news/nation/washington/articles/2007/08/12/us_doles_out_millions_for_street_cameras/).

120. Radiolab, *Eye in the Sky*, NPR (June 18, 2015), <http://www.radiolab.org/story/eye-sky/>; Craig Timberg, *New Surveillance Technology Can Track Everyone in an Area for Several Hours at a Time*, WASH. POST (Feb. 5, 2014), [http://www.washingtonpost.com/business/technology/new-surveillance-technology-can-track-everyone-in-an-area-for-several-hours-at-a-time/2014/02/05/82f1556e-876f-11e3-a5bd-844629433ba3\\_story.html](http://www.washingtonpost.com/business/technology/new-surveillance-technology-can-track-everyone-in-an-area-for-several-hours-at-a-time/2014/02/05/82f1556e-876f-11e3-a5bd-844629433ba3_story.html).

121. Timberg, *supra* note 120.

122. *Id.*

123. *Id.*

124. *Id.*

125. *Id.*

126. *Id.*

127. *Id.*

128. *See, e.g.*, *United States v. Knotts*, 460 U.S. 276, 285 (1983) (holding that the use of a tracking device to monitor a vehicle did not constitute a search under the Fourth Amendment, since there could be no reasonable expectation of privacy on public thoroughfares). Of course, in the relatively recent case *United States v. Jones*, the Court left open the possibility that some surveillance in public could be so extensive that it might rise to the level of an unreasonable search in violation of the Fourth Amendment. 565 U.S. 400, 430–31 (2012) (Alito, J., concurring in judgment).

cameras (at least those installed and monitored with public input and control) can also be rights-enhancing insofar as they provide transparency, particularly with respect to police–citizen interactions.

Consider a hypothetical interaction between an officer and a young woman.<sup>129</sup> The woman has just disembarked from a flight from Los Angeles to Detroit and is walking through the concourse when two Drug Enforcement Administration agents notice her. The agents decide to approach her because they believe she fits a “drug courier profile,” though in theory their criteria would include almost any passenger. As Justice Thurgood Marshall demonstrated with his string cite of cases in which a traveler matched one of the DEA’s profiles, the net such profiles can cast is wide indeed:

Compare, *e.g.*, *United States v. Moore*, 675 F.2d 802, 803 (CA6 1982) (suspect was first to deplane), cert. denied 460 U.S. 1068 (1983), with *United States v. Mendenhall*, 446 U.S. 544, 564 (1980) (last to deplane), with *United States v. Buenaventura-Ariza*, 615 F.2d 29, 31 (CA2 1980) (deplaned from middle); *United States v. Sullivan*, 625 F.2d 9, 12 (CA4 1980) (one-way tickets), with *United States v. Craemer*, 555 F.2d 594, 595 (CA6 1977) (round-trip tickets), with *United States v. McCaleb*, 552 F.2d 717, 720 (CA6 1977) (nonstop flight), with *United States v. Sokolow*, 808 F.2d 1366, 1370 (CA9), vacated, 831 F.2d 1413 (1987) (case below) (changed planes); *Craemer, supra*, at 595 (no luggage), with *United States v. Sanford*, 658 F.2d 342, 343 (CA5 1981) (gym bag), cert. denied, 455 U.S. 991 (1982), with *Sullivan, supra*, at 12 (new suitcases); *United States v. Smith*, 574 F.2d 882, 883 (CA6 1978) (traveling alone), with *United States v. Fry*, 622 F.2d 1218, 1219 (CA5 1980) (traveling with companion); *United States v. Andrews*, 600 F.3d 563, 566 (CA6 1979) (acted nervously), cert. denied *sub nom. Brooks v. United States*, 444 U.S. 878 (1979), with *United States v.*

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129. The hypothetical is loosely based on *United States v. Mendenhall*, 446 U.S. 544 (1980). But it is also informed by a long-standing practice of targeting women of color for surveillance and intrusive searches at airports, especially women of color traveling internationally. *See, e.g.*, Sherri Sharma, *Beyond “Driving While Black” and “Flying While Brown”: Using Intersectionality to Uncover the Gendered Aspects of Racial Profiling*, 12 COLUM. J. GENDER & L. 275, 276 (2003). The particular suspicion black women have faced while flying is well documented. A report released by the U.S. General Accounting Office found that black women traveling internationally were nine times more likely than white women to be subjected to x-rays or strip searches by U.S. Customs officials, even though they were less than half as likely to be carrying contraband. Such targeting prompted a class action suit against officials. *See* John Gibeaut, *Marked for Humiliation*, A.B.A. J., Feb. 1999, at 46, 46; Associated Press, *Black Women Searched More, Study Finds*, N.Y. TIMES, Apr. 10, 2000, at A17.

*Himmelwright*, 551 F.2d 991, 992 (CA5) (acted too calmly), cert. denied, 434 U.S. 902 (1977).<sup>130</sup>

The officers identify themselves as federal agents, ask to see her identification, and ask her about the purpose of her trip. Believing the woman to be “extremely nervous,” the agents ask the woman to accompany them to an office for further questioning, where they then ask for permission to search her person and her handbag. Later, humiliated, the young woman claims that her Fourth Amendment rights were violated.

Already, the determination of whether the woman was “free to leave” (meaning there was no seizure within the meaning of the Fourth Amendment) or whether she was at some point detained (which would mean there was an unconstitutional seizure absent probable cause or reasonable suspicion), is already a difficult call. The difficulty will likely be compounded by testimonial inconsistencies. For example, the woman may testify that the only real profile she fit was her race—the actual case, after all, describes her as “a female and a Negro.”<sup>131</sup> She may testify that nothing about her movements was suspicious, that the officers seized her ticket and did not return it, and that they roughly grabbed her elbow as they “asked” her to accompany them to their office. The agents, sincerely or not, may testify that they did not grab her elbow, that she looked around evasively as they put questions to her, and that they in fact returned her ticket before asking her to accompany them. There will likely be no other witness.

Now add public surveillance cameras. Cameras, for example, might confirm that there was nothing about the woman’s outward behavior to suggest that she was “extremely nervous” or confirm that the officers in fact roughly grabbed her elbow, amounting to a seizure for Fourth Amendment purposes. Or, alternatively, the surveillance footage might support the version of events presented by the DEA agents. The point is, either way, cameras can make citizen–police encounters transparent and reviewable. Certainly, video footage from public cameras could do some of the work of resolving inconsistencies and determining whether there was a Fourth Amendment violation. In fact, in some places a combination of public and private cameras is already doing precisely this. In New York City, for example, the Civilian Complaint Review Board has been able to substantiate a much higher rate of complaints about police

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130. *United States v. Sokolow*, 490 U.S. 1, 13–14 (1989) (Marshall, J., dissenting).

131. *Mendenhall*, 446 U.S. at 558.

conduct, including unlawful stops, for one reason and one reason alone: cameras.<sup>132</sup>

To be sure, public surveillance cameras are not perfect, but they do provide a more neutral, and real-time, documentation. They can render visible police–citizen interactions that are too often invisible, since very few interactions result in the seizure of contraband or in an arrest to trigger judicial oversight.<sup>133</sup> If done properly with public input and control, they may even deter officers from committing Fourth Amendment violations.<sup>134</sup> Equally important, public surveillance cameras can educate judges about how the Fourth Amendment is really being applied and counter myopic perspectives that already tip the scales in favor of the police. This last point cannot be overstated, since such an education has the potential to “help change constitutional meaning.”<sup>135</sup> This Article will have much more to say about public surveillance cameras and stop-and-frisks when it turns to the topic of accuracy in Part III. But hopefully the main point is already clear: public surveillance cameras can be rights-enhancing, and in this respect they provide a much-needed doctrinal assist.

### B. Digital Audio Recorders and Consent

Technology can also address another recurring Fourth Amendment problem: determining the validity of consent and leveling the playing field with respect to consent. This is no insignificant matter. Since the Court decided *Schneckloth v. Bustamonte* and held that the probable cause requirement will be excused so long as there is voluntary consent, consent searches have become the preferred method of law enforcement officers in many jurisdictions.<sup>136</sup> Indeed, by at least one estimate, consent searches comprise more than 90% of all warrantless searches.<sup>137</sup> However, as a matter of doctrine, the consent exception to the Fourth Amendment has never been satisfactory. A search will not violate the

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132. N.Y.C. CIVILIAN COMPLAINT REVIEW BD., SEMI-ANNUAL REPORT: JANUARY - JUNE 2015, at 2 (2015), [http://www1.nyc.gov/assets/ccrb/downloads/pdf/policy\\_pdf/annual\\_bi-annual/2015\\_semi-annual.pdf](http://www1.nyc.gov/assets/ccrb/downloads/pdf/policy_pdf/annual_bi-annual/2015_semi-annual.pdf).

133. See *infra* notes 176–208 and accompanying text.

134. Simonson, *supra* note 6, at 413 (“Copwatching deters police misconduct in real time.”).

135. *Id.* at 425.

136. Janet Nadler, *No Need to Shout: Bus Sweeps and the Psychology of Coercion*, 2002 SUP. CT. REV. 153, 208–09; see also Alafair S. Burke, *Consent Searches and Fourth Amendment Reasonableness*, 67 FLA. L. REV. 509, 511 (2015) (noting that consent searches “permeate real-world policing”); Brian R. Gallini, *Schneckloth v. Bustamonte: History’s Unspoken Fourth Amendment Anomaly*, 79 TENN. L. REV. 233, 279–80 (2012) (recognizing the “popularity of consent searches”).

137. Burke, *supra* note 136, at 511 (citing JOSHUA DRESSLER & GEORGE C. THOMAS III, CRIMINAL PROCEDURE: PRINCIPLES, POLICIES AND PERSPECTIVES 317–18 (4th ed. 2010)).

Fourth Amendment so long as consent was voluntarily given, but determining voluntariness is far from straightforward. The matter is further complicated by the Court's insistence, also in *Schneekloth v. Bustamonte*, that the police need not advise a civilian that she may refuse. As such, consent determinations tend to turn on a court weighing the testimony of police officers against the testimony of a civilian. There are rarely third-party witnesses. With the matter so framed, consent determinations are invariably tipped against citizens. Four reasons why this is so—the *Rashomon* effect, psychological pressures, murkiness, and “testilying”—are discussed below.

**The *Rashomon* Effect.** The first problem is the *Rashomon* effect.<sup>138</sup> It is not necessarily the case that any witness is deliberately lying. It is rather that each witness remembers events from her own perspective.<sup>139</sup> The *Rashomon* effect thus calls into question the possibility, when dealing with memory, of determining a univocal truth. The *Rashomon* effect has particular import in the typical hearing on a motion to suppress evidence, where a civilian may remember the officer as demanding consent, and the officer may remember requesting consent. Rather than positing that either the officer or the civilian is lying, the *Rashomon* effect suggests that both the officer and the civilian may remember the event through their own perspective, informed by their biases and their self-interests.<sup>140</sup>

**Psychological Pressures.** There are also psychological pressures that come into play during police–citizen encounters and complicate the determination of voluntariness. Because many of these pressures have been documented elsewhere,<sup>141</sup> this Article focuses here on just one: that consent, rather than being purely voluntary, is often instead acquiescence to authority. Simply put, individuals confronted by authority figures are less likely to feel free to deny a request.<sup>142</sup>

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138. The term comes from director Akira Kurosawa's 1950 film *Rashomon*, which opens at the trial of a bandit accused of murder. In flashback, the viewer “sees” the testimony of four witnesses, including the defendant himself. But the testimony of the witnesses, although similar in basics, is widely contradictory in many respects, and the viewer slowly realizes that each witness is remembering events from his perspective, in a way that reflects his biases, and that allows the witness to appear respectable to the fact finders.

139. Robert Anderson, *What Is the Rashomon Effect?*, in *RASHOMON EFFECTS: KUROSAWA, RASHOMON AND THEIR LEGACIES* 66, 66 (Blair Davis et al. eds., 2016).

140. By way of illustration, imagine the officer in fact said, “Pop open your trunk for me?” At the suppression hearing, the officer may honestly recall his question as “Do you mind if I have a look in your trunk?” The driver, by contrast, may honestly remember the words as a command, “Pop open your trunk!” The *Rashomon* effect also explains how witnesses might differently interpret subsequent events. For example, if the driver responded by opening his trunk, the officer may honestly recall this as the driver saying “Okay,” and then opening his trunk. By contrast, the driver may recall his opening the trunk as simply his acquiescing to a command.

141. *E.g.*, Nadler, *supra* note 136, at 165–97.

142. *Id.* at 173.



Consider the role such pressures can play in a typical traffic stop. A uniformed officer approaches a vehicle to ask for the driver's license and registration. However, even before speaking the officer has already demonstrated his authority and power; after all, by simply turning on his siren he has forced the driver to pull over and delay her trip.<sup>143</sup> This power is further reflected in the officer's uniform (designed to convey military authority) and other indicia of power (the glistening badge, the billy club, the holstered gun).<sup>144</sup> This power may also be reflected in the respective physical positions of the officer and the driver. He is standing, leaning down; she is sitting, looking up.<sup>145</sup> Power may also be communicated in the officer's tone of voice.<sup>146</sup> And lastly, this power is reflected in his first "request": his request to see the driver's license and registration. Since the driver likely knows she has no right to refuse to produce her documentation, the driver is likely to also assume that any future "requests"—such as a request to search her vehicle—are not really requests either.<sup>147</sup> Again, psychological experiments suggest that the driver may comply *involuntarily*.<sup>148</sup> Surveys of actual drivers suggest the same. For example, in one study of randomly sampled drivers who had

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143. Of course, other factors may influence how this power is weighted. For example, sociologist Annette Lareau's research suggests that upper-middle class individuals are socialized to interact with authorities as equals; working class children, by contrast, are taught to defer to authorities. See Annette Lareau, *Invisible Inequality: Social Class and Childrearing in Black Families and White Families*, 67 AM. SOC. REV. 747, 749 (2002).

144. See Richard R. Johnson, *An Examination of Police Department Uniform and Color and Police–Citizen Aggression*, 40 CRIM. JUST. & BEHAV. 228, 229 (2013); Richard R. Johnson, *The Psychological Influence of the Police Uniform*, FBI L. ENFORCEMENT BULL., Mar. 2001, at 27, 27 (discussing how the uniform of the police officer "conveys power and authority").

145. Placing oneself in a physical position of dominance is a hallmark policing strategy during police–citizen encounters. See, e.g., PETER B. AINSWORTH, *PSYCHOLOGY AND POLICING* 13 (2002); cf. FRED. E. INBAU ET AL., *CRIMINAL INTERROGATION AND CONFESSIONS* 193 (5th ed. 2013); Douglass Starr, *The Interview*, NEW YORKER (Dec. 9, 2013), <http://www.newyorker.com/magazine/2013/12/09/the-interview-7> ("You remain standing to establish your dominance.").

146. On the role of tone of voice generally, see Ric Simmons, *Not "Voluntary" but Still Reasonable: A New Paradigm for Understanding the Consent Search Doctrine*, 80 IND. L.J. 773, 804–06 (2005).

147. Indeed, exactly what officers can "request" during police–citizen encounters is unsettled. As Professor Rachel Harmon recently noted:

Both state and constitutional law say a lot about when police may use some kinds of coercive measures, namely, stops and arrests, but much less about the scope of the police power to issue other commands. As a result, we cannot easily know the terms of interactions that could result in force.

Rachel Harmon, *Lawful Orders and Police Uses of Force* 15 (Oct. 20, 2016) (unpublished manuscript) (on file with author).

148. Nadler, *supra* note 136, at 201–03.

been “asked” for consent to search, 49 of the 54 respondents granted consent, but of these 49, only two considered their consent truly voluntary.<sup>149</sup> A full 47 said they consented because they were afraid of what would happen to them if they did not consent.<sup>150</sup> Indeed, police are trained in how to induce drivers to give consent. One well-known training manual, *Tactics for Criminal Patrol*, advises officers how to “position” the driver “emotionally to grant you his permission.”<sup>151</sup> The manual further suggests how requests for consent should be phrased, suggesting phrasing that “employs psychology in your favor. The implication is that the subject will look guilty if he *does* mind. . . . It’s psychologically harder to decline . . . .”<sup>152</sup> One final point: individuals overestimate their ability to say no. When asked, individuals predict that if they were placed in such a context, they would not feel pressured to say yes. Studies prove the opposite.<sup>153</sup>

Murkinness. Then there is the murkinness—or indeterminacy, if you will—of language itself. Imagine a traffic stop in which, after inspecting the driver’s license and registration documents, the officer says, “Can you pop open your trunk for me?” Or says, “I’m going to need to look into your trunk for a second.” Are these requests for consent to search, or are they not? Analyzing such statements relying on a simple binary—it is either a request for consent or it is not—elides the nuances in language, to say nothing of tone and delivery.<sup>154</sup> Nor is this the only murkinness problem, since what invariably follows these utterances (the words of the officer, the responsive words of the driver) is a sequence of

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149. *Id.* at 202–03 (citing Illya D. Lichtenberg, Voluntary Consent or Obedience to Authority: An Inquiry into the “Consensual” Police-Citizen Encounter (1999) (unpublished Ph.D. dissertation, University of Michigan) (on file with author)).

150. *Id.* at 202.

151. CHARLES REMSBERG, *TACTICS FOR CRIMINAL PATROL: VEHICLE STOPS, DRUG DISCOVERY AND OFFICER SURVIVAL* 212–31 (1995).

152. *Id.* at 216.

153. See, e.g., David K. Kessler, *Free to Leave? An Empirical Look at the Fourth Amendment’s Seizure Standard*, 99 J. CRIM. L. & CRIMINOLOGY 51, 87 (2008). Indeed, that almost everyone consents undermines the notion that consents are truly voluntary. For example, one study found that of 16,228 drivers who were asked for consent to search, all but 3 granted consent. L.A. POLICE DEP’T, *ARREST, DISCIPLINE, USE OF FORCE, FIELD DATA CAPTURE AND AUDIT STATISTICS AND THE CITY STATUS REPORT COVERING PERIOD OF JANUARY 1, 2006–JUNE 30, 2006*, at 8, 10 (2006), [http://www.lapdonline.org/home/pdf\\_view/33233](http://www.lapdonline.org/home/pdf_view/33233). The percentage of pedestrians granting consent to search was similarly high: 99.9%. *Id.*

154. As professor Richard Uviller observed based on his year imbedded with police officers, a police officer’s request, no matter how “gently phrased, is likely to be taken by even the toughest citizen as a command.” H. RICHARD UVILLER, *TEMPERED ZEAL: A COLUMBIA LAW PROFESSOR’S YEAR ON THE STREETS WITH THE NEW YORK CITY POLICE* 81 (1988).

translations.<sup>155</sup> At some point later in time (especially if there is a search resulting in the seizure of contraband), the officer will document the exchange in a police report or arrest complaint. At some later point still, a prosecutor may prepare the officer to testify at a suppression hearing. Still later, the prosecutor may prepare the officer to testify at trial. At each of these junctures, the actual exchange that occurred at point one will likely be translated, modified, made testimony-worthy, in part because we rarely remember exchanges word for word and in part because the police objective that existed when the first words were uttered (to search the trunk) have now shifted (to prove voluntariness and insure the admissibility of the evidence).<sup>156</sup>

Testilying. Lastly, more extreme than the murkiness problem is the phenomenon of officers simply lying about whether they requested (as oppose to demanded) consent, or about whether consent was granted. Officers telling “white lies”—or perhaps more accurately, “blue lies”—is disturbingly common.<sup>157</sup> Judge Alex Kozinski of the U.S. Court of Appeals for the Ninth Circuit calls it “an open secret long shared by prosecutors, defense lawyers and judges that perjury is widespread among law enforcement officers.”<sup>158</sup> Even surveyed officers agree that blue lies are widespread.<sup>159</sup> This suggests that some officers simply lie about the circumstances surrounding the issue of consent. Since typically the only witnesses are the officer and the civilian,<sup>160</sup> such officers also know that there is little chance judicial officers will discover the falsity of their statements. They likely also know that courts are loath to find police perjury.<sup>161</sup>

All of these problems—the *Rashomon* effect, psychological pressures, murkiness, and “testilying”—tip the scales against citizens. As a result of the *Rashomon* effect and murkiness, for example, courts are more likely to hear contradictory narratives. Faced with the choice of crediting a

155. Few individuals have the ability to remember conversations word for word, as numerous studies demonstrate. See, e.g., William Hirst & Gerald Echterhoff, *Remembering in Conversations: The Social Sharing and Reshaping of Memories*, 63 ANN. REV. PSYCHOL. 55, 74 (2012).

156. I saw this repeatedly when I was a federal prosecutor. It was not uncommon for “I’m going to need to look in your trunk” to metamorphose by the time of the suppression hearing into “I then requested the driver’s permission to search the trunk of his vehicle.”

157. Capers, *supra* note 113, at 870.

158. Stuart Taylor, Jr., *For the Record*, AM. LAW., Oct. 1995, at 71.

159. Myron W. Orfield, Jr., *The Exclusionary Rule and Deterrence: An Empirical Study of Chicago Narcotics Officers*, 54 U. CHI. L. REV. 1016, 1050–51, 1050 n.129 (1987).

160. STEPHEN A. SALTZBURG & DANIEL J. CAPRA, AMERICAN CRIMINAL PROCEDURE: INVESTIGATIVE CASES AND COMMENTARY 482 (8th ed. 2007).

161. Capers, *supra* note 113, at 875.

civilian or an officer, courts are primed to credit the latter.<sup>162</sup> None of this truly gets at voluntariness. There is a reason why Professor Wayne LaFave, in his widely used treatise of the Fourth Amendment, begins his discussion of this exception with the line, “The so-called consent search,”<sup>163</sup> and why Professor Janice Nadler describes it as the “fiction of consent.”<sup>164</sup> If the validity of consent is predicated on the voluntariness of the consent granted, then the multiple difficulties in ascertaining voluntariness “pose [a] challenge[] to the boundaries of the Fourth Amendment.”<sup>165</sup>

Technology, by making consent more transparent, can minimize these problems. For example, every iPhone comes preinstalled with an App called Voice Memos, and other smartphones are equipped with similar technology. With a mere press of a finger, the phone will begin an audio recording that can be preserved indefinitely for future use. The recording can even be disseminated, exported via email, iMessage, or MMS. In other words, with existing technology, any officer can make an audio recording of his request for consent, and receipt of consent, to preserve “for the record.” In making consent transparent,<sup>166</sup> such technology can provide a doctrinal assist by reducing many of the issues that make determining consent so troubling. The *Rashomon* Effect, in which individuals who experience the same event remember it differently, would perforce be minimized: a recording would now exist that captured the exchange in real time as it actually happened, not as the participants, given their own interest and biases, remember it. The same would be true with respect to the problem of psychological pressures, and the murkiness of language being translated and made “testimony-worthy.” After all, some of psychological pressure and murkiness that escape review during suppression hearings is traceable to tone. Reviewing judges would not only have at their disposal the actual words used (addressing the murkiness problem) but also the tone (addressing the psychological pressures problem).<sup>167</sup> And of course, “testilying” would become that

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162. Peter Keane, *Why Cops Lie*, SFGATE (Mar. 15, 2011, 4:00 AM), <http://www.sfgate.com/opinion/openforum/article/Why-cops-lie-2388737.php>.

163. 3 LAFAVE, *supra* note 31, § 8.1.

164. Nadler, *supra* note 136, at 156.

165. *Id.* at 153.

166. Many police departments already use written “Consent to Search” forms as persuasive evidence that consent was voluntarily obtained. See Nancy Leong & Kira Suyeishi, *Consent Forms and Consent Formalism*, 2013 WIS. L. REV. 751, 769. However, such forms do little to address the problems of psychological pressures or tone. *Id.* at 751. As such, digital recordings would be a marked improvement. *Id.* at 752.

167. To illustrate by returning to an earlier example, a judge would have not only the defendant’s assertion that no consent was sought or granted, and the officer’s assertion to the contrary, but the actual language and tone. “Pop open the trunk for me?” may constitute a request

much more difficult, since an officer falsely claiming to have secured consent would be contradicted by, quite literally, the record.<sup>168</sup>

These are only some of the salutary benefits. Consider again the fact that of the surveyed drivers who granted consent, only two of them believed their consent was truly voluntary, and the overwhelming majority consented because they were afraid of what would happen if they did not consent.<sup>169</sup> It stands to reason that this concern would be lessened, and perhaps even eliminated, if citizens knew their exchanges were being recorded, and that an unbiased witness (the recording) would be available to “speak the truth.”

### C. Legitimacy

There is another important consideration. Both of the technologies discussed in this part—public surveillance cameras and digital audio recorders—can increase perceptions of legitimacy. As Professor Tom Tyler has repeatedly demonstrated, perceptions of legitimacy play a significant role in inducing compliance with the law.<sup>170</sup> The use of public surveillance cameras and digital audio recorders, to the extent they render transparent police–citizen encounters and contribute to judicial reviewability, can only increase perceptions of legitimacy. And as I have detailed elsewhere, the benefits of increased legitimacy are manifold.<sup>171</sup> Among other things, individuals will be more likely to voluntarily assist the police in maintaining an ordered society.<sup>172</sup>

## III. ACCURACY

The technologies discussed so far—smartphone communication platforms such as FaceTime and Google Hangout, public surveillance

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or might not, depending on the tone. The important thing is that judges, and the litigants themselves, will have that information.

168. An example of how such evidence can expose testifying occurred recently in Chicago, where a video recording played during a suppression hearing directly contradicted the testimony of five officers about the circumstances of a drug arrest. Martha Neil, *Rare ‘Perry Mason’ Moment in Court Wins Dismissal for Defendant, Desk Duty for 5 Police Officers*, A.B.A. J. (Apr. 15, 2014, 6:20 PM), [http://www.abajournal.com/news/article/rare\\_perry\\_mason\\_moment\\_at\\_trial\\_wins\\_acquittal\\_for\\_defendant\\_desk\\_duty\\_for](http://www.abajournal.com/news/article/rare_perry_mason_moment_at_trial_wins_acquittal_for_defendant_desk_duty_for).

169. See Nadler, *supra* note 136, at 202–03.

170. See TOM R. TYLER & YUEN J. HUO, TRUST IN THE LAW: ENCOURAGING PUBLIC COOPERATION WITH THE POLICE AND COURTS 106 (2002); TOM R. TYLER, WHY PEOPLE OBEY THE LAW 60 (1990).

171. See Capers, *supra* note 113, at 838–42.

172. Tom R. Tyler & Jeffrey Fagan, *Legitimacy and Cooperation: Why Do People Help the Police Fight Crime in Their Communities?*, 6 OHIO ST. J. CRIM. L. 231, 252 (2008). Legitimacy can also stem mini-rebellions. See Capers, *supra* note 113, at 862–64; cf. JAMES C. SCOTT, WEAPONS OF THE WEAK: EVERYDAY FORMS OF PEASANT RESISTANCE 322 (1985).

cameras, and digital recorders like Voice Memo—are relatively simple and widely available. Moreover, adapting their use to policing in ways that revitalize the warrant requirement and further transparency should be noncontroversial. This Part turns to more cutting edge and controversial technologies—terahertz scanners, facial recognition software, Big Data, and Automated Suspicion Algorithms—and argues that these technologies can further another goal that we should embrace: accuracy. To be sure, this argument is likely to receive pushback. It requires, after all, that we all surrender some privacy. But the benefits are undeniable, especially when it comes to two of the most pressing Fourth Amendment problems: the overuse and misuse of stop-and-frisks and the persistent problem of racial profiling.

### A. *Stop-and-Frisks*

As noted in Part II, the Court gave license to stop-and-frisk practices almost forty-five years ago in *Terry v. Ohio*.<sup>173</sup> Balancing the needs of law enforcement to combat growing crime, the Court held that as long as an officer has specific and articulable facts, i.e., reasonable suspicion, to believe that “criminal activity may be afoot,”<sup>174</sup> the Fourth Amendment permits a limited detention and questioning of the person. If the officer also has reasonable suspicion that a person is armed and dangerous, the officer can couple the limited detention and questioning with a pat down for weapons: in common parlance, a stop-and-frisk.<sup>175</sup>

But as also noted in Part II, the “reasonable suspicion” standard is so malleable that it often means anything and nothing, which officers on the ground know well.<sup>176</sup> Even more problematic, officers need only articulate their “reasonable suspicion” after the fact. Most officers know too that engaging in stop-and-frisks provides little risk to them. If contraband is found, the officer can issue a summons or make an arrest, the very process of which will color the propriety of the stop-and-frisk upon judicial review, since judges are loath to exclude improperly obtained evidence.<sup>177</sup> On the other side, if the officer finds no contraband or other basis for an arrest, the officer is still insulated, since the stop will almost always remain invisible to the courts. In a data-collecting jurisdiction, the stop may become a part of the statistics, but rarely

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173. 392 U.S. 1, 30 (1968).

174. *Id.*

175. *Id.* at 27.

176. Jeffrey Fagan, *Terry's Original Sin*, 2016 U. CHI. LEGAL F. 43, 52 (“After nearly four decades, the *Terry* standard remains rather opaque.”).

177. *See, e.g.*, Akhil Reed Amar, *Fourth Amendment First Principles*, 107 HARV. L. REV. 757, 799 (1994) (“Judges do not like excluding bloody knives, so they distort doctrine, claiming the Fourth Amendment was not really violated.”).

anything beyond that. Add to this one final problem: although the Court has been circumspect about this, the Court has essentially made clear that police *may* consider race in determining who to stop and who to frisk.<sup>178</sup>

I have argued previously that if the Fourth Amendment itself has a poisonous tree, its name is *Terry v. Ohio*.<sup>179</sup> The reason is in the numbers. Consider numbers from *Floyd v. City of New York*,<sup>180</sup> a recent class-action suit. Between January 2004 and June 2012, officers from the New York City Police Department made over 4.4 million forcible stops of individuals, 83% of whom were black or Hispanic.<sup>181</sup> When considered as a percentage of the population, the numbers are even more jarring. During a particular period, stops of whites, if spread across the population of New York City, would amount to stops of approximately 2.6% of the white population.<sup>182</sup> By contrast, stops of blacks, if spread across the population, would amount to stops of approximately 21.1% of the population.<sup>183</sup>

Nor is New York alone. Studies have found evidence of racial profiling in Los Angeles: A study by Professor Ian Ayres found that the stop rate was 3,400 stops higher per 10,000 residents for blacks than for whites, and 360 stops higher for Hispanics than for whites, even after controlling for variables such as the rate of violent and property crimes.<sup>184</sup> In addition, police were 127% more likely to search stopped blacks than to search stopped whites, and 43% more likely to search stopped

178. See *Whren v. United States*, 517 U.S. 806, 811–13 (1996) (suggesting that racial targeting is irrelevant under the Fourth Amendment); *United States v. Martinez-Fuerte*, 428 U.S. 543, 563 (1976) (allowing race as a permissible factor in conducting border stops); *United States v. Brignoni-Ponce*, 422 U.S. 873, 886–87 (1975) (permitting “Mexican appearance” as a factor in border stops); see also Devon W. Carbado & Cheryl I. Harris, *Undocumented Criminal Procedure*, 58 UCLA L. REV. 1543, 1575 (2011); Kevin R. Johnson, *How Racial Profiling in America Became the Law of the Land: United States v. Brignoni-Ponce and Whren v. United States and the Need for Truly Rebellious Lawyering*, 98 GEO. L.J. 1005, 1022 (2010); Sheri Lynn Johnson, *Race and the Decision to Detain a Suspect*, 93 YALE L.J. 214, 230–33 (1983) (discussing use of race at border stops).

179. Bennett Capers, *Rethinking the Fourth Amendment: Race, Citizenship, and the Equality Principle*, 46 HARV. C.R.-C.L. L. REV. 1, 32 (2011).

180. 959 F. Supp. 2d 540 (S.D.N.Y. 2013).

181. *Id.* at 573–74. This number is likely conservative, since officers sometimes neglect to document each stop. *Id.* at 559; see also First Report of Independent Monitor at 8, *Floyd*, 959 F. Supp. 2d 540 (No. 513).

182. See *Analysis of New NYPD Stop-and-Frisk Data Reveals Dramatic Impact on Black New Yorkers*, ACLU (Nov. 26, 2007), <http://www.aclu.org/racialjustice/racialprofiling/33095prs20071126.html>.

183. *Id.*

184. IAN AYRES & JONATHAN BOROWSKY, RACIAL PROFILING AND THE LAPD: A STUDY OF RACIALLY DISPARATE OUTCOMES IN THE LOS ANGELES POLICE DEPARTMENT 27 (2008), <https://www.aclusocal.org/sites/default/files/wp-content/uploads/2015/09/99227648-Racial-Profiling-the-LAPD.pdf>.

Hispanics than stopped whites.<sup>185</sup> In Philadelphia, a recent review of pedestrian stops found that 80.23% of the stops were of minorities, far greater than their representation in the population.<sup>186</sup> In Maryland, a report by the Maryland State Police found that African-Americans comprised 72.9% of all of the drivers that were stopped and searched along a stretch of I-95, even though they comprised only 17.5% of the drivers violating traffic laws on the road.<sup>187</sup> In Boston, an analysis of more than 200,000 Boston Police Department records of police–citizen encounters (which include observations, interrogations, stops, frisks, and searches) revealed that blacks were subjected to 63% of these encounters even though they make up just 24% of Boston’s population.<sup>188</sup> Even when controlling for crime, alleged gang affiliation, and other non-race factors, the numbers are still disproportionately high. In New Jersey, statistician John Lambert’s study revealed that black drivers along Interstate I-95 were 4.85 times more likely to be stopped than similarly situated whites.<sup>189</sup> Similar racial disparities have been found in a host of jurisdictions, both large and small.<sup>190</sup>

All of this is problematic. It is certainly inconsistent with the Court’s decisions favoring race neutrality in government action.<sup>191</sup> Equally troubling, as Professor Bernard Harcourt persuasively argues, racial profiling may actually have the perverse effect of increasing the overall

185. *Id.*

186. Plaintiff’s Fifth Report to Court and Monitor on Stop and Frisk Practices at 13, *Bailey v. City of Philadelphia*, No. 10-5952 (E.D. Pa. Feb. 24, 2015).

187. Memorandum in Support of Plaintiffs’ Motion for Enforcement of Settlement Agreement and for Further Relief at 4, *Wilkins v. Md. State Police*, No. MJG-93-468 (D. Md. Dec. 7, 1993); see also David A. Harris, “*Driving While Black*” and *All Other Traffic Offenses: The Supreme Court and Pretextual Traffic Stops*, 87 J. CRIM. L. & CRIMINOLOGY 544, 566 (1997) (citing a Maryland State Police reporting that of 732 citizens detained and searched by the Maryland State Police, 75% were African-Americans).

188. AM. CIVIL LIBERTIES UNION, *BLACK, BROWN AND TARGETED: A REPORT ON BOSTON POLICE DEPARTMENT STREET ENCOUNTERS FROM 2007–2010*, at 6 (2014), [http://www.bostonherald.com/sites/default/files/media/2014/10/08/black\\_brown\\_and\\_targeted\\_online.pdf](http://www.bostonherald.com/sites/default/files/media/2014/10/08/black_brown_and_targeted_online.pdf).

189. John Lamberth, *Driving While Black: A Statistician Proves That Prejudice Still Rules the Road*, in *RACE, ETHNICITY, AND POLICING: NEW AND ESSENTIAL READINGS* 32, 33 (Stephen K. Rice & Michael D. White eds., 2010).

190. Capers, *supra* note 113, at 850–51, 850 n.86 (citing to jurisdictions); see also David A. Harris, *The Stories, the Statistics, and the Law: Why “Driving While Black” Matters*, 84 MINN. L. REV. 265, 267 (1999).

191. See, e.g., R. Richard Banks, *Race-Based Suspect Selection and Colorblind Equal Protection Doctrine and Discourse*, 48 UCLA L. REV. 1075, 1108–09 (2001) (stating that the Supreme Court now reviews policies that concern racial classification under strict scrutiny); Ian Haney-López, *Intentional Blindness*, 87 N.Y.U. L. REV. 1779, 1783 (2012) (stating that the court subjects affirmative action to the highest level of scrutiny under judicial review).



societal rate of offending.<sup>192</sup> And yet there is a cognate problem with *Terry* as applied that has received far less attention: its breadth. Consider again the numbers from New York, where data indicate that, conservatively speaking, approximately 4.4 million individuals were forcibly stopped over the course of eight years.<sup>193</sup> There is a reason why this number is the first detail mentioned in *Floyd*. Even setting aside racial disparities, the sheer volume with which individuals of all races are stopped should raise concerns.

This becomes especially true when we consider the goal of accuracy. For every twenty individuals stopped, a full nineteen were found not to be engaged in activity warranting an arrest.<sup>194</sup> In other words, the accuracy rate was around 5%. And even this overstates the true accuracy rate, since studies have shown that nearly half of all of arrests resulting from these stop-and-frisks encounters are eventually dismissed.<sup>195</sup> The accuracy rate drops even more precipitously when one considers the oft-stated objective of aggressive stop-and-frisk practices: to get illegal firearms out of the hands of criminals.<sup>196</sup> According to the NYPD's own data, their accuracy rate for finding guns during stop-and-frisks was 1 in 1,000 stops.<sup>197</sup> As economist Jeff Fagan has observed, this is on par with the success rate when officers have conducted purely random searches.<sup>198</sup> Moreover, evidence suggests that racialized policing increases *inaccuracy*, not accuracy. In New York, for example, frisked blacks were actually *less* likely to have a weapon than frisked whites.<sup>199</sup> In Maryland, the "hit rate" was also lower for searched blacks than for searched whites.<sup>200</sup> Similar results come from New Jersey, where troopers found

192. See BERNARD E. HARCOURT, *AGAINST PREDICTION: PROFILING, POLICING, AND PUNISHING IN AN ACTUARIAL AGE* 3 (2007) (arguing the "use of probabilistic methods may increase the overall amount of targeted crime").

193. *Floyd v. City of New York*, 959 F. Supp. 2d 540, 556 (S.D.N.Y. 2013).

194. *Id.* at 558. It is possible that even Justice Scalia would have found this error rate unacceptable. See *Navarette v. California*, 134 S. Ct. 1683, 1695 (2014) (Scalia, J., dissenting) (suggesting that a hit rate of less than 5% would be insufficient to justify reasonable suspicion).

195. See, e.g., ERIC T. SCHNEIDERMAN, N.Y. STATE OFFICE OF THE ATT'Y GEN., *A REPORT ON ARRESTS ARISING FROM THE NEW YORK CITY POLICE DEPARTMENT'S STOP-AND-FRISK PRACTICES* 8 (2013), [https://www.ag.ny.gov/pdfs/OAG\\_REPORT\\_ON\\_SQF\\_PRACTICES\\_NOV\\_2013.pdf](https://www.ag.ny.gov/pdfs/OAG_REPORT_ON_SQF_PRACTICES_NOV_2013.pdf).

196. Barry Paddock, *Kelly: Stop-and-Frisk Saves Lives by Taking Guns off the Street*, N.Y. DAILY NEWS (Apr. 4, 2013, 2:57 AM), <http://www.nydailynews.com/new-york/kelly-stop-and-frisk-saves-lives-article-1.1306828>.

197. Paddock, *supra* note 196.

198. See Second Supplemental Report of Jeffrey Fagan, Ph.D. at 35, *Floyd*, 959 F. Supp. 2d 540.

199. *Floyd*, 959 F. Supp. at 574.

200. See DAVID A. HARRIS, *PROFILES IN INJUSTICE: WHY RACIAL PROFILING CANNOT WORK* 80 (2002).

evidence of criminal activity in 13% of their searches of black motorists, compared with 25% of their searches of white motorists.<sup>201</sup> Add to this yet another problem revealed by analyses of stop-and-frisk practices: often the claimed articulated reasonable suspicion is legally inadequate. For example, a 2012 audit of a random sample of almost 2,000 stops in Philadelphia found that over 40% of the stop-and-frisks could not be legally justified.<sup>202</sup> The foregoing suggests not just a racialized policing problem, but also a related but distinct over-inclusiveness problem. It suggests that stop-and-frisks, although notionally a tool to apprehend criminals, in fact has a breadth that disproportionately affects those who are *Terry* innocent.<sup>203</sup> If one of the animating concerns of the Framers was the widespread use of general warrants<sup>204</sup>—open-ended warrants to search anyone and seize anything—then the widespread, over-inclusive use of warrantless stop-and-search practices suggests that the Fourth Amendment is not protecting the rights as citizens as was originally intended.<sup>205</sup>

### B. *Big Data, Terahertz Scanners, and Machine Learning*

*Terry*'s problems are multifaceted, but they are not insurmountable. Here again technology can provide a much-needed doctrinal assist, this time by drastically improving accuracy.

Consider first how technology can reduce the over-inclusiveness problem. Recall that the stated goal of aggressive stop-and-frisk practices such as those deployed in New York City is to get firearms out of the hands of criminals.<sup>206</sup> In fact, there is technology that can scan for concealed weapons without the need for a stop or frisk.<sup>207</sup> The device, which measures terahertz radiation, is small enough to be placed in a police vehicle or even mounted as a surveillance camera.<sup>208</sup> As the New York City Police Commissioner put it during a public announcement:

201. *Id.*

202. Plaintiffs' Third Report to Court and Monitor on Stop and Frisk Practices at 6, 8, *Bailey v. City of Philadelphia*, No. 10-5952 (E.D. Pa. Mar. 19, 2013).

203. This Article uses this term, "*Terry* innocent," to describe individuals who are not found to be engaged in criminal activity warranting an arrest or summons.

204. See WILLIAM J. CUDDIHY, *THE FOURTH AMENDMENT: ORIGINS AND ORIGINAL MEANING* 134–35 (2009) (discussing the pervasive use of the general warrant in colonial America).

205. See Sherry F. Colb, *Innocence, Privacy, and Targeting in Fourth Amendment Jurisprudence*, 96 COLUM. L. REV. 1456, 1505 (1996) (arguing that the Fourth Amendment should consider intrusions on the innocent).

206. See Paddock, *supra* note 196.

207. See John Del Signore, *NYPD "Takes Delivery" of Portable Body Scanners to Detect Concealed Weapons on the Street*, *GOTHAMIST* (Jan. 23, 2013, 12:46 PM) (quoting Police Comm'r Raymond Kelly), [http://gothamist.com/2013/01/23/nypd\\_takes\\_delivery\\_of\\_van-mounted.php](http://gothamist.com/2013/01/23/nypd_takes_delivery_of_van-mounted.php).

208. *Id.*

The device reads a specific form of natural energy emitted by people and objects known as terahertz. If something is obstructing the flow of that radiation, for example a weapon, the device will highlight that object. Over the past twelve months, we've been working with the vendor and the London Metropolitan Police to develop a tool that meets our requirements. We took delivery of it last week.

One of our requirements was that the technology must be portable . . . we're able to mount it in a truck.<sup>209</sup>

Add to this the use of facial recognition technology, already in use by over fifty police departments,<sup>210</sup> and which can access not just arrest photos, but also drivers' license photos and photos on social media sites like Facebook.<sup>211</sup> One such technology is FaceIt.

FaceIt is a facial recognition software engine helping a network of cameras and computers to quickly detect and recognize faces. When a head-like object moves within the camera's field of vision . . . the computer guesses whether it is a face. If the answer is yes, FaceIt crops the face from the background and "normalizes" the image by compensating for size and lighting. The image is then subjected to a Local Feature Analysis that essentially generates a faceprint—a digital code encapsulating the measurements of the landmarks of a face and how they correlate. . . . Accessories such as wigs, moustaches, glasses, even basic plastic surgery, will not affect identification.<sup>212</sup>

Now add access to Big Data to the equation. Already, the breadth and

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209. *Id.* Assuming the device could only reveal the presence of a concealed weapon, using the device would not constitute a Fourth Amendment search under current precedent. *See* United States v. Jacobsen, 466 U.S. 109, 124 (1984) (treating searches that can only reveal the presence or absence of contraband as non-searches under the Fourth Amendment); United States v. Place, 462 U.S. 696, 707 (1983) (same). This should be true even where one is licensed to carry a firearm, at least in areas where having a license is uncommon, just as canine sniffs for narcotics are non-searches even where one, say, has a medical marijuana license. *But see* Jeffrey Bellin, *The Right to Remain Armed*, 93 WASH. U. L. REV. 1, 5 (2015) (arguing that, given increased Second Amendment protections, possession of a handgun without more may be inadequate justification for a Fourth Amendment stop).

210. Sabrina A. Lochner, Note, *Saving Face: Regulating Law Enforcement's Use of Mobile Facial Recognition Technology & Iris Scans*, 55 ARIZ. L. REV. 201, 233 (2013).

211. *See* Andrew Guthrie Ferguson, *Big Data and Predictive Reasonable Suspicion*, 163 U. PA. L. REV. 327, 367 (2015).

212. Alexander T. Nguyen, *Here's Looking at You, Kid: Has Face-Recognition Technology Completely Outflanked the Fourth Amendment?*, 7 VA. J.L. & TECH. 2, 5–6 (2002) (footnotes omitted); *see* Laura K. Donohue, *Technological Leap, Statutory Gap, and Constitutional Abyss: Remote Biometric Identification Comes of Age*, 97 MINN. L. REV. 407, 409 (2012).

depth of information available (from credit card transactions to credit history, from Facebook likes to Twitter feeds, from favorite bands to political affiliations) is vast. Consider a report from just a few years ago:

[I]n 2013 the amount of stored information in the world is estimated to be around 1,200 exabytes, of which less than 2 percent is non-digital.

There is no good way to think about what this size of data means. If it were all printed in books, they would cover the entire surface of the United States some 52 layers thick. If it were placed on CD-ROMs and stacked up, they would stretch to the moon in five separate piles.<sup>213</sup>

Quite simply, whether it involves tracking location history by remotely accessing and analyzing metadata on our phones, or accessing surveillance camera data (both public and private), or turning to commercial data aggregators, the police have or will soon have at their disposal law enforcement tools unlike any before. In a matter of seconds, “unknown suspects can be known.”<sup>214</sup>

Now combine access to Big Data with Automated Suspicion Algorithms (ASAs), algorithms created by applying machine learning methods to troves of government and private data with the purpose of identifying potential criminal activity.<sup>215</sup> Already, ASAs are in operation. For example, computer systems already use public and private high-resolution surveillance cameras to identify suspicious bags abandoned in public areas. The algorithms can identify which bags (by shape, size,

213. VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, *BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK* 9 (2013).

214. Ferguson, *supra* note 211, at 351. One can imagine access to data being limited to non-intimate information. For a discussion of this possibility, see Note, *Data Mining, Dog Sniffs, and the Fourth Amendment*, 128 HARV. L. REV. 691, 712 (2014).

215. Automated Suspicion Algorithms, or ASAs, are software programs that employ machine learning to predict individual criminality. As Professor Rich states, ASAs share three characteristics:

First, they are based on *algorithms*, which can be broadly defined as sequences of instructions to convert an input into an output. In this case, ASAs convert data about an individual and her behavior into predictions of the likelihood that she is engaged in criminal conduct. Second, ASAs assess individuals based on *suspicion* of criminal activity . . . . Third, ASAs *automate* the process of identifying suspicious individuals from data: they comb through data for factors that correlate to criminal activity, assess the weight of each factor and how it relates to other factors, use the results to predict criminality from new data, and continuously improve their performance over time.

Michael L. Rich, *Machine Learning, Automated Suspicion Algorithms, and the Fourth Amendment*, 164 U. PA. L. REV. 871, 876 (2016) (footnotes omitted) (citations omitted).

placement, timing) may possibly conceal an explosive, as opposed to a discarded beer can, and send an automatic alert to the police.<sup>216</sup> Equally important, the algorithms learn from their mistakes and successes.<sup>217</sup> It does all of this with minimal human involvement. ASAs applied to individuals would be similar. As professor Michael Rich has explored, “One day soon, a machine will identify likely criminal activity and, with the beep of an e-mail delivery, the buzz of an alarm, or the silent creation of a report, tell police where to find it.”<sup>218</sup>

To be clear, these technologies raise privacy and other concerns.<sup>219</sup> But perhaps counterintuitively, they can also be privacy enhancing by improving accuracy so that *Terry* is no longer error-friendly. In other words, techno-policing can improve accuracy so that the police can actually target likely criminals rather than the *Terry* innocent. The over-inclusiveness problem with stop-and-frisks, after all, is that police are imperfect judges of whether “criminal activity [is] afoot” (the first requirement of *Terry*) and whether the person under observation is connected to that activity (the second *Terry* requirement).<sup>220</sup> Having access to at-a-distance weapons scanners, facial recognition software, and Big Data can significantly increase accuracy and restore the “right to be let alone”<sup>221</sup> to the rest of us. Terahertz scanners would tell the police that the bulge in a teenager’s jacket is nothing more than a bulky cellphone; facial recognition technology combined with Big Data and Automated Suspicion Algorithms would tell the police that the driver repeatedly circling the block in fact works in the neighborhood and is probably looking for a parking space; that the clean-cut looking man who seems to be admiring a home-owner’s garden in fact is violating an order of protection; and that the kid with the book bag running down the street is simply that, a kid running down the street.<sup>222</sup>

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216. See Ross Andersen, *An Eye Without an ‘I’: Justice and the Rise of Automated Surveillance*, ATLANTIC (June 14, 2012), <http://www.theatlantic.com/technology/archive/2012/06/an-eye-without-an-i-justice-and-the-rise-of-automated-surveillance/258082/>.

217. See Rich, *supra* note 215, at 905.

218. *Id.* at 872.

219. For example, algorithms are only as reliable as the inputs, and can reflect the biases of their programmers. See Claire Cain Miller, *When Algorithms Discriminate*, N.Y. TIMES (July 9, 2015), [http://www.nytimes.com/2015/07/10/upshot/when-algorithms-discriminate.html?action=click&pgtype=Homepage&version=MoTh-Visible&module=inside-nyt-region&region=inside-nyt-region&WT.nav=inside-nyt-region&\\_r=1&abt=0002&abg=1](http://www.nytimes.com/2015/07/10/upshot/when-algorithms-discriminate.html?action=click&pgtype=Homepage&version=MoTh-Visible&module=inside-nyt-region&region=inside-nyt-region&WT.nav=inside-nyt-region&_r=1&abt=0002&abg=1).

220. *Terry v. Ohio*, 392 U.S. 1, 30 (1968).

221. *New Jersey v. T.L.O.*, 469 U.S. 325, 361–62 (1985) (Brennan, J., dissenting) (quoting *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting)).

222. For example, relying solely on “commonsense,” the Court has long held that flight from police in a high crime area, standing alone, provides reasonable suspicion to justify a stop. *Illinois v. Wardlow*, 528 U.S. 119, 125 (2000). In fact, empirical evidence demonstrates the opposite: “that in high-crime urban communities where the population is disproportionately minority, flight

With the goal of accuracy in mind, techno-policing can also play a role in addressing the *bête noire* of stop-and-frisk policing, racial profiling. To be clear, most racialized policing is likely *not* the product of intentional discrimination. But we know from social cognition research that implicit biases about race—those assumptions and associations we have even when we believe we are “race-blind”—are practically universal.<sup>223</sup> These implicit biases include associations with race and criminality. Using technology can neutralize implicit biases and move us closer to a Fourth Amendment that is applied equally. Rather than relying on race-based heuristics, techno-policing would be able to tell from afar, in a way that is not intrusive or embarrassing, whether someone is a troublemaker casing a neighborhood, or a student returning home with a bag of Skittles and a Snapple iced tea;<sup>224</sup> a loiterer, or a father waiting to pick up his children from school;<sup>225</sup> a burglar, or a Harvard professor entering his own home;<sup>226</sup> a mugger, or the future United States Attorney General.<sup>227</sup> This is accuracy.

To be sure, the techno-policing this Article advocates is not a cure-all in terms of making policing more accurate, especially given how

from an identifiable police officer is a very poor indicator that crime is afoot.” See Tracey L. Meares & Bernard E. Harcourt, *Foreword: Transparent Adjudication and Social Science Research in Constitutional Criminal Procedure*, 90 J. CRIM. L. & CRIMINOLOGY 733, 792 (2000). Automated Suspicion Algorithms, since they are based on data-derived probabilities, would learn and know this.

223. See ADAM BENFORADO, *UNFAIR: THE NEW SCIENCE OF CRIMINAL INJUSTICE* 19–20 (2015); Nilanjana Dasgupta, *Implicit Ingroup Favoritism, Outgroup Favoritism, and Their Behavioral Manifestations*, 17 SOC. JUST. RES. 143, 146 (2004) (discussing implicit prejudice and stereotype themes in today’s world); Jerry Kang, *Trojan Horses of Race*, 118 HARV. L. REV. 1489, 1491–1528 (2005); L. Song Richardson, *Arrest Efficiency and the Fourth Amendment*, 95 MINN. L. REV. 2035, 2043–44 (2011).

224. The reference is to Trayvon Martin, the unarmed black youth shot by neighborhood watchman George Zimmerman.

225. The reference is to an incident in which the police assumed a black man outside of an elite private school might be engaged in criminal activity. In fact, he was waiting for his children. Joanna Rothkopf, *“I’m Not Your Brother!”: Video Reveals Police’s Stunning Double-Standard for Black Americans*, SALON (Aug. 29, 2014, 4:45 PM), [http://www.salon.com/2014/08/29/st\\_paul\\_cops\\_tase\\_and\\_arrest\\_black\\_man\\_for\\_waiting\\_to\\_pick\\_his\\_kids\\_up\\_from\\_preschool/](http://www.salon.com/2014/08/29/st_paul_cops_tase_and_arrest_black_man_for_waiting_to_pick_his_kids_up_from_preschool/).

226. The reference is to the arrest of Harvard Professor Henry Louis Gates after an officer suspected him of burglary as he entered his own home. See, e.g., Abby Goodnough, *Harvard Professor Jailed; Officer Is Accused of Bias*, N.Y. TIMES (July 20, 2009), <http://www.nytimes.com/2009/07/21/us/21gates.html>. As I have detailed elsewhere, a number of law-abiding minority professors—Cornel West, William Julius Wilson, Paul Butler, and Devon Carbado, to name just a few—have been subjected to police stops. Capers, *supra* note 179, at 18.

227. See Gene Demby, *Two Tales of Profiling, from the Highest Offices in the Land*, NPR (July 19, 2013, 7:20 PM), <http://www.npr.org/blogs/codeswitch/2013/07/19/203715163/two-tales-of-profiling-from-the-highest-offices-in-the-land> (quoting Att’y Gen. Eric Holder describing being profiled by the police).

interconnected, how networked,<sup>228</sup> every aspect of our criminal justice system is. And to be sure, because any technology has the potential to replicate or exacerbate existing inequalities and disparities, significant checks such as race audits will be required.<sup>229</sup> But it is a significant step in the right direction. Indeed, given that more democratic policing will likely increase perceptions of legitimacy—Professor Tyler’s argument again<sup>230</sup>—it may even result in the reduction of crime.

#### IV. O BRAVE NEW WORLD<sup>231</sup>

It is one thing to proffer illustrations of the types of technology that can be harnessed to strengthen Fourth Amendment protections. It is another to propose workable plans for incentivizing the turn to technology. This Part attempts to do just that. Specifically, this Part turns to the role legislators can play in requiring, or at least encouraging, the use of technology that enhances Fourth Amendment protections; and it turns to the role courts can play in reimagining a robust Fourth Amendment. It then anticipates and addresses potential objections.

##### A. *A Role for Courts*

Courts can play a role in promoting the use of technology that enhances Fourth Amendment protections by saying “no” *and* by saying “yes.” This requires some explanation: Courts should say no when law enforcement officers attempt to rationalize warrantless searches by offering justifications that no longer make sense given current and readily available technology. For example, a court should say “no” when an officer conducts a warrantless search of a vehicle and justifies the search by simply invoking the vehicle exception to the warrant requirement. Recall that the vehicle exception was predicated on the inability of officers to quickly secure a warrant.<sup>232</sup> While that exception made sense in 1925 and through the early 1990s, it hardly makes sense today, and courts should respond accordingly. While urging courts to say no may seem radical, in fact the Supreme Court has already begun to do just that. In *Schmerber v. California*, the Court permitted the warrantless drawing

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228. For a discussion of network theory, see Bennett Capers, *Crime, Legitimacy, Our Criminal Network, and the Wire*, 8 OHIO ST. J. CRIM. L. 459, 468–69 (2011).

229. Robin A. Lenhardt, *Race Audits*, 62 HASTINGS L.J. 1527, 1534 (2011).

230. Tyler & Fagan, *supra* note 172, at 235.

231. The reference is not to Aldous Huxley’s dystopic *Brave New World*, but rather to its title’s source: Shakespeare’s *The Tempest*, and the words spoken by Miranda. “How beauteous mankind is! O brave new world, That has such people in’t!”. WILLIAM SHAKESPEARE, *THE TEMPEST* act 5, sc. 1.

232. *Carroll v. United States*, 267 U.S. 132, 153 (1925).

and testing of blood because securing a timely warrant was impractical.<sup>233</sup> In *Missouri v. McNeely*, the Court considered the “advances in the 47 years since *Schmerber*” and the availability of technology that allows for the “more expeditious processing of warrant applications” to reverse course and say “no.”<sup>234</sup>

Courts can also advance Fourth Amendment protections by saying “yes,” and saying it loudly. It has long been recognized that the Court has a teaching function.<sup>235</sup> One way to educate is by saying “yes” when law enforcement officers use technology that enhances Fourth Amendment protections. Again, an example may be useful. Imagine a police department initiates a policy that requires its officers to make audio recordings of requests for consent. In such jurisdictions, courts should not only view the existence of an audio recording as another factor under *Schneckloth*’s “totality of the circumstances” test.<sup>236</sup> Rather, courts can make clear that they view such evidence as having almost dispositive weight. In short, courts should reward officers—through the easy admission of evidence—in cases that include a recording of voluntary consent.<sup>237</sup> The point here is that merely by saying “yes,” and saying it loudly, courts can make a difference by changing police norms and police culture. A perfect example of this is how expectations changed in the 1970s after courts began saying “yes” to written consent forms.<sup>238</sup> Without ever mandating the use of such forms—which the Court could have required as a judicially mandated prophylactic—the Court made the use of such forms almost universal by saying “yes.”<sup>239</sup> As of 2013, only four states do not use written consent forms.<sup>240</sup>

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233. 384 U.S. 757, 770–72 (1966).

234. 133 S. Ct. 1552, 1555 (2013).

235. As a former dean of Yale Law School famously put it, the Justices “are inevitably teachers in a vital national seminar.” Eugene V. Rostow, *The Democratic Character of Judicial Review*, 66 HARV. L. REV. 193, 208 (1952).

236. *Schneckloth v. Bustamonte*, 412 U.S. 218, 227 (1973).

237. Conversely, courts should deter officers—excluding evidence or at least making the admission more difficult—where officers have failed to document the circumstances of consent through an audio recording. Indeed, state courts can even require such evidence as necessary to reasonableness under state constitutions. For a discussion of the trend of states relying on state constitutions to extend more protections to its citizens that are required by the federal Fourth Amendment, see Stephen E. Henderson, *Learning from All Fifty States: How to Apply the Fourth Amendment and Its State Analogs to Protect Third Party Information from Unreasonable Search*, 55 CATH. U. L. REV. 373, 393 (2006); William J. Brennan, Jr., *State Constitutions and the Protection of Individual Rights*, 90 HARV. L. REV. 489, 491 (1977); William J. Brennan, Jr., *The Bill of Rights and the States: The Revival of State Constitutions as Guardians of Individual Rights*, 61 N.Y.U. L. REV. 535, 548 (1986).

238. See Leong & Suyeishi, *supra* note 166, at 768–69.

239. *Id.*

240. For more, see Leong & Suyeishi, *supra* note 166, at 774.



### B. *A Role for Legislatures*

Perhaps not surprisingly, courts acting alone are sometimes inadequate to the task of regulating law enforcement practices to preserve individual protections.<sup>241</sup> Accordingly, scholars are increasingly calling for the involvement of “multiple institutions applying complementary approaches”<sup>242</sup> to ensure the proper balance between the rights of the state and the rights of the individual. One such institution is the legislature, both at the federal and local level.<sup>243</sup>

First, consider Congress. Much of the argument put forward thus far urges a return to warrants. Congress can facilitate this return by taking the lead on ensuring that federal warrants can be obtained expeditiously. To be sure, Congress took steps in this regard in 1977 when it amended Rule 41 of the Federal Rules of Criminal Procedure to permit officers to seek warrants via telephone.<sup>244</sup> The rationale for the 1977 amendment bears noting. Congress believed that the availability of telephonic warrants would “encourage Federal law enforcement officers to seek search warrants in situations where they might otherwise conduct warrantless searches.”<sup>245</sup> The availability of telephonic warrants would thus allow officers the means “to opt for the safer legal course of trying to obtain a search warrant before taking unilateral action.”<sup>246</sup> While the inclusion in 1977 of telephonic warrants should be commended, technological advances now make the mechanics for obtaining a warrant via telephone seem antiquated. For example, Rule 41 requires that both the affiant and the magistrate have before them a physical warrant and requires an actual signature.<sup>247</sup> But neither of these requirements makes sense in an age where documentation can be paperless, where access to shared file storage like DropBox and Google Drive is commonplace, and

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241. Rachel A. Harmon, *The Problem of Policing*, 110 MICH. L. REV. 761, 764 (2012) (observing that courts lack the capacity “to undertake complex empirical analysis of policing or to constrain the police beyond identifying and enforcing constitutional rights”).

242. David M. Jaros, *Preempting the Police*, 55 B.C. L. REV. 1149, 1152 (2014); see also Harmon, *supra* note 241, at 817 (calling for the involvement of multiple institutions to work together in “the complex task of articulating and implementing a form of policing that is both effective and harm efficient”).

243. Professor Charles Reich called for this approach in 1966, arguing that courts should not be “the first line of approach in regulating police work.” Charles A. Reich, *Police Questioning of Law Abiding Citizens*, 75 YALE L.J. 1161, 1170 (1966). Rather, “[l]egislatively and administratively, it is possible for a community to establish guidelines for police and citizens as well.” *Id.*

244. FED. R. CRIM. P. 41(d)(3).

245. S. REP. NO. 95-354, at 10 (1977).

246. *Proposed Amendments to the Federal Rules of Criminal Procedure: Hearings Before the Subcomm. on Criminal Justice of the Comm. of the Judiciary*, 95th Cong. 61 (1977).

247. See FED. R. CRIM. P. 41.

where signatures can be electronic. To require these procedures is on par with adhering to, say, the best evidence rule long after it has served its course. The goal is to make obtaining warrants easier, and Congress should take the lead in doing this.

Congress, however, is just the start. States, counties, and cities each have the ability to experiment and to provide incentives and protections that go beyond the floor of the Fourth Amendment. Indeed, localities “have an unrivalled ability to focus attention on an issue, convene key stakeholders and insist they work together, connect with residents at the neighborhood level, carry out the vision, and ensure a focus on results.”<sup>248</sup> To borrow from Professor Richard Briffault, who in turn channeled Justice Louis Brandeis:

Many years ago, Justice Brandeis famously offered a defense of federalism in terms of the possibility that state autonomy provides for innovation. As he observed, “a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.” Well, if the fifty states are laboratories for public policy formation, then surely the 3,000 counties and 15,000 municipalities provide logarithmically more opportunities for innovation, experimentation, and reform. Thousands of local governments provide thousands of arenas for innovation.<sup>249</sup>

Indeed, jurisdictions have already begun to experiment with technology to enhance protections. Cities have experimented, with great success, in requiring officers to wear body cameras. Jurisdictions have experimented with e-warrants. Cities are experimenting with facial recognition technology and long-range scanners for weapons. And jurisdictions are experimenting with providing law enforcement officers access to Big Data. The task ahead is to foster more experimentation. For example, one can imagine a jurisdiction experimenting with having judicial officers on call, via FaceTime, to adjudicate in real time police–citizen encounters when it comes to securing consent, or to sign off on warrants in advance of car searches or claims of exigent circumstances. One can imagine a jurisdiction requiring officers to “write” e-tickets when they conduct stop-and-frisks. The possibilities are many.

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248. NAT’L LEAGUE OF CITIES & INST. FOR YOUTH, EDUC., & FAMILIES, VITAL PARTNERS, MAYORS AND POLICE CHIEFS WORKING TOGETHER FOR AMERICA’S CHILDREN AND YOUTH 1 (2006), <https://ric-zai-inc.com/Publications/cops-p126-pub.pdf>.

249. Richard Briffault, *Home Rule for the Twenty-First Century*, 36 URB. LAW. 253, 259 (2004) (footnote omitted) (quoting *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting)).

### C. Counterarguments

Any suggestions for changes are sure to meet resistance and counter-arguments. I address the most obvious counter-arguments below.

**Costs.** Every change comes with costs, and one can imagine a cost-based objection to the proposals put forth in this Article. In fact, one could imagine two cost-based objections: one to the financial costs associated with outfitting the police with Fourth Amendment enhancing technology, and one to the “cost” associated with having more front-end involvement by judicial officers in term of issuing warrants and deciding, in real time, issues of probable cause or consent. Both of these objections are easily addressed. Turning to the first cost argument, much of the technology this Article puts forward—whether it is using a communication platform such as FaceTime or Google Hangout to quickly secure warrants or providing officers access to Big Data—have almost negligible costs. Indeed, as technology experts have noted, because apps can be endlessly replicated, they are a type of technology that is “subject to different economics, where abundance is the norm rather than scarcity.”<sup>250</sup>

More challenging is the objection based on the costs involved with having magistrates or other judicial officers<sup>251</sup> available on the front end. Right now, the role of judicial officers is usually confined to when an arrest is made or contraband is seized. In other words, judicial officers have virtually no involvement in the vast majority of stop-and-frisks, or consensual encounters, or requests for consent, or even car searches. To be sure, getting judicial officers involved on the front end will involve a sizable investment in resources, but that investment on the front end is likely to be recouped on the back end. To elaborate, right now, magistrates are involved in only a fraction of police–citizen encounters, namely, the fraction of encounters that result in an arrest or the seizure of contraband. However, with respect to this fraction of encounters, the judge’s role becomes outsized. With respect to arrests, the judge must decide probable cause hearings. With respect to seizures of contraband, the judge must review affidavits and memoranda in support of motions to suppress, as well as responding papers. The judge may preside over suppression hearings that can last for days. And where decisions are difficult and likely to be revisited on appeal, the judge may find herself writing, in anticipation of appeal, a lengthy decision denying the

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250. ERIK BRYNJOLFSSON & ANDREW MCAFEE, THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES 10 (2014).

251. As the Court has acknowledged, there is no requirement in the Fourth Amendment that the reviewing officer in fact be a magistrate or even have a law degree, so long as he is neutral and detached. *See Shadwick v. City of Tampa*, 407 U.S. 345, 352 (1972).

suppression motion.<sup>252</sup> All of this is time consuming. The judge's role is also myopic. The overwhelming number of problematic police interactions with law-abiding citizens simply remains invisible; a judge never sees them. Involving magistrates on the front end, however, lessens the burden of deciding cases on the back end. Once a magistrate issues a warrant on the front end, for example, that decision becomes almost unassailable because of the Court's decision in *United States v. Leon*<sup>253</sup> creating a "good faith" exception to the exclusionary rule.<sup>254</sup> More importantly, such technology can make visible and reviewable everyday police-citizen interactions, which in itself can "help change constitutional meaning."<sup>255</sup> In short, the investment in magistrate time on the front end is in fact likely a redirection of existing resources, since it diminishes the very real costs on the back end.

Perverse effects. There is also the issue of perverse effects, especially with respect to the proposals regarding stop-and-frisk practices. The concern, stated broadly, is that law enforcement officers will use this technology in ways that further racial disparities. They will use remote scanners in minority neighborhoods, not majority neighborhoods. Indeed, in its platform, the Black Lives Matter movement has expressed precisely these concerns about the turn towards surveillance.<sup>256</sup> My hope is that where communities are concerned that law enforcement may be singling out communities in ways that are inappropriate, they can quite literally check such activities. For example, Professor Robin Lenhardt has proposed that municipalities conduct "race audits" to check to inequitable conditions.<sup>257</sup> Something similar could also be employed here.<sup>258</sup>

A related issue is that, even if such technology is used in race-neutral ways, it will nonetheless replicate and perhaps exacerbate existing racial disparities in the criminal justice system. To the extent the police use facial recognition and Big Data to determine who has a criminal record, this focus will result in the hyper-surveillance of individuals who are

252. The court might alternatively write a decision granting a suppression motion, if the court anticipates an interlocutory appeal.

253. 468 U.S. 897 (1984).

254. *Id.* at 904. Under the exception, evidence obtained pursuant to a warrant later declared to be invalid will not be excluded so long as a reasonably trained officer would have believed the warrant was valid. *Id.*

255. Simonson, *supra* note 6, at 425.

256. See *End the War on Black People*, MOVEMENT FOR BLACK LIVES, <https://policy.m4bl.org/end-war-on-black-people/> (last visited Nov. 8, 2016) (calling for, among other things, an end to the mass surveillance of black individuals and expressing concerns about technologies, such as body cameras, that criminalize and target black communities).

257. Lenhardt, *supra* note 229, at 1534.

258. To the extent individual officers are using technology in ways that are discriminatory or otherwise inappropriate, that too can be checked. The use of technology will leave its own data trail, allowing reviewing authorities to know exactly what steps an officer took prior to, during, and after an encounter, stop, or frisk.

already victims of a racialized penal system, and thus more likely to have arrest records. While this concern is a troubling one, there is reason to think that it may be significantly less troubling in practice. Many arrests and convictions will simply be irrelevant, both as an evidentiary matter and as a Fourth Amendment matter, to a stop-and-frisk. For example, an arrest record for possession of a personal use quantity of marijuana, discovered through access to Big Data, is only minimally relevant to whether someone standing in front of a clothing store is casing a store to rob it or merely window shopping. By contrast, an arrest or conviction that does matter—i.e., a prior arrest or conviction for possession of burglary tools—should matter. And again, this is where self-checks or race audits can come in. To the extent technology is inappropriately replicating racial disparities—or other disparities for that matter—adjustments can be made.

Data Control. For civil libertarians in particular, there is also the matter of control. If law enforcement officers are, for example, recording the verbal exchanges during requests for consent, who will have access to the recordings? If there are surveillance cameras in public, how long with those video records be stored? Will the press have access? And if law enforcement officers are using facial surveillance and data mining to know everything about us—not just whether we engage in crime, but also where we shop, whether we attend church, whether we subscribe to the sexual hook-up App Grindr or browse profiles on the website *Ashley Madison* (“the world’s leading married dating service for discreet encounters”)<sup>259</sup>—how do we keep such information from being misused? Will such information be subject to Freedom of Information Act requests? These are all weighty questions, but my response is brief and at bottom is reducible to this: These problems are not insurmountable, as our past history should make clear. We already regulate access to DNA and fingerprint evidence, for example. Surely we can regulate access to other types of data.

The End of Privacy. One can imagine a final objection: that allowing law enforcement access to Big Data and other technology will spell the end of the privacy as we know it. The Government will become James Stewart’s character in *Rear Window*, peering through our windows to learn all our secrets.<sup>260</sup> The Government will become the couple in John Cheever’s *The Enormous Radio*, able to listen in on every conversation

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259. Lance Whitney, *Adultery Site Ashley Madison Confirms Leak of Actual User Data*, CNET (Aug. 19, 2015, 10:22 AM) <https://www.cnet.com/news/adultery-site-ashley-madison-confirms-leak-of-actual-user-data/>.

260. *REAR WINDOW* (Paramount Pictures 1954).

with the mere turn of a radio dial.<sup>261</sup> In short, the Government will become the Big Brother of George Orwell's *1984*.

This Article's response to this "end-of-privacy" argument is three-fold. The first observation may sound flippant, but it is not intended to be. The observation is this: That ship has sailed. Or to put it in more contemporary terms, that satellite (with its tracking technology) was launched into orbit a long time ago. To complain about the loss of privacy is to ignore how much privacy we have surrendered in recent years. There is a reason why the online retail giant Amazon has obtained a patent for "anticipatory shipping," a technology that would allow Amazon to ship products before orders have been placed.<sup>262</sup> And why the political ads we receive seem tailored to our individual concerns,<sup>263</sup> and why the music we listen to now "is now listening to us."<sup>264</sup> There is a reason too that Target knows when women are pregnant,<sup>265</sup> that Netflix knows about my obsession with both *The Wire* and *Downton Abbey* and *Buffy the Vampire Slayer*; and that, after shopping for L.L.Bean rain boots, advertisements for galoshes will invade your browser. The reason is because we have surrendered part of our privacy in exchange for convenience and ease.

There is a second response to the "end of privacy" argument: Although we may have lost some privacy due to technology, in fact, the lack of privacy we have today is not that new. Rather, it shares much with the quantity and quality of privacy that most *citizens* had when the Fourth Amendment was ratified. Recall that in 1791, most citizens lived in small communities. If one missed service at church, the community knew. And

261. JOHN CHEEVER, *The Enormous Radio*, in *THE STORIES OF JOHN CHEEVER* 33, 33–41 (1978).

262. See Greg Bensinger, *Amazon Wants to Ship Your Package Before You Buy It*, WALL ST. J.: DIGITS (Jan. 17, 2014, 3:12 PM), <http://blogs.wsj.com/digits/2014/01/17/amazon-wants-to-ship-your-package-before-you-buy-it/?KEYWORDS=amazon+anticipatory>; see also Praveen Kopalle, *Why Amazon's Anticipatory Shipping Is Pure Genius*, FORBES (Jan. 28, 2014, 11:34 AM), <http://www.forbes.com/sites/onmarketing/2014/01/28/why-amazons-anticipatory-shipping-is-pure-genius/#1936cb102fac> (discussing Amazon's anticipatory shipping system).

263. Micah Cohen, *From Campaign War Room to Big-Data Broom*, N.Y. TIMES (June 19, 2013, 10:56 PM), [https://bits.blogs.nytimes.com/2013/06/19/from-campaign-war-room-to-big-data-broom/?\\_r=0](https://bits.blogs.nytimes.com/2013/06/19/from-campaign-war-room-to-big-data-broom/?_r=0); *How Campaigns Amass Your Personal Information to Deliver Tailored Political Ads*, PBS: NEWSHOUR (Oct. 29, 2012, 12:00 AM), [http://www.pbs.org/newshour/bb/politics-july-dec12-frontline\\_10-29/](http://www.pbs.org/newshour/bb/politics-july-dec12-frontline_10-29/).

264. *How the Music Industry Uses Big Data to Create the Next Big Hit*, PBS: NEWSHOUR (Nov. 27, 2014, 8:26 PM), <http://www.pbs.org/newshour/bb/music-industry-uses-big-data-create-next-big-hit/>; see also Derek Thompson, *The Shazam Effect*, ATLANTIC (Dec. 2014), <http://www.theatlantic.com/magazine/archive/2014/12/the-shazam-effect/382237/> (discussing how an app created to identify an unknown song title is now used by record companies as an early-detection system for hits).

265. See Charles Duhigg, *How Companies Learn Your Secrets*, N.Y. TIMES MAG. (Feb. 16, 2012), <http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html>.

if one wanted to purchase cyanide—think Miss Emily in Faulkner’s *A Rose for Emily*<sup>266</sup>—there was no way to disguise one’s purchase online; one went to the one general store that sold it. In this sense, privacy as we know it (or at least remember it) is a fairly recent phenomenon, dating to the rise of industrialization and the anonymity that came with city living.<sup>267</sup>

This Article’s third response to the “end of privacy” argument is to note the alternative. We could continue to live in a world where millions of law-abiding citizens “voluntarily” consent, where officers can search vehicles with little oversight, and where millions of citizens are stopped by the police and frisked by the police. We could even continue to live in a world where such policing is decidedly racialized, a type of policing that is decidedly inconsistent with our notion that everyone should be equal before the law. Or we could live in a world where all of us surrender some privacy in exchange for judicial review, transparency, and accuracy in policing. In short, in exchange for more egalitarian policing.<sup>268</sup> That is the alternative. I, for one, know which world I prefer.

#### CONCLUSION

The ambition of this Article has been to challenge conventional thinking about technology and to offer another way to think about the relationship between technology and the constellation of rights we associate with the Fourth Amendment. Deployed properly, techno-policing can provide doctrinal assists where Fourth Amendment doctrine alone has proved inadequate, shortsighted, and unfair. Some of the arguments are hopefully noncontroversial. Others—for example, the more widespread use of surveillance cameras, terahertz scanners, Big Data, and Automated Suspicion Algorithms—are sure to engender pushback. But at a time when crime levels are relatively low<sup>269</sup> and police accountability is coming to the fore, at a time when both conservatives and progressives are rethinking criminal justice, at a time of perhaps interest convergence,<sup>270</sup> and at a time when looking to the Supreme Court to fill doctrinal gaps seems foolhardy, techno-policing is certainly worth

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266. WILLIAM FAULKNER, *A Rose for Emily*, in *THE FAULKNER READER: SELECTIONS FROM THE WORKS OF WILLIAM FAULKNER* 119, 125–26 (Vintage Books 1977).

267. On this rise in anonymity and how it changed crime in America, see LAWRENCE M. FRIEDMAN, *CRIME AND PUNISHMENT IN AMERICAN HISTORY* 193–210 (1993).

268. For more on using technology to redistribute privacy in a way that is more egalitarian, see I. Bennett Capers, *Race, Policing, and Technology*, 95 N.C. L. REV. 1241 (2017).

269. John F. Pfaff, *The Complicated Economics of Prison Reform*, 114 MICH. L. REV. 951, 952, 954 (2016) (noting that crime is at a forty-year low).

270. See Derrick A. Bell, Jr., *Brown v. Board of Education and the Interest-Convergence Dilemma*, 93 HARV. L. REV. 518, 523 (1980) (noting that the interest of minorities in achieving equality is accommodated only when it converges with the interest of the majority).

considering, discussing, and debating. Because just possibly, technology can play a role in “mak[ing] America what America must become”<sup>271</sup>—fair, egalitarian, responsive to needs of all of its citizens, and truly democratic in all respects, including its policing. The goal of this Article has been to begin the conversation. Hopefully, it has done just that.

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271. JAMES BALDWIN, *THE FIRE NEXT TIME* 9 (1963) (“[G]reat men have done great things here, and will again, and we can make America what America must become.”).



