

Robocops to the Rescue? Addressing Police Misconduct

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ROBOCOPS TO THE RESCUE? ADDRESSING POLICE MISCONDUCT

CLOVIA HAMILTON*

SCOTT J. SHACKELFORD**

ABSTRACT

One way to reduce misconduct when police have face-to-face interactions with citizens is to limit the number of such encounters. The use of smart policing technology such as robotics should be included in policing reform recommendations because of its potential to increase objectivity. Yet robotics, if not utilized ethically, could also open new avenues for abuse. This study focuses on identifying the risks and benefits of using a combination of AI and robotics (termed 'robocops' for purposes of this paper) from a technological, legal, and ethical perspective. Since robocops make use of AI, proper AI ethics is imperative to these ends, and thus guidance for a model smart policing regulation is advanced in this study. Twenty-five recommendations are made by building from available literature listing language that needs to be included in a comprehensive model regulation of smart policing that includes regulating robocops.

Key words: robocops, robots, security robots, service robots, killer robots, military robots, autonomous weapons, robophobia, police technology, policing, police reform, police misconduct, police abuse, defunding the police, police, peace officers, AI, AI ethics, AI bias, racial bias, discrimination, algorithmic bias, emotion detection technology, facial recognition technology, health predictions, mental health, public safety, surveillance, privacy, data privacy, data protection, data transparency, cybersecurity, smart policing, smart justice, militarization of policing, law enforcement, criminal justice, community policing, participatory budgeting, drones, body cameras

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“Dexter was pulled over for failing to wear his seat belt. Now this leaves many, many questions,” attorney Steven Hart said. “Why were tactical officers jumping out of an unmarked police car with their guns drawn for a simple traffic violation of not wearing a seatbelt?”

- Jimenez & Yan, CNN 2024¹

INTRODUCTION

In March 2024, Chicago police fired as many as 96 bullets in 46 seconds toward a man during a traffic stop, killing 26-year-old Dexter Reed in a residential neighborhood.² A policeman was shot by Reed in the forearm.³ The Civilian Office of Police Accountability is overseeing the investigation.⁴ Unfortunately, this incident has become but one of many data points that highlight the need to address police misconduct.

The world has become more conscious of police misconduct because of high-profile cases such as Tyre Nichols⁵ and George Floyd,⁶ which were

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¹ Omar Jimenez & Holly Yan, *96 Shots Fired in a Fatal Traffic Stop. Here's What the Bodycam Footage Shows*, CNN (Apr. 10, 2024), <https://www.cnn.com/2024/04/09/us/dexter-reed-chicago-police-shooting-video/index.html>.

² *Id.*

³ *Id.*

⁴ Tom Schuba & Frank Main, *Killing of Dexter Reed Raises Questions About Chicago Police Reform. 'The Message Is, Go in Guns Blazing.'*, Chi. Sun Times (Apr. 10, 2024), <https://chicago.suntimes.com/police-reform/2024/04/10/dexter-reed-killing-questions-chicago-police-reform>.

⁵ Adrian Sainz, *City of Memphis Releases New Documents Tied to Tyre Nichols' Death*, PBS News (Feb. 14, 2024), <https://www.pbs.org/newshour/nation/city-of-memphis-releases-new-documents-tied-to-tyre-nichols-death>.

⁶ Yamiche Alcindor & Amna Nawaz, *What We Know About George Floyd's Death in Minneapolis Police Custody*, PBS News (May 26, 2020), <https://www.pbs.org/newshour/nation/what-we-know-about-george-floydis-death-in-minneapolis-police-custody>.

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recorded with the use of police-worn body cameras and by bystanders. These incidents have fueled mistrust and fear between the public and the police in many communities across the country.⁷ But, they have also helped galvanize public attention in the United States and around the world.

Breonna Taylor was shot and killed by police in her Louisville, Kentucky home in March of 2020. A grand jury charged four police officers with related federal crimes.⁸ Daniel Prude also passed away in March 2020 because of asphyxia problems while being physically restrained by the police. After covering Prude's face with a spit hood, a police officer from Rochester, New York, pushed Prude's head into the pavement with his entire body weight. Homicide was declared the cause of death.⁹ George Floyd suffered a similar fate in Minneapolis, Minnesota, in May of 2020. There were nationwide demonstrations and calls to "defund the police" after George Floyd died at the hands of the police.¹⁰

Stories of purported police wrongdoing persist despite these demonstrations. One such instance is the August 2020 shooting in Wisconsin that resulted in Jacob Blake being shot seven times in the back by police officers.¹¹ These wounds caused permanent lower limb paralysis.¹² Further, in May 2024, twenty-three year old African American U.S. Airforce Airman Roger Fortson was fatally shot by Florida

⁷ See Sam Kamin, *Unreasonable Traffic Stops*, 65 Wm. & Mary L. Rev. 1349, 1367 (2024); Ian T. Adams et al., *Turnover in Large US Policing Agencies Following the George Floyd Protests*, 88 J. Crim. Just. 102105, 4 (2023); Omavi Shukur, *The Criminalization of Black Resistance to Capture and Policing*, 103 B.U. L. Rev. 1, 48 (2023).

⁸ See Press Release, U.S. Dep't of Just., Current and Former Louisville, Kentucky Police Officers Charged with Federal Crimes Related to Death of Breonna Taylor (Aug. 4, 2022), <https://www.justice.gov/opa/pr/current-and-former-louisville-kentucky-police-officers-charged-federal-crimes-related-death>; Indictment, United States v. Meany, No. 3:22-CR-00085, (W.D. Ky. Aug. 22, 2024); Indictment, United States v. Hankinson, No. 3:22-cr-84-RGJ, (W.D. Ky. Oct. 30, 2024); Information, United States v. Goodlett, 3:22-CR-86-DJH, (W.D. Ky. Aug. 4, 2022).

⁹ Rachel Martin & Liz Baker, *Daniel Prude's Death Ruled a Homicide. He Was Restrained by Police.*, NPR (Sept. 3, 2020), <https://www.npr.org/2020/09/03/909086022/daniel-prudes-death-ruled-a-homicide-he-was-restrained-by-police>.

¹⁰ Richard A. Oppel Jr. et al., *What to Know About Breonna Taylor's Death*, N.Y. Times (Aug. 23, 2024), <https://www.nytimes.com/article/breonna-taylor-police.html>.

¹¹ *Jacob Blake: What We Know About Wisconsin Police Shooting*, BBC (Aug. 31, 2020), <https://www.bbc.com/news/world-us-canada-53909766> (last visited Feb. 10, 2025).

¹² Christianna Silva, *Jacob Blake Shares Beside Video from Hospital: 'Every 24 Hours There's Pain'*, NPR (Sept. 6, 2020), <https://www.npr.org/2020/09/06/910285667/jacob-blake-shares-bedside-video-from-hospital-every-24-hours-there-s-pain>.

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deputies.¹³ They received a call from one of Fortson's neighbors about an alleged disturbance.¹⁴ The deputies went to the wrong apartment and knocked on Fortson's door.¹⁵ Fortson was home alone on a Facetime call and asked who was at the door.¹⁶ When there was no answer, he retrieved his gun.¹⁷ Fortson then opened the door holding his gun pointing down.¹⁸ The deputies shot him six times, killing him.¹⁹ There is police body camera footage that shows the deputies shot before asking Roger to drop his gun.²⁰

In July 2024, Sangamon County Sheriff's Deputy Sean Grayson was charged with first-degree murder, aggravated battery with a firearm and official misconduct in the death of African American Sonya Massey.²¹ Massey called the police after suspecting a prowler near her home. There is body camera footage of Massey at her stove. Grayson claims he told Massey to put the pot of water down and threatened to shoot her.²² According to reports of the incident: "Massey duck[ed] behind a counter, puts her hands up, apologizes then comes up and has the upended pot in her hand."²³ Grayson shot her just below her left eye, killing her, rather than using his non-lethal options.²⁴

¹³ David Fischer, *Florida Deputies Who Fatally Shot US Airman Burst into Wrong Apartment, Attorney Says*, Associated Press (May 8, 2024), <https://apnews.com/article/police-shooting-airman-florida-8bcc82463ada69264389edf2a4f1a83d>.

¹⁴ Li Zhou, *What We Know About the Police Killing of Black Air Force Member Roger Fortson*, Vox (June 4, 2024), <https://www.vox.com/24153974/roger-fortson-police-killing>.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Jonathan Franklin, *Roger Fortson's Family Demands Charges Against Sheriff's Deputy Who Killed Him*, NPR (Aug. 16, 2024), <https://www.npr.org/2024/08/16/nx-s1-5078551/roger-fortson-family-demands-charges-in-his-death>.

²⁰ Zhou, *supra* note 14.

²¹ Emmanuel Camarillo, *In Chicago, Civil Rights Leaders Want Sonya Massey's Killing to Be a Catalyst for Police Reform*, Chi. Sun Times (July 30, 2024), <https://chicago.suntimes.com/crime/2024/07/30/sonya-massey-slaying-sharpton-crump-police-reform-shooting-sangamon-county-crime-civil-rights>.

²² *Id.*

²³ Beth Hundsdorfer, *Sonya Massey, Mother Called 911 Multiple Times in Days Before Her Death to Report Mental Health Crises*, Capitol News Ill. (July 31, 2024), <https://capitolnewsillinois.com/news/sonya-massey-mother-called-911-multiple-times-in-days-before-her-death-to-report-mental-health-crises/>.

²⁴ Camarillo, *supra* note 21.

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In August 2024, an Ohio police officer was indicted for fatally shooting Ta’Kiya Young, an African American pregnant 21-year-old.²⁵ The officers approached her as she sat in her car located in a parking lot because they suspected her of shoplifting.²⁶ They ordered her out of her car and she asked, “Are you going to shoot me?”²⁷ She then turned the car’s wheel to the right, the car rolled slowly forward, and the officer fired his gun killing her and her unborn child.²⁸

In a 2020 study, researchers at the Harvard School of Public Health found that Black people were more than three times as likely to be killed by police during an encounter.²⁹ Despite the apparent problems, many are split on proposed solutions. According to U.S. Senator James Clyburn, the U.S. Congress can “reimagine policing,” without cutting off funding for the police.³⁰ Another movement is called ‘participatory budgeting’ where citizens can participate in legislative and public oversight strategies that determine how police should spend funds.³¹ The spending would include funding new technology.³²

One underappreciated aspect of this reform effort is the use of new technologies including artificial intelligence (AI) and robotics to address this prevailing problem. Numerous instances of police brutality show that policing needs to be redesigned to better prioritize human rights. The advent of new robotic technologies is a promising solution. So-called “smart policing” is the use of data, data analytics and innovations

²⁵ Patrick Orsagos & John Seewer, *Ohio Police Officer Charged with Murder in Shooting of Pregnant Black Woman Who Was Accused of Shoplifting*, PBS (Aug. 13, 2024), <https://www.pbs.org/newshour/nation/ohio-police-officer-charged-with-murder-in-shooting-of-pregnant-black-woman-who-was-accused-of-shoplifting>.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*; Also note that “The Blendon Township police department’s use of force policy says officers should try to move away from an approaching vehicle instead of firing their weapons. An officer should only shoot when he or she ‘reasonably believes there are no other reasonable means available to avert the imminent threat of the vehicle, or if deadly force other than the vehicle is directed at the officer or others.’” *Id.*

²⁹ Gabriel L. Schwartz & Jaquelyn L. Jahn, *Mapping Fatal Police Violence Across U.S. Metropolitan Areas: Overall Rates and Racial/Ethnic Inequities, 2013-2017*, 15 PLoS ONE, June 24, 2020, at 1, 5.

³⁰ Chandelis Duster, *Clyburn Says He Does Not Support Defunding the Police*, CNN (June 14, 2020), <https://www.cnn.com/2020/06/14/politics/james-clyburn-defund-police-cnntv/index.html>.

³¹ Hannah Block-Wehba, *Algorithmic Governance from the Bottom Up*, 48 BYU L. Rev. 69, 121-22 (2022).

³² *Id.*

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to reduce crime,³³ and include such technologies as robotics and surveillance cameras. This paper focuses on the use of robocops by police departments by investigating the applicable federal and state laws regulating their use, along with the applicable caselaw and ethical norms. Significant governance gaps exist in this field, leaving many police departments to navigate this uncertain terrain with relatively little guidance, which this paper attempts to provide. The term robocops is defined as the use of robots and AI in policing. Robots include anthropomorphic human scaled robots.³⁴ They can be the size and shape of a police dog, drones, and other robotic police technologies.

This article is structured as follows. Part I discusses how robocops are not coming, but rather are already in use. Part II summarizes the U.S. federal government's use of robotics for national defense. Part III provides a review of related state laws in the use of robotic drones, robocops, body cameras and facial recognition technology for policing. There is also a look at pending and enacted state laws related to data privacy and data access. Part IV describes local reform attempts in New York City and San Francisco. Part V examines common law and ethical privacy and bias concerns relevant to robocops. Part VI features a discussion of twenty-five recommended topics that should be addressed in a model smart policing regulation which includes regulating robocops.

I. INTRODUCING ROBOCOPS

Robots can be used in hazardous environments and provide law enforcement with real-time situational awareness.³⁵ For example, in Dallas, the police discovered and killed a sniper who opened fire on police in 2016.³⁶ They did so by attaching a pound of C4 explosives to a remote-

³³ James R. Coldren Jr. et al., *Introducing Smart Policing: Foundations, Principles, and Practice*, 16 *Police Q.* 275, 275 (2013).

³⁴ Xin Ye & Lionel P. Robert Jr., *Human Security Robot Interaction and Anthropomorphism: An Examination of Pepper, RAMSEE, and Knightscope Robots*, *RO-MAN* 2023 1, 1 (2023), <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/177033/Ye%20and%20Robert%202023%20%28Final%20Submitted%29.pdf?sequence=1&isAllowed=y>. Ye points out that people's trust of security robots does not vary with the different shapes and sizes of these devices. *Id.*

³⁵ Drew Kann, *Why Your Local Police Force Loves Robots*, *CNN* (Apr. 18, 2017), <https://www.cnn.com/2016/11/10/us/police-officers-future-technology-lisa-ling/index.html>.

³⁶ Sara Sidner & Mallory Simon, *How Robot, Explosives Took Out Dallas Sniper In Unprecedented Way*, *CNN* (Jul. 12, 2016), <https://www.cnn.com/2016/07/12/us/dallas-police-robot-c4-explosives/index.html>.

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controlled robot, and guiding it towards the sniper.³⁷ For the first time, robotics and deadly force were used in conjunction by the police.³⁸ The robot, which resembled a lawnmower, may or may not have been used with lethal force.³⁹ For instance, a spokesperson for Boston Dynamics, a company that makes robocops, said that their approved usage guidelines for their robots forbid the weaponization of their products.⁴⁰

A beneficial example of the use of robocops is that police officers can avoid high-risk vehicle pursuits by using a robotic dog to monitor marked automobiles remotely.⁴¹ In one case, homeowners in Mountain View, California, reported a man brandishing a knife to the police.⁴² To find the suspect, the police employed drones to record live footage.⁴³ The police were able to defuse the situation without resorting to physical force because the drone video showed that “the man did not have any visible weapons on him.”⁴⁴ Robotic police dogs, according to the St. Petersburg, Florida police department, can also be deployed to defuse tensions and prevent the need for physical force.⁴⁵

Another instance featured a robot being used during a manhunt to lift a tarp and shield the police from a bombing suspect. This happened

³⁷ *Id.*

³⁸ Elizabeth E. Joh, *Policing Police Robots*, 64 UCLA L. Rev. 516, 518 (2016); Elizabeth E. Joh, *Police Robots Need to be Regulated to Avoid Potential Risks*, NY Times (Nov. 16, 2016), <https://www.nytimes.com/roomfordebate/2016/07/14/what-ethics-should-guide-the-use-of-robots-in-policing/police-robots-need-to-be-regulated-to-avoid-potential-risks>.

³⁹ Lauren Silverman, *Robot Used by Dallas Police to Kill Gunman Sparks Debate*, NPR (July 11, 2016), <https://www.npr.org/2016/07/11/485593444/robot-used-by-dallas-police-to-kill-gunman-sparks-debate>.

⁴⁰ Matt O'Brien & Jennifer Sinco Kelleher, *Robotic Police Dogs: Useful Hounds or Dehumanizing Machines?*, AP News (July 30, 2021), <https://apnews.com/article/robotic-police-dogs-e32e371e8776b8565f1a0f6491e55c29>.

⁴¹ *Mayor Adams and NYPD Roll Out High-Tech Crime Fighting Tools in Times Square*, ABC7 New York (Apr. 11, 2023), <https://abc7ny.com/nypd-robocop-digidog-new-york-city-crime/13112974/>.

⁴² Danielle Abril, *Drones, Robots, License Plate Readers: Police Grapple with Community Concerns as They Turn to Tech for Their Jobs*, The Washington Post (Mar. 9, 2022), <https://www.washingtonpost.com/technology/2022/03/09/police-technologies-future-of-work-drones-ai-robots/>.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

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during the 2013 manhunt for the Boston Marathon bomber.⁴⁶ Robocops are being used in states across the United States of America, such as Texas,⁴⁷ California,⁴⁸ Colorado,⁴⁹ New Jersey,⁵⁰ New York,⁵¹ Hawaii,⁵² and Massachusetts.⁵³ In fact, robocops are currently on patrol in several jurisdictions across the globe. See examples in Tables 1 and 2 in the Appendix.⁵⁴ Note that drones are also robots and can be used in policing. However, drones are not included in Tables 1 and 2 because drones are more well-known than the robocops samples that are listed.

Further, some robocops can carry weapons.⁵⁵ There has been quite a bit of legal scholarship about “killer robots.”⁵⁶ Because of its inherent technological objectivity, robocop smart technology under proper management can enhance ethics in policing. Effective technology management combined with smart policing may help reduce racial bias and abuse in law enforcement.

Traffic penalties can serve as a substantial revenue source for local governments in certain areas. It is important to note that traffic contacts

⁴⁶ Janie Har & Claudia Lauer, *US Police Rarely Deploy Deadly Robots to Confront Suspects*, AP News (Dec. 5, 2022, 7:44 PM), <https://apnews.com/article/technology-business-police-california-gun-politics-162a3eadb8b6b2e4e541c5bd1d6c8e46>.

⁴⁷ Silverman, *supra* note 39.

⁴⁸ Daniel Wu, *Can Police Use Robots to Kill? San Francisco Voted Yes.*, The Washington Post (Nov. 30, 2022), <https://www.washingtonpost.com/nation/2022/11/30/san-francisco-police-robots-kill/>.

⁴⁹ Kann, *supra* note 35.

⁵⁰ *Id.*

⁵¹ Mayor Adams and NYPD Roll Out High-Tech Crime Fighting Tools in Times Square, *supra* note 41.

⁵² Abril, *supra* note 42.

⁵³ Har & Lauer, *supra* note 46.

⁵⁴ See Appendix *infra* pp. 64-70 (finding examples of robocops on patrol in several jurisdictions across the globe).

⁵⁵ See Quentin Cooper, *Myth of the 'Real-Life Robocop'*, BBC (Feb. 12, 2014), <https://www.bbc.com/future/article/20140213-myth-of-the-real-life-robocop> (discussing the Russian FEDOR robocop); Joh, *supra* note 38.

⁵⁶ See Ashley Deeks, *High-Tech International Law*, 88 Geo. Wash. L. Rev. 574, 578 (2020); Rebecca Crootof, *The Killer Robots Are Here: Legal and Policy Implications*, 36 Cardozo L. Rev. 1837, 1837 (2015); Elizabeth E. Joh, *The New Surveillance Discretion: Automated Suspicion, Big Data, and Policing*, 10 Harv. L. & Pol'y Rev. 15 (2016); Bonnie Docherty, *Heed the Call: A Moral and Legal Imperative to Ban Killer Robots*, Human Rights Watch (Aug. 21, 2018), <https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots>; Mary Wareham, *Don't Arm Robots in Policing: Proposed New York City Law a Model for Regulation*, Human Rights Watch (Mar. 24, 2021), <https://www.hrw.org/news/2021/03/24/dont-arm-robots-policing>.

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with police account for most face-to-face confrontations between individuals and police officers in the United States. Between 2002 and 2008, forty million residents had face-to-face contact with police.⁵⁷ Most of the contacts were “with police when driving a vehicle that was pulled over in a traffic stop.”⁵⁸ In 2020, there were nearly fifty-four million such encounters.⁵⁹ Three percent of these police encounters involved traffic accidents with the police.⁶⁰ During face-to-face confrontations, officers make the decision to pull over drivers based on their judgement.

In a high-profile case, in 2015, African American Sandra Bland was arrested for a minor traffic violation and died in detention.⁶¹ She had received multiple traffic summonses due to living in a specific jurisdiction.⁶² Imagine if smart policing technology was used for traffic policing instead of these face-to-face confrontations. For example, South Korea has implemented a smart policing advance traffic monitoring system that identifies traffic violations from a traffic center using surveillance cameras and license plate readers.⁶³ Some police forces in the U.S. are implementing robotics to reduce the need for human officers. For example, in June 2019, the Huntington Park, California police department unveiled the HP Robocop.⁶⁴ It contains 360° cameras for police surveillance and monitoring.⁶⁵ The HP Robocop was deployed to

⁵⁷ CHRISTINE EITH & MATTHEW R. DUROSE, U.S. DEPT OF JUST., BUREAU OF JUST. STAT., SPECIAL REPORT: CONTACTS BETWEEN THE POLICE AND THE PUBLIC, 2008 1 (2011).

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Ray Sanchez, *Who Was Sandra Bland?*, CNN (July 23, 2015), <https://www.cnn.com/2015/07/22/us/sandra-bland/index.html>.

⁶² Laura I. Appleman, *Nickel and Dimed into Incarceration: Cash-Register Justice in the Criminal System*, 57 B.C. L. Rev. 1483, 1484 (2016).

⁶³ MINISTRY OF LAND INFRASTRUCTURE & TRANSP. (MOLIT), MOLIT ESTABLISHES THE MASTER PLAN FOR INTELLIGENT TRANSPORTATION SYSTEM 2030 (‘21~’30) 1 (2021).

⁶⁴ Jasper Hamill, *Real-life 'Robocop' Hits the Streets to Fight Crime and Bust Lawbreakers*, Metro News, (Jun. 20, 2019, 10:38am), <https://metro.co.uk/2019/06/20/real-life-robocop-hits-streets-fight-crime-bust-lawbreakers-10017573/>.

⁶⁵ *Id.*

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patrol open spaces like parks, dissuade criminal activity, and free up police resources to address community issues.⁶⁶

Yet, in the rush to adopt robotics and generative AI, police departments and policymakers alike have failed to account for the privacy, bias and security issues that arise with these technologies. Regulation has not kept pace with these technological developments. The political barriers to advancing reforms particularly at the federal level are high, necessitating a focus on bottom-up opportunities to change the status quo such as through a model regulation pertaining to law enforcement's use of these technologies.

A critical evaluation of the technically and morally sound management of robocops in smart policing was published in 2022.⁶⁷ The killing of George Floyd by police, which sparked police brutality protests across the globe, served as the impetus for that study. The study concluded that although smart policing is sought for its efficiency, ethical concerns and associated citizen needs are not satisfied.⁶⁸ Even though smart policing offers advantages, law enforcement should also consider how technology is affecting society and the need for "smart justice."⁶⁹ Research has shown that investments in smart policing should be part of reinvented policing.⁷⁰ Robocops may reduce the risk of harm coming to criminal suspects and increase the security of arrests, detentions, and searches. Robocops may also be used to increase police officer safety by removing cops from potentially violent situations.⁷¹

There are two primary views on the use of robocops among scholars. Opponents are cautionary of robocops and amongst these include University of California Davis School of Law Professor Elizabeth Joh.⁷²

⁶⁶ Katie Flaherty, *A RoboCop, a Park and a Fight: How Expectations About Robots are Clashing with Reality*, NBC News, (Oct. 4, 2019, 4:38 AM EDT), <https://www.nbcnews.com/tech/tech-news/robocop-park-fight-how-expectations-about-robots-are-clashing-reality-n1059671>.

⁶⁷ Sira Maliphol & Clovia Hamilton, *Smart Policing: Ethical Issues & Technology Management of Robocops*, 2022 IEEE PICMET Annual Conference (2022).

⁶⁸ *Id.* at. 4, 8-9.

⁶⁹ *Id.* at. 9. Smart justice is a term coined by Maliphol & Hamilton. One of the initial problems of defining Smart Policing is that the definition has been narrowly constrained to violent crimes committed by civilian offenders. In 2022, Maliphol & Hamilton argued that the definition needs to be expanded to include all aspects of policing and in doing so, it needs to expand towards Smart Justice. *Id.*

⁷⁰ *See generally id.* Smart policing includes technology objectivity that has the potential to improve policing and ethical outcomes. *Id.*

⁷¹ Joh, *supra* note 38.

⁷² *Id.*

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With regard to the City of San Francisco's armed robots, she stated that their equipment policy allowing such use would erode public trust in law enforcement given how the murder of George Floyd led to global demonstrations against police brutality and systemic racism.⁷³ In contrast, Yana Welinder, a nonresidential fellow at the Stanford Center for Internet and Society and an affiliate at the Berkman Center for Internet and Society at Harvard, is a proponent of these technologies.⁷⁴ Welinder advocates that police robots could reduce the use of deadly force by police.⁷⁵ In alignment with this view, in 2021, researcher Anna Gurinskaya found that 50% of her 570 research study participants in St. Petersburg support robocops patrolling the streets.⁷⁶ Gurinskaya attributes this to the fear of police and victimization.⁷⁷

II. FEDERAL USE OF ROBOTICS FOR NATIONAL DEFENSE

A. Transfer of Military equipment to police departments

The U.S. military uses robots for a wide array of purposes. For example, the U.S. Air Force used a Vision 60 robot dog to replace warfighters in certain situations to keep those fighters safe.⁷⁸ New American Foundation researcher Peter Singer states that the military first armed robots at military checkpoints in 2011. But, the police first armed a robot with a lethal weapon in 2016.⁷⁹ The City of Dallas was first and purchased their Androx Mark V A-1 robocop from Northrup Grumman in 2008.⁸⁰

⁷³ Michael Levenson, *San Francisco Considers Allowing Use of Deadly Robots by Police*, N.Y. Times (Dec. 7, 2022), <https://www.nytimes.com/2022/11/30/us/police-robots-san-francisco.html>.

⁷⁴ Yana Welinder, *Police Robots Could Reduce the Use of Deadly Force*, New York Times, (Jul. 14, 2016),

<https://www.nytimes.com/roomfordebate/2016/07/14/what-ethics-should-guide-the-use-of-robots-in-policing/police-robots-could-reduce-the-use-of-deadly-force>.

⁷⁵ *Id.*

⁷⁶ Anna Gurinskaya, *Support for Robocops: Measuring Effects of Attitudes towards Police and Policing Technologies*, in 1503 Communications in Computer and Information Science 237, 243 (Springer, Cham. 2021).

⁷⁷ *Id.* at. 244.

⁷⁸ See U.S. Department of Defense, *Robot Dog* (2022), <https://www.defense.gov/Multimedia/Photos/igphoto/2003050362/>.

⁷⁹ Kassia Halcli & Gretchen Frazee, *Robot-delivered Lethal Explosive in Dallas Police Standoff was a First, Experts Say*, PBS News, (Jul. 8, 2016), <https://www.pbs.org/newshour/science/robot-delivered-lethal-explosive-in-dallas-police-standoff-was-a-first-experts-say>.

⁸⁰ Sidner & Simon, *supra* note 36.

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The military sends their obsolete robotic devices to police departments for their use. Research conducted by the Center for the Research of Drones at Bard College found that 987 robots were transferred from the U.S. military to local police departments nationwide between May 2003 and May 2016, and an additional 201 robots were transferred in the first half of 2016.⁸¹ These transfers were mostly made to California.⁸² By September 2020, 451 robots valued at \$20.4 million were transferred under the U.S. Federal Government's 1033 program.⁸³ The transfers of surplus equipment from the U.S. Department of Defense (DOD) to police departments began in the 1990s.⁸⁴ The Obama administration stopped the transfers in 2015.⁸⁵

The use of robots by police is concerning because some view the use of robocops as the militarization of policing. For example, the American Civil Liberties Union (ACLU) voiced concerns in 2021 about the weaponization of these gadgets in connection to the use of fatal force.⁸⁶ The ACLU has also expressed concern over there being insufficient oversight of the use of this equipment by police departments.⁸⁷ Policing is viewed as escalatory, and perhaps even war-like, when officers are armed

⁸¹ Kann, *supra* note 25. Note the Bard College Center for the Research of Drones closed operations in 2020. Bard College, *About The Center for the Study of the Drone at Bard College* (2020), available at <https://dronecenter.bard.edu/about/>.

⁸² *Id.*

⁸³ See Adam Andrzejewski, Thomas W. Smith, & Tom Coburn, OpenTheBooks, *Program 1033: \$1.8 Billion in Military Gear Transferred to 8,200 Local Police Agencies* (2020), at 4, https://www.openthebooks.com/assets/1/6/Program_1033_final.pdf; Adam Andrzejewski, *California Leads All States In Taking Advantage Of Military Surplus War-Gear Under Program 1033*, *Forbes*, (Sept. 17, 2020), <https://www.forbes.com/sites/adamandrzejewski/2020/09/17/california-leads-all-states-in-taking-advantage-of-military-surplus-war-gear-under-program-1033/>.

⁸⁴ Dan Gettinger, *How American Police Receive Robots from the U.S. Military*, Bard Coll. Ctr. for the Study of the Drone (Aug. 25, 2014), <https://dronecenter.bard.edu/how-american-police-receive-robots-from-the-u-s-military/>.

⁸⁵ W.J. Henningan & Brian Bennett, *Dallas Police Used a Robot to Kill a Gunman, a New Tactic that Raises Ethical Questions*, *L.A. Times* (Jul. 8, 2016), <https://www.latimes.com/nation/la-na-dallas-robot-20160708-snap-story.html>.

⁸⁶ Jay Stanley, *Robot Police Dogs are Here. Should We be Worried?*, ACLU News & Commentary (Mar. 2, 2021), <https://www.aclu.org/news/privacy-technology/robot-police-dogs-are-here-should-we-be-worried>.

⁸⁷ Charlotte Lawrence & Cyrus J. O'Brien, *Federal Militarization of Law Enforcement Must End*, ACLU (2021), <https://www.aclu.org/news/criminal-law-reform/federal-militarization-of-law-enforcement-must-end>.

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with millions of dollars in military-grade equipment, and more civilians are likely to be injured.⁸⁸

In terms of policing militarization, it is important to note that peaceful encounters account for 90% of all police calls for service.⁸⁹ Yet, confrontations may become violent, and the police may contribute to the escalation because they are trained in the use of force tactics. Additionally, protesting police violence is often met with police threats.⁹⁰ Philip McHarris, a researcher at Yale University's Sociology and African American Studies Department argues that “[i]nstead of threatening protesters with police, we could deal honestly with the pain driving people to the streets.”⁹¹

The public is particularly concerned about armed robocops. For example, researcher Alireza Javaheri and her team studied public sentiment over robots and concluded that people are concerned about military robots (as described with the words weaponry and security) and have been from 2010-2020.⁹² Militarization is especially concerning in the U.S. and around the world. For instance, after sharing a video of a robot brandishing two pistols, Dmitry Rogozin, the Deputy Prime Minister of Russia, apologized and clarified that the goal was not to build a terminator but rather to teach their robot to make judgments in emergency scenarios.⁹³

⁸⁸ Ryan Welch & Jack Mewhirter, *Does Military Equipment Lead Police Officers to be More Violent? We Did the Research*, Washington Post (Jun. 30, 2017), <https://www.washingtonpost.com/news/monkey-cage/wp/2017/06/30/does-military-equipment-lead-police-officers-to-be-more-violent-we-did-the-research/>.

⁸⁹ Rashawn Ray, *What Does 'Defund the Police' Mean and Does it Have Merit?*, Brookings Inst. (June 19, 2020), <https://www.brookings.edu/articles/what-does-defund-the-police-mean-and-does-it-have-merit/>.

⁹⁰ *Id.*

⁹¹ Tracie L. Keese, *After this Crisis, Policing Should Never be the Same*, Washington Post (Jun. 4, 2020), <https://www.washingtonpost.com/opinions/2020/06/04/after-this-crisis-policing-should-never-be-same/>.

⁹² ALIREZA JAVAHERI ET AL., *PUBLIC VS MEDIA*

OPINION ON ROBOTS AND THEIR EVOLUTION OVER RECENT YEARS, CCF TRANS. PERVASIVE COMPING INTERACTIONS (2020), https://www.researchgate.net/publication/343165465_Public_vs_media_opinion_on_robots_and_their_evolution_over_recent_years.

⁹³ K. Jayanth Murali, *Rise of the Police Robots Hyderabad has Launched the Country's First Smart Policing Robot Called the Smart Robocop*, Deccan Chronicle (Nov. 7, 2018), <https://www.jayanthmurali.com/blog/2018/11/07/rise-of-the-police-robots/>.

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Regarding police militarization, in 2014, Kelly Jones Sharp, Director of Communications for the ACLU, highlighted that drones must be appropriately used, monitored, and subjected to public inspection.⁹⁴ And in 2018, the City of Bloomington, Indiana tried to acquire a Lenco BearCat counterattack vehicle in reaction to school shootings.⁹⁵ This was a highly contentious effort. Detractors believed that the militarization of law enforcement would lead to an increase in neighborhood violence, citing the social psychology phenomena known as the "Weapons Effect."⁹⁶ This theory states that the use of military gear is a stimulant linked to aggression, and as a result, the role of the police may change. The people may be treated like an enemy force by the police, who may react to them like a soldier would.⁹⁷

In a 1976 speech, French social theorist Michel Foucault expressed fear that Western colonization through military force could lead to the militarization of urban streets.⁹⁸ This phenomenon is known as "Foucault's Boomerang."⁹⁹ Protests against police abuse following George Floyd's death were met with harsh and militaristic policing that are in line with this hypothesis.¹⁰⁰

B. *AI Integrated Robots*

Robots can be integrated with AI systems that enable the robots to imitate human capabilities.¹⁰¹ "AI-powered robots are augmented with a variety of sensors (including vision devices such as 2D/3D cameras,

⁹⁴ Jane Henegar, *ACLU: Militarization of Police a Concern*, STAR PRESS (Aug. 21, 2014), <https://www.thestarpress.com/story/opinion/contributors/2014/08/21/aclu-militarization-police-concern/14388731/>.

⁹⁵ *Militarization of Police Will Lead to More Violence*, HERALD TIMES (Mar. 28, 2018), <https://www.heraldtimesonline.com/story/opinion/2018/03/28/militarization-of-police-will-lead-to-more-violence/46849229/>.

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ Stephen Graham, *Foucault's Boomerang: The New Military Urbanism*, OPEN DEMOCRACY (Feb. 14, 2013), <https://www.opendemocracy.net/en/opensecurity/foucaults-boomerang-new-military-urbanism/>.

⁹⁹ *Id.*

¹⁰⁰ Dario McCarty, *Foucault's Boomerang: How Tactics of Repression From Abroad Have Found Their Way Home*, MEDIUM (July 24, 2020), <https://dariolorenzo.medium.com/foucaults-boomerang-how-tactics-of-repression-from-abroad-have-found-their-way-home-49c03ba7c9e4>.

¹⁰¹ Intel Corp., *Robots and Artificial Intelligence Overview*, INTEL <https://www.intel.com/content/www/us/en/robotics/artificial-intelligence-robotics.html> (last visited Feb. 26, 2025).

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vibration sensors, proximity sensors, accelerometers, and other environmental sensors) that feed them with sensing data they can analyze and act upon in real-time.”¹⁰² It is important to note that leaps in AI with the new generative AI tools means leaps in the advancement of robots.¹⁰³ There is technology called teleoperation whereby a human performs a task hundreds of times and the data is used to train an AI robot’s model.¹⁰⁴ “[T]he AI models are very similar to the GPT style generative AI model.”¹⁰⁵ The data from hundreds of trials is fed into the model and the AI integrated robot learns how to do tasks autonomously.¹⁰⁶ Now, does not take months to code the model. It can be generated out of generative AI.¹⁰⁷

In 2020, the U.S. DOD adopted five principles of AI ethics.¹⁰⁸ After fifteen months of developing the principles, the Defense Innovation Board (DIB) recommended that: (1) DOD personnel are to remain responsible for the development, deployment and use of AI capabilities; (2) the DOD will take deliberate steps to minimize unintended bias in AI capabilities; (3, 4, 5) DOD AI capabilities will be traceable, reliable, and governable.¹⁰⁹ Regarding traceability, the DOD will develop and deploy AI capabilities “such that relevant personnel possess an appropriate understanding of the technology, development processes and operational methods applicable to AI capabilities, including with transparent and auditable methodologies, data sources and design procedures and documentation.”¹¹⁰ Thus, traceability seems to mean auditable. Governable means that the AI capabilities are “to fulfill their intended functions while possessing the ability to detect and avoid unintended consequences, and [have] the ability to disengage or deactivate” if they

¹⁰² *Id.*

¹⁰³ See Kate Rooney, *Inside Big Tech’s A.I. Robot Race*, NBC News, at 00:27 (July 10, 2024), <https://www.nbcnews.com/now/video/inside-big-tech-s-a-i-robot-race-214619717993>; Kate Rooney, *Why Nvidia, Tesla, Amazon and More Are Betting Big on AI-Powered Humanoid Robots*, CNBC (July 8, 2024), at 1:52, <https://www.youtube.com/watch?v=v0uKLCZocjs>.

¹⁰⁴ Kate Rooney, *Inside Big Tech’s A.I. Robot Race*, NBC News, at 00:48-00:56 (July 10, 2024), <https://www.nbcnews.com/now/video/inside-big-tech-s-a-i-robot-race-214619717993>.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 01:02-01:15.

¹⁰⁸ C. Todd Lopez, *DOD Adopts 5 Principles of Artificial Intelligence Ethics*, U.S. Dep’t of Def. (Feb. 25, 2020), <https://www.defense.gov/News/News-Stories/article/article/2094085/dod-adopts-5-principles-of-artificial-intelligence-ethics/>.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

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demonstrate unintended behavior.¹¹¹ Police departments that purchase robocops integrated with AI and their robocop vendors that design and manufacture these capabilities can apply these same principles.

AI needs to be governed by regulation. Legal scholars Gary E. Marchant and Carlos Ignacio Gutierrez delve into the governance of AI using “soft law.”¹¹² Soft law encompasses instruments that establish substantive expectations but lack direct enforceability by governments.¹¹³ Examples include “codes of conduct, ethical statements, professional guidelines, statements of principles, certification programs, private standards, public-private partnerships, or voluntary programs.”¹¹⁴ Recognizing the transformative impact of AI, Marchant and Gutierrez propose a Soft Law 2.0 model that includes ways to implement non-regulatory soft law initiatives and assure compliance.¹¹⁵ Drawing insights from existing soft law programs and lessons from other technologies, Marchant and Gutierrez published a toolbox of thirteen mechanisms to enhance the effectiveness and credibility of AI soft law governance.¹¹⁶

In addition, President Joe Biden signed and ordered the 2023 *Executive Order on the Safe, Secure and Trustworthy Development and Use of AI*, which states that AI has the potential for promise and peril; and must be safe and secure. This Executive Order requires that a study report on this issue be drafted by October 2024.¹¹⁷ The findings from this report will likely be relevant to the regulation of AI integrated robocops.

Further, legal scholars Bryan Casey and Mark Lemley advocate that human robot interaction blurs the lines between robots, other machines and humans.¹¹⁸ This “means that regulations specifically targeting robots

¹¹¹ *Id.*

¹¹² Gary E. Marchant & Carlos Ignacio Gutierrez, *Soft Law 2.0: An Agile and Effective Governance Approach for Artificial Intelligence*, 24 Minn. J. L. Sci. & Tech. 375, 377 (2023).

¹¹³ *Id.*

¹¹⁴ *Id.* at. 377.

¹¹⁵ *Id.* at. 378.

¹¹⁶ *Id.* at. 403-424.

¹¹⁷ EXEC. ORDER NO. 14110, Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, 88 Fed. Reg. 75191 § 9(iii) (Oct. 30, 2023), <https://www.federalregister.gov/documents/2023/11/01/2023-24283/safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence> (mentioning the need for privacy impact assessments and includes a Request for Information (RFI) on how to protect privacy).

¹¹⁸ Bryan Casey & Mark A. Lemley, *You Might Be a Robot*, 105 Cornell L. Rev. 287, 290-92 (2020).

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need to be pretty clear about exactly who or what they're attempting to regulate."¹¹⁹

III. REVIEW OF STATE LAWS

Part III is a review of laws related to policing technology at the state level in the U.S. Some of these states' pending and enacted regulations are clear and comprehensive. The lessons gleaned from these regulations can be used toward developing a model regulation of smart policing technology.

The National Conference of State Legislatures (NCSL) has tracked legislation related to autonomous vehicles and policing. The NCSL databases on autonomous vehicles and policy were searched for pending and enacted laws in the following areas: (1) autonomous vehicle cybersecurity & privacy of collected data; (2) policing robots' data & transparency; (3) policing drones' data & transparency; (4) policing privacy; (5) policing facial recognition technology; and (6) policing body cameras.¹²⁰

Bills that were proposed but failed are not included in this review of state laws. While enacted laws are important to review and are included in this discussion, pending laws are also included because they provide insight into what legislators think is important to their constituents.

The rationale for reviewing the states' regulation of autonomous vehicles is that robocops can be stationary kiosks, remote controlled in real-time, or programmed to move about in a fully autonomous manner. Thus, concerns related to autonomous vehicles could be a useful comparison, as these are likely similar to concerns about autonomous robocops. The regulation of autonomous vehicles focused on the privacy of collected vehicle data and/or cybersecurity may shed light on topics to include in robocop regulations. Robocops will likely have similar privacy and cybersecurity concerns related to the data they collect.

Since drones are robots, reviewing the current regulation of drones is helpful. Since body camera concerns have been discussed, the states' regulation of body cameras, facial recognition and privacy related to policing was reviewed for this analysis. The NCSL database was narrowly

¹¹⁹ *Id.* at. 293.

¹²⁰ See *Nat'l Conf. Of State Legis., Policing Legislation Database* (Apr. 9, 2024), <https://www.ncsl.org/civil-and-criminal-justice/policing-legislation-database>; *Nat'l Conf. Of State Legis., Autonomous Legislation Database* (Dec. 31, 2024), <https://www.ncsl.org/transportation/autonomous-vehicles-legislation-database>.

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searched for legislation related to data and transparency. Most states have legislation that is either pending and/or enacted in one or more of these areas.¹²¹ Some states do not have legislation in the NCSL databases in these areas, which include: AK, AR, AZ, DE, HI, IN, ME, MO, NC, ND, NE, OH, OR, SD and WY. Because robocops have a wide variety of capabilities and are collecting a vast amount of data, there is concern about what happens with this data, how it will be used, and what the capabilities are. Thus, many scholars have published about the need for more transparency.¹²²

A. *Robocops and Drone Robots*

In the NCSL database, the only two states with pending robocop legislation are New York and Rhode Island. New York's restricts weaponized robocops.¹²³ The pending New York law:

“prohibits a law enforcement agency from receiving or purchasing the following property from a military equipment surplus program operated by the federal government, drones that are armored, weaponized, or both, relates to aircraft that are combat configured or combat coded grenades or similar explosives and grenade launchers, silencers, militarized armored vehicles, camouflages uniforms, bayonets, riot gear, firearms or ammunition, explosives or pyrotechnics, or chemical incapacitants, defines terms.”¹²⁴

¹²¹ *Policing Legislation Database*, *supra* note 120.

¹²² See Cary Coglianese & Lavi M. Ben Dor, *AI in Adjudication and Administration*, 86 BROOK. L. REV. 791, 836-38 (2021); Ben Bowling & Shruti Iyer, *Automated Policing: The Case of Body-Worn Video*, 15 INT'L J. OF L. IN CONTEXT 141, 152-53 (2019); Michal Lavi, *Crises, Creep, and the Surveillance State*, 53 SETON HALL L. REV. 491, 551-53 (2022); Natasha Singer & Kate Conger, *Google Is Fined \$170 Million for Violating Children's Privacy on YouTube*, NY Times, (Sep. 5, 2019), <https://www.nytimes.com/2019/09/04/technology/google-youtube-fine-ftc.html>; Jennifer S. Bard, *Developing a Legal Framework for Regulating Emotion AI*, 27 B.U.J. SCI. & TECH. L. 42 (2021); Margaret Hu, *Biometrics and an AI Bill of Rights*, 60 DUQ. L. REV. 283, 290-91 (2022); Ashley Southall, *323,911 Accusations of N.Y.P.D. Misconduct Are Released Online*, NY Times, (Jul. 28, 2021), <https://www.nytimes.com/2020/08/20/nyregion/nypd-cerb-records-published.html>; Har & Lauer, *supra* note 31.

¹²³ H.R. S3097, 2023 Leg., Reg. Sess. (N.Y. 2023).

¹²⁴ *Id.*

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Rhode Island has a pending law that prohibits armed robocops or unmanned aerial vehicles (i.e. a drone) except to mitigate an explosive.¹²⁵ This first provision seems prudent and rather than banning the receipt of military surplus robocops, perhaps local governments should accept them for use to mitigate explosives. Rhode Island also has a pending law to outright prohibit the use of any robocop.¹²⁶

Drones are also robots and are used by some police departments. There are enacted laws in Illinois and Tennessee, and a pending law in New York regarding using drones.¹²⁷ New York has pending laws that require police to get a search warrant before using drones.¹²⁸ Like the proposed Rhode Island provision, Tennessee's law permits a law enforcement agency to operate a drone for the purpose of remotely detonating a bomb or similar incendiary.¹²⁹

Florida and Illinois have enacted law for the use of drones for specified purposes.¹³⁰ Florida's law states that drones are not to be used to gather evidence unless they are used to: (1) provide an aerial perspective of a crowd; (2) assist with traffic management; (3) facilitate collection of evidence at a crime scene or traffic crash scene; (4) assess a natural disaster; or (5) manage vegetation or wildlife.¹³¹ Government agencies may only use drones from approved manufacturers.¹³²

Illinois prohibits law enforcement's use of drones except to: (1) counter a terrorist attack; (2) find a missing person; (3) photograph a crime scene or traffic crash scene; (4) aid with a disaster or public health emergency; (5) inspect infrastructure; (6) demonstrate drone capabilities; (7) prevent imminent harm of life or destruction of evidence; (8) locate victims; or (9) create maps and/or monitor a routed event.¹³³ A notice of

¹²⁵ H.R. 2113, 2024 Gen. Assemb. Jan. Sess. (R.I. 2024).

¹²⁶ H.R. 6298, 2021 Gen. Assemb., Jan. Sess. (R.I. 2021).

¹²⁷ H.R. 3902, 103d Gen. Assemb., Reg. Sess. (IL 2023) ; H.R. 1492, 133th Gen. Assemb., Reg. Sess. (Tenn. 2023); S. 3527, 2023 Leg., Reg. Sess. (N.Y. 2023) (which prohibits receiving military surplus equipment including weaponized drones).

¹²⁸ *Protect Our Privacy (POP) Act*, S. 675, 2021 Leg., 244th Sess. (N.Y. 2021); A. 3311, 2021 Leg., 244th Sess. (N.Y. 2021).

¹²⁹ *Criminal Offenses – Prohibition on Weaponized Drones*, H.R. 1492, 113th Gen. Assemb., Reg. Sess. (Tenn. 2023).

¹³⁰ *Id.*; S. 44, 2021 Leg., Reg. Sess. (Fla. 2021); H.B. 3902, 103rd Gen. Assemb., Reg. Sess. (Ill. 2023).

¹³¹ S. 44, 2021 Leg., Reg. Sess. (Fla. 2021).

¹³² *Id.*

¹³³ H.B. 3902, 103rd Gen. Assemb., Reg. Sess. (Ill. 2023).

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drone usage is to be posted at the event 24 hours ahead of time.¹³⁴ Use of facial recognition technology on the drone is prohibited unless this is needed for a high-risk terrorist attack or if this allows for swift action to prevent imminent harm of life or destruction of evidence.¹³⁵

Since 2020, New Jersey has considered legislation with various prohibitions on the use of drones.¹³⁶ It states that law enforcement cannot use drones to gather evidence unless they get a search warrant, have probable cause to believe that a person committed a crime, or they have written consent from an individual or property owner about which they are trying to gather evidence.¹³⁷ The proposed law also requires that maintenance records be kept and that annual inspections be submitted to the Attorney General.¹³⁸

New York has a pending law related to the use of drones at concerts, protests, and demonstrations.¹³⁹ The goal is to protect “actions protected by the First Amendment to the United States Constitution.”¹⁴⁰ Further, although not specific to the use of drones, Puerto Rico has an enacted law that orders the Senate Committee on Government to investigate the findings of the Puerto Rico Civil Rights Commission, and whether the practices and policies of the Puerto Rico Police Bureau related to the surveillance and monitoring of public protest activities violate the rights of freedom of expression, association and privacy of people.¹⁴¹

B. Facial Recognition Technology

Several states enacted laws that prohibit using facial recognition technology (FRT) as the sole basis for making an arrest or for establishing probable cause in a criminal investigation. Alabama’s law is enacted¹⁴²

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ A. 1383, 2024 Leg., Reg. Sess. (N.J. 2024); A. 2570, 2024 Leg., Reg. Sess. (N.J. 2024); S. 451, 2022 Leg., Reg. Sess. (N.J. 2022); S. 475, 2021 Leg., Reg. Sess. (N.J. 2021); A. 2469, 2021 Leg., Reg. Sess. (N.J. 2021).

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ A. 3311, 2021 Leg., Reg. Sess. (N.Y. 2021); S. 675, 2021 Leg., Reg. Sess. (N.Y. 2021).

¹⁴⁰ *Id.*

¹⁴¹ S.R. 22, 2024 Leg., Reg. Sess. (P.R. 2024).

¹⁴² S. 56, 2022 Leg., Reg. Sess. (Ala. 2022); H.B. 197, 2022 Leg., Reg. Sess. (Ala. 2022) (relating to facial recognition technology and prohibiting state or local law enforcement agencies from using facial recognition results as the sole basis for making an arrest or for establishing probable cause in a criminal investigation).

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and California has one that is pending.¹⁴³ California's pending law also states that a judge cannot issue a warrant based solely on a FRT match.¹⁴⁴ Vermont enacted a law which permits police to use FRT to investigate the sexual exploitation of children.¹⁴⁵

Further, California has a pending law to ensure the confidentiality and cybersecurity of FRT data and results.¹⁴⁶ This pending law also prescribes the acceptable and prohibited uses for FRT by a law enforcement agency or requires the Department of Technology, in consultation with the Chief of the Office of Information Security, to issue standards to ensure the confidentiality and cybersecurity of FRT data and results.¹⁴⁷

Some pending and enacted state laws ban the use of FRT. Some states ban FRT on officers' cameras;¹⁴⁸ bans FRT on drones;¹⁴⁹ ban FRT in local and state government agencies and schools;¹⁵⁰ and outright ban FRT with a moratorium.¹⁵¹ For example, Montana enacted Senate Bill 397 to prohibit the use of FRT for continuous facial surveillance or facial identification by government agencies.¹⁵² This bill defines continuous facial surveillance as monitoring public places or third-party image sets

¹⁴³ *Law Enforcement Agencies: Facial Recognition Technology Act*, Assemb. Bill 1814, 2024 Reg. Sess. (Cal. 2024) (prohibiting law enforcement agencies or peace officers from using a facial recognition technology-generated match as the sole basis for probable cause in an arrest or search, barring judges from granting warrant applications based solely on a facial recognition match, and awarding damages up to a specified amount to individuals subjected to violations of these provisions, along with reasonable attorney's fees for the prevailing party).

¹⁴⁴ *Id.*

¹⁴⁵ *Facial Recognition Technology Use By Law Enforcement Act*, H.R. 195, 2021 Leg., Reg. Sess. (Vt. 2021).

¹⁴⁶ *Law Enforcement Agencies: Facial Recognition Technology Act*, Assemb. Bill 642, 2023 Reg. Sess. (Cal. 2023).

¹⁴⁷ *Id.*

¹⁴⁸ See A.B. 1034, 2023 Reg. Sess. (Cal. 2023); H.F. 43, 2021 Leg., Reg. Sess. (Iowa 2021) (stating that "body cameras shall not contain facial recognition technology unless the use of such technology has been authorized by the court pursuant to an arrest warrant or a search warrant"); S. 365, 2022 Leg., Reg. Sess. (N.J. 2022); S. 1917, 2021 Leg., Reg. Sess. (N.J. 2021); H.R. 3918, 2021 Leg., Reg. Sess. (S.C. 2021).

¹⁴⁹ H.B. 3902, 103rd Gen. Assemb., Reg. Sess. (Ill. 2023).

¹⁵⁰ S.B. 113, 2022 Leg., Reg. Sess. (Colo. 2022).

¹⁵¹ See S.B. 5104, 2021 Leg., Reg. Sess. (Wash. 2021); S. 1076, 2022 Leg., Reg. Sess. (N.Y. 2022); S. 1076, 2021 Leg., Reg. Sess. (N.Y. 2021); A. 1601, 2022 Leg., Reg. Sess. (N.Y. 2022); A. 1601, 2021 Leg., Reg. Sess. (N.Y. 2021); A. 10913, 2020 Leg., Reg. Sess. (N.Y. 2020); S. 6776, 2020 Leg., Reg. Sess. (N.Y. 2020).

¹⁵² S. 397, 2023 Leg., Reg. Sess. (Mont. 2023).

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using facial recognition for facial identification to match faces with a prepopulated list of face images “for general surveillance purposes without a particularized suspicion of a specific target.”¹⁵³ Like Alabama and California, this law also states that FRT cannot be the sole basis to establish probable cause in a criminal investigation.¹⁵⁴ The law requires written use and privacy policies that include the specific purpose for using FRT, the length of time data will be collected or stored, and “notice that facial biometric data may not be collected on an individual without prior consent by the individual.”¹⁵⁵

Since 2021, Minnesota has had a pending law that states that FRT cannot be used by law enforcement for ongoing surveillance of an individual or individuals in public spaces unless it is related to a law enforcement activity, and they get a court order.¹⁵⁶ The exception is if an officer faces exigent circumstances, and it is impractical to get a court order.¹⁵⁷

Like Alabama, California and Montana, Maryland enacted Senate Bill 182 and matching House Bill 338, which states that FRT cannot be the sole basis of establishing probable cause or positive identification of a person in a criminal investigation or proceeding.¹⁵⁸ This law lists specific crimes for which FRT can be used. The list includes but is not limited to violent crimes, human trafficking, second-degree child abuse, pornography, hate crimes, certain weapons crimes, and cruelty to animals.¹⁵⁹

Additionally, Utah enacted Senate Bill 34 which states that when capturing an image of an individual, the government is to “notify the individual that the individual’s image may be used in conjunction with facial recognition technology” at least 30 days before using a FRT system to do a comparison.¹⁶⁰ The Department of Public Safety is only to use FRT for authorized purpose of investigating a crime “supported by a statement of the specific crime and factual narrative to support that there is a fair probability that the individual who is the subject of the request

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ H.F. 465, 92nd Leg., Reg. Sess. (Minn. 2021); H.F. 2314, 93rd Leg., Reg. Sess. (Minn. 2023).

¹⁵⁷ *Id.*

¹⁵⁸ See S.B. 182, 446th Gen. Assemb., Reg. Sess. (Md. 2024); H.B. 338, 446th Gen. Assemb., Reg. Sess. (Md. 2024).

¹⁵⁹ *Id.*

¹⁶⁰ *Governmental Use of Facial Recognition Technology Act*, S.B. 34, 2021 Gen. Sess. (Utah 2021).

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is connected to the crime.”¹⁶¹ If there is a probable match, a second opinion is to be sought.¹⁶² If the result is submitted a prosecutor, that fact that FRT was used must be disclosed in writing.¹⁶³ And rather than an annual report, upon request, government agencies are required to release statistical reports about the types of crimes, number of requests for use of FRT and number of probably matches.¹⁶⁴

Lastly, some pending and enacted state laws call for the creation of a task force for considering FRT services.¹⁶⁵ In addition, Louisiana enacted a law to study the use of FRT data.¹⁶⁶ New Jersey also has a pending law that require a public hearing before using FRT.¹⁶⁷

C. Body Cameras

There is an extensive body of pending and enacted state laws related to the use of body cameras on human police. These are particularly important to the use of robocops since these robots are fitted with cameras. For example, New Jersey has a pending law that states that police cannot view the footage before making their statement if there is a shooting.¹⁶⁸ In DC, there is a pending law that police cannot make a statement more than twenty-four hours after an incident.¹⁶⁹ These pending laws as in New Jersey and D.C. are not relevant to robocops. Yet, these types of laws may raise concern over the fact that these types of police statements cannot be made when robocops are used for policing.

New Jersey provides circumstances when body cameras can be deactivated.¹⁷⁰ Illinois has a pending law that body cameras do not apply to officers in schools, covert/ undercover cops unless they conduct

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ See S.B. 113, 73rd Gen. Assemb., Reg. Sess. (Colo. 2022); S.B. 176, 2022 Gen. Assemb., Reg. Sess. (Ky. 2022); S. 927, 193rd Gen. Ct., Reg. Sess. (Mass. 2023) (advocating for the implementation of recommendations from a special committee).

¹⁶⁶ H.R. 199, 2021 Reg. Sess. (La. 2021) (requesting the House Committee on Administration of Criminal Justice and the House Committee on Judiciary to conduct a joint study of the use of facial recognition data, collection methods, and usage by law enforcement in legal proceedings).

¹⁶⁷ S. 364, 2022 Leg., Reg. Sess. (N.J. 2022).

¹⁶⁸ Proposed *Law Enforcement Present Sense Impression Act*, DC B. 238 (2021).

¹⁶⁹ Proposed *Law Enforcement Present Sense Impression Act*, DC B. 238 (2021).

¹⁷⁰ A. 4312, 2020 Leg., Reg. Sess. (N.J. 2020).

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interviews.¹⁷¹ New Hampshire has a pending law that body cameras are to be worn during interrogations.¹⁷² Tennessee has a law regarding the use of body cameras and minors.¹⁷³ Additionally, Tennessee's confidential public record code states that video taken by a law enforcement body camera that depicts minors within a K-12 school, child care agency or program, preschool or nursery school shall be treated as confidential and not subject to public inspection.¹⁷⁴

Note that robocops could conceivably be used in schools. Robocops could conceivably be coded to ask a lineup of questions during some form of interviewing or interrogating witnesses. The problem is that it is uncertain whether a robocop can detect body language, voice inflections, and emotions.

New York has pending laws for parole officers to use body cameras¹⁷⁵ and to pilot the use on correction officers.¹⁷⁶ Rhode Island's pending body camera law states that jail peace officers are to wear body cameras when performing a task that requires an anticipated use of force (including cell extractions and use of restraint chairs).¹⁷⁷

There are also enacted and pending state laws which provide grants for the purchase of body cameras.¹⁷⁸ Kansas's body camera law states that the agency is required to seek and accept grants to pay for implementing these body camera provisions.¹⁷⁹ Illinois enacted an interesting law which states that all employees of a law enforcement agency must wear a body camera if the agency received military equipment surplus grant funding.¹⁸⁰ This Illinois law states that all officers must wear body cameras if they received military equipment surplus grant funding except court officers, State Attorney investigators,

¹⁷¹ H.B. 4050, 103rd Gen. Assemb., 2023-2024 Reg. Sess. (Ill. 2023).

¹⁷² H.B. 253, 2021 Gen. Court, Reg. Sess. (N.H. 2021).

¹⁷³ S. 2061, 112th Gen. Assemb., Reg. Sess. (Tenn. 2022); Tenn. Code Ann. § 10-7-504(s)(1)(A) - 2(A)(i-v) (2022).

¹⁷⁴ *Id.*

¹⁷⁵ S. 1763, 2023 Leg., Reg. Sess. (N.Y. 2023).

¹⁷⁶ A. 3875, 2023-24 Leg., Reg. Sess. (N.Y. 2023).

¹⁷⁷ H. 7937, 2022 Gen. Assemb. (R.I. 2022).

¹⁷⁸ See also A. 335, 2022 Wis. Leg., Reg. Sess. (Wis. 2022); H. 1078, 93rd Minn. Leg., Reg. Sess. (Minn. 2023); S. 1198, 2023 Leg., 93rd Sess. (Minn. 2023); H.B. 253, 2021 Leg., Reg. Sess. (N.H. 2021).

¹⁷⁹ S.B. 198, 2021 Leg., Reg. Sess. (Kan. 2021).

¹⁸⁰ H.B. 3443, 102nd Gen. Assemb., Reg. Sess. (Ill. 2021).

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and Attorney General investigators.¹⁸¹ The oddity is that if a city or town in Illinois decides not to accept a body camera grant, and they have no municipal code requiring that body cameras be worn, then their police do not have to wear them since wearing them is contingent on whether grant money is accepted.

New Jersey has a pending law that police must notify people that they are recording.¹⁸² Iowa has the same requirement in an enacted law.¹⁸³ The police must notify unless informing the person would be unsafe, impractical, or impossible.¹⁸⁴ The Iowa law states:

“If a peace officer wearing a body camera enters a residence without a warrant or where no exigent circumstances exist, the peace officer shall immediately ask whether a resident desires the peace officer to stop the body camera recording while the peace officer is in the residence. If the resident responds in the affirmative, the peace officer shall stop the body camera recording. The peace officer shall record the question required to be asked... and any answer to the question. If a peace officer wearing a body camera interacts with a person reporting a crime, providing information regarding a crime or ongoing investigation, or claiming to be a victim of a crime, the peace officer shall immediately ask whether the person desires the peace officer to stop the body camera recording of the interaction.”¹⁸⁵

Further, with regard to providing notices and information, New Hampshire and Illinois require annual reporting, New Hampshire enacted a law requiring reports on body camera issues.¹⁸⁶ Illinois enacted a law with annual reporting requirements as well as related to the use of drones.¹⁸⁷

¹⁸¹ *Id.*

¹⁸² A.B. 4312, 219th Leg., Reg. Sess. (N.J. 2020).

¹⁸³ H.F. 43, 89th Gen. Assemb., Reg. Sess. (Iowa 2021).

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ S. 362, 2024 Leg., Reg. Sess. (N.H. 2024).

¹⁸⁷ H. 3902, 103rd Gen. Assemb., Reg. Sess. (Ill. 2023).

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Tennessee has a pending law which would prohibit the use of body cameras if there is an unannounced entry into a residence.¹⁸⁸ Note that the use of robocops inside a residence would be futuristic and requires further research. Perhaps an officer could be accompanied by a collaborative robot (cobot) robocop into a home for recordings and have the cobot ask questions to de-escalate a situation. The shock of seeing a robot and the fact that these devices are fitted with cameras may de-escalate a situation.¹⁸⁹ As was done in the aforementioned Mountain View California case, a cobot or drone entering ahead of an officer may allow the officer to see what is going on inside the home – e.g. whether there are weapons or evidence of violence.¹⁹⁰ Imagine when Sonya Massey called to report a suspected prowler, instead of a human police person arrived at her home, there were a drone sent it to scope around her home. Sonya may still be alive. Imagine if U.S. Airman Roger Fortson’s apartment complex were scoped with a drone or robocop when his neighbor called in a possible domestic fight. Airman Fortson might also still be alive.

Further, some laws do not require that police give notice about recording a person. For example, Illinois has a pending law that an officer no longer needs to provide notice of recording to a person that has a reasonable expectation of privacy.¹⁹¹ In contrast, Tennessee’s SB 1174 required “officers wearing body cameras to notify the subjects of the recording that the subjects are being recorded by a body camera as close

¹⁸⁸ S. 1432, 112th Gen. Assemb., Reg. Sess. (Tenn. 2021); H. 993, 112th Gen. Assemb., Reg. Sess. (Tenn. 2021).

¹⁸⁹ See Kate Cagle, *Unleashed: LAPD SWAT Integrates 'Robot Dog' into the Unit*, Spectrum News 1, (Jan. 1, 2025), <https://spectrumnews1.com/ca/southern-california/public-safety/2025/01/01/police-robot-dog> (reporting shock and terror by someone who sees a robocop); Daniel AC Barbosa, et al., *De-escalation Technology: the Impact of Body-Worn Cameras on Citizen Police Interactions*, CAGE Working Paper No. 581, CAGE 2-3, 10 (2021) (discovering that interactions between police and citizens de-escalate and crime reduces when police wear body cameras); Kyle Bloyd, *West Lafayette Police: 'The Camera Doesn't Lie'*, Wish-TV, (Sep. 25, 2015), <https://www.wishtv.com/news/west-lafayette-police-the-camera-doesnt-lie/> (reporting that police de-escalate and use less force when wearing body cameras).

¹⁹⁰ Danielle Abril, *Drones, Robots, License Plate Readers: Police Grapple with Community Concerns as They Turn to Tech for Their Jobs*, Washington Post (Mar. 9, 2022), <https://www.washingtonpost.com/technology/2022/03/09/police-technologies-future-of-work-drones-ai-robots/>.

¹⁹¹ SB 3439, 103rd Gen. Assemb., Reg. Sess. (Ill. 2024).

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to the inception of the encounter as is reasonably possible” but did not pass the Senate vote in March 2025.”¹⁹²

Rhode Island has a pending law that if body camera is not worn, then police get disciplined.¹⁹³ This manner of discipline would not be a relevant to robocops. Yet, if a human police officer failed to turn on the robocop’s camera, then that officer should be disciplined under this type of law. New York has a pending law for Internal Affairs to investigate failures to wear body cameras.¹⁹⁴

New York, South Carolina, and Tennessee have pending laws that make it a crime to tamper with body camera evidence.¹⁹⁵ This is relevant to the footage captured by robocops. While a robocop could not tamper with footage unless it is coded to delete certain images, a human could tamper with those recordings.

There are also laws that provide procedures for body camera usage.¹⁹⁶ For example, Rhode Island has a pending law for the retention and storage of footage.¹⁹⁷ Vermont has a pending law to create a department to routinely review police dashboard footage.¹⁹⁸ Just as there are regulations requiring task forces to study the use of FRT, there are also pending laws for the creation of advisory task forces for the use of body cameras.¹⁹⁹

Michigan has a pending police reform resolution that urges the U.S. Congress to enact policing reforms to mandate anti-bias training, ban carotid holds and chokeholds, and require the use of other de-escalation methods before use of deadly force, require body cameras, and address qualified immunity for law officers, among other initiatives.²⁰⁰ This law mirrors the U.S. Department of Justice (DOJ) new policy mentioned in Part III. of this study. Further, Rhode Island has a pending law called the

¹⁹² S.B. 1174, 114th Gen. Assemb., Reg. Sess. (Tenn. 2025).

¹⁹³ H.B. 7937, 2022 Gen. Assemb. Reg. Sess. (R.I. 2022).

¹⁹⁴ S. 8736, 2020 Leg., Reg. Sess. (N.Y. 2020).

¹⁹⁵ S. 1990, 2023 Leg., Reg. Sess. (N.Y. 2023).

¹⁹⁶ See H.R. 3347, 102nd Gen. Assemb., Reg. Sess. (Ill. 2021); S. 101, 219th Leg., 2020 Sess. (N.J. 2020); S. 131, 2021 Leg., 79th Sess. (Nev. 2021).

Proposed *Body Cameras*, NV BDR 241 (2020).

¹⁹⁷ H. 5728, 2021 Gen. Assemb. Jan. Sess. (R.I. 2021) (stating that all cities and towns in the state are to retain and store the footage).

¹⁹⁸ H. 214, 2023 Gen. Assemb., Reg. Sess. (Vt. 2023).

¹⁹⁹ See S.D. 3284, 2022 Leg., 192nd Sess., (Mass. 2022); A. 839, 221st Leg., 2024 Sess. (N.J. 2024); S. 727, 2021 Leg., Reg. Sess. (N.Y. 2021).

²⁰⁰ H.R. 130, 101st Leg., 2021-2022 Sess. (Mich. 2021).

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Rishod Gore Justice in Policing Act of 2021 which provides police reform by requiring body cameras and makes certain methods of restraint a felony, including chokeholds and using the foot as a weapon.²⁰¹ These are relevant to robocops because as noted in Part III. of this study, with generative AI it is possible to code a robocop to grab hold of a person and apply force. Thus, states need to decide whether to ban a robocop from being used a more physical manner.

D. Data privacy and access to recordings

Connecticut enacted a law which prohibits disclosure of a recording if it depicts a victim—if disclosure could reasonably constitute an unwarranted invasion of privacy of the victim’s surviving family members or a minor, sex abuse, domestic abuse, homicide, suicide, or if the victim died in an accident.²⁰² Kentucky also has an enacted law called the Bailey Hope Victims Privacy Act which prohibits disclosure of recordings showing a death, rape, or sexual abuse.²⁰³ Illinois has a pending law which states that a public body can deny a FOIA request for a body camera recording.²⁰⁴

Kansas also has a very clear and comprehensive pending law regarding access to recordings.²⁰⁵ This law states that officers are to activate their body camera whenever they respond to a call for service or initiate an encounter and are to make an effort to record their interactions with others.²⁰⁶ Officers are to notify a person if the person is being recorded.²⁰⁷ Further, officers can choose not to record conversations with crime witnesses or when they enter a resident “under non-exigent circumstances.”²⁰⁸ They are not to record conversations with informants, undercover officers, strip searches, conversation about case tactics or strategies, and interactions in places where a reasonable expectation of privacy such as a bathroom or locker room.²⁰⁹

²⁰¹ H. 599, 2021 Gen. Assemb., Jan. Sess., (R.I. 2021).

²⁰² S. 234, 2024 Gen. Assemb., Reg. Sess. (Conn. 2024).

²⁰³ H. 273, 2021 Gen. Assemb., Reg. Sess. (Ky. 2021).

²⁰⁴ H. 5125, 103rd Gen. Assemb., Reg. Sess. (Ill. 2024).

²⁰⁵ S. 198, 2021 Leg., Reg. Sess. (Kan. 2021).

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*; H. 7937, 2022 Gen. Assemb., Jan. Sess. (R.I. 2022) (stating that police do not need to wear body cameras when working undercover).

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Further, this pending Kansas law states that law enforcement agencies are to retain recordings for three years where there is use of force; a recording that leads to a detention or arrest; or if the recording is relevant to a formal or informal complaint against an officer or law enforcement agency.²¹⁰ The law enforcement agency has five business days to disclose recordings after a request is made if the recording depicts a discharge of a firearm, killing of an animal, or use of force that results in bodily harm or death.²¹¹ The agency is to redact deaths, nudity, sexual conduct, confidants, undercover agents, confidential investigations or procedures, endangering someone's life, revealing a sexual offense victim's identifying information, identifies a minor, or shows the license plate of someone who is not arrested.²¹² This pending Kansas law is a wonderful reminder that full transparency is not prudent in law enforcement. There are reasonable exceptions to public disclosure. In applying all of this to robocops, the robot may not be able to distinguish when to be on or off. A way to deal with this is human redaction of the robocop's footage.

There are also pending body camera laws regarding the release of certain recordings.²¹³ Illinois has a pending law that recordings must be released if an officer dies or uses force that results in a death – release within five days of an officer firing a gun and hitting someone or could have caused injury including stun guns or other use of force.²¹⁴ Similarly, a pending Georgia law, H325, states that audio video that portrays a dead person will be released to that person's parents, guardians, living spouse or next of kin no later than 24 hours after recorded.²¹⁵ It also states that if the recording is of a victim of domestic violence, sexual assault, homicide, suicide or accident, there will be no public disclosure since

²¹⁰ See S. 198, 2021 Leg., Reg. Sess. (Kan. 2021); S. 8, 54th Leg., 1st Spec. Sess. (N.M. 2020) (stating that peace officers wear body cameras and those recordings be retained by the law enforcement agency for not less than 120 days); H.F. 43, 2021 Gen. Assemb., Reg. Sess. (Iowa 2021). This bill states that the recordings are to be retained for three years, and an agency shall post on a public internet site its policies related to the retention of recordings. In this bill, if the contents of a recording are to be used in a criminal prosecution, the law enforcement agency is to retain the contents of the recording in the same manner as other evidence in the criminal prosecution. *Id.*

²¹¹ S. 198, 2021 Leg., Reg. Sess. (Kan. 2021).

²¹² *Id.*

²¹³ H. 325, 2023 Gen. Assemb., Reg. Sess. (Ga. 2023).

²¹⁴ H. 5133, 102nd Gen. Assemb., Reg. Sess. (Ill. 2022).

²¹⁵ H. 325, 2023 Gen. Assemb., Reg. Sess. (Ga. 2023).

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disclosure would be an invasion of personal privacy. There will only be public disclosure if there is a court order to do so.²¹⁶

Illinois also has a pending law, Senate Bill 3439, that defines where and when there is no expectation of privacy.²¹⁷ It states there is “[n]o expectation of privacy means when a person is in a publicly accessible area or when a person is engaging with law enforcement officers during the scope of an officer’s official duties even when the engagement is in a nonpublic area, including in a private residence when officer are lawfully present in the residence during the course of official duties.” There is also a FOIA exemption for recordings or portion of recordings under the Law Enforcement Officer-Worn-Body Camera Act.²¹⁸

The NCSL lists a pending database in Georgia as a type of policing technology. Georgia’s pending law H3631 provides for the creation of a database of identifying information from arrest records (but adhere to state and federal privacy laws) of people suffering from addictions, disabilities, and mental illness.²¹⁹

E. Autonomous Vehicles

Some robocops roam about sidewalks, airports, transit stations and other public facilities autonomously. Autonomous vehicle laws that seem relevant to robocops are laws that allow the piloting and testing of these vehicles.²²⁰ Massachusetts has a pending law for the safe integration of autonomous vehicles into their transportation system.²²¹ This law states that an autonomous vehicle may be tested on public ways. These vehicles are required to have a failure alert system and need to meet federal motor vehicle safety standards.²²²

²¹⁶ *Id.*

²¹⁷ S. 3439, 103rd Gen. Assemb., Reg. Sess. (Ill. 2024).

²¹⁸ *Id.*

²¹⁹ H. 361, 2023 Gen. Assemb., Reg. Sess. (Ga. 2023). This pending law provides for the creation of a state-wide database by the Criminal Justice Coordinating Council to be known as the Eurie Lee Martin (ELM) database. The pending law also provides that the ELM database shall include identifying information from arrest records of individuals who suffer from addictive disease, developmental disabilities, or mental illness and provides for adherence to all state and federal privacy laws. *Id.*

²²⁰ S. 427, 2017 Gen. Assemb., Reg. Sess. (Pa. 2017); S. 251, 2017 Leg., Reg. Sess. (Cal. 2017); S. 2149, 218th Leg., Reg. Sess. (N.J. 2018) (permitting the testing and use of autonomous vehicles on the public highways, roads, and streets of New Jersey).

²²¹ S. 2115, 191st Gen. Assemb., Reg. Sess. (Mass. 2019).

²²² *Id.*

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In this pending Massachusetts law, these vehicles must have a system to capture and store data.²²³ There must be a mechanism to protect the privacy of operators and passengers and to ensure the security of the data collection system.²²⁴ There are to be steps to limit “the availability of any sensitive data to the public.”²²⁵ The system must be resistant to tampering and the collected data must be accurate. There must be a mechanism that forces the vehicle to expediently come to a safe stop.²²⁶

Problems with this pending law is that operator and passenger privacy, and sensitive data are not defined. These requirements would be relevant to the operation of a robocop since robocops collect an incredible number of audio-visual recordings. Perhaps some of those recordings should be deemed private or sensitive. This distinction must be defined in robocop regulation.

Massachusetts also has a pending law regarding the privacy of the data collected by autonomous vehicles.²²⁷ It is concerned with autonomous vehicles being wireless and connected to the Internet of Things. This pending law states that it has the objective to “ensure the security and confidentiality of customer information in a manner fully consistent with industry standards, protect against anticipated threats or hazards to the security and integrity of such information, and protect against unauthorized access to or use of such information that may result in substantial harm or inconvenience to any consumer.”²²⁸ This wording is very vague. If applied to robocops, it is unclear what type of information would need to be protected. Would this include all information that a robocop recorded involving citizens that passed it way or that it interacted with?

For future research, especially given what occurred in San Francisco related to their robocops described herein, it would be beneficial to study municipal codes, police department policies, and police department operating manuals.

²²³ *Id.*

²²⁴ *Id.* at 98-101.

²²⁵ *Id.* at 102.

²²⁶ S. 2115, 2019 Leg., 191st Gen Ct. (Mass. 2019).

²²⁷ S. 2056, 2019 Leg., 191st Gen. Ct. (Mass. 2019).

²²⁸ *Id.* at 22-25.

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IV. LOCAL GOVERNMENT POLICING REFORM EFFORTS

This section examines two local government case studies: New York and San Francisco's policing reform efforts. This section includes discussions of community policing and robocops.

A. *New York City, NY*

With respect to the Obama administration's efforts to establish a task force on policing and the U.S. House of Representatives proposed 'Justice in Policing Act', the Chairperson of the New York City Finance Committee has remarked that the training has not effectively prevented police brutality as the organizational culture has not changed.²²⁹ According to Philip McHarris, training and body cams have not resulted in meaningful improvement.²³⁰ Instead, McHarris advocates that there needs to be an "end [to the] culture of punishment in the criminal justice system."²³¹ Thus, perhaps a sweeping cultural shift in policing is called for. McHarris has advocated that the focus needs to be on addressing the root cause of police violence and police funding needs to be redirected to other forms of emergency responses.²³²

Since 1985, changes in New York City regulations have allowed for the publishing of nearly 300,000 accusations of police wrongdoing.²³³ This statistic highlights issues resulting from police bias. The database can promote transparency and accountability, but it may also lead to a situation where police are unable or unwilling to do their duties.²³⁴

²²⁹ Nicole Goodkind, *This is What People Mean When They say They Want to Defund the Police*, FORTUNE (June 9, 2020), <https://fortune.com/2020/06/08/defund-the-police-what-does-it-mean-protests-george-floyd/>.

²³⁰ Scottie Andrew, *There's a Growing Call to Defund the Police. Here's What it Means*, CNN (June 17, 2020), <https://www.cnn.com/2020/06/06/us/what-is-defund-police-trnd/index.html>.

²³¹ *Id.*

²³² Philip V. McHarris & Thenjiwe McHarris, *No More Money for the Police*, N.Y. TIMES (May 30, 2020), <https://www.nytimes.com/2020/05/30/opinion/george-floyd-police-funding.html?searchResultPosition=1>.

²³³ Southall, *supra* note 122.

²³⁴ *Id.*

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New York City explored contracting with Boston Dynamics to utilize the camera and sensor-equipped Digidog robocop in 2022.²³⁵ This robot was put to the test. Civil rights activists, however, objected to the robotics investment and called for a reduction in police expenditures.²³⁶ Scientific American tech editor Sophie Bushwick opined that the Digidog pilot was poor timing. It was in the wake of public scrutiny of policing, the militarization of policing and widespread scrutiny of and displeasure with police responses to minority race persons.²³⁷ While not mentioning Digidog specifically, computer science scholars Tom Williams and Kerstin Haring argue that robotics can be used as tools of oppression.²³⁸

Reputation was at stake with the pushback. So, the Digidog proposal was tabled in NYC.²³⁹ Still, in 2023, the robotic police dog was brought back to guard Time Square and the Time Square metro. Opponents see it as an instrument of harsh enforcement.²⁴⁰

Some scholars oppose investments in hardware and surveillance. Brooklyn College Professor Alex Vitale, author of the book 'The End of Policing,' argues that investments in police training programs, gear, and oversight are not the solution. Instead, local governments should prioritize non-police measures to address the issues that poor people

²³⁵ Elle Rothermich, *Mind Games: How Robots can Help Regulate. Brain-Computer Interfaces*, 7 U. Pa. J. L. & Pub. Aff. 391, 429-31 (2022).

²³⁶ Emma Bowman, 'Creepy' Robot Dog Loses Job with N.Y. Police Dep't, NPR (Apr. 30, 2021), <https://www.npr.org/2021/04/30/992551579/creepy-robot-dog-loses-job-with-new-york-police-department>; Maria Cramer & Christine Hauser, *Digidog, a Robotic Dog Used by the Police, Stirs Priv. Concerns*, NY TIMES (Feb. 27, 2021), <https://www.nytimes.com/2021/02/27/nyregion/nypd-robot-dog.html?searchResultPosition=1>.

²³⁷ Sophie Bushwick, *The NYPD's Robot Dog Was a Really Bad Idea: Here's What Went Wrong*, SCIENTIFIC AMERICAN (May 7, 2021), <https://www.scientificamerican.com/article/the-nypds-robot-dog-was-a-really-bad-idea-heres-what-went-wrong/>.

²³⁸ Tom Williams & Kerstin Sophie Haring, *No Justice, No Robots: From the Dispositions of Policing to an Abolitionist Robotics*, AIES '23: AAAI/ACM CONF. ON AI, ETHICS, AND SOC'Y, 566, 567 (2023).

²³⁹ Rothermich, *supra* note 235, at 430.

²⁴⁰ See ABC7 N.Y., *supra* note 41; Samantha Max, *Robocops Join NYPD, Much to the Dismay of Some Residents*, WBUR, at 2:56 (April 17, 2023), <https://www.wbur.org/hereandnow/2023/04/17/robocops-nypd>; Emma Roth, *The NYPD is Bringing Back its Robot Dog*, THE VERGE (Apr. 11, 2023), <https://www.theverge.com/2023/4/11/23679297/nypd-robot-dog-spot-surveillance-boston-dynamics>.

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experience. Investing in housing, jobs, and healthcare directly addresses public safety concerns.²⁴¹

This is relevant to robocops since they are fitted with camera surveillance. Do the cameras work? They work in documenting instances of wrongdoing. Legal scholar Hannah Bloch-Webha advocates that the use of surveillance in and of itself needs to be more transparent. Bloch-Webha states that “[t]ransparency mandates and legislative control remain the gold standard of many surveillance reform-oriented proposals.”²⁴² She gives the example of the 2015 New York City Public Oversight of Surveillance Technologies (POST) Act.²⁴³ POST requires that the NYPD reports to the NY City Council on its use of surveillance technologies.²⁴⁴ A model regulation for robocops and smart policing generally should require the same level of transparency.

B. San Francisco, CA

Since 2010, the Police Department of the City of San Francisco has employed robots. They have never, however, employed deadly force.²⁴⁵ In 2022, the Board of Supervisors in San Francisco approved the robots including equipping the devices with explosives in emergency scenarios.²⁴⁶ The adoption of California Assembly Bill 481, which mandates that police "inventory military-grade equipment such as flashbang grenades, assault rifles, and armored vehicles, and seek approval for their use," prompted the board to consider this contentious city ordinance.²⁴⁷ The use of military-grade weaponry policy is being

²⁴¹ Alex S. Vitale, *The Answer to Police Violence is not 'Reform'. It's Defunding. Here's Why*, THE GUARDIAN (May 31, 2020), <https://www.theguardian.com/commentisfree/2020/may/31/the-answer-to-police-violence-is-not-reform-its-defunding-heres-why>.

²⁴² Bloch-Webha, *supra* note 31 at 119.

²⁴³ *Id.*

²⁴⁴ *Id.*; *Fuck the Police, Trust the People: Surveillance Bureaucracy Expands the Stalker State*, STOP LAPD SPYING COALITION (June 24, 2020), <https://stoplapdspying.org/surveillance-bureaucracy-expands-the-stalker-state/>.

²⁴⁵ Zachary Rogers, *San Francisco Police Can Use Robots to Kill in Emergency Situations, City Says*, ABC News4 WCIV (Nov. 30, 2022), <https://abc3340.com/news/nation-world/san-francisco-police-can-use-robots-to-kill-in-emergency-situations-city-says-robocop-terminator-rafael-mandelman-department-cops-lethal-force>.

²⁴⁶ *Id.*

²⁴⁷ Brian Heater, *San Francisco Police Can Now Use Robots to Kill*, TECH CRUNCH (Nov. 30, 2022), <https://techcrunch.com/2022/11/30/san-francisco-police-can-now-use-robots-to-kill/>.

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requested by more than 500 police agencies. This responds to the goal to increase public transparency in the application of the law.²⁴⁸

The plan put forth by San Francisco lawmakers by November 2022, after much haggling over the use of lethal force, said that "robots will only be used as a deadly force option when risk of loss of life to members of the public or officers are imminent and outweigh any other force option available to the SFPD."²⁴⁹ This passed via San Francisco City Ordinance No. 257-22 on December 13, 2022.²⁵⁰ Oakland, on the other hand, abandoned the concept of turning their robots into weapons and instead just equipped them with pepper spray.²⁵¹

Interestingly, the San Francisco equipment policy for the authorized use of their robocops states two important rules:

- (1) *"Use of any robots with audio or video functionality shall comply with authorized uses and prohibitions approved pursuant to Section 19B.2 of the San Francisco Administrative Code; and*
- (2) *Only assigned operators who have completed the required training shall be permitted to operate the robots. The Tactical Unit/EOD Special Operations Bureau establish use. Each deployment/use shall be logged with all deployment details and reported to the Assistant Chief of Operations or designee to fulfill annual reporting requirements."*²⁵²

Thus, the authorized implementation of audio-visual features for surveillance purposes and the use of deadly force is limited. What we can learn from the San Francisco case is that robocops may not be fully implemented due to technological limitations, policy delays, and ethical concerns.

²⁴⁸ Har & Lauer, *supra* note 46; *Law Enforcement Equipment Policy: Inventory Acquired Prior to January 2022*, SAN FRANCISCO POLICE DEPARTMENT (Nov. 21, 2022), <https://www.sanfranciscopolice.org/sites/default/files/2022-11/SFPDDraft-AB481Policy-20221121.pdf>.

²⁴⁹ Ari Shapiro & Brianna Scott, *San Francisco Considers Allowing Law Enforcement Robots to Use Lethal Force*, NPR (Nov. 28, 2022), <https://www.npr.org/2022/11/28/1139523832/san-francisco-considers-allowing-law-enforcement-robots-to-use-lethal-force>.

²⁵⁰ S.F., CAL., ORDINANCE NO. 257-22 (2022), <https://sfbos.org/sites/default/files/o0257-22.pdf>.

²⁵¹ Har & Lauer, *supra* note 46.

²⁵² See also *Law Enforcement Equipment Policy: Inventory Acquired Prior to January 2022*, *supra* note 248, at 3.

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V. COMMON LAW AND ETHICAL CONCERNS

This section reviews the common law legal and ethical concerns relevant to robocops. These concerns include privacy, biasness, and public safety issues. The privacy issues relate to surveillance and what becomes of the big data collected by AI devices like robocops. The algorithmic bias concerns are numerous and include racial bias, the use of emotion detection technology, use of facial recognition technology, and health predictions capabilities.

A. Privacy concerns

One comprehensive analysis of peer-reviewed literature examined ideas about smart policing's advantages, limitations, strengths, and shortcomings in a review of 111 articles published between 1994 and August of 2020.²⁵³ Privacy was the most prevalent concern identified, and the most frequently discussed topic is public trust.²⁵⁴

AI ethics must be a part of sound technical management of technology in smart policing.²⁵⁵ The use of robotics in law enforcement has both advantages and disadvantages. One disadvantage, for instance, is the privacy issues with using robocops.²⁵⁶ Numerous pieces of information regarding residents' movements, activities, and locations are gathered by these robots.²⁵⁷ The police might then track individuals and utilize this information to forecast their behavior and future movements. How this data will be shared and safely stored is another issue.

²⁵³ Maliphol & Hamilton, *supra* note 67, at 6-8.

²⁵⁴ *Id.* at 8-9.

²⁵⁵ See generally Clovia Hamilton et al., *Recommended Technology Management of Smart Policing Robocops for AI Ethics and Cybersecurity*, AM. SOC'Y OF ENG'G MGMT. (ASEM) INT'L ANN. COND. (2023).

²⁵⁶ For privacy issues related to smart policing generally, see *id.* at 2-6; see also Ryan Calo, *Robots and Privacy*, in ROBOT ETHICS: THE ETHICAL AND SOCIAL IMPLICATIONS OF ROBOTICS 4, 10-11 (2011); Matthew Guariglia, *Police Robots are not a Selfie Opportunity, They're a Privacy Disaster*

Waiting to Happen, ELEC. FRONTIER FOUND. (Jan. 7, 2021), <https://www.eff.org/deeplinks/2021/01/police-robots-are-not-selfie-opportunity-theyre-privacy-disaster-waiting-happen>; Matt O'Brien & Jennifer Sinco Kelleher, *Robotic Police Dogs: Useful Hounds or Dehumanizing Machines?*, AP NEWS (July 20, 2021, 11:36 AM), <https://apnews.com/article/robotic-police-dogs-e32e371e8776b8565f1a0f6491e55c29>.

²⁵⁷ See Maria P. Angel & Ryan Calo, *Distinguishing Privacy Law: A Critique of Privacy as Social Taxonomy*, 124 COLUM. L. REV. 507, 510-11 (2024).

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Legal scholars Maria Angel and Ryan Calo argue that the social taxonomy of privacy problems is an issue if the right people, established scholars, courts and public officials talk about privacy harms.²⁵⁸ This has resulted in an abandonment of defining privacy's core subject matter and has resulted in a broad range of information-based harms.²⁵⁹

i. Robocops Are Fitted with Surveillance Cameras

The Electronic Frontier Foundation (EFF), a privacy watchdog group, is concerned that robocops are outfitted with security cameras and can recognize cellphones by their IP addresses.²⁶⁰ Yet, there are already other camera technologies being used in policing and the related privacy concerns are not new. For example, while the use of police body cameras can increase accountability and transparency in policing, it has raised privacy concerns.²⁶¹ Outside of the context of policing, it has become commonplace for citizens to make use of voice activated personal assistant chatbots fitted with cameras and microphones.²⁶² These are being used in private homes, healthcare facilities, banks, classrooms and in higher education with attendant privacy concerns.²⁶³ So, the concern over robocops surveillance capabilities is not surprising.

Further, Farhang Heydari, the Executive Director of NYU School of Law's Policing Project is worried about the police's increasing access to private residents' cameras and external third-party databases used for surveillance.²⁶⁴ The ACLU shares this concern.²⁶⁵ Conceivably, it is also possible to fit robocops with license plate readers. And the use of license

²⁵⁸ *Id.* at 511.

²⁵⁹ *Id.* at 507.

²⁶⁰ Guariglia, *supra* note 256.

²⁶¹ Bowling & Iyer, *supra* note 122, at 152-53.

²⁶² See Clovia Hamilton et al., *Developing a Measure of Social, Ethical, and Legal Content for Intelligent Cognitive Assistants*, 16 J. STRAT. INNOV. SUSTAIN. 1, 5 (2021).

²⁶³ *See id.* at 3-15.

²⁶⁴ Farhang Heydari, *The Privacy Role in Public Safety*, 90 GEO. WASH. L. REV. 696, 757-58 (2022).

²⁶⁵ Both the ACLU and Electronic Frontier Foundation (EFF) are opposed to San Francisco's Board of Supervisor's approval to allow police to monitor footage from private cameras across the city with the camera owners' consent. *See e.g.*, Corin Faife, *San Francisco Police Can Now Watch Private Surveillance Cameras in Real Time*, THE VERGE (Sept. 23, 2022, 12:53 PM), <https://www.theverge.com/2022/9/23/23368603/san-francisco-police-private-surveillance-cameras-vote>.

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plate readers has also been opposed by the ACLU.²⁶⁶ According to research, 35% of "hits" on license plates were misinterpreted, which raises the possibility of innocent persons being hunted down and taken into custody.²⁶⁷

San Francisco, which limited the use of private cameras by its citizens in 2019 as related to law enforcement, is considering granting the authorities more access to these systems.²⁶⁸ In another instance, numerous law enforcement organizations worked in conjunction with the *Ring* video doorbell maker to gain access to data gathered from the devices.²⁶⁹ San Francisco, Cambridge, Pittsburgh, Seattle, and Nashville initiated "community control over police surveillance" programs.²⁷⁰ But legal scholar Hannah Bloch-Wehba notes that the degree of control secured is unclear.²⁷¹

Legal scholar Michal Lavi examined the impact of mass surveillance during the COVID-19 pandemic.²⁷² Governments initially believed that tracking human networks and collecting movement data would help mitigate virus spread.²⁷³ However, this approach raises concerns about privacy, free expression, and abuse of power. Lavi advocates for a privacy-by-design approach, including anonymization of personal information.²⁷⁴ She emphasizes the need for transparency, impact assessments, fiduciary duties, oversight, and due process.²⁷⁵ Lavi warns against surveillance creep and highlights the delicate balance between health and human rights even in times of crisis.²⁷⁶ COVID-19 serves as a test case, revealing the consequences of unchecked surveillance without proper regulatory safeguards.²⁷⁷

²⁶⁶ Jason Potts, *Research in Brief: Assessing the Effectiveness of Automatic License Plate Readers*, POLICE CHIEF, Mar. 27, 2018, at 14-15.

²⁶⁷ *Id.*

²⁶⁸ Abril, *supra* note 42.

²⁶⁹ Bernard Marr, *The 5 Biggest Tech Trends in Policing and Law Enforcement*, FORBES (Mar. 8, 2022), <https://www.forbes.com/sites/bernardmarr/2022/03/08/the-5-biggest-tech-trends-in-policing-and-law-enforcement/>.

²⁷⁰ Bloch-Wehba, *supra* note 31, at 119; *Community Control Over Police Surveillance*, ACLU, <https://www.aclu.org/community-control-over-police-surveillance> (last visited Jan. 21, 2025).

²⁷¹ Bloch-Wehba, *supra* note 31, at 119.

²⁷² Lavi, *supra* note 122, at 494-95.

²⁷³ *Id.* at 501-02.

²⁷⁴ *Id.* at 537-38.

²⁷⁵ *Id.* at 500, 549, 551-53.

²⁷⁶ *Id.* at 528-35, 547.

²⁷⁷ *Id.* at 562.

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Law professors, Elizabeth E. Joh and Thomas Joo, examined the increasing reliance of police departments on surveillance technologies provided by private companies;²⁷⁸ and reliance on data storage and data analyses services.²⁷⁹ These technologies encompass tools like body cameras, license plate readers, data analytics, and predictive crime software, all powered by AI and vast amounts of digitized data.²⁸⁰ The private sector's influence over these police customers and their tools raises concerns about hidden control over an essential democratic function.²⁸¹

Additionally, the race among private companies to develop dominant policing platforms poses another critical issue. “[P]rivate vendors wield considerable influence over matters of accountability and transparency.”²⁸² If a single company monopolizes the market for such a platform, it gains significant power over various surveillance technologies, impacting democratic policing.²⁸³

ii. Big Data & Data Security Concerns

Another privacy concern is what will happens to all the data that robocops collect. Consider when Google was fined \$170 million for violating children's privacy on YouTube.²⁸⁴ Legal scholar Mihailis Diamintis states that as a matter of fairness an innocent third-party user of a web service should not be liable if Google causes harm by facilitating illegal use of protected personal information.²⁸⁵ Applying this logic to robocops, the third-party user would be the police. If a developer of robocop's AI facilitated the illegal use of protected personal information, then as a matter of fairness, the police should not be liable. The point is that a regulation of robocop AI needs to address these potential liability issues.

²⁷⁸ See Elizabeth Joh & Thomas Joo, *The Harms of Police Surveillance Technology Monopolies*, 99 DENV. L. REV. F. 1, 18-19 (2022).

²⁷⁹ *Id.* at 2.

²⁸⁰ *Id.* at 1.

²⁸¹ *Id.* at 2.

²⁸² *Id.* at 35.

²⁸³ *Id.* at 2-3.

²⁸⁴ Singer & Conger, *supra* note 122.

²⁸⁵ Mihailis Diamantis, *Algorithms Acting Badly: A Solution from Corporate Law*, 89 GEO. WASH. L. REV. 801, 843 (2021).

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Using AI and big data analysis is one of the primary uses of smart policing technology such as robocops.²⁸⁶ The goal of this data-driven, strategic approach to police is to enhance results with information adequacy²⁸⁷ results and the policing process by detecting patterns of criminal activity with crime mapping.²⁸⁸ The goal was to use data-driven problem solving to identify and assess problems.²⁸⁹ Crime mapping policing policies were created and the renowned CompStat was introduced in New York City in 1994.²⁹⁰

The use of AI to enhance police results through algorithmic policing has gained traction once more because of the development of new software tools like Patternizr to identify and predict crime patterns.²⁹¹ Patternizr software seems to address some ethical concerns since researchers found no evidence that Patternizr recommends any suspect race at a higher rate than exists with random pairing.²⁹² Further, researchers have examined how big data was gathered and analyzed during COVID-19 in South Korea and concluded that although striking a balance between privacy concerns and public safety can be challenging, it is still important to do so.²⁹³ The researchers argue that enhanced privacy protections, like being clear in communicating the public disclosure of private information and de-identification personal data, are required.²⁹⁴

The possibility of data leaks and hackers is another concern. Hackers who wanted to try many passwords on locked, misplaced, or pilfered mobile phones developed the Robotic Reconfigurable Button Basher (R2B2).²⁹⁵ If hackers can hack cell phones, "cars or toy drones, they can certainly hack police robots," as third parties are capable of hacking

²⁸⁶ Maliphol & Hamilton, *supra* note 67, at 3.

²⁸⁷ David Weisburd et al., *Reforming to Preserve: CompStat and Strategic Problem Solving in American Policing*, 2 CRIM. PUB. POLY 421, 426 (2003).

²⁸⁸ *Id.* at 443.

²⁸⁹ *Id.* at 427.

²⁹⁰ *Id.* at 445.

²⁹¹ Molly Griffard, *A Bias-Free Predictive Policing Tool?: An Evaluation of the NYPD's Patternizr*, 47 FORDHAM URB. L.J. 44, 59-60 (2019); Coglianese & Dor, *supra* note 122, at 821-822.

²⁹² Griffard, *supra* note 291, at 64 (referring to Alex Chohlas-Wood & E. S. Levine, *A Recommendation Engine to Aid in Identifying Crime Patterns*, 49 INFORMS J. ON APPLIED ANALYTICS 1 (2019)).

²⁹³ Na Young Ahn et al., *Balancing Personal Privacy and Public Safety During COVID-19: The Case of South Korea*, 8 IEEE ACCESS 171325, 171331 (2020).

²⁹⁴ *Id.*

²⁹⁵ Murali, *supra* note 93.

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cellphones.²⁹⁶ Robots can be networked over the internet. Thus, cyber threat intelligence sharing between countries should be promoted since addressing “malicious cyber operations, strategic campaigns and collateral damage on shared networks, infrastructure and missions” is a global menace.²⁹⁷

Fitted with surveillance cameras, robocops record and collect a massive amount of data. Legal scholar Hannah Bloch-Wehba has pointed out that in the wake of the September 11, 2001 attacks, the Department of Defense’s Defense Advanced Research Projects Agency (DARPA) sought proposals from the tech industry for large scale data storage and desired technologies that enabled humans and machines to efficiently and effectively think together about complicated problems.²⁹⁸ This system was called Total Information Awareness (TIA) and grants were issued to private firms. But this program was discontinued in 2003.²⁹⁹ Further, another concern with outsourcing and public-private cooperation for algorithmic governance is that it could lead to an abdication of governmental responsibilities and more discretion by technology companies.³⁰⁰ These concerns are relevant to robocops given concerns about human-robot interaction and the anticipated big data mining is now underway in law enforcement.

Since robocops also make use of AI, the 2019 Executive Order 13859³⁰¹ that launched the American AI Initiative³⁰² is relevant. Bloch-Wehba opines that this executive order is a “light-touch approach to AI” given that it merely acknowledges the need to protect civil liberties and privacy but provides no clear guidance.³⁰³ She also notes that as of 2022,

²⁹⁶ Joh, *supra* note 38.

²⁹⁷ Chon Abraham & Sally Daultrey, *Considerations for NATO in Reconciling Challenges to Shared Cyber Threat Intelligence: A Study of Japan, the US and the UK*, in COOPERATIVE CYBER DEFENCE CENTRE OF EXCELLENCE 194, 195 (A. Etran et al. eds., 2020); Cesar Cerrudo & Lucas Apa, *Hacking Robots before Skynet*, IOACTIVE 1, 5 (2017), <https://ioactive.com/wp-content/uploads/pdfs/Hacking-Robots-Before-Skynet.pdf>.

²⁹⁸ Bloch-Wehba, *supra* note 31, at 91.

²⁹⁹ *Id.*

³⁰⁰ *Id.* at 124.

³⁰¹ EXEC. ORDER NO. 13,859, 84 Fed. Reg. 3967 (Feb. 14, 2019).

³⁰² U.S. Office of Science and Technology Policy, *Accelerating America’s Leadership in Artificial Intelligence*, Trump White House Archives (Feb. 11, 2019), <https://trumpwhitehouse.archives.gov/articles/accelerating-americas-leadership-in-artificial-intelligence/>.

³⁰³ Bloch-Wehba, *supra* note 31, at 111 (referencing EXEC. ORDER NO. 13,859, 84 Fed. Reg. 3967, §1(a) (Feb. 14, 2019)).

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algorithmic auditing was not mandated by any jurisdictions in the U.S.³⁰⁴ The use of algorithmic impact assessments would promote fairness and nondiscrimination in algorithms.³⁰⁵ This is in alignment with legal scholar Andrew Selbst who proposes that police should draft algorithmic impact statements.³⁰⁶

In 2020, legal scholar Przemyslaw Palka researched how the disclosure of personal information can lead to harmful activities. She states that the harm includes both privacy violations and social exclusion. In this light, the next paper section discusses bias which can also lead to related harms.³⁰⁷

B. Algorithmic Bias Concerns

i. Racial Bias

Research on public trust has examined various elements of civilian-police interactions, including bias and race relations.³⁰⁸ Research indicates racial differences in police interactions leading to violent incidents.³⁰⁹ Further, while most of the studies that were investigated do not mention a crime, the most common issue is police bias or misbehavior.³¹⁰

³⁰⁴ *Id.* at 116.

³⁰⁵ *Id.* at 117.

³⁰⁶ Andrew D. Selbst, *Disparate Impact in Big Data Policing*, 52 GA. L. REV. 109, 110 (2017). Andrew D. Selbst explored the regulatory strategy of algorithmic impact assessments (AIAs) for addressing and correcting algorithmic harms. The article argues that effective AIA regulation must consider how it will be implemented within the private sector institutional environment. Drawing insights from governance, organizational theory, and computer science, Selbst examines key considerations and tensions arising from the private sector's role in AI governance. By anticipating these challenges, future AIA regulations can better navigate the complexities of real-world implementation. The article sheds light on the need to balance technological advancements with ethical and social impact assessments to mitigate algorithmic risks and biases. *Id.*

³⁰⁷ Przemyslaw Palka, *Data Management Law for the 2020s: The Lost Origins and the New Needs*, 68 Buff. L. Rev. 559, 559 (2020). Przemyslaw Palka discusses the challenges posed by data analytics in our society. As individuals disclose personal information, companies leverage novel data analytics to infer knowledge about others, leading to potentially harmful activities. These harms extend beyond privacy violations and include social exclusion. Existing data protection regimes, focused on individual rights, fail to address these broader social costs. Palka proposes a solution: re-conceptualizing the issue through the lens of "data management law." This framework emphasizes mitigating negative effects of corporate data usage, accounting for collective interests, and employing political means to create norms governing data management. *Id.*

³⁰⁸ Maliphol & Hamilton, *supra* note 67, at 7.

³⁰⁹ *Id.* at 8.

³¹⁰ *Id.* at 7.

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Racial bias concerns are age-old. Several studies have revealed that the racial backgrounds of both the officers and the suspects influence the likelihood of violent outcomes in police contacts with them.³¹¹ The U.S. Supreme Court ruled in *Terry v. Ohio* (1968) that the stop-and-frisk policy was not the same as a Fourth Amendment-mandated search or seizure.³¹² The court ruled that if there was a reasonable suspicion that a crime was about to or had occurred, police could halt a suspect. To ensure that the suspect had no weapon that may be used against the police officer, the police could pat the suspect down.³¹³ "Terry stops" is the term for these stops.

Regarding policing technology, after the data-driven CompStat management system was implemented in the 1990s, the stop-and-frisk method of preventing crime was implemented for many years. This method enabled police to monitor and respond to crime patterns in real-time.³¹⁴ According to a 1999 investigation commissioned by the New York State Attorney General, the New York Police Department (NYPD) disproportionately stopped and frisked minorities by failing to reach the legal standard of reasonable suspicion.³¹⁵ Racism and implicit bias have contributed to the misuse of police power.³¹⁶ A lawful stop-and-frisk cannot be justified solely by the suspect's race or ethnicity.³¹⁷ In New York, stop-and-frisks were effective in reducing crime when based on

³¹¹ See, e.g., Southall, *supra* note 122; Ashley Southall & Michael Gold, *Why 'Stop-and-Frisk' Inflamed Black and Hispanic Neighborhoods*, N.Y. TIMES (Nov. 17, 2019), <https://www.nytimes.com/2019/11/17/nyregion/bloomberg-stop-and-frisk-new-york.html>; Wesley G. Jennings, Meghan E. Hollis & Allison J. Fernandez, *Deadly Force and Deadly Outcome: Examining the Officer, Suspect, and Situational Characteristics of Officer-Involved Shootings*, 41(8) DEVIANT BEHAV. 969, 969 (2020); Robert J. Durán & Oralia Loza, *Exploring the Two Trigger Fingers Thesis: Racial and Ethnic Differences in Officer Involved Shootings*, 20 CONT. JUST. REV. 71, 71 (2017); Sarah Kramer et al., *I Saw That Being Observed Reduces Race-Based Shoot Decisions*, 51(3) SOC. PSYCH. 1, 2 (2019).

³¹² *Terry v. Ohio*, 392 U.S. 1, 21-22 (1968).

³¹³ *Id.* at 55-56.

³¹⁴ Southall & Gold, *supra* note 311.

³¹⁵ Jon Schuppe, *Bloomberg Says He Nearly Eliminated Stop-and-Frisk as Mayor. But He Fought for it to the End*, NBC NEWS (Feb. 27, 2020), <https://www.nbcnews.com/politics/2020-election/bloomberg-says-he-nearly-eliminated-stop-frisk-mayor-he-fought-n1144266>.

³¹⁶ Henry F. Fradella & Michael D. White, *'Stop-and-Frisk' Can Work, Under Careful Supervision*, CONVERSATION (Dec. 5, 2019), <https://theconversation.com/stop-and-frisk-can-work-under-careful-supervision-127785#:~:text=Officers%20can%20be%20fair%20to,the%20person%20may%20be%20armed.>

³¹⁷ *Id.*

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specific suspicions rather than racial profiling, even if few arrests or weapons were found.³¹⁸

In 2013, a federal judge determined that the NYPD's stop and frisk policy violated minority individuals' constitutional rights through indirect racial profiling.³¹⁹ The judge found that police officers frequently stopped Blacks and Hispanics through these tactics in what amounted to unconstitutional discrimination.³²⁰

Just as following the Ferguson event, the Obama administration task force on policing suggested the usage of body cams.³²¹ In the New York stop and frisk case, a federal judge ordered a pilot program requiring officers to wear body cameras, organize community meetings to gather feedback, and appointed a veteran prosecutor to oversee the department's policing techniques.³²² Thus, although cameras might raise privacy concerns, the use of body cameras ordered to document and thwart instances of policing bias. Besides privacy issues, it is important to note that 48% of Black Americans and 45% of Hispanics were stopped and frisked due to covert maneuvers, which are done quietly to avoid detection.³²³

Allegations of police bias are not baseless. Black Americans face far higher rates of traffic stops and drug charges compared to White Americans.³²⁴ Unarmed Black Americans are over three times more likely to be shot by police than unarmed White Americans.³²⁵ In 2016, the U.S. DOJ found that by 2015 Baltimore's Police Department employed 42% African American officers,³²⁶ frequently practiced racially biased

³¹⁸ Emily Badger, *The Lasting Effects of Stop-and-Frisk in Bloomberg's New York*, N.Y. TIMES (Mar. 2, 2020), <https://www.nytimes.com/2020/03/02/upshot/stop-and-frisk-bloomberg.html>.

³¹⁹ Joseph Goldstein, *Judge Rejects New York's Stop-and-Frisk Policy*, N.Y. TIMES (Aug. 13, 2013), <https://www.nytimes.com/2013/08/13/nyregion/stop-and-frisk-practice-violated-rights-judge-rules.html>.

³²⁰ *Id.*

³²¹ BBC News, *supra* note 11.

³²² Goldstein, *supra* note at 290.

³²³ Joseph Goldstein, *Behind the Decision on the Stop-and-Frisk Policy*, N.Y. TIMES (Aug. 12, 2013), <https://archive.nytimes.com/www.nytimes.com/interactive/2013/08/12/nyregion/10-years-of-stop-and-frisk.html>.

³²⁴ Adele Peters, *Is it Time to Defund the Police?*, FAST COMPANY (Jun. 2, 2020), <https://www.fastcompany.com/90511824/is-it-time-to-defund-the-police>.

³²⁵ Cody T. Ross, *A Multi-Level Bayesian Analysis of Racial Bias in Police Shootings at the County-Level in the United States, 2011-2014*, PLOS ONE (2015).

³²⁶ U.S. Dep't of Justice, *Investigation of the Baltimore City Police Department*, U.S. DEPARTMENT OF JUSTICE CIVIL RIGHTS DIVISION (Aug. 10, 2016), <https://www.justice.gov/opa/file/883366/dl>.

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policing,³²⁷ and had a problematic culture.³²⁸ The Baltimore Police Department had a culture resistant to accountability³²⁹ and there was office reluctance to report misconduct.³³⁰ In Boston, Blacks make up 25% of the population yet account for 69% of police stops.³³¹

Legal scholar Laura Moy addresses the intersection of racial equity and police technology.³³² As concerns grow about how new technologies may exacerbate inequities in policing, Moy proposes a comprehensive taxonomy to evaluate these issues. The taxonomy identifies five distinct problems related to police technology:

- 1. Replication of Inequity:** Some technologies perpetuate existing racial disparities in policing.
- 2. Masking Inequity:** Certain tools obscure underlying inequities, making them harder to address.
- 3. Transfer of Inequity:** Technologies may import biases from other contexts into policing.
- 4. Exacerbation of Harms:** Some tools worsen inequitable outcomes for marginalized communities.
- 5. Oversight Compromises:** Technologies can hinder oversight of inequities.³³³

This framework enables policymakers, police agencies, and scholars to analyze new police technologies through a racial equity lens and develop appropriate policies.³³⁴ With regard to robocops and concerns about the potential for AI bias related to race, this model is useful.

Laura Moy provides a model equity impact assessment for proposed technologies, applicable beyond criminal justice contexts.³³⁵ In fact, recall the participatory budgeting technique used in community involved

³²⁷ *Id.* at 47-73.

³²⁸ *Id.* at 149-51.

³²⁹ *Id.* at 149.

³³⁰ *Id.* at 151.

³³¹ The Editorial Board, *City Must Confront Racial Bias of Stop-and-Frisk*, BOS. GLOBE, (Jun. 17, 2020), <https://www.bostonglobe.com/2020/06/17/opinion/city-must-confront-racial-bias-stop-and-frisk/>.

³³² See generally Laura M. Moy, *A Taxonomy of Police Technology's Racial Inequity Problems*, 2021 U. ILL. L. REV. 139 (2021).

³³³ *Id.* at 154.

³³⁴ *Id.*

³³⁵ *Id.* at 175-76.

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policing.³³⁶ Similarly, there are laws called Community Control Over Police Surveillance (CCOPS) laws that empower communities to oversee the purchase and use of surveillance technologies in law enforcement.³³⁷

In 2016, in response to NYC using the Digidog police robocop, Jay Stanley of the ACLU advised that empowering a robot to do police work could have implications for mobile surveillance, privacy issues, hacking, and bias.³³⁸ Bias is not excluded from nor inherent in technology. Smart technology must be designed to avoid bias. Legal scholar Mihailis Diamantis advocates that there are steps that technology companies can take to reduce bias and related algorithmic harm including diversifying the engineers that develop algorithms.³³⁹

In the Maliphol & Hamilton bibliometric study of smart policing, while robotics have received media attention for their usage in Smart Policing, surveillance technology and facial recognition are the most researched areas.³⁴⁰ Thus next is a discussion of the use of surveillance technology that can detect emotions and facial recognition technology.

ii. Emotion Detection

Further, robocops can be fitted with emotion detectors.³⁴¹ Jennifer Bard explores the complex intersection of AI and emotions detection within a legal context.³⁴² Bard delves into the ethical implications of emotion AI,

³³⁶ Vincent M. Southerland, *The Master's Tools and a Mission: Using Community Control and Oversight Laws to Resist and Abolish Police Surveillance Technologies*, 70 UCLA L. REV. 1 (2022).

³³⁷ *Id.* (explores the impact of Community Control Over Police Surveillance (CCOPS) laws, which—enacted in over 20 jurisdictions nationwide—empower informed and engaged communities to oversee law enforcement's acquisition and deployment of surveillance technologies. CCOPS laws recognize that surveillance disproportionately affects poor communities of color and infringes on privacy. While they aim to check intrusive surveillance, there is tension between legitimizing these technologies and abolitionist goals. Southerland evaluates CCOPS efficacy, focusing on jurisdictions with independent community advisory bodies. He analyzes the benefits and shortcomings, suggesting ways to deploy CCOPS for transformative interventions).

³³⁸ Cramer & Hauser, *supra* note 236.

³³⁹ Diamantis, *supra* note 285, at 850-53; See also Kate Crawford, *Opinion, Artificial Intelligence's White Guy Problem*, N.Y. TIMES (Jun. 25, 2016), <https://www.nytimes.com/2016/06/26/opinion/sunday/artificial-intelligences-white-guy-problem.html>.

³⁴⁰ Maliphol & Hamilton, *supra* note 67 at 7, 9.

³⁴¹ David Gamez, *A.I.: Artificial Intelligence as Philosophy: Machine Consciousness and Intelligence*, THE PALGRAVE HANDBOOK OF POPULAR CULTURE AS PHILOSOPHY 16 (2023).

³⁴² Bard, *supra* note 122, at 18-19.

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which involves machines recognizing, interpreting, and responding to human emotions.³⁴³ She discusses the potential risks and benefits of this technology, highlighting concerns such as privacy,³⁴⁴ bias,³⁴⁵ and manipulation.³⁴⁶

Bard argues for the necessity of creating a robust legal framework to regulate emotion AI, ensuring transparency,³⁴⁷ and protection of individuals' rights to privacy.³⁴⁸ By examining the current gaps in legislation and proposing solutions, Bard emphasizes the importance of addressing these issues proactively to shape a responsible and ethical future for AI development.³⁴⁹ While Bard focused on the use of emotion detectors in advertisements, the general concerns would likely be the same as related to a robocop detecting a person's emotions.

iii. Facial Recognition

Robocops can also be fitted with facial recognition technology.³⁵⁰ University of Michigan Professor Gabriela Marcu and her research team conducted seventeen interviews related to security robots.³⁵¹ They concluded that the participants felt that facial recognition technology in

³⁴³ Bard, *supra* note 122, at 8-9.

³⁴⁴ Bard, *supra* note 122, at 17-34.

³⁴⁵ Bard, *supra* note 122, at 7-8 (noting the risk of reproducing societal biases in AI algorithms).

³⁴⁶ Bard, *supra* note 122, at 34-35, 44.

³⁴⁷ Bard, *supra* note 122 (referring to challenges computer scientists need to grapple with).

³⁴⁸ Bard, *supra* note 122, at 21.

³⁴⁹ See generally Bard, *supra* note 122; see also Bloch-Wehba, *supra* note 31, at 110-12; see also Maurice R. Dyson, *Combatting AI's Protectionism & Totalitarian-Coded Hypnosis: The Case for AI Reparations & Antitrust Remedies in the Ecology of Collective Self-Determination*, 75 SMU L. REV. 625 (2022) (delving into the intersection of AI, power dynamics, and societal impact, and examining how AI technologies can perpetuate protectionist practices and reinforce totalitarian tendencies through biased algorithms and manipulative mechanisms. ... He argues for the need to address these issues by advocating for AI reparations to rectify harms caused by discriminatory AI systems and antitrust remedies to promote fair competition and prevent monopolistic control in the AI landscape. Dyson emphasizes the importance of collective self-determination in shaping the ethical and equitable deployment of AI technologies, calling for proactive measures to safeguard individual rights and promote democratic values in the digital age.).

³⁵⁰ See generally Gabriela Marcu, et al., "Would I Feel More Secure With a Robot?": Understanding Perceptions of Security Robots in Public Spaces, 7 ACM HUM.-COMP. INTERACTION CONF. PROC. (2023).

³⁵¹ Gabriela Marcu, et al., *supra* note 350, at 6.

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these robots “could be abused to personally identify individuals who have not committed a crime.”³⁵²

Legal researcher Andrew Ferguson discusses the complex legal and constitutional implications of using facial recognition technology in law enforcement and surveillance practices.³⁵³ Ferguson analyzed how the deployment of facial recognition systems intersects with individuals’ Fourth Amendment rights,³⁵⁴ particularly concerning privacy,³⁵⁵ search and seizure protections,³⁵⁶ and due process considerations.³⁵⁷ He explored case law, regulatory frameworks, and scholarly debates surrounding the application of facial recognition technology in various contexts, evaluating its impact on civil liberties and constitutional safeguards.³⁵⁸ Ferguson discussed the challenges of balancing public safety needs with individual rights in the digital age, highlighting the importance of legal standards, accountability mechanisms, and ethical guidelines to ensure responsible use of facial recognition technology within the boundaries of the Fourth Amendment.³⁵⁹

Ferguson concludes that being able to have privacy and having freedom of expression is fundamental to American life.³⁶⁰ Thus, there needs to be a legislative framework to safeguard these fundamental rights. This is particularly relevant to the use of robocops since they can be fitted with facial recognition technology and its use needs legal regulation.

Besides the Fourth Amendment, legal scholar Hannah Bloch-Wehba expressed concern about the use of facial recognition to identify protestors during uprisings against the murder of George Floyd.³⁶¹ This use of facial

³⁵² *Id.* at 322, at 2.

³⁵³ Andrew Guthrie Ferguson, *Facial Recognition and the Fourth Amendment*, 105 MINN. L. REV. 1105, 1107–08 (2021).

³⁵⁴ *Id.* at 1141–63, 1164–96.

³⁵⁵ *Id.* at 1126–41, 1197–1209.

³⁵⁶ *Id.* at 1127–28.

³⁵⁷ *Id.* at 1181, 1199, 1202, 1209.

³⁵⁸ *Id.*

³⁵⁹ *Id.*

³⁶⁰ *Id.* at 1210; Ferguson states that “[c]onstant public surveillance . . . inhibits expression[] and undermines the freedom to protest or petition for redress. The ability to carve out a private life independent of government watchers is fundamental to modern American life.” *Id.*

³⁶¹ Bloch-Wehba, *supra* note 31, at 100–01.

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recognition is a risk to the civil liberty of freedom of expression.³⁶² This is in alignment with Andrew Ferguson’s stance.

Legal scholar Jameson Spivack of the Georgetown University Law School’s Center on Privacy & Technology commented on these protests in a debate about regulating facial recognition and stated that this technology has been used prior to the George Floyd protests.³⁶³ Spivack advocates that the use of facial recognition technology should be reformed to include: (1) requiring probable cause backed search warrants; (2) use for violent felonies; (3) ban the use in immigration enforcement; (4) ban the use in life-or-death situations involving drones or police worn body cameras; and (5) require transparent disclosure to a defendant if facial recognition is used to identify and arrest a defendant.³⁶⁴ With regard to the fifth recommendation, note that in 2024 the Detroit police department adopted a new policy on its use of facial recognition and it was endorsed by the ACLU.³⁶⁵ In Detroit, using facial recognition led to wrongful arrests.³⁶⁶ So, the new policy is that the police can no longer show a person’s face to an eyewitness based solely on a facial recognition match.³⁶⁷ Secondary corroborating evidence is required.³⁶⁸

Additionally, legal scholar, Eldar Haber, examined the intersection of recognition technology more expansively beyond the face; and its use in criminal enforcement.³⁶⁹ Recognition technology can extend beyond faces to voices and gaits.³⁷⁰ However, when applied to law enforcement, it raises concerns. Specifically, the use of recognition technology, tainted by racist algorithms and datasets, can lead to what Haber calls “racial recognition.”³⁷¹ Haber advocates that this phenomenon duplicates and amplifies existing structural inequities in society and disproportionately affects marginalized and over-policed communities such as Black

³⁶² *Id.*

³⁶³ Jennifer Strong, et al., *Who Owns Your Face?*, MIT TECH. REV. (Aug. 12, 2020), <https://www.technologyreview.com/2020/08/12/1006678/who-owns-your-face/>.

³⁶⁴ *Id.* at 05:34.

³⁶⁵ Kashmir Hill, *Moves to Improve Police Use of Facial Recognition*, N.Y. TIMES (June 29, 2024), at B1.

³⁶⁶ *Id.*

³⁶⁷ *Id.*

³⁶⁸ *Id.*

³⁶⁹ Eldar Haber, *Racial Recognition*, 43 CARDOZO L. REV. 71, 75, 81 (2021).

³⁷⁰ *Id.* at 72, 81.

³⁷¹ *Id.* at 73–101, 118–30.

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communities.³⁷² Haber concludes that it is imperative to “examine the embedded biases that stem from any use of recognition technology and, perhaps most profoundly, that of voice and gesture recognition.”³⁷³ Again since robocops can be fitted with these more expansive ‘recognition’ technologies beyond mere facial recognition, these same concerns apply to the use of robocops.

Legal researcher William B. Heberling has delved into the impact of biometric surveillance on Black transgender individuals.³⁷⁴ He emphasizes that “Black trans people exist and should not be erased by an anti-Black and transphobic system of government.”³⁷⁵ As advocated by Haber, Heberling advocates that the use of biometric technology, such as facial recognition, can perpetuate discrimination and exacerbate existing inequalities.³⁷⁶ Heberling’s work sheds light on the ethical and social implications of surveillance practices, urging that the rights and dignity of marginalized communities in the face of technological advancements be taken into consideration.³⁷⁷

Moreover, law scholar Margaret Hu studied the intersection of biometric data collection and emerging AI systems. Hu notes that in 2021, the European Union (EU) Commission proposed an AI regulation to safeguard fundamental rights among other purposes.³⁷⁸ Biometric AI systems, used for purposes like policing, border security, and cyber intelligence, are increasingly categorized as “high-risk” because these systems, including facial recognition identification, pose challenges to constitutional and human rights.³⁷⁹ The EU proposed that these high-risk AI systems need to be developed in a manner that provides more transparency so that end users can interpret their use and output.³⁸⁰

Finally, Margaret Hu argues that an informed discussion on envisioning an AI Bill of Rights in the U.S. necessitates grappling with these challenges. Hu emphasizes the need to recognize the constitutional threats posed by biometric AI systems and advocates for the formulation

³⁷² See generally William B. Heberling, *STOP SURVEILLING MY GENRE!: On the Biometric Surveillance of (Black Trans) People*, 20 SEATTLE J. SOC. JUST. 861, 872–74 (2022).

³⁷³ Haber, *supra* note 369, at 134.

³⁷⁴ Heberling, *supra* note 372, at 868–70.

³⁷⁵ Heberling, *supra* note 372, at 865.

³⁷⁶ *Id.* at 873–74.

³⁷⁷ *Id.*

³⁷⁸ Hu, *supra* note 122, at 289–30.

³⁷⁹ Hu, *supra* note 122, at 286–87, 297.

³⁸⁰ Hu, *supra* note 122, at 290.

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of an AI Bill of Rights.³⁸¹ As this relates to robocops can be designed as high-risk biometric AI systems, it is indeed imperative to envision a new legal framework such as the EU's AI Act or Hu's proposed AI Bill of Rights.

iv. Health Predictions

AI is currently being used to predict patients' health outcomes and robots are currently being used to monitor and encourage patients' progress.³⁸² So, while some robocops can detect emotion, they can also potentially be coded to predict health. As previously mentioned in this research, Daniel Prude was a victim of police misconduct.³⁸³ In Daniel's case, his brother Joe Prude called the police to help him because Daniel had a history of mental illness.³⁸⁴

Further, in the Sonya Massey case, Sonya's mother allegedly called 911 one day before Sonya was shot by Deputy Sean Grayson and "said her daughter was in the front yard of her...house, talking loudly, acting erratically."³⁸⁵ When the police visited Sonya, she allegedly declined medical assistance.³⁸⁶ Sixteen hours later, an ambulance was called, and she was declared dead – shot in the face by Deputy Grayson.³⁸⁷

According to a news account, Sonya Massey's mother Donna Massey pled with the 911 police dispatcher:

"Please don't send no combative policemen that are prejudiced...They are scary. I'm scared of the police."³⁸⁸

After reflecting on Daniel Prude's and Sonya Massey's cases, perhaps there will be a day when robots can detect a citizen's mental health in real-time for the police's knowledge and use.

This is particularly interesting given that some 'defund the police' advocates have called for redirecting police funds to programs that address mental health. Law professor Christy E. Lopez, co-director of the

³⁸¹ *Id.* at 297–99.

³⁸² Fiona Cosgrove, *AI and The Future of Health Coaching*, GLOB. WELLNESS INST. (July 8, 2024), <https://globalwellnessinstitute.org/global-wellness-institute-blog/2024/07/08/ai-and-the-future-of-health-coaching/>.

³⁸³ Martin, *supra* note 9.

³⁸⁴ Martin, *supra* note 9.

³⁸⁵ Hundsdorfer, *supra* note 23.

³⁸⁶ Hundsdorfer, *supra* note 23.

³⁸⁷ Hundsdorfer, *supra* note 23.

³⁸⁸ Hundsdorfer, *supra* note 23.

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Georgetown Law School's Innovative Policing Program advocates that "to fix policing, we must first recognize how much we have come to over-rely on enforcement."³⁸⁹ Defunding the police follows the Urban Institute's "divest and invest" paradigm for which the plan is to redirect monies from police budgets towards mental health, substance addiction treatment, youth development, social work, and community programming.³⁹⁰ So, if a robocop could evaluate or predict someone's health, doing so may be viewed as in alignment with these existing reform efforts.

However, health prediction is underway and raises privacy concerns. In legal scholar Sharona Hoffman's research, she compares the legal and ethical responses to genetic testing with those related to long-term predictive health analytics.³⁹¹ These analytics involve algorithms predicting future illnesses, such as suicide, heart disease, and diabetes.³⁹² Hoffman notes that law makers have taken a more cautious approach to genetic testing than to predictive health analytics.³⁹³ Despite their potential benefits, predictive technologies raise concerns about psychological harm, privacy breaches, discrimination, and the accuracy of predictions.³⁹⁴ Hoffman emphasizes the need for thoughtful safeguards, including changes to privacy rules, oversight mechanisms, and self-regulation by healthcare providers. Ignoring the hazards of long-term predictive health analytics would be a grave mistake.³⁹⁵

The possibility that robotics will dehumanize the homeless is also a concern. The ACLU, for instance, is worried that Hawaii purchased the Spot robot with COVID relief money.³⁹⁶ In a homeless tent city, Hawaii used Spot to scan the eyes of the residents to determine if they had fevers.³⁹⁷ Hawaii justified this practice by claiming that it was meant to safeguard the public, police, and employees of homeless shelters.³⁹⁸

³⁸⁹ Christy E. Lopez, *Defund the Police? Here's What that Really Means*, WASHINGTON POST (June 8, 2020), <https://www.washingtonpost.com/opinions/2020/06/07/defund-police-heres-what-that-really-means/>.

³⁹⁰ Goodkind, *supra* note 229.

³⁹¹ See generally Sharona Hoffman, *What Genetic Testing Teaches About Predictive Health Analytics Regulation*, 98 N.C. L. REV. 123 (2019).

³⁹² *Id.*

³⁹³ *Id.* at 126.

³⁹⁴ *Id.* at 129–30.

³⁹⁵ *Id.* at 156–62.

³⁹⁶ O'Brien & Kelleher, *supra* note 40.

³⁹⁷ *Id.*

³⁹⁸ *Id.*

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According to the Boston Dynamics Vice President of Business Development, the company's acceptable use policies for robotics forbid actions that may violate privacy or civil rights laws.³⁹⁹ It is necessary to review if Hawaii violated privacy laws or civil rights.⁴⁰⁰

There are also artificially intelligent algorithms that can recognize people who have a tendency toward violence.⁴⁰¹ Psychology and law scholars Benjamin Spivak and Stephane Sheperd commented on scholar Neil Hogan's teams' research regarding the use of violence risk assessments.⁴⁰² Hogan advocates that, given empirical evidence of racial bias in the criminal justice system, caution is necessary, when applying AI to processes like violence risk assessment that do not conform clearly to simple classification paradigms management. Hogan's research notes "problems of informed consent, maleficence (e.g., the known iatrogenic effects of overly punitive sanctions), and justice (particularly racial justice)."⁴⁰³ Yet, in response and debate, Spivak commented:

*as work continues in this field, it is important that researchers maintain a balanced view about what exactly AI is, what it can do, and where the risks lie. Furthermore, as ethics concerns are raised, we ought to avoid the temptation to evaluate the drawbacks of AI without considering whether the available alternatives provide any improvements in these areas.*⁴⁰⁴

The potential for these AI systems to exacerbate racial inequalities has been expressed by many scholars included in this study. If robocops were outfitted with AI violence risk assessment algorithms, a regulatory framework for using robocops needs to certainly take race into consideration as well as informed consent.

³⁹⁹ *Id.*

⁴⁰⁰ *Id.*

⁴⁰¹ Benjamin L. Spivak & Stephane M. Shepherd, *Ethics, Artificial Intelligence, and Risk Assessment*, 49 J. AM. ACAD. PSYCHIATRY L. 335, 335 (2021).

⁴⁰² *See generally id.*

⁴⁰³ Neil R. Hogan, et al., *On the Ethics and Practicalities of Artificial Intelligence, Risk Assessment, and Race*, J. AM. ACAD. PSYCHIATRY L. 326, 331 (2021).

⁴⁰⁴ Spivak & Shepherd, *supra* note 401, at 357.

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C. Public Safety Concerns

The prohibition against a robot injuring people or allowing them to suffer harm by doing nothing is one of the three Asimov laws of robotics.⁴⁰⁵ Isaac Asimov's "Three Laws of Robotics," published 82 years ago, states that: (1) robots must not harm humans, (2) robots must obey human orders unless they contradict the First Law, and (3) robots must protect themselves if it does not violate the First or Second Laws.⁴⁰⁶

While a U.S. Air Force Academy Warfighter Effective Research Center researcher, scholar Kerstin Haring and her research team argued that when robots are placed in life and death situations, there is a need to go beyond these Asimov laws.⁴⁰⁷ Haring's team advocates that there needs to be moral and ethical guidelines for human-robot interaction (HRI) designers and guidelines on the robot behaviors they should avoid.⁴⁰⁸ Haring points out that Asimov's laws were originally intended for robots depicted in science fiction entertainment.⁴⁰⁹

The public may expect robocops to guarantee public safety. It is difficult to control this belief. In fact, researchers investigated the possibility of robots defending humans.⁴¹⁰ They discovered that significant challenges must be addressed before robots can intervene and offer protection.⁴¹¹ The researchers had 611 Japanese and U.S. research survey participants.⁴¹² The U.S. research participants were more okay with these robots being armed than the Japanese.⁴¹³

Yet, these researchers point out that the design of a security robot that could defend itself is not a likely reality anytime soon.⁴¹⁴ This capability would require it to be able to (1) detect an ongoing or imminent

⁴⁰⁵ Mark Robert Anderson, *After 75 years, Isaac Asimov's Three Laws of Robotics need updating*, THE CONVERSATION (Mar. 17, 2017), <https://theconversation.com/after-75-years-isaac-asimovs-three-laws-of-robotics-need-updating-74501>.

⁴⁰⁶ *Id.*

⁴⁰⁷ Kerstin S. Haring, et al., *The Dark Side of Human-Robot Interaction: Ethical Considerations and Community Guidelines for the Field of HRI*, 689 (14th Ann. ACM/IEEE INT'L. CONF. HUM. ROBOT INTERACTION, 2019), <https://ieeexplore.ieee.org/document/8673184>.

⁴⁰⁸ *Id.*

⁴⁰⁹ *Id.*

⁴¹⁰ Martin Cooney, et al., *A Broad View on Robot Self-Defense: Rapid Scoping Review and Cultural Comparison*, 43 ROBOTICS, Mar. 2023, at 1, 27.

⁴¹¹ *Id.* at 29.

⁴¹² *Id.* at 24.

⁴¹³ *Id.* at 27.

⁴¹⁴ *Id.* at 29.

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threat that cannot be handled without force; (2) judge that its intervention is likely to result in less harm than when it does not intervene; (3) accurately grasp what is happening and assess risks; and (4) deter and attack.⁴¹⁵

The use of robotics presents obstacles. In December 2013, California firm, Knightscope, introduced the K5 autonomous robotic security guard. It can detect sound, vision, touch, and scent to predict and prevent crime.⁴¹⁶ The K5 includes cameras, microphones and sensors. It may report its findings over Wi-Fi.⁴¹⁷ The K5 has experienced performance difficulties. In 2016, there was a hit-and-run incident involving a toddler in a mall, resulting in minor injuries to the toddler.⁴¹⁸

Another example occurred in October 2019 when a woman approached the robot and reported a major brawl nearby.⁴¹⁹ The robot said, “step out of the way” and rolled away, humming a tune, and constantly asking to keep the park clean.⁴²⁰ After the violent brawl, injured individuals were taken to the hospital via ambulance after a police call was made.⁴²¹ This episode demonstrates that robots are only as effective as their programming allows. The public expects these AI capabilities to ensure public safety and expect the robocops to be reliable.

Additionally, a robocop in Duncanville, Texas broke down, and it took two months for local repair workers to fix it.⁴²² Therefore, these gadgets might not be the best choice for communities with little funding. Concerns over the ease with which these robots could be knocked over have also been raised. In fact, a person was caught by police wheelie-ing

⁴¹⁵ *Id.*

⁴¹⁶ Cooper, *supra* note 55.

⁴¹⁷ Rachel Metz, *Rise of the Robot Security Guards*, MIT TECH. REV. (Nov. 13, 2014), <https://www.technologyreview.com/2014/11/13/170454/rise-of-the-robot-security-guards/#:~:text=Startup%20Knightscope%20is%20preparing%20to%20roll%20out%20human%20Dsize%20robot%20patrols.&text=As%20the%20sun%20set%20on,on%20Microsoft's%20Silicon%20Valley%20campus>.

⁴¹⁸ Thomas Page, *The Inevitable Rise of the Robocops*, CNN (May 22, 2017), <https://www.cnn.com/2017/05/22/tech/robot-police-officer-future-dubai/index.html>.

⁴¹⁹ Jimmy McCloskey, *Police Robot Told Woman to Go Away After She Tried to Report Crime—then Sang a Song*, METRO (Oct. 4, 2019), <https://metro.co.uk/2019/10/04/police-robot-told-woman-go-away-tried-report-crime-sang-song-10864648/>.

⁴²⁰ *Id.*

⁴²¹ *Id.*

⁴²² Linda Wertheimer, *Police in Texas Needed Help to Get Robot Working*, NPR (Jun. 30, 2015), <https://www.tpr.org/2015-06-30/police-in-texas-needed-help-to-get-robot-working>.

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and rushing into a robocop while knocking someone over with a bike.⁴²³ Fulfilling the public's expectation that these gadgets can deliver trustworthy public safety is a major ethical, legal, and societal challenge.

Further, the ethical method of controlling a robot's behavior is to program it to make the optimal decision based on scenario analysis and context. A robot should "still be able to push them out of the way of a falling object," rather than being programmed to not push humans.⁴²⁴ Although less likely than if the robot did not push them, the human might still have been hurt.⁴²⁵

VI. TOWARDS A MODEL SMART POLICING REGULATION

In this section, local government policing reform efforts are discussed. Specifically, legal and policy reforms related to the use of AI technology in New York City and San Francisco are briefly described.

The focus of this research has been on robocops. Yet, a model regulation of smart policing generally can be gleaned from the available literature summarized in this research. It is also important to note legal scholar Michael Sinclair addressed the need for guidelines governing the deployment of autonomous and semi-autonomous platforms by law enforcement agencies.⁴²⁶

Sinclair emphasizes the importance of establishing clear governance rules to prevent potential misuse and ensure accountability.⁴²⁷ He proposes the following five rules:

1. Comply with current trends in the state of the law when conducting surveillance and search activities;⁴²⁸
2. Prohibit independent "tactical" patrol operations of robotic police. Yet, allow the police to deploy robotic units independently for

⁴²³ Murali, *supra* note at 74.

⁴²⁴ C. Salge, *Asimov's Laws won't Stop Robots from Harming Humans, so we've Developed a Better Solution*, THE CONVERSATION (Jul. 10, 2017), <https://theconversation.com/asimovs-laws-wont-stop-robots-harming-humans-so-weve-developed-a-better-solution-80569>.

⁴²⁵ *Id.*

⁴²⁶ Michael Sinclair, *Proposed Rules to Determine the Legal Use of Autonomous and Semi-Autonomous Platforms in Domestic U.S. Law Enforcement*, 20 N.C. J. L. & TECH. 1, 7 (2018).

⁴²⁷ *Id.* at 52–73.

⁴²⁸ *Id.* at 52.

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purposes such as crime scene analysis under human supervision;⁴²⁹

3. Prohibit the use of force from operational devices to prevent further militarization of police;⁴³⁰
4. Have checks on the lethality and autonomy of the robotics to mitigate against uncertain actions; and ⁴³¹
5. Enforce strict liability when there is a death or serious bodily injury involving an autonomous device that deploys force inappropriately.⁴³²

Sinclair examined the U.S. military's use of remotely operated systems as a starting point for developing such regulations.⁴³³ By considering factors like transparency,⁴³⁴ oversight, and ethical implications, he advocates for a comprehensive framework that balances security needs with civil liberties.⁴³⁵ Michael Sinclair explained that the goal is to harness technology effectively while safeguarding human rights and minimizing risks associated with autonomous platforms.⁴³⁶

Robots used for spying, bomb disposal, and military conflict have the potential to hurt humans. The robots of today are far more sophisticated than those of 82 years ago when Isaac Asimov's "Three Laws of Robotics" was published.⁴³⁷ However, by concentrating on the possible risks associated with far-off technology, the advantages and difficulties associated with current or near-future technologies may be preempted.

Legal scholar Kiel Brennan-Marquez examined the implications of laws that are drafted in overly broad terms, potentially encompassing a wide range of behaviors and activities beyond their intended scope.⁴³⁸ Brennan-Marquez highlights how these vague and expansive laws can lead to legal uncertainty, arbitrary enforcement, and violations of

⁴²⁹ *Id.* at 57.

⁴³⁰ *Id.* at 59.

⁴³¹ *Id.* at 62.

⁴³² *Id.* at 72.

⁴³³ *Id.* at 8-10.

⁴³⁴ *Id.* at 17, 24.

⁴³⁵ *Id.* at 7, 17, 24, 52-73.

⁴³⁶ *See generally id.*

⁴³⁷ Anderson, *supra* note at 405.

⁴³⁸ Kiel Brennan-Marquez, *Extremely Broad Laws*, 61 ARIZ. L. REV. 641, 642 (2019).

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individuals' rights.⁴³⁹ He discusses the challenges of interpreting and applying such laws, as well as the risks of unintentional consequences⁴⁴⁰ and chilling effects on freedom of expression including protests.⁴⁴¹ Brennan-Marquez calls for greater precision and clarity in legislative drafting to ensure that laws are proportionate, targeted, and aligned with democratic principles such as an expectation of privacy.⁴⁴² By scrutinizing the impact of extremely broad laws, he underscores the importance of legal precision and specificity in upholding the rule of law and protecting civil liberties.⁴⁴³

Regarding what needs to be included in a comprehensive model regulation, here are twenty-five recommendations gleaned from the scholarly work reviewed in this study:

1. **Participatory Budgeting** - Make the use of policing technology such as robocops fitted with cameras a community policing program and include participatory budgeting,⁴⁴⁴ Empower communities to oversee purchase and use of tech.⁴⁴⁵ Enhanced community policing is a goal.⁴⁴⁶ By using participatory budgeting, perhaps robocops can be used by police departments for branding themselves as being known for enhanced community policing.
2. **De-militarize the use of robocops** – There is *robophobia*. There is fear and concern about the use of robocops.⁴⁴⁷ Thus, address public

⁴³⁹ *Id.* at 665.

⁴⁴⁰ *Id.* at 664.

⁴⁴¹ *Id.* at 665.

⁴⁴² *Id.*

⁴⁴³ *See generally id.*

⁴⁴⁴ Bloch-Wehba, *supra* note at 22 (regarding participatory budgeting).

⁴⁴⁵ Southerland, *supra* note at 307. *See* Har & Lauer, *supra* note at 31. Har & Lauer wrote, “San Francisco official David Chiu, who authored the California bill to inventory militarized equipment when he was in the state legislature, said communities deserve more transparency from law enforcement and to have a say in the equipment’s use.” *Id.*

⁴⁴⁶ Walter Cooper, et al., *The Corrections and Law Enforcement Technology Assessment System (CLETAS)*, IEMC '98 Proceedings *INT'L CONF. ENG. AND TECH. MGMT.* Pioneering New Technologies: Management Issues and Challenges in the Third Millennium (Cat. No. 98CH36266) (IEEE, 1998) at 419-425.

⁴⁴⁷ *See* Ryan Fonseca, *As Police Across California Eye Advanced Robots, Watchdogs Fear a Slippery Slope*, LOS ANGELES TIMES (Mar. 8, 2023), <https://www.latimes.com/california/newsletter/2023-03-08/essential-california-police-robots-essential-california>. In the City of Los Angeles, “as city leaders weighed whether to accept the

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fears of armed robocops head-on. As illustrated in Table 2, robocops come in many different designs. Some look more militarized than others. Use an unarmed community friendly looking robocop to avoid the “Weapons Effect” theory that the use of military gear is a stimulant linked to aggression, and as a result, the role of the police may change. The people may be treated like an enemy force by the police, who may react to them like a soldier would.⁴⁴⁸ As Sinclair advocated, prohibit use of force.⁴⁴⁹ Yet, the City of San Francisco decided to prohibit use of force unless there are special circumstances necessitating the use of weaponry.⁴⁵⁰

3. **Analyze use of robocops through an inclusive lens** - In an expansion of legal scholar Laura Moy’s ‘racial equity lens,’⁴⁵¹ require analyses of new police tech through a gender, racial, income, and overall ‘inclusive-society’ equity lens and develop policies from that lens. Ensure it is not used as a tool of oppression,⁴⁵² Avoid racist algorithms and racist data sets.⁴⁵³ acknowledging that tech can perpetrate discrimination and exacerbate existing inequalities,⁴⁵⁴ Also, recall the deliberate steps adopted by the U.S. DOD to minimize unintended bias in AI capabilities.⁴⁵⁵
4. **Mandate traceability with audits and impact assessments** - Make sure the robocops’ AI capabilities are traceable (i.e., auditable).⁴⁵⁶ This can be accomplished with impact statements.⁴⁵⁷

donation of a so-called robot dog. During a public comment period, dozens of people spoke out against the LAPD’s plan.” *Id.* ; see also Paul Waldman, *Coming Soon to Your Local Police Department: Killer Robots*, THE WASHINGTON POST (Dec. 2, 2022), <https://www.washingtonpost.com/opinions/2022/12/02/san-francisco-police-killer-robots/>. In San Francisco, people “fear that their lives can be snuffed out.” *Id.*

⁴⁴⁸ See *supra* note 76.

⁴⁴⁹ Michael Sinclair, *supra* note at 392 at 59.

⁴⁵⁰ Rogers, *supra* note 220.

⁴⁵¹ Moy, *supra* note 332, at 154.

⁴⁵² See Coglianesse & Dor, *supra* note 122, at 830; see also Williams & Haring, *supra* note 238, at 2.

⁴⁵³ Haber, *supra* note 369, at 73.

⁴⁵⁴ Moy, *supra* note 332 at 143; see also Heberling, *supra* note 372, at 891.

⁴⁵⁵ Lopez, *supra* note 108.

⁴⁵⁶ *Id.*

⁴⁵⁷ See, e.g., Moy, *supra* note 332, at 175-76.

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Also require algorithmic impact assessments.⁴⁵⁸ The goal is to promote accountability.⁴⁵⁹ Audits and impact assessments are customarily used to promote accountability.

5. **Ensure reliability** - Make sure the robocops are reliable.⁴⁶⁰ One of the DOD principles for its AI capabilities is that they are reliable.⁴⁶¹ This principle should be applied to robocops that are integrated with AI capabilities. And it is reasonable to assume that the public expect robocops to ensure public safety and expect the robocops to be reliable. There needs to be a commitment to piloting, testing, and having a well-resourced team capable of making timely repairs. Recall Duncanville, Texas's robocop which took two months to repair locally after it stopped working.⁴⁶²

As aforementioned, the robocops have had some performance issues. The K5 has experienced performance difficulties. In 2016, the K5 robot had a hit-and-run incident involving a toddler in a mall, resulting in minor injuries to the toddler.⁴⁶³ Another example occurred in October 2019 when a woman approached the robot and reported a major brawl nearby. The robot said, "step out of the way" and rolled away, humming a tune, and constantly asking to keep the park clean.⁴⁶⁴ After the violent brawl, injured individuals were taken to the hospital via ambulance after a police call was made.⁴⁶⁵

To address reliability concerns, require:

- 1) Maintenance records;
- 2) Annual inspections;
- 3) Failure alert systems;

⁴⁵⁸ Bloch-Wehba, *supra* note 31, at 117.

⁴⁵⁹ H.R. 1280, 117th Cong. (2021); *see also* Coglianesi & Dor, *supra* note 122, at 831.

⁴⁶⁰ *See* Lopez, *supra* note 108; *supra* notes 416-418 and accompanying text (discussing performance difficulties of the K5 autonomous robotic security guard); *see also* McCloskey, *supra* notes 419-21 and accompanying text.

⁴⁶¹ Lopez, *supra* note 108.

⁴⁶² Wertheimer, *supra* note 422; *see also* Hamilton, et al. *supra* note 255, at 5 (noting that robocops can be knocked over very easily).

⁴⁶³ Page, *supra* note 418.

⁴⁶⁴ McCloskey, *supra* note 419.

⁴⁶⁵ *Id.*

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- 4) Reliable capture and storage of data; and
 - 5) Ability to safely stop the robotic devices.
6. **Address potential for unintended consequences** - Make sure the robocops are governable⁴⁶⁶ and “fulfill their intended functions while possessing the ability to detect and avoid unintended consequences and [have] the ability to disengage or deactivate”⁴⁶⁷ if they demonstrate unintended behavior. In addition, legal scholar Casey Fiesler noted the importance of speculating and having foresight – foresee what could possibly go wrong and regulate for the potential of unintended consequences.⁴⁶⁸
7. **Require the use of cameras** - Robocops are glorified kiosks with cameras fitted therein. The police surveillance using video cameras is their superpower. Note that the use of bodycams on human police has been mandated in the past. Following the killing of Michael Brown in Ferguson, the Obama administration task force on policing suggested the usage of body cams,⁴⁶⁹ in the New York stop and frisk case, a federal judge ordered a pilot program requiring officers to wear body cameras, community meetings to gather feedback, and a veteran prosecutor to oversee the department’s policing techniques.⁴⁷⁰ Thus, mandate the use of cameras on robocops despite any privacy concerns.
8. **Address problematic police department organizational cultures** - Acknowledge that camera use alone is not enough. Require an organizational culture assessment and mandate the implementation of action items to fix problematic cultures. Camden New Jersey completely revamped its police department to fix its

⁴⁶⁶ Lopez, *supra* note 108.

⁴⁶⁷ *Id.*

⁴⁶⁸ Casey Fiesler, *Innovating Like an Optimist, Preparing like a Pessimist: Ethical Speculation and the Legal Imagination*, 19 COLO. TECH. L.J. 1, 10-11 (2021).

⁴⁶⁹ U.S. DEPT OF JUST., FINAL REPORT OF THE PRESIDENT’S TASK FORCE ON 21ST CENTURY POLICING 36 (2015), https://cops.usdoj.gov/pdf/taskforce/taskforce_finalreport.pdf.

⁴⁷⁰ Goldstein, *supra* note 319.

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organizational culture.⁴⁷¹ Recall that sociology and African American studies scholar Phil McHarris advocates that police-reform requires addressing the pain that drives anti-police protesters to the streets and to that end mere body cams and police training is not enough.⁴⁷² ACLU-Illinois attorney Alexandra Block stated that with respect to Chicago police department's approach to reform, their promises of overhauling the culture have not been kept.⁴⁷³ Thus, regulate these promises by requiring assessments and the implementation of action items that address problems in the police departments' organizational culture.

9. **Restrict the use of facial recognition technology** – Facial recognition technology considered high risk by the EU.⁴⁷⁴ The EU proposed that these high-risk AI systems need to be developed in a manner that provides more transparency so that end users can interpret their use and output.⁴⁷⁵ In the U.S., when its use is authorized, there needs to be careful and responsible use within the parameters of the Fourth Amendment.⁴⁷⁶ Legal scholar Jameson Spivack suggested (1) transparent disclosure to a defendant if facial recognition is used to identify and arrest a defendant; (2) requiring probable cause backed search warrants; (3) only use for violent felonies; (4) ban the use in immigration enforcement; and (5) ban the use in life-or-death situations involving drones or police worn body cameras.

Further, facial recognition technology relies on video. the City of San Francisco's equipment policy states that robots with audio or video needs to comply with authorized uses and prohibitions approved pursuant to

⁴⁷¹ CGTN America, *U.S. police reform: What to learn from the City of Camden*, YOUTUBE (Jun. 19, 2020), https://www.youtube.com/watch?v=ZGjBaw57_YY.

⁴⁷² McHarris & McHarris, *supra* note 232; see also Courtney Vinopal, *What Is The 'Defund The Police' Movement? 5 Questions Answered*, PBS NEWSHOUR (Jun. 11, 2020), <https://www.pbs.org/newshour/nation/watch-live-what-is-the-defund-the-police-movement-answering-your-questions>.

⁴⁷³ Schuba & Main, *supra* note 4.

⁴⁷⁴ Hu, *supra* note 122, at 290.

⁴⁷⁵ *Id.*

⁴⁷⁶ See generally Ferguson, *supra* note 353.

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Section 19B.2 of the San Francisco Administrative Code.⁴⁷⁷ So, authorized uses and prohibitions need to be delineated.

10. **Include a comprehensive set of soft law techniques** – As per legal scholars Gary E. Marchant and Carlos Ignacio Gutierrez, when governing AI, some of the soft law features include:
 - a. Codes of conduct;
 - b. Ethical statements, statements of principles;
 - c. Professional guidelines;
 - d. Certification programs;
 - e. Public-private partnerships; and
 - f. Voluntary programs.⁴⁷⁸

These artifacts and programs may be ineffective and have credibility and trust issues. So, Marchant and Gutierrez's soft law 2.0 include enforcement processes to implement these artifacts and programs to assure compliance with making use of them.⁴⁷⁹ Soft law governance of the AI integrated into robocops should be included in a comprehensive robocops program.

11. **Anonymize, de-identify personal information** – Legal scholar Michal Lavi advocates the anonymization of personal information.⁴⁸⁰ Using robocops will result in the collection of 'big data'. The Na Young Ahm research team examined how big data was gathered and analyzed during COVID-19 in South Korea and concluded that although striking a balance between privacy concerns and public safety can be challenging, it is still important to do so.⁴⁸¹ The researchers argue that enhanced privacy protections, like being clear in communicating the public disclosure of private information and de-identification personal data, are required.⁴⁸²

⁴⁷⁷ S.F. POLICE DEP'T, *Law Enforcement Equipment Policy: Inventory Acquired Prior to January 2022* 3 (2022), <https://www.sanfranciscopolice.org/sites/default/files/2022-11/SFPDDraft-AB481Policy-20221121.pdf>.

⁴⁷⁸ Marchant & Gutierrez, *supra* note 112, at 377.

⁴⁷⁹ *Id.* at 424.

⁴⁸⁰ Lavi, *supra* note 122, at 545-46.

⁴⁸¹ Ahn, et al., *supra* note 293, at 171331.

⁴⁸² *Id.*

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12. **Mandate transparency** – The NCSL’s policing legislation database has state regulations of policing technology, and one category this can be sorted on is called ‘data and transparency.’⁴⁸³ This is likely their practice because this is an important issue of concern facing state legislatures. In a review of the NCSL 2023 database of policing legislation, it was reported that “[n]early every state introduced legislation to address data collection or transparency, with nearly 60 bills enacted.”⁴⁸⁴

In 2020, the DOD established five principles for using AI which include developing and deploying AI capabilities with transparent and auditable methods, data source, design procedures and documentation.⁴⁸⁵ Also, in 2021, the *George Floyd Justice in Policing Act* had a goal to increase transparency.⁴⁸⁶

13. **Control and reduce private sector developers’ influence on the use of robocops** - The private sector’s influence over these police customers raises concerns about hidden control over an essential democratic function.⁴⁸⁷ Additionally, the race among private companies to develop dominant policing platforms poses another critical issue. “[P]rivate vendors wield considerable influence over matters of accountability and transparency.”⁴⁸⁸ If a single company monopolizes the market for such a platform, it gains significant power over various surveillance technologies, impacting democratic policing.⁴⁸⁹ another concern with outsourcing and public-private cooperation for algorithmic governance is it could lead to an abdication of governmental responsibilities and more discretion by technology companies.⁴⁹⁰

⁴⁸³ Nat. Conf. of State Leg. (NCSL), *supra* note 120.

⁴⁸⁴ Amber Widgery, *2023 Policing Policy Legislation in Review*, NATIONAL CONFERENCE OF STATE LEGISLATURES (NCSL) (May 1, 2024), <https://www.ncsl.org/state-legislatures-news/details/2023-policing-policy-legislation-in-review>.

⁴⁸⁵ Lopez, *supra* note 108.

⁴⁸⁶ See Joan E. Greve, *What is the George Floyd Justice in Policing Act and Is It Likely to Pass?*, THE GUARDIAN (Feb. 6, 2023), <https://www.theguardian.com/us-news/2023/feb/06/george-floyd-justice-in-policing-act-explainer-tyre-nichols>.

⁴⁸⁷ Joh & Joo, *supra* note 278, at 17.

⁴⁸⁸ *Id.* at 27.

⁴⁸⁹ *Id.* at 3.

⁴⁹⁰ Bloch-Wehba, *supra* note 31, at 124.

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14. **Set a liability standard** - Address liability concerns. Should developers, governments or both be held liable? What should the level of liability be. Legal scholar Michael Sinclair advocates for strict liability.⁴⁹¹ This is in keeping with common law for abnormally dangerous activities.⁴⁹² Given public fears over the use of robocops, perhaps their use can be categorized as an abnormally dangerous activity. Under tort law, if a robocop is defective, strict product liability could be applied.⁴⁹³

15. **Obtain consent from citizens before using robocops integrated with AI capabilities** - Robocops can be fitted with AI technology such as facial recognition and emotion detection. Conceivably other AI applications such as mental health and violence predictions could also be coded into robocops. Psychology scholar Neil Hogan's research team expressed concern over use of violence predictions because of informed consent issues.⁴⁹⁴ Further, in the US, when conducting research on human subjects, research participants are asked to provide consent to participating after being informed about the purpose of the research and any risks.⁴⁹⁵ Consent is going to be a legal issue if police departments begin to integrate AI tools that detect emotion, mental health, propensity for violence and health predictions into robocops. In the U.S., this would likely kick in the need for HIPAA compliance.⁴⁹⁶

There is a need for transparency and openness. Jay Stanley of the ACLU has stated that while police departments are adopting powerful new surveillance and other technology without telling or asking the communities they serve.⁴⁹⁷ In this broader context of giving citizens an opportunity to consent to the use of these AI tools in robocops, there would be a need for an alternative to informed consent. The alternative could be

⁴⁹¹ Sinclair, *supra* note 426, at 72-73.

⁴⁹² *Strict Liability*, CORNELL LAW SCH. LEGAL INFO. INST., https://www.law.cornell.edu/wex/strict_liability (last visited Feb. 19, 2025).

⁴⁹³ *Id.*

⁴⁹⁴ *See generally*, Hogan, et al., *supra* note 403.

⁴⁹⁵ 45 C.F.R. § 46.104(d)(8) (2018).

⁴⁹⁶ Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, Stat. 1936.

⁴⁹⁷ Cramer & Hauser, *supra* note 236.

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a vote on a referendum item. Another possibility is to have city or county councils and boards vote. For example, the City of San Francisco has its Board of Supervisors vote on the amendment of the policy equipment policy including weaponizing robocops.

16. **Require a commitment to the prioritization of public safety in the use of robocops** - San Francisco's equipment policy on the use of robocops states "[o]nly assigned operators who have completed the required training shall be permitted to operate the robots."⁴⁹⁸ "[I]n a study of the Laoag police station in the Philippines, a lack of trained personnel in the use of the technology is problematic"⁴⁹⁹ Police need comprehensive training in the use of these devices before they use robocops.⁵⁰⁰ One of the DOD's 2020 AI principles is that relevant personnel possess an appropriate understanding of the technology.⁵⁰¹ Further, legal scholar Michael Sinclair advocates that the capabilities of these robots need to be known. There is a need for checks on lethality and how autonomous they are.⁵⁰²
17. **Protect due process rights** – Under the Fourteenth Amendment of the U.S. Constitution, substantive due process means that no State can deprive any person of life, liberty, or property, without due process of law.⁵⁰³ There is procedural due process and substantive. Substantive due process relates to privacy.⁵⁰⁴ Privacy is an important concern with the use of robocops. Legal scholar Michal Lavi advocates for the use of due process.⁵⁰⁵ This concern is echoed by legal researcher Andrew Ferguson as related to the use of facial recognition technology.⁵⁰⁶ In addition, researchers Coglianese and

⁴⁹⁸ SAN FRANCISCO POLICE DEPT, *supra* note 477, at 3.

⁴⁹⁹ Jay-Lynne May S. Escalona, *E-policing in the PNP Laoag City Police Station: Case Study*, 5 INT'L. J. OF INNOVATIVE SCI. & RSCH. TECH. 497 (2020).

⁵⁰⁰ Hamilton, et al., *supra* note 255.

⁵⁰¹ Lopez, *supra* note 108.

⁵⁰² *See generally* Sinclair, *supra* note 426.

⁵⁰³ *Due Process of Law*, JUSTIA, <https://law.justia.com/constitution/us/amendment-14/04-due-process-of-law.html> (last visited Feb. 29, 2025).

⁵⁰⁴ *Id.*

⁵⁰⁵ Lavi, *supra* note 122, at 500, 551-553.

⁵⁰⁶ Ferguson, *supra* note 353, at 1181, 1202, 1209.

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Dor raised due process concerns about the ethical implications of using AI algorithms in decision-making.⁵⁰⁷

Other due process requirements stated in pending and enacted state regulations include:

- 1) Requiring a search warrant before using drones;
 - 2) Protecting First Amendment freedom of expression, freedom of association, privacy by not using these devices to cause a chilling impact American freedom and civil rights;
 - 3) If drones are used to obtain evidence, require a search warrant and have probable cause to believe someone committed a crime; and
 - 4) Forbidding FRT from serving as sole basis for making an arrest or for establishing probable cause.
18. **Mandate the hiring of an AI Czar** - Each police department that deploys robocops need to employ an AI Czar⁵⁰⁸ that addresses privacy concerns, biased AI algorithms, AI used in hiring police, the reliability of robotics, the private sectors influence over robotic products used in policing and requires private sector sellers of AI algorithms and robotics to be completely honest and transparent about AI capabilities.
19. **Decide prohibitions on the use of FRT and cameras on robocops** - Require the formation of a task force, work group or panel of experts to decide: (1) whether to use FRT on drones; (2) whether footage is to be treated as confidential; and (3) what cybersecurity is required to safeguard the data and results. Rather than use for generalized surveillance in public spaces, decide whether to only use to investigate certain crimes:
- Exploitation of children
 - Child abuse
 - Only when there is a specific target
 - Violent crime
 - Human trafficking
 - Hate crimes

⁵⁰⁷ Coglinanese & Dor, *supra* note 122, at 833, 836.

⁵⁰⁸ Hamilton, et al., *supra* note 255.

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Also require annual reports and require reports upon request on demand.

20. **Decide when to prohibit disclosure of robocop camera footage** - Require that a department be created with staff to review and manage footage in any law enforcement agency using cameras, FRT, drones, and robocops. Decide whether there should be camera usage or no disclosure of the following depictions:

- Strip searches
- Bathrooms
- Locker rooms
- Conversations about policing strategies and tactics
- Schools
- Covert/undercover operations
- Conversations with witnesses
- Confidants/informants
- In residences
- Conversations with victims of crimes
- Victimization – sex abuse, domestic abuse
- Death – homicide, suicide.

Treat these recordings as confidential and not subject to public inspection. Since robocops cannot make these distinctions and turn on and off accordingly, decisions must be made to redact the recordings.

21. **Rather than ban robocops, pilot and test their use** - As done with autonomous vehicles, pilot and test robocops how they can be integrated into everyday life in public ways. Use robocops to reduce contact with human police or to mitigate explosives. For example, use to detonate bombs. Decide whether to have a public hearing on the use of robocops. This is important because piloting is typically viewed as research. And in the US, there are Institutional Review Board (IRB) requirements for research involving human subjects.⁵⁰⁹ Further, when robocops are fitted with FRT, emotion detection, and health prediction algorithms, the research involves individuals'

⁵⁰⁹ U.S. Department of Health and Human Services (DHHS), *Office of Human Research Protections 45 CFR 46*, available at <https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/index.html>.

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health. There may be Health Insurance Portability and Accountability Act (HIPAA) concerns about health information privacy and protection.⁵¹⁰

For example, the IRB oversees ethical considerations such as privacy concerns. Participants in health care settings must be fully informed and provide an informed consent about how their biometric data (facial images, emotional responses, health predictions) will be collected, stored, and used.⁵¹¹ Robocops and related AI involved research involving private identifiable information from human subjects may prove challenging. The ability to use, study, analyze or generate identifiable private information with or without intervention or interaction would need to be sorted out.⁵¹² In addition, the IRB has published that “there is broad concern about the harms (e.g., bias, discrimination, creation and reinforcement of inequity) of ubiquitous data collection and the application of AI to individuals and, perhaps more importantly, to groups.”⁵¹³

22. State when drones can be used as robocops – For instance, state that drones can be used by law enforcement agencies for:

- Acquiring aerial perspectives of crowds
- Traffic management
- Viewing crime scenes
- Countering terrorist attacks
- Finding Find missing people
- Assisting with disasters in emergency management.

To thwart privacy concerns., prohibit generalized surveillance with drones.

⁵¹⁰ U.S. Department of Health and Human Services (DHHS), *Summary of the HIPAA Privacy Rule*, <https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html>.

⁵¹¹ Nicole Martinez-Martin, *What Are Important Ethical Implications of Using Facial Recognition Technology in Health Care?*, *AMA Journal of Ethics* (2019). Martinez-Martin points out that “in health care settings, informed consent will need to be obtained not only for collecting and storing patients’ images but also for the specific purposes for which those images might be analyzed by FRT systems.”

⁵¹² U.S. Department of Health and Human Services (DHHS), *IRB Considerations on the Use of Artificial Intelligence in Human Subjects Research*, (Oct. 19, 2022), available at <https://www.hhs.gov/ohrp/sachrp-committee/recommendations/irb-considerations-use-artificial-intelligence-human-subjects-research/index.html>.

⁵¹³ *Id.*

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23. **State whether to give notice of recording or FRT use and/or consent** – For example, decide whether to give notice about upcoming use of FRT thirty days ahead of use. To address transparency concerns, at the least, give general notice that FRT, cameras, drones and/or other robots are being used for law enforcement purposes.
24. **State data retention and access requirements** – State how data is to be stored and retained. For example, decide to retain collected recordings and other data from robocops for 120 days or for three years. State that if the data is required to be used in criminal prosecution, retain in the same manner as evidence in criminal prosecution. Also decide when to release footage and how fast to release it. For example, make disclosure mandatory after receiving a request within five business days, disclose. Routinely disclose faster, for example within 24 hours, if the recording or data includes an incident involving the use of a firearm or when there's a death to notify spouse, parent, guardian, children, or other next of kin.
25. **State that robotics, algorithmic software, and databases are to be acquired from approved manufacturers** - Have a list of approved manufactures and a panel of technology experts to decide which vendors that can be on that list and the criteria they use to make that decision. The goal is to control the quality and use of these devices. To this end, it is important not to give manufacturers too much discretion and control.

CONCLUSION

This study is motivated by the murder of George Floyd, Dexter Reed, Sonya Massey, U.S. Airman Roger Fortson, and the countless other instances of abusive contacts between police and civilians. The contacts between police and civilians in the U.S. have increased over the years and most of the contacts are in traffic stops. The co-author Dr. Clovia Hamilton attests to rarely seeing police and saw very few contacts between police and civilians when she lived in South Korea between 2020 and 2022. South Korea uses smart policing. There are numerous CCTV cameras and intensive surveillance. If there is a traffic violation, license

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plates are read, and the violator receives a notice to pay a fine or come to court.

Here in America, a simple traffic stop can escalate into a deadly encounter. Between 2002 and 2008, 40 million residents had face-to-face contact with police.⁵¹⁴ In 2020, there were more at 53.8 million.⁵¹⁵ Thus, the use of smart policing cameras and replacing police with robocops might be a solution to reducing negative encounters. The well-managed, regulated use of robocops and other smart policing techniques can save police and civilians from unnecessary harm.

However, as this study detailed, there are numerous challenges to address. These challenges include pushback from the public against surveillance due to privacy concerns. In addition, robotics rely on AI algorithms that may be coded to be biased. There is AI that can recognize faces, detect emotions, and predict health states. The use of these algorithms raises privacy concerns. Further, transparency is an issue. It is not very transparent that citizens know these technologies are in use or know their capabilities. There are also related due process concerns over whether citizens should receive informed consent and give consent to the use of these devices. Perhaps consent can come in the form of referendums and citizens vote on the use.

Another concern is the potential militarization of policing and weaponization of the robocops. Are these devices coded well enough to know when to use a weapon? Will they be completed autonomously or remotely used by a human police person? The issue of whether killer robots should be banned has been debated for many years. Further, potential future research includes studying whether: 1) to code robocops for interviews and interrogations; 2) robocops should serve as parole or correction officers; 3) to allow robocops to enter residences; and 4) to allow the use of robocops that can grab hold of people, chokehold, knee or otherwise restrain them.

There is clearly a need for a regulatory framework. Herein, the U.S. federal government's use of robotics for national defense is discussed. The legal and ethical privacy and bias concerns with using robocops is described. Given that robocops makes use of AI a review of state laws related to the use of AI, and the states' regulations that address privacy

⁵¹⁴ U.S. DEPT. OF JUST., BUREAU OF JUST. STAT., NCJ234599, CONTACTS BETWEEN THE POLICE AND THE PUBLIC, 2008 1, <https://bjs.ojp.gov/content/pub/pdf/cpp08.pdf> (Oct. 2011).

⁵¹⁵ U.S. DEPT. OF JUST., BUREAU OF JUST. STAT., NCJ304527, CONTACTS BETWEEN THE POLICE AND THE PUBLIC, 2020 1, <https://bjs.ojp.gov/media/document/cbpp20.pdf> (Nov. 2022).

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and bias in the use of AI tools such as facial recognition technology is provided. Local reform attempts in New York City and San Francisco are discussed. Lastly, after reflecting on lessons learned from this research, twenty-five (25) recommendations are made about what should be included in a model regulation of smart policing generally which includes the deployment of robocops.

APPENDIX

Table 1. Summary of Robocops deployed globally

Country	Robot	Drones	Mobile Apps for Smart policing	Traffic Systems for Smart Policing	Weaponized robots	Face Recognition	Facial Expression Recognition	Emotion Recognition
Afghanistan ⁵¹⁶		x						
China ⁵¹⁷	x					x		
Congo ⁵¹⁸	x			x				
Dubai ⁵¹⁹	x					x	x	x

⁵¹⁶ Cooper, *supra* note 55. The Reaper drone has been deployed for military operations in Afghanistan, Iraq, and other countries. The vehicle has remote monitoring cameras and sensors, as well as heavy armory. There are reports, though, that the Reaper is prone to mishaps and can become uncontrollable if compromised. *Id.*; see also Graham, *supra* note 98. Using drones for urban surveillance carries several risks, one of which being the potential to contribute even further to the militarization in urban locations. *Id.*

⁵¹⁷ Murali, *supra* note 93.

⁵¹⁸ Agence France-Presse, *Robocops Being Used As Traffic Police in Democratic Republic of Congo*, THE GUARDIAN (Mar. 4, 2015), <https://www.theguardian.com/travel/2015/mar/05/robocops-being-used-as-traffic-police-in-democratic-republic-of-congo>.

⁵¹⁹ Parag Deulgaonkar, *World's First "Robocop" Joins Dubai Police Force*, ARABIAN BUS. (May 21, 2017), <https://www.arabianbusiness.com/industries/industries-culture-society/world-s-first-robocop-joins-dubai-police-force-674837>.

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Country	Robot	Drones	Mobile Apps for Smart policing	Traffic Systems for Smart Policing	Weaponized robots	Face Recognition	Facial Expression Recognition	Emotion Recognition
France ⁵²⁰	x							
India ⁵²¹	x		x		x			
Israel ⁵²²	x	x			x			
Nambia ⁵²³			x					
Poland ⁵²⁴	x							
Russia ⁵²⁵	x				x			
South Korea ⁵²⁶				x				

⁵²⁰ Discover the Robot Security Guards, *The Police Officers and Patrollers of Tomorrow*, CAPITAL (Dec. 29, 2016).

⁵²¹ Page, *supra* note 418. India's police force plans to utilize in-house robots, like Dubai's approach. The KP-Bot is being piloted to record complaints and direct visitors in police stations' reception areas. *Id.*; Shweta Taneja, *Seeing Silicon: Robo Cops Are Here. Do You Trust Them?*, THE HINDUSTAN TIMES (Dec 2, 2024) <https://www.hindustantimes.com/science/seeing-silicon-robocops-are-here-do-you-trust-them-101733116774706.html>; *see generally* Chen-Hao Huang, et al., *Towards Convergence of AI And IoT for Smart Policing: A Case Of A Model Edge Computing-Based Context-Aware System*, 29 J. OF GLOB. INFO. MGMT. (2021). Huang notes that additionally, a policing architecture combining AI and IoT has been developed. *Id.*

⁵²² Meir Orbach, *Boston Dynamics' Robo-Gog Gets Israeli Percepto's Drone Capabilities*, CALICAST (Nov. 24, 2020), <https://www.calcalistech.com/ctech/articles/0,7340,L-3875932,00.html>; *see also* Glaser, *supra* note 515.

⁵²³ Naftali Nakasole, et al., *Analysing ICT Initiatives Towards Smart Policing to Assist African Law Enforcement in Combating Cybercrimes*, IEEE 9TH INT'L CONFERENCE ON SCIENCES OF ELECTRONICS, TECHNOLOGIES OF INFORMATION AND TELECOMMUNICATIONS (SETIT) 191, 195 (2022). Namibian researchers also investigated smart policing as a means of thwarting cybersecurity crimes. They discovered that the use of AI is critical in the fight against cybercrimes and that it is crucial to develop mobile applications and sites that allow the public to help law enforcement by providing information. *Id.*

⁵²⁴ Kann, *supra* note 35; *see also* Murali, *supra* note 93.

⁵²⁵ Page, *supra* note 418. In contrast to Dubai, the Russian Foundation for Advanced Research Projects in the Defense Industry demonstrated a gun-toting android. The android, designated FEDOR (Final Experimental Demonstration Object Research), can drive, shoot, and walk. *Id.*

⁵²⁶ MOLIT, *supra* note 63.

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Country	Robot	Drones	Mobile Apps for Smart policing	Traffic Systems for Smart Policing	Weaponized robots	Face Recognition	Facial Expression Recognition	Emotion Recognition
U.S. ⁵²⁷	x				x ⁵²⁸			

⁵²⁷ See e.g., Cooper, *supra* note 55; Flaherty, *supra* note 66; Abril, *supra* note 42; see also O'Brien & Kelleher, *supra* note 40; Stanley, *supra* note 86; Kahn, *supra* note 35; Murali, *supra* note 93; ABC 7 New York, *supra* note 41; Max, *supra* note 240; Mike Masnick, *Now That We've Entered The Age of Robocop, How About Ones That Detain, Rather Than Kill?*, TECHDIRT (Jul. 8, 2016), <https://www.techdirt.com/2016/07/08/now-that-weve-entered-age-robocop-how-about-ones-that-detain-rather-than-kill/>; Silverman, *supra* note 39.

⁵²⁸ SAN FRANCISCO POLICE DEPT, *supra* note 248.

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Table 2. Examples of Smart Policing Robocops.

Image	Robots equipped with cameras	Manufacturer	Location
 <p>529</p>	<p>Anbot and E-Patrol Robot Sheriff (armed with facial recognition software and stun-guns)⁵³⁰</p>	<p>Shenzhen Public Security Bureau, National University of Defense Technology, and a domestic technology company</p>	<p>China (Shenzhen & Zhengzhou)</p>

⁵²⁹ Photograph of China's RoboCop, in Stephen Chen, *Meet China's RoboCop: The Robot Police Officer Who Doesn't Tire – Or Second-Guess Commands*, SOUTH CHINA MORNING POST (May 5, 2016), <https://www.scmp.com/news/china/policies-politics/article/1941394/meet-chinas-robocop-robot-police-officer-who-doesnt>.

⁵³⁰ Murali, *supra* note 93; see also Yi Shu Ng, *China's Latest Robot Police Officer Can Recognise Faces*, MASHABLE (Feb. 20, 2017), <https://mashable.com/article/china-police-robot>; Sophie Williams, *Meet the Cop of the Future: Robotic Policeman 'Anbot' Begins Patrolling in China and Will Give Trouble-Makers a Ruthless TASER*, DAILY MAIL (Sep. 23, 2016), <https://www.dailymail.co.uk/news/peoplesdaily/article-3803748/Robotic-policeman-Anbot-begins-patrolling-China-trouble-makers-ruthless-TASER.html>.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>531</p>	Robocop (5 ft 5 in, 100 kg) fitted with emotion detectors ⁵³²	PAL Robotics	Dubai
 <p>533</p>	Smart Robocop ⁵³⁴	H-Bots Robotics	India (Hyderabad, Telangana)
	Dogo	General Robotics	Israel India



⁵³¹ Photograph Of Robocop, in *Middle East Eye*, *Dubai Police Debut World's First 'Robocop'*, MIDDLE EAST EYE (Jun. 1, 2017), <https://www.middleeasteye.net/news/dubai-police-debut-worlds-first-robocop>.

⁵³² *World's First "Robocop" Joins Dubai Police Force*, ARABIAN BUSINESS (May 21, 2017), <https://www.arabianbusiness.com/industries/industries-culture-society/world-s-first-robocop-joins-dubai-police-force-674837>; see also Murali, *supra* note 93; Page, *supra* note 418.

⁵³³ Photograph of Smart Robocop, in *World's 2nd 'Robocop' Comes Up In India: Hyderabad Dedicates Made-In-India Robot To Serve Nation*, NEWS BHARATI (Dec. 31, 2017), <https://www.news Bharati.com/Encyc/2017/12/31/Robocop-in-Hyderabad.html>.

⁵³⁴ Murali, *supra* note 93.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>535</p>	(10kg, 11 inches tall; can be armed with a handgun) ⁵³⁶		France
 <p>537</p>	Spot ⁵³⁸	Boston Dynamics in partnership with Percepto for imaging and thermal vision drone capabilities	Israel



⁵³⁵ Photograph of Dogo, in Erik Sofge, *Eyes in the Air, Guns On The Ground: The Near Future of Police Robots*, NBC NEWS (Dec. 6, 2016), <https://www.nbcnews.com/mach/technology/eyes-air-guns-ground-near-future-police-robots-n692246>.

⁵³⁶ Seth J. Frantzman, *Watch This Israeli Robot Face Off Against A Marksman In A Live-Fire Demo*, DEFENSE NEWS (May 31, 2019), <https://www.defensenews.com/unmanned/2019/05/31/watch-this-israeli-robot-face-off-against-a-marksman-in-a-live-fire-demo/>; see also Glaser, *supra* note 517; Murali, *supra* note 93.

⁵³⁷ Photograph of Spot, in Lauren Goode, *Boston Dynamics' Robots Won't Take Our Jobs ... Yet*, WIRED (Oct. 26, 2018, 9:22 AM), <https://www.wired.com/story/get-wired-podcast-14-boston-dynamics/>.

⁵³⁸ Orbach, *supra* note 517.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>539</p>	<p>Tamuke, Mwaluke, Kisanga (giant solar powered for traffic control)⁵⁴⁰</p>	<p>Congolese Association of Women Engineers; Women's Technology</p>	<p>Republic of Congo</p>
 <p>541</p>	<p>Final Experimental Demonstration Object Research (FEDOR)⁵⁴²</p>	<p>Russian Foundation for Advanced Research Projects</p>	<p>Russia</p>



⁵³⁹ Photograph of Solar Powered Robot, in Annalisa Merelli, *Photos: How A Female Entrepreneur Helped Kinshasa's Traffic Problem, One Robocop At A Time*, QUARTZ (June 15, 2015), <https://qz.com/africa/419524/photos-how-a-woman-engineer-fixed-kinshasas-traffic-problem-one-robocop-at-a-time>.

⁵⁴⁰ France-Presse, *supra* note 513; *see also* Murali, *supra* note 93.

⁵⁴¹ Photograph of FEDOR, in Patrick J. Kiger, *Russian Gun-Wielding Robot Totally 'Not a Terminator,' Says Russian Official*, HOWSTUFFWORKS, <https://science.howstuffworks.com/russian-robot-guns-fedor-terminator.htm>.

⁵⁴² Murali, *supra* note 93; *see also* Page, *supra* note 418.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>543</p>	K5 robotic security guard ⁵⁴⁴	KnightScope	U.S. - CA
 <p>545</p>	Hp Robocop ⁵⁴⁶	KnightScope	U.S. - CA



⁵⁴³ Photograph of K5 Robotic Guard, in Donna Loughlin Michaels, *Knightscope Deploys New Autonomous Security Robot in Southern California*, BUSINESSWIRE PRESS RELEASE (Mar. 16, 2022), <https://www.businesswire.com/news/home/20220316005436/en/Knightscope-Deploys-New-Autonomous-Security-Robot-in-Southern-California>.

⁵⁴⁴ Cooper, *supra* note 55.

⁵⁴⁵ Photograph of HP Robocop, in Elena Gorgan, *HP RoboCop Shows How Far We Still Have to Go Before AI Could Really Protect Us*, AUTO EVOLUTION (Oct. 17, 2019), <https://www.autoevolution.com/news/hp-robocop-shows-how-far-we-still-have-to-go-before-ai-could-really-protect-us-138344.html>.

⁵⁴⁶ Flaherty, *supra* note 66.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>547</p>	Remotec F5A Remotec F6A QinetiQ TALON QinetiQ DRAGON RUNNER IRobot FirstLook ⁵⁴⁸	Remotec (subsidiary of Northrop Grumman) QinetiQ IRobot	U.S. – CA – San Francisco
Same as Israel’s Spot robocop	Spot (70 pound dog) ⁵⁴⁹	Boston Dynamics	U.S. - HI
 <p>550</p>	Throwbot (1 pound dumb-bell can be thrown to collect audio video data) ⁵⁵¹	Recon Robotics	U.S. - NJ Poland

⁵⁴⁷ Photograph of Robot, in Jack Karsten & Darrell M. West, *Lethal Robot Marks A Shift In Policing Tactics*, BROOKINGS INSTITUTE (Aug. 2, 2016), <https://www.brookings.edu/articles/lethal-robot-marks-a-shift-in-policing-tactics/>.



⁵⁴⁸ SAN FRANCISCO POLICE DEP’T, *supra* note 248.

⁵⁴⁹ Abril, *supra* note 42; *see also* O’Brien & Kelleher, *supra* note 40; Stanley, *supra* note 86.

⁵⁵⁰ Photograph of Micro-Robot, in *Throwbot 2 Micro Robot*, ARMY TECHNOLOGY (Oct. 20, 2022), <https://www.army-technology.com/projects/throwbot-2-micro-robot/?cf-view>.

⁵⁵¹ Kahn, *supra* note 35; *see also* Murali, *supra* note 93.

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Image	Robots equipped with cameras	Manufacturer	Location
 <p>552</p>	Digidog	Boston Dynamics	U.S. - NY
 <p>553</p>	Bomb Robots Mark 6/ Andros V-A1/HD-2 ⁵⁵⁴	Remotec (subsidiary of Northrop Grumman)	U.S. - TX

⁵⁵² Photograph of Digidog, in *NYC crime: Mayor Eric Adams and NYPD Roll Out High-Tech Crimefighting Tools In Times Square*, ABC 7 NEW YORK (Apr. 11, 2023); see also Max, *supra* note 240; Stanley, *supra* note 86.

⁵⁵³ Photograph of Bomb Robot, in Brian Fung, *Meet the Remotec Andros Mark V-A1, The Robot That Killed The Dallas Shooter*, WASH. POST (Jul. 11, 2016), <https://www.washingtonpost.com/news/the-switch/wp/2016/07/11/meet-the-remotec-andros-mark-v-a1-the-robot-that-killed-the-dallas-shooter/>.

⁵⁵⁴ Masnick, *supra* note 216; see also Silverman, *supra* note 39.