

## Automated Policing

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Ask someone what job they think will disappear because of automation, and they are likely to respond with truck driver.<sup>1</sup> Truck driving jobs—hundreds of thousands of them—will disappear when self-driving trucks appear on the roads.<sup>2</sup> Many other jobs—by some estimates, nearly half of all jobs in the U.S. within the next twenty years—are at high risk of automation as well, including bank tellers, insurance claims adjusters, and security guards.<sup>3</sup>

But we do not consider police officers as good candidates for automation, because we believe that the job involves high levels of human interaction, social skills, and adaptability in complex environments. That belief makes sense only if we embrace a particular vision of policing. In it, the police combat crime and enforce the law in volatile situations. Yet, crime fighting, embraced by popular culture, the media, and even the police themselves, is only one part of the job.

Instead, actual police patrol is often characterized by long stretches of boredom punctuated with brief moments of potential danger.<sup>4</sup> Studies going back more than fifty years point out that much of a line officer's job has little to do with enforcing the law against offenders. Arrests are infrequent, and law enforcement activity is only a small portion of a shift. Police act much of the time in a service

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<sup>1</sup> See Martin Ford, *Driverless Trucks: Economic Tsunami May Swallow One of Most Common US Jobs*, GUARDIAN (Feb. 16, 2017), <https://www.theguardian.com/technology/2017/feb/16/self-driving-trucks-automation-jobs-trucking-industry> [<https://perma.cc/WGS7-93WR>] (“While truck driving may eventually become the poster child for the automation wave, the disruption will, of course, be far broader, eventually encompassing the fast food, retail and office jobs that currently employ tens of millions of Americans.”).

<sup>2</sup> See, e.g., Natalie Kitroeff, *Robots Could Replace 1.7 Million American Truckers in the Next Decade*, L.A. TIMES (Sept. 25, 2016), <http://www.latimes.com/projects/la-fi-automated-trucks-labor-20160924/> [<https://perma.cc/W8G6-Y5R2>] (noting that truck driving will probably be the first form of driving in the U.S. to be fully automated).

<sup>3</sup> Carl Benedikt Frey & Michael A. Osborne, *The Future of Employment: How Susceptible Are Jobs to Computerisation?*, 114 TECH. FORECASTING & SOC. CHANGE 254, 269–78 (2017). Frey and Osborne ranked 702 jobs in order of their susceptibility to automation within twenty years. While “security guards” were at high risk, “patrol officers” were not.

<sup>4</sup> Numerous well-known studies of the police have observed this. See, e.g., DAVID H. BAYLEY, *POLICE FOR THE FUTURE* 23 (1994) (“Patrol officers spend a lot of time simply waiting for something to happen—a summons from dispatch, a supervisor to show up, ambulances to arrive, detectives to finish with a crime scene, tow trucks to haul a car away, relatives to be summoned, and the fire department to flush gasoline off the street.”).

capacity—resolving disputes with non-legal means, directing traffic, responding to accidents, providing medical aid, and often simply driving around.<sup>5</sup>

Here, then, is a thought experiment about a distant future—but not that distant. What if much of policing becomes automated? The job of a security guard will become increasingly automated. The military envisions a future of human operators overseeing groups of semi-autonomous robots doing the work human soldiers once did.<sup>6</sup> Policing is not so distinct from private security or from the military that it will be immune from these developments.

By automated policing, I mean a future in which a significant portion of ordinary policing employs robotics, artificial intelligence, and big data. These changes are already transforming the economy and society because of three trends: the availability of vast amounts of digitized data, the increasing sophistication of algorithms, and advances in robotics.<sup>7</sup> Human officers would not disappear, but their role would be changed, just as it would in truck driving and other occupations.

In this scenario, a fleet of autonomous or semi-autonomous police robots—in the air, on the ground; armed or unarmed—assume surveillance tasks and increase the capacity of traditional policing with biometric identification, real time access to multiplatform databases, and infinite data storage. The predictive policing software programs used by many departments today still exist but on steroids. Self-driving cars have eliminated most of the most volatile and violent encounters between the public and the police because traffic stops, as we know them now, no longer exist. Situations fraught with the potential for violence—everything from encounters with the mentally ill to emotionally-charged protests—meet armed robots with human minders employed at a safe distance.

Early indications of these trends already exist. Many police departments already use predictive algorithms to determine where crimes might occur, which persons might be at a high risk of violent crime victimization or perpetration, and what threats are posed by people line officers encounter on the street.<sup>8</sup> The nation's largest police department wants to hire 100 civilian crime analysts with backgrounds in math and statistics who will be “expected to find crime patterns before they grow too large.”<sup>9</sup> The military, private companies, and police departments already use robots.

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<sup>5</sup> The criminologist Richard Ericson famously highlighted the prevalence of boredom in ordinary patrolling. See RICHARD V. ERICSON, *REPRODUCING ORDER: A STUDY OF POLICE PATROL WORK* 62 (1982).

<sup>6</sup> See P. W. SINGER, *WIRED FOR WAR: THE ROBOTICS REVOLUTION AND CONFLICT IN THE 21ST CENTURY* 132–34 (2009).

<sup>7</sup> EXEC. OFFICE OF THE PRESIDENT, *ARTIFICIAL INTELLIGENCE, AUTOMATION, AND THE ECONOMY* 6 (2016).

<sup>8</sup> See Elizabeth E. Joh, *Policing by Numbers: Big Data and the Fourth Amendment*, 89 WASH. L. REV. 35, 42–48 (2014) (providing examples of predictive policing methods).

<sup>9</sup> Benjamin Mueller, *Police Add Civilians in Bid to Better Analyze Crime Data*, N.Y. TIMES (Aug. 15, 2017), <https://nyti.ms/2vBdNUV> [<https://perma.cc/Y4A4-FTKN>].

If some or all of these developments arise—and some of them will—we can identify some important questions about the impact of automation on policing.

1. How should we respond to the deskilling of policing through automation?

When the tasks assumed by a person in a traditional job are significantly or entirely automated, the consequent loss of skills or knowledge he previously possessed is referred to as *deskilling*.<sup>10</sup> The employee may continue to perform aspects of the traditional job, but he loses abilities that were once necessary to do the job at all. Eventually, the person subjected to deskilling may have little idea of how the complex systems that perform the job work. Thus, while the traditional test for becoming a London cabdriver was a possession of “The Knowledge,” the need for those skills has eroded with the ubiquity of GPS-based mapping apps.<sup>11</sup>

Many police are already outsourcing some of their suspicion determinations to private companies that have developed algorithmic decisionmaking.<sup>12</sup> Some of these programs predict the geographic locations where crimes might occur.<sup>13</sup> Others use social network analysis to determine persons who are at a high risk of becoming the victims or perpetrators of gun violence.<sup>14</sup> These trends for the moment coexist with traditional forms of investigation: personal knowledge of people, neighborhoods, and social dynamics. But when most or all of these determinations are automated, what will happen to the professional model of policing—a historical model developed in the 1950s and the hallmark of most efforts of police reform?<sup>15</sup> Moreover, even if automation results in safer and more efficient policing, will it also result in more difficulties in hiring educated and professionally-oriented recruits? How will police unions respond to the encroachment of automation on everyday policing?

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<sup>10</sup> See, e.g., NICHOLAS CARR, *THE GLASS CAGE: AUTOMATION AND US* 54–55 (2014).

<sup>11</sup> Jody Rosen, *The Knowledge, London’s Legendary Taxi-Driver Test, Puts Up a Fight in the Age of GPS*, N.Y. TIMES (Nov. 10, 2014), <https://nyti.ms/2k5DKD9> [<https://perma.cc/6C98-TP5U>].

<sup>12</sup> See generally Elizabeth E. Joh, *The Undue Influence of Surveillance Technology Companies on Policing*, 92 N.Y.U. L. REV. 101, 125–26 (2017) (describing influence of surveillance technologies company vendors on the kinds of tactics and approaches used by the police).

<sup>13</sup> See, e.g., Erica Goode, *Sending the Police Before There’s a Crime*, N.Y. TIMES (Aug. 15, 2011), <https://nyti.ms/2mzDd1r> [<https://perma.cc/G8Q3-ZSZX>] (describing predictive algorithms used to deploy police to certain geographic locations).

<sup>14</sup> See, e.g., John Eligon & Timothy Williams, *Police Program Aims to Pinpoint Those Most Likely to Commit Crimes*, N.Y. TIMES (Sept. 24, 2015), <https://nyti.ms/2kXvdq9> [<https://perma.cc/NC7L-KG23>] (describing the Chicago Police Department’s “‘heat list’ of 400 people who are considered far more likely than the average person to be involved in violent crime.”).

<sup>15</sup> See, e.g., SAMUEL WALKER, *A CRITICAL HISTORY OF POLICE REFORM: THE EMERGENCE OF PROFESSIONALISM* (1977).

2. How should courts consider their traditional deference to police judgment and expertise in an automated future?

The Supreme Court (and all courts) tend to defer to the judgments of the police, particularly when it comes to split-second decisions in unpredictable situations.<sup>16</sup> A frequent justification for this deference is that the police are professionals whose judgments are based on experiences that form their expertise. Those presumptions will have to be different if the police increasingly rely upon automated decisionmaking to guide their actions about stops, arrests, and surveillance.

The flexible and ill-defined nature of legal justifications like probable cause and reasonable suspicion probably means that courts will likely accept human judgments *informed* by automated decisionmaking.<sup>17</sup> But if some forms of police decisionmaking become almost entirely automated, courts will have to decide whether those decisions are equal to, better, or worse than those made by human officers.

3. How should we evaluate the unevenly distributed effects of police automation?

Finally, the future of police automation will not be evenly distributed. Part of the blame can be attributed to the hyper-local nature of policing. There are no “police” in general; we have thousands of law enforcement agencies subject to the local influences of budgets, politics, and priorities.<sup>18</sup> Even within cities and counties, some areas receive heavy police attention while others do not.<sup>19</sup> Midtown Manhattan is not Brownsville, and Westwood is not South Central Los Angeles.

Those neighborhoods already subjected to large numbers of police, innovations in police tactics, and disproportionate enforcement will be subjected to

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<sup>16</sup> See, e.g., Seth W. Stoughton, *Policing Facts*, 88 TUL. L. REV. 847, 849 (2014) (“In Fourth, Fifth, and Sixth Amendment cases, it is common for the [Supreme] Court to make an assertion about some broadly applicable aspect of policing—the environment in which officers operate, police practices, or what motivates officers, for example—and to rely on that assertion as it develops or justifies the scope and contours of constitutional law.”).

<sup>17</sup> Andrew Ferguson has offered the most thorough discussion of this position. See, e.g., Andrew Guthrie Ferguson, *Big Data and Predictive Reasonable Suspicion*, 163 U. PA. L. REV. 327 (2015).

<sup>18</sup> See, e.g., BRIAN A. REAVES, BUREAU OF JUSTICE STATISTICS, U.S. DEP’T OF JUSTICE, CENSUS OF STATE AND LOCAL LAW ENFORCEMENT AGENCIES, 2008, at 2 (2011), <https://www.bjs.gov/content/pub/pdf/csllea08.pdf> [<https://perma.cc/ZA4N-QPFV>] (census identifying 17,985 state and local law enforcement agencies).

<sup>19</sup> Disparate enforcement has been well documented for drug arrests. See, e.g., HUMAN RIGHTS WATCH, DECADES OF DISPARITY: DRUG ARRESTS AND RACE IN THE UNITED STATES (2009), <https://www.hrw.org/report/2009/03/02/decades-disparity/drug-arrests-and-race-united-states> [<https://perma.cc/TB55-BPS6>].

automated decisionmaking first. Automated decisionmaking already has raised troubling questions about those who are targeted by it. The emergence of “algorithmic accountability” asks how those directly affected by these decisions can ask to see the basis of these decisions, the data used to make them, and the possibility of error.<sup>20</sup> Journalists and researchers have already found that seemingly objective algorithms can reproduce the human biases of the engineers who designed them.

When coupled with the ability to interfere with individual liberties, automated policing may pose an even more extreme version of overpolicing already experienced by many. And when those decisions are unknowable—and executed by machines with human operators miles away—automated policing may exacerbate social inequalities in ways that have to be addressed.

Nearly or fully automated policing may be a version of a future that might not arrive for some time. But just as we worry about the impact automation will have on a wide range of professions, so too should we consider the questions that will arise should policing become significantly automated. Thinking about these questions well in advance can help plan for a future in which our current assumptions about policing may not hold.

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<sup>20</sup> The Association for Computing Machinery defines algorithmic accountability with this principle: “Institutions should be held responsible for decisions made by the algorithms that they use, even if it is not feasible to explain in detail how the algorithms produce their results.” ACM U.S. PUBLIC POLICY COUNCIL, STATEMENT ON ALGORITHMIC TRANSPARENCY AND ACCOUNTABILITY 2 (Jan. 12, 2017), [https://www.acm.org/binaries/content/assets/public-policy/2017\\_usacm\\_statement\\_algorithms.pdf](https://www.acm.org/binaries/content/assets/public-policy/2017_usacm_statement_algorithms.pdf).