11-2022

Algorithmic Governance from the Bottom Up

Hannah Bloch-Wehba

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Artificial intelligence and machine learning are both a blessing and a curse for governance. In theory, algorithmic governance makes government more efficient, more accurate, and more fair. But the emergence of automation in governance also rests on public-private collaborations that expand both public and private power, aggravate transparency and accountability gaps, and create significant obstacles for those seeking algorithmic justice. In response, a nascent body of law proposes technocratic policy changes to foster algorithmic accountability, ethics, and transparency.

This Article examines an alternative vision of algorithmic governance, one advanced primarily by social and labor movements instead of technocrats and firms. The use of algorithmic governance in increasingly high-stakes settings has generated an outpouring of activism, advocacy, and resistance. This mobilization draws on the same concerns that animate budding policy responses. But social and labor movements offer an alternative source of constraints on algorithmic governance: direct resistance from the bottom up. These movements confront head-on the entanglement of economic power, racial hierarchy, and government surveillance.

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Using three case studies, this Article explores how tech workers and social movements are resisting and mobilizing against technologies that expand surveillance and funnel wealth to the private sector. Each case study illustrates how the intermingling of state and private power has required movements to engage both within and outside firms to counteract the growing appeal of automation. Yet the dominant approaches to regulating the government's uses of technology continue to afford a privileged role to private firms and elite institutions, sidelining movement demands. The fundamental challenge posed by these movements will be whether—and how—law and policy can accommodate demands for bottom-up control. This Article sketches a new vision for algorithmic accountability, with a more vibrant role for workers and for the public in determining how firms and government institutions work together.

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INTRODUCTION

In March 2017, a group of forty protesters assembled outside of a building on San Francisco's Billionaire's Row.[1] The crowd was gathered outside of a powerful individual's home to demand a change in policy—a classic form of public protest.[2] But the target of the demonstration was not a legislator or a public official. Instead, demonstrators were outside the house of Peter Thiel, the co-founder of surveillance firm Palantir Technologies, in protest of the company's decision to provide a software program to Immigration and Customs Enforcement (ICE).[3] The Department of Homeland Security (DHS) had awarded Palantir a contract to provide a new case management system that would enable DHS to upgrade its mainframe-based custom software to a web-enabled, commercially available tool.[4] Activists opposing the contract had organized the picketing, a form of public protest they believed would "raise awareness" and solidarity among Palantir's white-collar workforce.[5]

New technologies are transforming law enforcement in increasingly high-stakes settings.[6] As Palantir's collaboration with ICE illustrates, these shifts depend in large part on partnerships between government and private vendors. Police contract with firms that provide facial recognition and surveillance technology. Immigration enforcement relies on cloud services and

1. Anna Wiener, *Why Protesters Gathered Outside Peter Thiel's Mansion This Weekend*, THE NEW YORKER (Mar. 14, 2017), http://www.newyorker.com/news/news-desk/why-protesters-gathered-outside-peter-thiels-mansion-this-weekend.

2. Alfred Kamin, *Residential Picketing and the First Amendment*, 61 NW. U. L. REV. 177 (1967).

3. Wiener, *supra* note 1.

4. *ICE Investigative Case Management System*, SAM.GOV, https://sam.gov/opp/36fb3b697a2ccb4ec7084b4e0ec6cdb9/view (last accessed Sept. 3, 2022).

5. Wiener, *supra* note 1.

6. Christian Katzenbach & Lena Ulbricht, *Algorithmic Governance*, 8 INTERNET POL'Y REV. 2 (2019) (defining algorithmic governance as "a form of social ordering that relies on coordination between actors, is based on rules and incorporates particularly complex computer-based epistemic procedures[]"). This Article focuses on automated decision-making in government itself. *Cf.* Hannah Bloch-Wehba, *Access to Algorithms*, 88 FORDHAM L. REV. 1265, 1267 (2020) (defining algorithmic governance).

enterprise software. National security agencies seek an array of artificial intelligence techniques to bolster warfighting and defense.[7] The expanding private role in law enforcement is not just a force multiplier for the state. It also creates new opportunities—and new obstacles—for activists, advocates, and movements.

This Article examines how social and labor movements are responding to these dramatic shifts in governance. The state's use of novel technologies to mete out punishment, allocate benefits, and otherwise classify individuals and communities is being met by a growing wave of popular opposition.[8] Popular resistance finds its most ardent support amid calls to democratize policing and criminal law enforcement. But concerns about datafication aren't limited to policing, or even to the state itself.[9] Bottom-up movements must also respond to the intermingling of state and private power that has accompanied this shift. A cottage industry of technologies and techniques—biometric surveillance, license plate readers, predictive policing, and social media monitoring, to name just a handful—are transforming law enforcement and expanding its capacity. Social and labor movements thus have developed a new focus, seeking broader accountability for the technologies and partnerships that underpin law enforcement's power.[10]

7. *See infra* Part II.

8. For example, British students demonstrated against the U.K. education system's use of a predictive algorithm to grade A-level exams. Louise Amoore, *Why "Ditch the Algorithm" is the Future of Political Protest*, GUARDIAN (Aug. 19, 2020), http://www.theguardian.com/commentisfree/2020/aug/19/ditch-the-algorithm-generation-students-a-levels-politics. In California, front-line workers demonstrated against the use of a predictive tool to allocate access to the COVID vaccine. Lenny Bernstein, Lateshia Beachum & Hannah Knowles, *Stanford Apologizes for Coronavirus Vaccine Plan that Left Out Many Front-Line Doctors*, WASH. POST (Dec. 18, 2020), https://www.washingtonpost.com/health/2020/12/18/stanford-hospital-protest-covid-vaccine/.

9. Lina Dencik & Anne Kaun, *Datafication and the Welfare State*, GLOB. PERSPS. (June 23, 2020), https://online.ucpress.edu/gp/article-abstract/1/1/12912/110743/Datafication-and-the-Welfare-State?redirectedFrom=fulltext.

10. *See, e.g.*, Rashida Richardson, Jason M. Schultz & Vincent M. Southerland, *Litigating Algorithms 2019 Us Report: New Challenges to Government Use of Algorithmic Decision Systems*, A.I. NOW INST. (2019), https://ainowinstitute.org/litigatingalgorithms-2019-us.pdf; Elizabeth E. Joh, *Policing by Numbers: Big Data and the Fourth Amendment*, 89 WASH. L. REV. 35, 48 (2014) ("While surveillance has long been an essential tool of the police, what has changed is its supporting technology.").

To date, legal scholars and policymakers have largely overlooked grassroots opposition to these arrangements. Instead, the dominant approaches to addressing the failings of algorithmic governance are technocratic. Scholars and policymakers have repeatedly called for interventions to ensure that these sophisticated mechanisms are trustworthy, transparent, accountable, and fair.[11] A rich interdisciplinary literature explores the promise of designing automated systems to make decisions consistent with law, policy, and public values and to provide intelligible reasons for those decisions.[12] This technocratic vision of top-down algorithmic reform—though by no means without its critics—has become the foremost framework in scholarly and policy circles.[13]

The technocratic approach rightly highlights the urgent need for algorithmic reform. But it also overlooks the potential of popular mobilization both to resist current modes of governance and to inform our vision of what the future should hold. This Article focuses on a different vision of algorithmic governance, one put forth predominantly by social and labor movements. Movements often share the technocrats' understandings of the basic flaws of algorithmic governance: transparency, accountability, and fairness deficits. But in contrast to the faith in top-down reform, social and labor movements offer an alternative source of constraints on algorithmic governance: direct resistance from the bottom up. This resistance frequently seeks not to improve algorithmic governance through technology or policy but rather to eliminate or significantly curtail it in a given sphere.[14]

I call this the "democratic vision" of algorithmic governance. By "democratic," I mean that this vision demands that all citizens

11. *See infra* Part I.

12. *See infra* Part I.

13. *Cf.* Daniel A. Crane, *Technocracy and Antitrust*, 86 TEX. L. REV. 1159, 1160 (2008) (describing how antitrust enforcement has become more "technocratic": "It has become increasingly separated from popular politics, insulated from direct democratic pressures, delegated to industrial-policy specialists, and compartmentalized as a regulatory discipline."); *see also* Andrew Guthrie Ferguson, *Surveillance and the Tyrant Test*, 110 GEO. L.J. 205, 212 (2021) (manuscript on file with author) (describing the "technocratic lens" on policing, which "emphasizes ex ante rules, transparent policies, and audits as external accountability mechanisms to address potential misuse").

14. *See infra* Part II.

should have an equal say in making "political judgments."[15] Algorithmic governance might be "democratic" in one sense—its adoption might be the product of competitive elections or an administrative system that is ultimately accountable to the public through political and legal channels.[16] Yet in another sense, it can be fundamentally undemocratic: firms and governments can set policy through design and procurement processes shielded from public input and, to an even greater extent, public control.[17] Algorithmic governance forges ahead without the consent of those whom it most profoundly affects, whether they are members of affected communities or workers asked to build oppressive technology.[18] And, once adopted, algorithmic mechanisms reinforce existing hierarchies and justify continuing disparities.[19]

By contrast, the democratic vision stresses that governance should proceed from the bottom up, rather than from the top down. By a "bottom up" approach, I mean not only that movements are playing a significant role in algorithmic governance outside of traditional, formal, and court-centered institutions.[20] I also mean

15. Jedediah Britton-Purdy, David Singh Grewal, Amy Kapczynski & Sabeel Rahman, *Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century Synthesis*, 129 YALE L.J. 1784, 1827 (2020); Nikolas Bowie, *Antidemocracy*, 135 HARV. L. REV. 160, 167 (2021) ("[W]hat has historically distinguished democracy as a unique form of government is its pursuit of *political equality*.") (emphasis in original).

16. JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, & DEMOCRACY 269 (Routledge 2006) (1943).

17. *See infra* Section IV.B; *see, e.g.*, Deirdre K. Mulligan & Kenneth A. Bamberger, *Procurement as Policy: Administrative Process for Machine Learning*, 34 BERKELEY TECH. L.J. 773, 788–89 (2019); Alicia Solow-Niederman, *Administering Artificial Intelligence*, 93 S. CAL. L. REV. 633 (2020).

18. Ngozi Okidegbe, *The Democratizing Potential of Algorithms?*, 53 CONN. L. REV. (forthcoming 2021) (manuscript at 30) (on file with author) (describing how efforts to promote participation in decisions about algorithmic governance have centered on "the ex-post solicitation of public input").

19. *See, e.g.*, Ifeoma Ajunwa, *The Paradox of Automation as Anti-Bias Intervention*, 41 CARDOZO L. REV. 1671, 1673–75 (2020) (exploring the role of algorithms in "perpetuating inequality in the labor market"); Danielle Keats Citron & Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89 WASH. L. REV. 1 (2014) (exploring disparate impacts of credit scoring); VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR (2018) (exploring algorithmic tools in the welfare system).

20. Howard Erlanger, Bryant Garth, Jane Larson, Elizabeth Mertz, Victoria Nourse & David Wilkins, *Is It Time for a New Legal Realism?*, 2005 WIS. L. REV. 335, 357 (2005) (describing how "new governance" "reinvent[s] governance from the 'bottom up' by rejecting ancient

that movements are trying to build power for individuals and groups at the "bottom" of the social and political hierarchy.[21]

Delineating and contrasting these two visions yield several compelling insights. First, the democratic vision has largely failed to find a foothold in the emerging law constraining algorithmic governance, which is often top-down by default. In large part, current mechanisms for reining in algorithmic governance sideline or ignore movement demands. Even when contemporary policy proposals attempt to address these demands, they often fall short.[22] Second, the competing visions of algorithmic governance expose central questions about the role of participation in a democratic society. In an era of increasing reliance on private sector technology vendors, what might a "more genuine democracy" look like?[23] More precisely, what is the role of the *public* in determining whether, how, and when we ought to be governed by technology? These questions point to yawning gaps in the existing institutions and legal frameworks for addressing algorithmic governance. We still have the opportunity to integrate this democratic vision into law and legal institutions.

Crucially, the democratic vision also extends beyond the government to the private firms that supply technologies of governance.[24] At firms such as Microsoft, Google, and Amazon, labor and social movements are working hand in hand to demand changes to corporate partnerships with federal, state, and local government institutions. In a world in which private enterprise supplies so much of the infrastructure of governance, firms themselves are becoming significant sites of democratic contestation and resistance.[25]

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administrative strategies of command and control and replacing them with a continuous dynamic process governed by the relevant stakeholders"); Michael Wilkinson, *Three Conceptions of Law: Towards a Jurisprudence of Democratic Experimentalism*, 2010 WIS. L. REV. 673, 673–74 (2010) (describing the turn away from "an image of law that is state-centered, unified, and hierarchical" toward one that is "decentered, fragmented, and heterarchical").

21. Erlanger, *supra* note 20, at 340 (describing "bottom-up" scholarship as requiring "sensitiv[ity] to the realities of power arrangements and hierarchies in studying law").

22. *See infra* Part III.

23. Britton-Purdy et al., *supra* note 15, at 1834.

24. *See infra* Part IV.C.

25. Bowie, *supra* note 15, at 183 (describing the movement to democratize the workplace through "radical organizing").

In contrast to the technocratic vision, the democratic approach does not advocate for tech that is more "fair," more capable of explanation, or more accountable to the existing law or to an additional layer of oversight. Instead, movements call for real power to determine whether, when, and how governments deploy technology in high-stakes settings.[26] By exploring these demands for more "genuine accountability," rather than technocratic assurances, the Article adds to the scholarly literature concerned with what it means for automated systems to be "accountable."[27] It also draws on a growing body of legal scholarship confronting the need to shift power over law enforcement toward those who are most affected by it.[28]

The rest of this Article is organized in four parts. Part I places governments' embrace of automated decision-making in the context of shifts toward privatization, informality, and flexibility in

26. *See* Jocelyn Simonson, *Police Reform Through a Power Lens*, 130 YALE L.J. 778, 787 (2021) (arguing that a key goal of police reforms is often to "shift power away from the police and toward policed communities"); Okidegbe, *supra* note 18 (describing how a participatory process to inform Pennsylvania's decision to adopt risk assessment at sentencing nonetheless failed to empower the communities most affected).

27. Britton-Purdy et al., *supra* note 15, at 1834–35 (calling for a new scholarly agenda to confront, among others, "the challenges posed by emerging forms of power and control arising from new technologies"); Ari Ezra Waldman, *Power, Process, and Automated Decision-Making*, 88 FORDHAM L. REV. 613, 624 (2019). *See, e.g.*, Joshua A. Kroll, Joanna Huey, Solon Barocas, Edward W. Felten, Joel R. Reidenberg, David G Robinson & Harlan Yu, *Accountable Algorithms*, 165 U. PA. L. REV. 633 (2017); Deborah Hellman, *Measuring Algorithmic Fairness*, 106 VA. L. REV. 811 (2020); Florian Cech, *Beyond Transparency: Exploring Algorithmic Accountability*, *in* COMPANION OF THE 2020 ACM INTERNATIONAL CONFERENCE ON SUPPORTING GROUP WORK 11–14 (2020); Nicholas Diakopoulos, *Accountability in Algorithmic Decision Making*, 59 COMMUN. ACM 56 (2016); Mike Ananny & Kate Crawford, *Seeing Without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability*, 20 NEW MEDIA & SOC'Y 973 (2018); Margot E. Kaminski, *Binary Governance: Lessons from the GDPR's Approach to Algorithmic Accountability*, 92 S. CAL. L. REV. 1529 (2019); SOLON BAROCAS, ELIZABETH BRADLEY, VASANT HONAVAR & FOSTER PROVOST, COMPUTING CMTY. CONSORTIUM, BIG DATA, DATA SCIENCE, AND CIVIL RIGHTS (2017), https://pennstate.pure.elsevier.com/ws/portalfiles/portal/38098667/1706.03102v1.pdf; Manish Raghavan, Solon Barocas, Jon Kleinberg & Karen Levy, *Mitigating Bias in Algorithmic Hiring: Evaluating Claims and Practices* (2019), http://arxiv.org/abs/1906.09208; Reuben Binns, *Algorithmic Accountability and Public Reason*, 31 PHIL. TECH. 543 (2018); Brent Daniel Mittelstadt, Patrick Allo, Mariarosaria Taddeo & Luciano Floridi, *The Ethics of Algorithms: Mapping the Debate*, 3 BIG DATA & SOCIETY 10–11 (2016), DOI:10.1177/2053951716679679.

28. Okidegbe, *supra* note 18; Amna A. Akbar, *Toward a Radical Imagination of Law*, 93 N.Y.U. L. REV. 405 (2018); Simonson, *supra* note 26; Dorothy E. Roberts, *Democratizing Criminal Law as an Abolitionist Project*, 111 NW. U. L. REV. 1597 (2017); Joshua Kleinfeld, *Manifesto of Democratic Criminal Justice*, 111 NW. U. L. REV. 1367 (2017).

government service provision. It then draws on existing scholarly critiques to explain the risk that automation might undermine important social and political values.

Part II examines three case studies that highlight the potential of extralegal mobilization and strategic alliances between social and labor movements to resist and oppose algorithmic governance. In criminal law enforcement, national security, and immigration settings, progressive movements are forming coalitions alongside tech workers to demand democratic participation and control of the mechanisms of governance.

Part III evaluates the extent to which the law currently responds to social and labor movement demands and examines the potential of more radical reforms to more directly empower communities and citizens in the area of algorithmic governance. Part IV concludes by asking how law can help to create the conditions for a more democratic form of algorithmic governance. Drawing on political theory, the Article begins to sketch a new vision for algorithmic accountability that places democratic participation at its center.

I. ALGORITHMIC GOVERNANCE AND ITS DISCONTENTS

At every level, government is experiencing an "algorithmic turn."[29] In recent years, legal scholars have explored how the rise of automation is altering the power and capacity of the public sector across diverse domains.[30] This Part explores some of the potential

29. Mulligan & Bamberger, *supra* note 17, at 791; Ajunwa, *The Paradox of Automation*, *supra* note 19, at 1683.

30. Danielle Keats Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249 (2008); Emily Berman, *A Government of Laws and Not of Machines*, 98 B.U. L. REV. 1277 (2018); Rebecca Wexler, *Life, Liberty, and Trade Secrets: Intellectual Property in the Criminal Justice System*, 70 STAN. L. REV. 1343 (2018); Kate Crawford & Jason Schultz, *AI Systems as State Actors*, 119 COLUM. L. REV. 1941 (2019); Paul Schwartz, *Data Processing and Government Administration: The Failure of the American Legal Response to the Computer*, 43 HASTINGS L.J. 1321 (1992); Andrew Guthrie Ferguson, *Big Data and Predictive Reasonable Suspicion*, 163 U. PA. L. REV. 327 (2015); Rebecca Crootof, *The Killer Robots Are Here: Legal and Policy Implications*, 36 CARDOZO L. REV. 1837 (2014); Elizabeth E. Joh, *The New Surveillance Discretion: Automated Suspicion, Big Data, and Policing*, 10 HARV. L. & POL'Y REV. 15 (2016); Ryan Calo & Danielle Keats Citron, *The Automated Administrative State: A Crisis of Legitimacy*, 70 EMORY L.J. 816 (2021); Vera Eidelman, *The First Amendment Case for Public Access to Secret Algorithms Used in Criminal*

costs of this transformation. First, algorithmic governance promises a form of efficiency that both rests on and amplifies existing tendencies toward privatization and managerialism, often at the expense of democratic participation. Second, regardless of AI's potential efficiency gains, its use also comes at a potentially high cost to individual rights, civil liberties, and other legal obligations.[31]

A. Algorithms as "Governance"

As early law and tech scholarship recognized, technology can constrain, shape, and regulate behavior as effectively as (and perhaps more effectively than) law and regulation itself.[32] This recognition has transformed technology into a powerful tool for private governance and, at times, a substitute for public regulation. For example, the analogy between the regulating abilities of technology and legal constraints encouraged potential regulators of the Internet to defer to private ordering and self-regulation.[33] Imbued with the power to *de facto* regulate, technology itself became a core mechanism by which governance could be accomplished.

A key justification for algorithmic decision-making is resource-related: algorithms are more "efficient" than human decision makers, or human bureaucracies.[34] The deployment of algorithmic

Trials, 34 GA. ST. U. L. REV. 915 (2018); Bloch-Wehba, *Access to Algorithms*, *supra* note 6; Sandra G. Mayson, *Bias in, Bias out*, 128 YALE L. J. 2218 (2019); Jon Kleinberg, Jens Ludwig, Sendhil Mullainathan & Cass R. Sunstein, *Discrimination in the Age of Algorithms*, 10 J. LEG. ANALYSIS 62 (2018); EUBANKS, *supra* note 19; Rory Van Loo, *Rise of the Digital Regulator*, 66 DUKE L.J. 1267 (2017); Alicia Solow-Niederman, YooJung Choi & Guy Van den Broeck, *The Institutional Life of Algorithmic Risk Assessment*, 34 BERKELEY TECH. L.J. 705 (2019); Kiel Brennan-Marquez & Stephen E. Henderson, *Artificial Intelligence and Role-Reversible Judgment*, 109 J. CRIM. L. & CRIMINOLOGY 137 (2019); Marion Fourcade & Jeffrey Gordon, *Learning Like a State: Statecraft in the Digital Age*, 1 J. L. POL. ECON. 78 (2020).

31. *See generally, e.g.*, Citron, *supra* note 30; Wexler, *supra* note 30; Calo & Citron, *supra* note 30, at 816.

32. Joel R. Reidenberg, *Lex Informatica: The Formulation of Information Policy Rules Through Technology*, 76 TEX. L. REV. 553 (1998); LAWRENCE LESSIG, CODE: VERSION 2.0 (2006).

33. *See* Hannah Bloch-Wehba, *Global Platform Governance: Private Power in the Shadow of the State*, 72 S.M.U. L. REV. 27, 34 (2019) ("[A]t critical junctures, governments supported the emergence of online self-governance and self-regulation in the belief that it would stimulate innovation.").

34. *See* Matthew M. Young, Justin B. Bullock & Jesse D. Lecy, *Artificial Discretion as a Tool of Governance: A Framework for Understanding the Impact of Artificial Intelligence on Public*

governance processes reflects how assumptions about efficiency have become embedded in broader expectations about what the government should (and should not) do.[35] Algorithmic governance promises to address the challenges that chronically underfunded and resource-strapped public agencies face and to streamline the government's delivery of services.[36]

In part, enthusiasm about algorithmic governance reflects both the appeal of efficiency and the influence of "private-sector management methods" within government—what some have called "managerialism."[37] As government institutions increasingly prize the ability to make use of data flows and patterns in setting and enforcing policy, algorithms first used in private contexts are remaking government itself.[38] Some have also argued that government entities ought to "keep pace and make use of the same analytic tools" as the private sector businesses they regulate.[39]

The relationship between government and private-sector innovation is literal as well as metaphorical. Despite lingering uncertainties about whether algorithmic governance can fulfill its promise, state and local governments often contract out to technology firms or other providers. Governments "partner" with private firms that can collect and analyze coveted data, supply

Administration, 2 PERSPS. ON PUB. MGMT. GOV'T 1, 1 (2019) ("[Artificial discretion] creates opportunities for more efficient and reliable government, as well as the potential to cause significant harm.").

35. *Cf.* Adam Dahl & Joe Soss, *Neoliberalism for the Common Good? Public Value Governance and the Downsizing of Democracy*, 74 PUB. ADMIN. REV. 496, 497 (2014) (describing the emergence of public value governance, which aims to "displace neoliberal modes of governance that privilege markets, empower self-serving economic actors, and reduce the public good to an aggregation of private interests").

36. Bloch-Wehba, *Access to Algorithms*, *supra* note 6, at 1275 ("Agencies often rely on the 'objectivity' or 'efficiency' of their data-driven decision-making procedures to justify cost-cutting measures . . . .").

37. R. A. W. Rhodes, *The New Governance: Governing Without Government*, 44 POL. STUD. 652, 655 (1996).

38. JULIE E. COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM 144–45 (2019); Waldman, *supra* note 27, at 626; Fourcade & Gordon, *supra* note 30, at 81 ("Dataism . . . is an ideology that finds the purpose of government in what can be measured rather than in the will of the people.").

39. Cary Coglianese & David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 Geo. L.J. 1147, 1153 (2017).

networked technologies, and build the infrastructure for a variety of governance "solutions."[40]

These dynamics underscore the risk that privatization and outsourcing enable private vendors to usurp government functions and reduce state capacity.[41] For decades, scholars of administrative law and constitutional law have grappled with the implications of outsourcing and privatizing government functions.[42] Scholars have considered, for example, how private companies can serve "public functions" consistently with principles of government accountability.[43] The attenuated accountability mechanisms for private contractors have led scholars to contemplate whether the "state action" requirement ought to be loosened under some circumstances.[44] Although the focus of many of these interventions

40. Robert Brauneis & Ellen P. Goodman, *Algorithmic Transparency for the Smart City*, 20 YALE J. L. & TECH. 103, 114 (2018); BEN GREEN, THE SMART ENOUGH CITY: PUTTING TECHNOLOGY IN ITS PLACE TO RECLAIM OUR URBAN FUTURE 133–34 (2019) ("[G]overnments across the United States rely on contracts to complete many of their most essential tasks. . . ."). A recent report on the use of algorithms in the federal administrative state concluded that a slight majority of the federal government's use cases for artificial intelligence were developed in-house. David Freeman Engstrom, Daniel E. Ho, Catherine M. Sharkey & Mariano-Florentino Cuéllar, *Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies* (NYU School of Law, Public Law Research Paper No. 20-54 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3551505. While the federal government does develop a substantial portion of its own AI tools, state and local governments may be more inclined to procure "off the shelf" methodologies.

41. Jon D. Michaels, *Privatization's Pretensions*, 77 U. CHI. L. REV. 717, 723 (2010) ("[L]egal scholarship has instead tended to focus on privatization in terms of the Executive's ceding of sovereignty, rather than its amassing of it. . . .").

42. *See, e.g.*, Martha Minow, *Public and Private Partnerships: Accounting for the New Religion*, 116 HARV. L. REV. 1229 (2003); Alfred C. Aman Jr., *Privatization and the Democracy Problem in Globalization: Making Markets More Accountable Through Administrative Law*, 28 FORDHAM URB. L.J. 1477, 1486 (2001) ("When is the market primarily a regulatory scheme designed to achieve certain public policy results and when is it a manifestation of individual freedom, the outcome of which is, by definition, correct?"); Jody Freeman, *The Private Role in the Public Governance*, 75 N.Y.U. L. REV. 543, 549 (2000) (describing "the possibility of harnessing private capacity to serve public goals").

43. Gillian E. Metzger, *Privatization as Delegation*, 103 COLUM. L. REV. 1367 (2003); Kenneth A. Bamberger, *Regulation as Delegation: Private Firms, Decisionmaking, and Accountability in the Administrative State*, 56 DUKE L.J. 377 (2006); Van Loo, *supra* note 30, at 1321 ("[U]nchecked agency reliance on potentially manipulative and deceptive machines serving as market gatekeepers at some point is in tension with an accountable administrative state.").

44. Metzger, *supra* note 43, at 1411 (arguing that state action doctrine "ignores the way that privatization gives private actors control over government programs and resources,

has been on extending accountability norms from the public into the private sphere, in recent years, scholars have increasingly questioned whether the private role in governance warrants more foundational intervention.[45]

These shifts toward privatization and informality characterize what is sometimes called "new governance" or "collaborative governance."[46] "New governance" emerged from a critique of top-down regulatory models that failed to facilitate widespread public participation.[47] In their place, scholars have sought models that provide opportunities for more significant, direct stakeholder participation.[48]

In theory, "new governance" frameworks permit democratic participation at a variety of levels and through a variety of institutional arrangements: public meetings, task forces, and advisory councils can all serve to permit "citizen users" to collaborate closely with government.[49] This "optimistic vision of stakeholder collaboration" sees privatization, devolution, and informality as laying the groundwork for a more participatory state that is more responsive and accountable to all of its citizens.[50] Rather than permitting only the most powerful and influential actors to dominate the regulatory process, the "new governance" model is meant to reduce barriers to participation and serve as a "dynamic, reflexive, and flexible regime" open to change and to self-regulation.[51]

focusing instead on identifying government involvement in specific private acts"); PAUL R. VERKUIL, OUTSOURCING SOVEREIGNTY: WHY PRIVATIZATION OF GOVERNMENT FUNCTIONS THREATENS DEMOCRACY AND WHAT WE CAN DO ABOUT IT (2007).

45. *See, e.g.*, COHEN, *supra* note 38, at 187. This Article saves for another day a full discussion of whether, and when, technology vendors ought to be considered state actors.

46. Lisa T. Alexander, *Stakeholder Participation in New Governance: Lessons from Chicago's Public Housing Reform Experiment*, 16 GEO. J. ON POVERTY L. & POL'Y 117, 120 (2009).

47. *Id.* at 125.

48. Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 288 (1998); Solow-Niederman, *supra* note 17, at 646.

49. Dorf & Sabel, *supra* note 48, at 318.

50. Alexander, *supra* note 46, at 121.

51. Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 365 (2004).

The expansion of algorithmic governance is a logical consequence of policy that values efficiency, markets, and privatization.[52] Yet it has not been the unambiguous win for participation that "new governance" theorists might have predicted. The introduction of algorithms into political contexts fraught with power disparities has enhanced the power of the private sector but not meaningfully boosted the power of marginalized individuals or groups.[53] For example, ambiguity about key terms (such as "algorithmic transparency") and mechanisms for accountability (such as "ethics" and "auditing") has allowed industry standards to compete with, and sometimes displace, public regulation as a source of constraint.[54] Private vendors sometimes invoke trade secrecy to avoid disclosing key information in discovery or under state and federal public records statutes.[55] With much of the key information about algorithmic governance in private hands and kept confidential, ordinary citizens are rarely equipped with the knowledge or power to understand how these new modes of governance function.[56] And as Ngozi Okidegbe has deftly illustrated, policies designed to promote participation in decisions about algorithmic governance often only solicit "public input" after the fact.[57]

52. Waldman, *supra* note 27, at 615 ("[A]lgorithmic decision-making systems are social, political, and economic expressions of what Julie Cohen and others have called neoliberal managerialization, or an organizational system of public or private governance that prioritizes freedom and efficiency above all other values."); John M. Bryson, Barbara C. Crosby & Laura Bloomberg, *Public Value Governance: Moving Beyond Traditional Public Administration and the New Public Management*, 74 PUB. ADMIN. REV. 445, 447 (2014).

53. Alexander, *supra* note 46, at 133 (observing that "[m]uch new governance scholarship tends to de-emphasize public problems that involve complex relations of power").

54. This argument is more fully developed in Part III. *See also* JULIE E. COHEN, BETWEEN TRUTH AND POWER: THE LEGAL CONSTRUCTIONS OF INFORMATIONAL CAPITALISM 189–90 (2019) (describing the role of compliance monitoring, reporting, and standard-setting); Hannah Bloch-Wehba, *Transparency's AI Problem*, *in* DATA AND DEMOCRACY, KNIGHT FIRST AMEND. INST. COLUM. UNIV. (2021), https://knightcolumbia.org/content/transparencys-ai-problem ("The private sector not only occupies a central role in making 'transparency' technically achievable, but also in interpreting its core meaning.").

55. Natalie Ram, Christi J. Guerrini & Amy L. McGuire, *Genealogy Databases and the Future of Criminal Investigation*, 360 SCIENCE 1078, 1078–79 (2018); Wexler, *supra* note 30, at 1343.

56. Bloch-Wehba, *Access to Algorithms*, *supra* note 6, at 1272.

57. Okidegbe, *supra* note 18, at 768–69.

As a result, while the advent of algorithmic governance might once have been thought to increase participation and responsiveness, today it appears to have the opposite effect. Critics also contest whether algorithmic governance can deliver on its promise of efficient, seamless, technology-aided decision-making. Across the nation, state and local agencies' adoption of automated decision-making systems has given rise to substantial civil litigation, calling into doubt assumptions that automation would reduce friction and improve efficiency.[58] Citron and Calo have also cast doubt on claims that algorithmic decision-making has substantially increased efficiency, writing that it instead has "misallocated public resources" and "misdirect[ed] government services."[59] At times, it is difficult to assess whether the deployment of algorithmic decision-making has advanced efficiency at all.

B. Accuracy and Bias

Proponents of algorithmic governance tout its capacity to improve the accuracy and objectivity of government decisions. For instance, in the context of sentencing or pretrial release decisions, automating some aspects of decision-making might make judges less likely to release or "under-punish" those who are likely to reoffend, and might prevent "over-punishing" or detaining individuals who pose a minimal risk to society.[60] Both of these claimed benefits relate to the drawbacks of human decision-making: "people dissemble, obfuscate, and lie," and they may not even be able to articulate reasons for the decisions they make.[61] Boosters of algorithmic governance claim that "scientific," "actuarial," or mechanized decision-making methods have

58. *See, e.g.*, Calo & Citron, *supra* note 30, at 820–23 (describing litigation against the Arkansas Department of Human Services); Alejandro de la Garza, *States' Automated Systems Are Trapping Citizens in Bureaucratic Nightmares with Their Lives on the Line*, TIME (May 28, 2020, 2:24 PM), https://time.com/5840609/algorithm-unemployment/.

59. Calo & Citron, *supra* note 30, at 819.

60. Anne Milgram, Alexander M. Holsinger, Marie Vannostrand & Matthew W. Alsdorf, *Pretrial Risk Assessment: Improving Public Safety and Fairness in Pretrial Decision Making*, 27 FED. SENT'G REP. 216, 219 (2015); Kelly Hannah-Moffat, *The Uncertainties of Risk Assessment: Partiality, Transparency, and Just Decisions*, 27 FED. SENT'G REP. 244, 244–45 (2015).

61. Kleinberg et al., *supra* note 30, at 4.

improved accuracy and objectivity.[62] Critics, on the other hand, have long been skeptical.[63]

Some of these problems rest on faulty data sources. Machine-learning algorithms are trained to make decisions based on data that reflect past decisions. In order for algorithmic predictions to be accurate, the data that they operate on must be accurate as well. But in certain high-stakes settings, such as policing, major questions exist about the accuracy of the data underlying algorithmic systems and the political imperatives that might distort it.[64] Law enforcement might, for example, fail to collect accurate data, either purposefully or by omission.[65] The problem of "dirty data" predates the advent of AI tools in government. Today, however, the problem of missing and inaccurate data remains pervasive.

But even data that are apparently complete or "accurate" can reflect social and racial biases and disparities, further calling claims of accuracy into question. A by-now standard critique of government's embrace of automation emphasizes that algorithms—despite what is often described as a "veneer of expertise and objectivity"—often reflect and even amplify racial and gender bias when working as designed.[66] For example, Joy Buolamwini and Timnit Gebru demonstrated that facial recognition algorithms err most significantly when trying to classify dark-skinned female

62. Paul E. Meehl, *Empirical Comparisons of Clinical and Actuarial Prediction*, *in* CLINICAL VERSUS STATISTICAL PREDICTION: A THEORETICAL ANALYSIS AND A REVIEW OF THE EVIDENCE 83, 83–128 (1954); Richard Berk & Jordan Hyatt, *Machine Learning Forecasts of Risk to Inform Sentencing Decisions*, 27 FED. SENT'G REP. 222, 227 (2015).

63. *See, e.g.*, Sonja B. Starr, *Evidence-Based Sentencing and the Scientific Rationalization of Discrimination*, 66 STAN. L. REV. 803, 842 (2014).

64. Rashida Richardson, Jason M. Schultz & Kate Crawford, *Dirty Data, Bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems, and Justice*, 94 N.Y.U. L. REV. ONLINE 15, 18 (2019) (defining "dirty data" to include "missing data, wrong data, and non-standard representations of the same data[,]" as well as data that "is derived from or influenced by corrupt, biased, and unlawful practices").

65. Floyd v. City of New York, 959 F. Supp. 2d 540, 659–60 (S.D.N.Y 2013); Anita Chabria, Kevin Rector & Cindy Chang, *California Bars Police from Using LAPD Records in Gang Database. Critics Want It Axed*, L.A. TIMES (July 14, 2020), https://www.latimes.com/california/story/2020-07-14/california-bars-police-from-using-lapd-records-in-gang-database-as-scandal-widens (reporting that, in 2020, the State of California barred access to records in a statewide gang database generated by the Los Angeles Police Department after an audit revealed that the department's entries were "inconsistent, unreliable and unpredictable").

66. Aziz Z. Huq, *A Right to a Human Decision*, 106 VA. L. REV. 611, 681–82 (2020).

people, and err least when trying to classify light-skinned male people.[67] Indeed, algorithmic decision-making can both rely upon and reproduce existing bias. In the context of criminal law enforcement, for instance, what Dorothy Roberts describes as "institutionally biased" crime data reflects police practices that disproportionately surveil, monitor, and punish African Americans.[68] And, as Ngozi Okidegbe has argued, there is an even deeper-rooted epistemic flaw at the heart of many algorithms used in criminal law enforcement contexts: algorithms rely on data generated exclusively from "carceral knowledge sources," and systematically exclude "community knowledge sources" as "non-credible."[69] Thus, it appears that the promises of objectivity and accuracy may fall short.[70]

The core ideas of algorithmic inaccuracy and bias can be deceptively alluring. To the extent that algorithmic inaccuracy and bias rest on faulty data sources, techno-optimists can reframe debates about the social impact of algorithmic governance as ones to be solved by technology itself.[71] Likewise, if algorithmic

67. Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, 81 PROC. MACH. LEARNING RSCH. 1, 12 (2018).

68. Dorothy E. Roberts, *Abolition Constitutionalism*, 133 HARV. L. REV. 1, 28–29 (2019). Other scholars have considered the influence of institutional bias in the employment context. *E.g.*, Ajunwa, *The Paradox of Automation*, *supra* note 19, at 1673–74 (citing the example of Amazon, which had to discard an automated hiring algorithm after it turned out that, based on historical patterns of male dominance in the job application and hiring process, the artificial intelligence program was systematically downgrading female applicants); *see also* Stephanie Bornstein, *Antidiscriminatory Algorithms*, 70 ALA. L. REV. 519, 521 (2018) (making similar claims).

69. Ngozi Okidegbe, *Discredited Data*, 107 CORNELL L. REV. (forthcoming 2022) (manuscript at 42–43) (on file with author).

70. It is also difficult for researchers to vet claims that AI/ML are "more accurate" than human decision makers at all. As Megan Stevenson notes, empirical studies that compare human decision makers with algorithmic outcomes are fraught with methodological difficulties. Megan Stevenson, *Assessing Risk Assessment in Action*, 103 MINN. L. REV. 303, 322–27 (2018). Rigorous empirical study of algorithmic decision-making may be particularly difficult to undertake in legal environments in light of the longstanding aversion of the legal profession to randomized controlled trials. D. James Greiner & Andrea Matthews, *Randomized Control Trials in the United States Legal Profession*, 12 ANNU. REV. L. SOC. SCI. 295, 296 (2016); H. Fernandez Lynch, D. J. Greiner & I. G. Cohen, *Overcoming Obstacles to Experiments in Legal Practice*, 367 SCIENCE 1078, 1080 (2020).

71. Okidegbe, *supra* note 69, at 26–27 (describing how the "biased data diagnosis has encouraged technocrats to focus on the data currently used in algorithmic systems").

unfairness amplifies preexisting social, racial, and gender biases, optimists can point to more "objective" decision-making mechanisms as a way to consign those problems to the dustbin.

But problems of bias also run deeper than data flaws, to a frame of reference that centers on combatting individual prejudice while turning a blind eye to systemic unfairness.[72] Ifeoma Ajunwa has described this phenomenon of "algorithmic capture" as the "combined effect of the belief that algorithms are more efficient and fairer *and* the abdication of human accountability for undesirable outcomes."[73] Examining how algorithmic governance rests upon, produces, and reproduces unfairness suggests that technical fixes, no matter how sophisticated, are unlikely to address these underlying systemic problems in a satisfying way.[74]

C. Accountability and Transparency

In recent years, a rich vein of scholarship has explored how AI can be made to render decisions that are "accountable" to their subjects. From a legal perspective, Danielle Citron's prescient *Technological Due Process* set the stage by observing that automated decision-making processes would have dramatic consequences for accountability in the contexts of both rulemaking and adjudication.[75] Some scholars argue that current algorithmic systems more than satisfy existing accountability and transparency obligations and principles.[76] Others are optimistic that algorithms may actually improve accountability and transparency. They argue that compared to human decision-making—hardly a beacon of light—automation might be more transparent, not less.[77] And

72. Ifeoma Ajunwa, *An Auditing Imperative for Automated Hiring Systems*, 34 HARV. J.L. & TECH. 621, 639 (2021).

73. Ajunwa, *The Pardox of Automation*, *supra* note 19, at 1692.

74. *See, e.g.*, Anna Lauren Hoffmann, *Where Fairness Fails: Data, Algorithms, and the Limits of Antidiscrimination Discourse*, 22 INFO., COMMC'N & SOC'Y 900, 903–04 (2019) (describing how "antidiscrimination discourse" focuses on "discrete 'bad actors' . . . [i]nstead of addressing pernicious social and systemic injustices").

75. Citron, *supra* note 30.

76. *See generally* Cary Coglianese & David Lehr, *Transparency and Algorithmic Governance*, 71 ADMIN. L. REV. 1 (2019) (arguing that "responsible governments can provide sufficient transparency about their use of algorithms to supplement, and possibly even replace, human judgments").

77. Kleinberg et al., *supra* note 30, at 4.

digital technologies used by government might also be used to monitor the government itself and understand, for example, "the choices police make on a daily basis."[78] Existing accountability obligations assume that decisions are made by humans who can provide justifications for their actions; automated systems that obscure the justifications for decisions make these obligations difficult to meet.[79] But some have argued that careful design choices can make algorithms "provably accountable."[80]

Still, most commentators appear more inclined to believe that new data-driven governance practices will undermine, not promote, transparency and accountability. In *Technological Due Process*, Citron noted that significant accountability deficits arise when government agencies rely on automated systems that might invisibly "depart from formal policy."[81] In later work, Citron and Ryan Calo contend that the accountability deficits run even deeper, exposing growing gaps in the expertise of the administrative state.[82] A robust literature considers whether there is something exceptional about human decision-making that would make it desirable to maintain human-led administrative processes in the face of the promised efficiency gains of automation.[83] Likewise, scholars of science, technology and society have stressed the importance of maintaining a "human in the loop" in order to ensure

78. Andrew Guthrie Ferguson, *The Exclusionary Rule in the Age of Blue Data*, 72 VAND. L. REV. 561, 607 (2019).

79. *See generally* Kroll et al., *supra* note 27, at 636.

80. *Id.* at 641.

81. Citron, *supra* note 30, at 1295. Other scholars have expressed similar concerns about how automated systems might expand agency discretion beyond its lawful bounds. *See, e.g.*, Mulligan and Bamberger, *supra* note 17, at 794–98; Berman, *supra* note 30, at 1312.

82. Calo and Citron, *supra* note 30, at 818.

83. *See, e.g.*, Rebecca Crootof, "*Cyborg Justice" and the Risk of Technological-Legal Lock-in*, 119 COLUM. L. REV. ONLINE 233, 236–38 (2019); Kaminski, *supra* note 27, at 1594 (describing how the European Union's General Data Protection Regulation sets forth "the right to 'obtain human intervention' in an algorithmic decision"); Richard M. Re & Alicia Solow-Niederman, *Developing Artificially Intelligent Justice*, 22 STAN. TECH. L. REV. 242, 255 (2019) ("The main strengths of Al adjudication are two hallmarks of codified justice: efficiency (or elimination of waste) and uniformity (or elimination of bias and arbitrariness)."); Huq, *supra* note 66, at 637–40; Eugene Volokh, *Chief Justice Robots*, 68 DUKE L.J. 1135, 1161–66 (2019); Brennan-Marquez & Henderson, *supra* note 30, at 146–48.

that decision makers are ultimately "accountable" to the subjects of algorithmic decisions.[84]

Optimism about potential technological fixes for opaque, unaccountable algorithms still abounds in industry and in technical fields.[85] Some scholars have considered whether artificial intelligence might be able to make key information about its inner workings available to affected individuals without compromising trade secrecy and confidentiality interests.[86] In the tech industry, firms are adopting principles of ethical AI, transparency, and accountability that, they say, will advance these values from within.[87]

But in contexts that are already suffering from severe accountability and transparency deficits, technological improvements to transparency are marginal. In "low-rights" contexts such as criminal law enforcement, the border, and national security, unilateral promises of ethics, accountability, and transparency can hardly reassure either policymakers or citizens that technology is functioning as it should.[88] AI is frequently used in the context of law enforcement and national security programs that have only grown more secretive and less transparent over time.[89] Indeed, as automation promises to expand the capacity and efficiency of the law enforcement apparatus, questions about *algorithmic* accountability

84. Bettina Berendt & Sören Preibusch, *Toward Accountable Discrimination-Aware Data Mining: The Importance of Keeping the Human in the Loop – and Under the Looking Glass*, 5 BIG DATA 135 (2017) (arguing for a deeper understanding of the human side of decision-making with data mining); Meg Leta Jones, *The Right to a Human in the Loop: Political Constructions of Computer Automation and Personhood*, 47 SOC. STUD. SCI. 216, 230 (2017) (describing European "insistence on the categorization of . . . a human in the loop as a *fundamental right*") (emphasis added).

85. *See generally* FRANK PASQUALE, NEW LAWS OF ROBOTICS 123 (2020) (describing this inclination as "technophilic").

86. Kroll et al., *supra* note 27, at 658–60; *see also* Andrew D. Selbst & Solon Barocas, *The Intuitive Appeal of Explainable Machines*, 87 FORDHAM L. REV. 1085, 1135 (2018).

87. *See infra* Part III.A.

88. EUBANKS, *supra* note 19, at 12 (describing how automated systems are piloted in contexts targeting the poor).

89. Andrew D. Selbst, *Disparate Impact in Big Data Policing*, 52 GA. L. REV. 109, 113–14 (2017) (describing predictive policing as a "particularly important area" of technological adoption); *see also* David E. Pozen, *Transparency's Ideological Drift*, 128 YALE L.J. 100, 156 (2018) (describing how, in the context of national security, transparency law "grew increasingly detached from the state's most violent and least visible components[,]" casting doubt on the promise that freedom of information laws could effectively check national security abuses); Christina Koningisor, *Secrecy Creep*, 169 U. PA. L. REV. 1751 (2021) (describing how national security secrecy has migrated into state and local law enforcement domains).

and transparency begin to merge with broader questions about how best to reduce, control, or eliminate state violence.[90]

II. A BOTTOM-UP VISION FOR ALGORITHMIC GOVERNANCE

As automated decision-making has become a key tool for governance, concerns about the values reflected in AI have grown. The use of algorithms to dole out access to goods and services, allocate opportunities, and mete out punishment has prompted backlash and mobilization in a variety of contexts.[91] Resistance to the new technological modalities of surveillance draws on the kinds of concerns about accountability, bias, accuracy, and transparency outlined in the previous Part. Yet social and labor movement activists reject bureaucratic oversight, legal accountability, and electoral safeguards as the chief mechanisms to constrain algorithmic governance. Instead, bottom-up activism turns to more direct resistance strategies to compel change: walkouts, protests, and union drives.

Just as algorithmic governance involves significant participation by both public- and private-sector actors, activists call for *both* the public and private sectors to respond to their demands.[92] The turn toward bottom-up activism reflects demands for democratic

90. Garfield Benjamin, "*Put It in the Bin:" Mapping AI as a Framework of Refusal*, RESISTANCEAI WORKSHOP AT THE 34TH CONFERENCE ON NEURAL INFORMATION PROCESSING SYSTEMS (2020) (using the example of live facial recognition technology).

91. *See, e.g.*, Nanette Asimov, *How Stanford's Vaccine Algorithm Caused a Major Controversy and Left Frontline Workers at the Back of the Line*, S.F. CHRON. (Dec. 25, 2020, 7:20 PM), https://www.sfchronicle.com/health/article/How-Stanford-s-vaccine-algorithm-caused-a-major-15824918.php; Henry McDonald, *Home Office to Scrap "Racist Algorithm" for UK Visa Applicants*, GUARDIAN (Aug. 4, 2020, 7:47 AM), http://www.theguardian.com/uk-news/2020/aug/04/home-office-to-scrap-racist-algorithm-for-uk-visa-applicants; Louise Amoore, *Why "Ditch the Algorithm" is the Future of Political Protest*, GUARDIAN (Aug. 19, 2020, 6:47 AM), http://www.theguardian.com/commentisfree/2020/aug/19/ditch-the-algorithm-generation-students-a-levels-politics; Chris Palmer & Claudia Irizarry-Aponte, *Dozens of Speakers at Hearing Assail Pa. Plan to Use Algorithm in Sentencing*, PHILA. INQUIRER (June 6, 2018), https://www.inquirer.com/philly/news/crime/philadelphia-pennsylvania-algorithm-sentencing-public-hearing-20180606.html.

92. *See* Chelsea Barabas, Colin Doyle, JB Rubinovitz & Karthik Dinakar, *Studying Up: Reorienting the Study of Algorithmic Fairness Around Issues of Power*, *in* ACM CONFERENCE ON FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY 167, 174–75 (2020); Ben Tarnoff, *Trump's Tech Opposition*, JACOBIN (May 2, 2017), https://jacobinmag.com/2017/05/tech-workers-silicon-valley-trump-resistance-startups-unions.

control that go beyond formal public institutions, extending to the private sector companies that might once have thought themselves beyond democracy's reach.[93]

With private authority embedded in public governance, both private and public institutions are now vulnerable to calls for democratic control.[94] This entwinement creates new opportunities for tech workers to organize and work in parallel with labor and social movements against firms' provision of algorithmic governance to the state. Yet existing legal scholarship has overlooked the democratic significance of the emerging tech-worker movement, even as scholars appreciate the movement's salience to corporate governance and to labor law. Legal scholars have described worker mobilization in the technology sector as a form of "private ordering" and as a call for higher "ethical standards" in the private sector.[95] While significant, these descriptions are incomplete: they fail to appreciate the broader ambition of workers mobilizing in solidarity with other movements.

Using three case studies, this Part examines how tech workers, alongside movements for social and racial justice, are demanding accountability not just from government institutions but also from the private firms that build and sell tech to government customers. Together, social movements and tech workers oppose the embeddedness of tech firms within the most violent and repressive government practices and programs. In so doing, they challenge both the disempowerment of the tech workers who were "exclu[ded] from real decision-making" about collaboration with government programs, as well as the deployment of new technologies of governance to further exclude, marginalize, and oppress people and communities.[96]

93. *Cf.* ELIZABETH ANDERSON, PRIVATE GOVERNMENT: HOW EMPLOYERS RULE OUR LIVES (AND WHY WE DON'T TALK ABOUT IT) 47–48 (2017); Bowie, *supra* note 15 (describing recent movements to democratize the workplace).

94. COHEN, *supra* note 54, at 187.

95. Jennifer S. Fan, *Employees as Regulators: The New Private Ordering in High Technology Companies*, 2019 UTAH L. REV. 973, 1015–17 (2019); Kelley Changfong-Hagen, "*Don't Be Evil": Collective Action and Employee Prosocial Activism*, 5 COLUM. HUM. RTS. L. REV. ONLINE 188, 190 (2021).

96. Ben Tarnoff, *The Making of the Tech Worker Movement*, LOGIC (May 4, 2020), https://logicmag.io/the-making-of-the-tech-worker-movement/full-text/.

A. National Security Surveillance

National security was perhaps the first setting for widespread adoption of algorithmic governance. In the wake of the September 11, 2001, attacks, the Department of Defense created the "Orwellian-sounding" Total Information Awareness System (TIA), which linked multiple sources of information and intelligence in one centralized location.[97] From the outset, the growth of the national security surveillance state required extensive cooperation from the tech industry. In connection with the TIA, the Defense Advanced Research Projects Agency (DARPA) sought proposals for large-scale data storage as well as technologies that would "allow humans and machines to think together about complicated and complex problems more efficiently and effectively."[98] Defense firms and other private actors also secured grants to support the TIA project.[99] Congress cut off funding for TIA in 2003, after it had barely gotten off the ground.[100] Nonetheless, the kinds of data mining and analysis techniques used in connection with TIA soon metastasized to other locations in the defense and law enforcement context.[101] Later revelations about other dragnet surveillance programs have also spawned comparisons with TIA.[102]

At first, the private sector provided little resistance. The defense contractors that had partnered with DARPA in the initial stages of TIA were hardly hotbeds of progressive anti-surveillance sentiment. But acquiring the raw materials for data mining and surveillance also required partnerships with other

97. Ferguson, *Big Data*, *supra* note 30, at 361.

98. *EPIC Analysis of Total Information Awareness Contractor Documents*, EPIC (Feb. 2003), https://www.epic.org/privacy/profiling/tia/doc_analysis.html.

99. *Approved Contractors for BAA-02-08: Total Information Awareness*, EPIC, https://www.epic.org/privacy/profiling/tia/contractors_table.html (last visited Sept. 23, 2022).

100. Christopher Slobogin, *Government Data Mining and the Fourth Amendment*, 75 U. CHI. L. REV. 317, 317–18 (2008).

101. *Id.* at 319 ("The Defense Department, the progenitor of TIA, sponsors the largest number of data mining operations.").

102. *See, e.g.*, Siobhan Gorman, *NSA's Domestic Spying Grows as Agency Sweeps Up Data; Terror Fight Blurs Line Over Domain; Tracking Email*, WALL ST. J. (Mar. 10, 2008, 12:01 AM), https://www.wsj.com/articles/SB120511973377523845 (describing how, when TIA ended, some of its research and technology was "shifted to the NSA").

firms that could facilitate access to large amounts of user data.[103] Telecommunications companies collaborated willingly with national security agencies, while some Silicon Valley technology companies began to resist and push back, albeit often in secretive judicial proceedings.[104] Moreover, firms' partnerships with law enforcement and intelligence were not popular with all of their employees. In 2006, in what was perhaps the first example of a private-sector employee blowing the whistle on a national security program, Mark Klein, an AT&T technician, leaked information about the firm's cooperation with the National Security Agency to WIRED.[105]

Movements for social and racial justice began to coalesce in response to revelations about tech-enabled national security surveillance. For instance, beginning in 2011, the Associated Press published a series of stories revealing that the New York Police Department (NYPD), in partnership with the CIA, had systematically surveilled Muslim communities in New York.[106] In response, a group of Muslim individuals, Muslim-owned businesses, mosques, and the Muslim Students Association filed a lawsuit challenging NYPD's surveillance on First Amendment and equal protection grounds.[107] The New York City grassroots group Desis Rising Up and Moving (DRUM) began a series of projects

103. Jack M. Balkin, *Old-School/New-School Speech Regulation*, 127 HARV. L. REV. 2296, 2329 (2014) ("[I]n order to engage in surveillance, the government needs access to the facilities through which most people are speaking; hence the government needs access to the infrastructure of free expression, which is largely held in private hands.").

104. Jon D. Michaels, *All the President's Spies: Private-Public Intelligence Partnerships in the War on Terror*, 96 CALIF. L. REV. 901, 911 (2008) (describing "the telecommunications companies' complicity" in the warrantless wiretapping program). For examples of tech firm pushback, see, e.g., *In re* Directives to Yahoo! Inc. Pursuant to Section 105B of the Foreign Intelligence Surveillance Act, No. 08-01, 2008 WL 10632524 (Foreign Intel. Surveillance Ct. Aug. 22, 2008); *In re* Nat'l Sec. Letter, 863 F.3d 1110 (9th Cir. 2017).

105. David Kravets, *NSA Leak Vindicates AT&T Whistleblower*, WIRED (June 27, 2013, 3:09 PM), https://www.wired.com/2013/06/nsa-whistleblower-klein/; *see also* Michael German, *Protecting Whistleblowers Protects National Security*, BRENNAN CTR. FOR JUST. (Mar. 5, 2015), https://www.brennancenter.org/our-work/analysis-opinion/protecting-whistleblowers-protects-national-security (describing whistleblowing activities by Babak Pasdar, a contractor with Verizon Wireless who discovered a circuit that connected the company's data to FBI headquarters).

106. *See, e.g.*, Adam Goldman & Matt Apuzzo, *Inside the Spy Unit that NYPD Says Doesn't Exist*, ASSOCIATED PRESS (Aug. 31, 2011), https://www.nbcnewyork.com/news/local/nypd-spy-terrorism-muslim-cia/1927513/.

107. Hassan v. City of New York, 804 F.3d 277 (3d Cir. 2015).

advocating for changes to local and national surveillance programs.[108] But in 2012, NYPD announced that Microsoft was building a new Domain Awareness System for the department to conduct round-the-clock aggregation and analysis of information from video sources, license plate readers, and criminal databases, among other sources.[109] The new incarnation of technologically-facilitated counterterrorism surveillance raised concerns that it would amplify the same kinds of racial and religious profiling practices NYPD had long been engaging in.[110]

Today, tech workers seem increasingly hostile to partnerships such as Total Information Awareness or the Domain Awareness System. Consider "Project Maven," a Department of Defense program that sought to deploy artificial intelligence for video analysis.[111] Project Maven began in 2017, when the Department launched its Algorithmic Warfare Cross-Functional Team.[112] In a 2017 event, Defense Department officials publicly commented about the potential of computer vision and artificial intelligence for combat and intelligence-related purposes, acknowledging that the emerging focus on AI would require significant investment by the government as well as participation by the private sector.[113] In March 2018, Gizmodo and The Intercept reported that Google had entered into a contract with the Department of Defense to supply

108. *Racial & Immigrant Justice Program*, DRUM (Oct. 5, 2012), https://www.drumnyc.org/racial-immigrant-justice-program/.

109. I. Bennett Capers, *Crime, Surveillance, and Communities*, 40 FORDHAM URB. L.J. 959, 960–61 (2013).

110. Michael McLaughlin, *John Liu Investigates NYPD Surveillance of Muslims, Mosques*, HUFFINGTON POST (Aug. 28, 2013, 5:20 PM), https://www.huffpost.com/entry/john-liu-nypd-muslims_n_3831681.

111. Scott Shane, Cade Metz & Daisuke Wakabayashi, *How a Pentagon Contract Became an Identity Crisis for Google*, N.Y. TIMES (May 30, 2018), https://www.nytimes.com/2018/05/30/technology/google-project-maven-pentagon.html.

112. Dell Cameron & Kate Conger, *Google Is Helping the Pentagon Build AI for Drones*, GIZMODO (Mar. 6, 2018, 10:15 AM), https://gizmodo.com/google-is-helping-the-pentagon-build-ai-for-drones-1823464533.

113. Cheryl Pellerin, *Project Maven to Deploy Computer Algorithms to War Zone by Year's End*, U.S. DEP'T DEF. (July 21, 2017), https://www.defense.gov/Explore/News/Article/Article/1254719/project-maven-to-deploy-computer-algorithms-to-war-zone-by-years-end/.

artificial intelligence that would interpret drone footage and help "track individuals as they come and go from different locations."[114]

The disclosure that Google was helping the Department of Defense conduct bomb strikes raised the hackles of Google employees.[115] The Project Maven story broke as Google was also grappling with internal dissatisfaction over the company's mishandling of sexual harassment complaints.[116] Thousands of employees signed onto an open letter drafted by Meredith Whittaker, who led the Open Research Group at the firm, protesting the contract and demanding that the company desist from providing "warfare technology."[117] The firm's tepid response, which sought to reassure Google employees that the Maven contract was uncontroversial, had the opposite effect, bolstering support for Whittaker and eroding confidence in Google's leadership.[118] In May 2018, Google removed its famous corporate tagline, "don't be evil," from its code of conduct.[119] Shortly thereafter, the firm announced that it would not renew its Project Maven contract.[120]

Project Maven illustrates the democratic vision's breadth. The dominant critiques of algorithmic governance focus on errors and problems that are internal to technical systems. For example, the argument for a "human in the loop" rests on the perception that humans might be able to flag context, errors, or interpretations that

114. Cameron & Conger, *supra* note 112; Lee Fang, *Google Is Quietly Providing AI Technology for Drone Strike Targeting Project*, THE INTERCEPT (Mar. 6, 2018, 11:40 AM), https://theintercept.com/2018/03/06/google-is-quietly-providing-ai-technology-for-drone-strike-targeting-project/.

115. Fang, *supra* note 114.

116. Kate Conger & Noam Scheiber, *Federal Labor Agency Says Google Wrongly Fired 2 Employees*, N.Y. TIMES (Dec. 2, 2020), https://www.nytimes.com/2020/12/02/technology/google-nlrb-fired-workers.html.

117. Shane et al., *supra* note 111.

118. Conger & Scheiber, *supra* note 116.

119. Kate Conger, *Google Removes 'Don't Be Evil' Clause from Its Code of Conduct*, GIZMODO (May 18, 2018, 5:31 PM), https://gizmodo.com/google-removes-nearly-all-mentions-of-dont-be-evil-from-1826153393.

120. Daisuke Wakabayashi & Scott Shane, *Google Will Not Renew Pentagon Contract That Upset Employees*, N.Y. TIMES (June 1, 2018), https://www.nytimes.com/2018/06/01/technology/google-pentagon-project-maven.html.

machines currently cannot.[121] In contrast, the democratic vision might also see Google employees resisting Project Maven as playing a role as "humans in the loop." But the loop is much larger than any single, individual automated decision: the Project Maven example highlights the significance of human resistance against the adoption of an automated system in the first place. In other words, the democratic vision might be understood to expand the role of human judgment beyond the scope of isolated decisions and to inform the determination of whether, when, and under what circumstances algorithmic governance is consistent with human values.

The Maven example also underscores the potential power and promise of organizing, even as Google exploited scant protections for labor and retaliated against many of its employees.[122] When Google employees unionized in January 2021, they cited Project Maven as one example of successful worker mobilization, alongside higher wage for subcontractors and an end to the forced arbitration of sexual harassment claims.[123] Vocal employee resistance raised public awareness of projects that might otherwise have been swept under the rug and made internal conflicts over the company's policies visible to an external audience. In a context in which it is "difficult to obtain reliable publicly available information" from the government itself, worker advocacy can make secretive government programs more salient to the public.[124] Indeed, at the time of writing, Google and Amazon workers have

121. Brennan-Marquez & Henderson, *supra* note 30, at 146; Anna Brown, Alexandra Chouldechova, Emily Putnam-Hornstein, Andrew Tobin & Rhema Vaithianathan, *Toward Algorithmic Accountability in Public Services: A Qualitative Study of Affected Community Perspectives on Algorithmic Decision-making in Child Welfare Services*, *in* PROCEEDINGS OF THE 2019 CHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS PROCEEDINGS - CHI '19 1–12 (2019) ("While algorithmic risk scores were perceived as potentially helpful as a starting point, they were generally deemed to be an inadequate basis for ultimate decision-making.").

122. Conger & Scheiber, *supra* note 116; Kate Conger & Cade Metz, *"I Could Solve Most of Your Problems": Eric Schmidt's Pentagon Offensive*, N.Y. TIMES (May 2, 2020), https://www.nytimes.com/2020/05/02/technology/eric-schmidt-pentagon-google.html.

123. Parul Koul & Chewy Shaw, *We Built Google. This Is Not the Company We Want to Work For.*, N.Y. TIMES (Jan. 4, 2021), https://www.nytimes.com/2021/01/04/opinion/google-union.html.

124. Engstrom et al., *supra* note 40, at 12.

walked out of the workplace once again, this time to protest their employers' cloud contracts with the Israeli government.[125]

At the same time, the narrow victories of Google workers also illustrate the limits of worker mobilization. Returning to the example of the NYPD, the Domain Awareness System remains an important tool for the agency even after the unit that had conducted the Muslim surveillance programs was officially disbanded in 2014.[126] Strikingly, Microsoft's role in supplying the NYPD with surveillance tools has not generated controversy within its workforce. Nor do firms such as ShotSpotter, which provides New York and other cities with "gunshot detection" sensors and software, or Vigilant Solutions, which supplies license plate readers, appear to be roiled by worker concerns.[127] Perhaps because government contracts make up a significant portion of these firms' revenues, workers are less likely to resist or reconsider the provision of surveillance technology to public partners.[128]

While tech workers and social movements have made some very public gains in opposing algorithmic governance in national security contexts, the overall effectiveness of these mobilizations thus appears uneven.

B. Facial Recognition Technology

As surveillance techniques and technologies have migrated from the national security domain to more everyday policing contexts, relationships between tech workers and grassroots social movements have only grown more entwined. Consider the role of social and labor movements in opposing facial recognition

125. Amanda Silberling, *Google Workers Protest $1.2B Project Nimbus Contract with Israeli Military*, TECHCRUNCH (Sept. 1, 2022), https://techcrunch.com/2022/09/01/google-workers-protest-1-2b-project-nimbus-contract-with-israeli-military/.

126. Matt Apuzzo & Joseph Goldstein, *New York Drops Unit That Spied on Muslims*, N.Y. TIMES (Apr. 15, 2014), https://www.nytimes.com/2014/04/16/nyregion/police-unit-that-spied-on-muslims-is-disbanded.html; *Domain Awareness System (DAS): Impact & Use Policy*, NYPD (Apr. 11, 2021), www1.nyc.gov/assets/nypd/downloads/pdf/public_information/post-final/domain-awareness-system-das-nypd-impact-and-use-policy_4.9.21_final.pdf.

127. Bloch-Wehba, *Access to Algorithms*, *supra* note 6, at 1283–84 (describing ShotSpotter); Amanda Levendowski, *Trademarks as Surveillance Transparency*, 36 BERKELEY TECH. L.J. 439, 457–63 (2021) (describing Vigilant Solutions's provision of license plate recognition cameras and software).

128. *See, e.g.*, Microsoft Q4 10-K (2020), 29 ("We derive substantial revenue from government contracts.").

technology (FRT). FRT is an investigative tool that uses a computer algorithm to screen a photograph against a database of images and return a list of probable matches.[129] These algorithms frequently use a form of machine learning called "deep learning," which tends to provide "limited insights into the decision-making process."[130] The great appeal of FRT is efficiency: the technology can help "maximize limited resources" by permitting law enforcement to "expedite[] certain police functions."[131] While policing provides the most salient use case for FRT, private actors also use the technology.[132]

Police use of FRT has garnered special attention and concern in light of problems with accuracy and bias.[133] To understand the stakes, consider the story of Robert Williams. In January 2020, Mr. Williams was arrested after a facial recognition system

129. PATRICK GROTHER, MEI NGAN & KAYEE HANAOKA, U.S. DEP'T OF COM., FACE RECOGNITION VENDOR TEST (FVRT) PART 3: DEMOGRAPHIC EFFECTS (2019).

130. Shruti Nagpal, Maneet Singh, Richa Singh & Mayank Vatsa, *Deep Learning for Face Recognition: Pride or Prejudiced?*, PROC. OF THE AAAI CONF. ON A.I. (Apr. 3, 2020), https://ojs.aaai.org//index.php/AAAI/article/view/7085.

131. *Law Enforcement Facial Recognition Use Case Catalog*, at 1, IJIS INSTITUTE (Mar. 2019), https://www.theiacp.org/sites/default/files/2019-10/IJIS_IACP%20WP_LEITTF_Facial%20Recognition%20UseCasesRpt_20190322.pdf; *see also* Shannon Togawa Mercer & Ashley Deeks, *Facial Recognition Software: Costs and Benefits*, LAWFARE BLOG (Mar. 27, 2018, 9:00 AM), https://www.lawfareblog.com/facial-recognition-software-costs-and-benefits (arguing that the most promising benefit of FRT is that it "can make law enforcement more efficient").

132. *See, e.g.*, Mike Rogoway, *Major Tech Company Using Facial Recognition to ID Workers*, GOV'T TECH. (Mar. 11, 2020), https://www.govtech.com/public-safety/Major-Tech-Company-Using-Facial-Recognition-to-ID-Workers.html; Nick Tabor, *Smile! The Secretive Business of Facial-Recognition Software in Retail Stores*, N.Y. MAG. (Oct. 20, 2018), https://nymag.com/intelligencer/2018/10/retailers-are-using-facial-recognition-technology-too.html; Kashmir Hill, *Before Clearview Became a Police Tool, It Was a Secret Plaything of the Rich*, N.Y. TIMES (Mar. 6, 2020), https://www.nytimes.com/2020/03/05/technology/clearview-investors.html; Rachel Metz, *Anyone Can Use This Powerful Facial-recognition Tool — and That's a Problem*, CNN (May 4, 2021, 3:53 PM), https://www.cnn.com/2021/05/04/tech/pimeyes-facial-recognition/index.html; Yasmin Gagne, *How We Fought Our Landlord's Secretive Plan for Facial Recognition — and Won*, FAST COMPANY (Nov. 22, 2019), https://www.fastcompany.com/90431686/our-landlord-wants-to-install-facial-recognition-in-our-homes-but-were-fighting-back.

133. *See, e.g.*, Madeleine Gregory, *Amazon's Facial Recognition Misidentified 1 in 5 California Lawmakers as Criminals*, VICE (Aug. 13, 2019, 12:42 PM), *https://www.vice.com* /en_us/article/ne8wa8/amazons-facial-recognition-misidentified-1-in-5-california-lawmakers-as-criminals.

wrongly flagged his old driver's license photo as a match for an individual suspected of shoplifting expensive watches at a Detroit store known for its modern vintage aesthetic and its role in the city's "revitalization."[134] After holding Mr. Williams overnight, detectives showed him a still image taken from the store's surveillance video system, and asked, "Is this you?" It was not Mr. Williams, who was incredulous. "You think all black men look alike?"[135] Officers had run the photograph through a facial recognition system, which flagged Mr. Williams's driver's license photo as a potential match, and showed it to a loss-prevention contractor, who wrongly identified Mr. Williams as the perpetrator.[136]

For Detroit activists, Mr. Williams's arrest vividly illustrated both the perils of racial bias embedded within FRT systems and the failings of public oversight. Around the same time that Mr. Williams's arrest became national news, the uprisings against police violence were coming to a head, and Detroit was due to renew its contract with DataWorksPlus, a tech firm that provided a platform for FRT to be used by the police.[137] Detroit had been using FRT for years, primarily in the context of Project Green Light, a "public-private-community partnership" that had installed surveillance cameras in neighborhoods around the city.[138] Project Green Light started in 2016 with eight gas stations that paid for and mounted police-monitored surveillance cameras outside their establishments.[139] The partnership, which matched voluntary

134. Robert Williams, *I Was Wrongfully Arrested Because of Facial Recognition. Why Are Police Allowed to Use It?*, WASH. POST (June 24, 2020, 3:04 PM), https://www.washingtonpost.com/opinions/2020/06/24/i-was-wrongfully-arrested-because-facial-recognition-why-are-police-allowed-use-this-technology/; Stacy Perman, *The Real History of America's Most Authentic Fake Brand*, INC. MAG. (Apr. 2016), https://www.inc.com/magazine/201604/stacy-perman/shinola-watch-history-manufacturing-heritage-brand.html.

135. Kashmir Hill, *Wrongfully Accused by an Algorithm*, N.Y. TIMES (June 24, 2020), https://www.nytimes.com/2020/06/24/technology/facial-recognition-arrest.html.

136. *Id.*

137. M. L. Elrick, *Detroit Protesters Take Fight Against Facial Recognition Tech to City Leaders' Homes*, DETROIT FREE PRESS (June 15, 2020), https://www.freep.com/story/news/local/michigan/detroit/2020/06/15/facial-recognition-deal-off-agenda-protesters-target-councilmembers/3191887001/ (describing the June 15 caravan).

138. *Project Green Light Detroit*, CITY OF DETROIT, https://detroitmi.gov/departments/police-department/project-green-light-detroit (last visited Sept. 25, 2022).

139. *Id.*

participation by private enterprise with police resources, was a novel development for Detroit and quickly expanded.

Detroit adopted FRT technology long before determining how to regulate it. In 2017, Detroit police started using FRT to analyze the footage from the Project Green Light cameras, entering into a contract worth $1 million with technology firm DataWorksPlus.[140] DataWorks's software incorporates algorithms developed by third-party tech companies such as Japanese software company NEC, which provided the algorithm that led to Mr. Williams's arrest.[141] Detroit police had been deploying FRT for a full year and a half before finally adopting a policy that governed its use in 2019.[142] Debates about the Board of Police Commissioners' role in overseeing the technology grew so acrimonious that one police commissioner was arrested during a meeting.[143] By the summer of 2020, Project Green Light included hundreds of participating businesses, and the City Council was considering a contract extension for DataWorks.[144]

Activists organizing against police surveillance took the contract debate as an opportune moment to advocate against FRT.[145] But tech workers have also opposed the sale of FRT to

140. *Professional Services Contract Between City of Detroit, Michigan and DataWorks Plus Contract No. 6000801*, MUCKROCK (July 8, 2019), https://www.muckrock.com/foi/detroit-314/facial-recognition-detroit-mi-76785/#file-808358.

141. Hill, *supra* note 135.

142. Tawana Petty, *Detroit: On a Journey to Be Seen*, DATA FOR BLACK LIVES BLOG (Mar. 5, 2021), https://blog.d4bl.org/detroit-on-a-journey-to-be-seen-2/ ("In 2019 Detroiters learned that facial recognition technology had been part of the surveillance program since 2017."); Christine Ferretti, *Residents Urge City Council to Reject Proposed Facial Recognition Contract Extension*, DETROIT NEWS (June 16, 2020, 2:03 PM), https://www.detroitnews.com/story/news/local/detroit-city/2020/06/16/residents-urge-city-council-reject-proposed-facial-recognition-contract/3197917001/; Violet Ikonomova, *Video: Detroit Police Commissioner Arrested During Meeting on Facial Recognition*, DEADLINE DETROIT (July 12, 2019, 12:01 AM), https://www.deadlinedetroit.com/articles/22779/video_detroit_police_commissioner_arrested_during_meeting_on_facial_recognition.

143. Violet Ikonomova, *Detroit Police Board's Power Questioned Amid Face-Recognition Dispute*, DEADLINE DETROIT (July 31, 2019, 8:34 AM), https://www.deadlinedetroit.com/articles/22915/2019_recap_detroit_police_board_s_power_questioned_amid_face-recognition_dispute.

144. Elrick, *supra* note 137; Tawana Petty, *Defending Black Lives Means Banning Facial Recognition*, WIRED (July 10, 2020), https://www.wired.com/story/defending-black-lives-means-banning-facial-recognition/.

145. Petty, *supra* note 142.

criminal law enforcement. In 2018, for example, Amazon workers mounted an internal campaign to stop the firm from selling its FRT system, Rekognition, to law enforcement.[146] In an open letter, workers emphasized that FRT facilitated large-scale monitoring of the Black population and raised racial justice concerns. Workers wrote, "As ethically concerned Amazonians, we demand a choice in what we build, and a say in how it is used."[147] The letter had no impact. Indeed, not only did Amazon continue to sell Rekognition to police, but it also continued to partner with police to promote the adoption of Ring, its home surveillance subsidiary.[148]

FRT's dangerous potential became particularly apparent during and after the 2020 uprisings against police violence and repression that responded to Minneapolis police officer Derek Chauvin's killing of George Floyd. In addition to the obvious costs to individual privacy, FRT systems also pose particular risks to other civil liberties interests, including free expression.[149] Civil liberties advocates had long warned about the potential for FRT to identify participants in protests and demonstrations, raising substantial concerns about First Amendment expressive and associational rights.[150] According to news reports, several law

146. Ali Breland, *Amazon Employees Protest Sale of Facial Recognition Tech to Law Enforcement*, THE HILL (June 21, 2018, 9:00 PM), https://thehill.com/business-a-lobbying/393583-amazon-employees-protest-sale-of-facial-recognition-tech-to-law.

147. Ali Breland, *Dear Jeff*, SCRIBD, https://www.scribd.com/document/382334740/Dear-Jeff (last visited Sept. 25, 2022).

148. Louise Matsakis, *Cops Are Offering Ring Doorbell Cameras in Exchange for Info*, WIRED (Aug. 2, 2019, 8:31 PM), https://www.wired.com/story/cops-offering-ring-doorbell-cameras-for-information/; Lauren Goode & Louise Matsakis, *Amazon Doubles Down on Ring Partnerships With Law Enforcement*, WIRED (Jan. 7, 2020, 8:02 PM), https://www.wired.com/story/ces-2020-amazon-defends-ring-police-partnerships/; John Herrman, *Who's Watching Your Porch?*, N.Y. TIMES (Jan. 19, 2020), https://www.nytimes.com/2020/01/19/style/ring-video-doorbell-home-security.html; Alfred Ng, *Amazon's Helping Police Build a Surveillance Network with Ring Doorbells*, CNET (June 5, 2019, 7:55 AM), https://www.cnet.com/features/amazons-helping-police-build-a-surveillance-network-with-ring-doorbells/.

149. Because FRT systems are so easily concealed, scholars Woodrow Hartzog and Evan Selinger have argued they will lead to a widespread chilling effect that "dampen[s] expressive and religious conduct." Woodrow Hartzog & Evan Selinger, *Facial Recognition Is the Perfect Tool for Oppression*, MEDIUM (Aug. 2, 2018), https://medium.com/s/story/facial-recognition-is-the-perfect-tool-for-oppression-bc2a08f0fe66.

150. *See, e.g.*, Roy Bragg, *Show Your Face in Public: Smile, You're on the Bad Guy Camera*, SAN ANTONIO EXPRESS-NEWS (Aug. 19, 2001); David Hench, *Police Filming of Rally-Goers Draws Concern*, PORTLAND PRESS-HERALD (Oct. 20, 2002) ("[P]eace activists and civil libertarians criticize the tactics as intimidating people who disagree with the government.").

enforcement agencies used FRT to identify and arrest people accused of violence and property crime during the George Floyd protests.[151] Activists also reported that Amazon's Ring cameras were being used to monitor and surveil protests.[152]

Against this background, activists have continued to advocate for law enforcement to abandon FRT and for technology companies to abandon law enforcement customers. Events during the summer of 2020 brought these pressures to a head, as tech workers became increasingly aligned with social movements seeking racial justice. In June 2020, Amazon put out a statement of support for protestors against racial injustice. Some workers pushed back, arguing that, by continuing to profit off of law enforcement adoption of its technologies, the firm's actions spoke louder than words.[153] Days later, after years of resisting advocates' and organizers' calls not to sell Rekognition to law enforcement, Amazon abruptly changed its tune, announcing that it would impose a yearlong moratorium on sales of its FRT to police.[154] IBM followed suit, announcing that it would no longer make FRT for law enforcement applications, and

151. Richland County Sheriff's Department, *Richland, Columbia Police Use Facial Recognition, Social Media in Protest Tied Arrests*, THE STATE (Aug. 2, 2020, 5:00 AM), https://www.thestate.com/news/local/crime/article244433082.html; Justin Jouvenal & Spencer S. Hsu, *Facial Recognition Used to Identify Lafayette Square Protester Accused of Assault*, WASH. POST (Nov. 2, 2020, 1:45 PM), https://www.washingtonpost.com/local/legal-issues/facial-recognition-protests-lafayette-square/2020/11/02/64b03286-ec86-11ea-b4bc-3a2098fc73d4_story.html.

152. Khaleda Rahman, *Police are Monitoring Black Lives Matter Protests with Ring Doorbell Data and Drones, Activists Say*, NEWSWEEK (Aug. 9, 2020, 10:46 AM), https://www.newsweek.com/amazon-ring-drones-monitor-protests-1523856; Matthew Guariglia & Dave Maass, *LAPD Requested Ring Footage of Black Lives Matter Protests*, EFF (Feb. 16, 2021), https://www.eff.org/deeplinks/2021/02/lapd-requested-ring-footage-black-lives-matter-protests.

153. Isobel Asher Hamilton, *Amazon Workers Slammed the Company for Supporting the George Floyd Protesters While Still Flogging Surveillance Tech to Police*, BUSINESS INSIDER (June 3, 2020, 6:04 AM), https://www.businessinsider.com/amazon-workers-accuse-company-hypocrisy-george-floyd-statement-2020-6.

154. Karen Hao, *The Two-Year Fight to Stop Amazon from Selling Face Recognition to the Police*, MIT TECH. REV. (June 12, 2020), https://www.technologyreview.com/2020/06/12/1003482/amazon-stopped-selling-police-face-recognition-fight/ (Amazon later announced it would extend the moratorium); Jeffrey Dastin, *Amazon Extends Moratorium on Police Use of Facial Recognition Software*, REUTERS (May 18, 2021, 1:12 PM), https://www.reuters.com/technology/exclusive-amazon-extends-moratorium-police-use-facial-recognition-software-2021-05-18/.

Microsoft likewise announced a moratorium on sales.[155] In jurisdictions around the nation, pressure from social and racial justice activists is paying off as governments ban public use of FRT.[156]

At the same time, however, these victories are limited. After all, Detroit ultimately renewed its DataWorks contract.[157] While some American firms have backed away from providing FRT to government agencies, they are smaller players in the market.[158] Federal legislation to regulate the use of FRT has been introduced but not yet enacted.[159] And while government use of FRT is an increasingly visible and salient policy issue, private usage remains almost entirely unfettered.[160] In short, large American firms have been vulnerable to pressure from workers and from movement activists, but that pressure does not inevitably translate into progressive outcomes.

155. Charlotte Jee, *IBM Says It Is No Longer Working on Face Recognition Because It's Used for Racial Profiling*, MIT TECH. REV. (June 9, 2020), https://www.technologyreview.com/2020/06/09/1002947/ibm-says-it-is-no-longer-working-on-face-recognition-because-its-used-for-racial-profiling/; Jay Greene, *Microsoft Won't Sell Police Its Facial-Recognition Technology, Following Similar Moves By Amazon and IBM*, WASH. POST (June 11, 2020), https://www.washingtonpost.com/technology/2020/06/11/microsoft-facial-recognition/.

156. Ally Jarmanning, *Boston Bans Use of Facial Recognition Technology. It's The 2nd-Largest City To Do So*, WBUR (June 24, 2020), https://www.wbur.org/news/2020/06/23/boston-facial-recognition-ban; Dave Gershgorn, *Maine Passes the Strongest State Facial Recognition Ban Yet*, THE VERGE (June 30, 2021, 1:49 PM), https://www.theverge.com/2021/6/30/22557516/maine-facial-recognition-ban-state-law; *Facial Recognition Technology Ban Passed by King County Council*, KING COUNTY (June 1, 2021), https://kingcounty.gov/council/mainnews/2021/June/6-01-facial-recognition.aspx.

157. Christine Ferretti & Sarah Rahal, *Detroit Council Oks Controversial Contract for Facial Recognition Software*, DETROIT NEWS (Sept. 29, 2020, 8:04 AM), https://www.detroitnews.com/story/news/local/detroit-city/2020/09/29/detroit-council-vote-facial-recognition/3563440001/.

158. Will Knight, *IBM's Withdrawal Won't Mean the End of Facial Recognition*, WIRED (June 10, 2020, 7:00 AM), https://www.wired.com/story/ibm-withdrawal-wont-mean-end-facial-recognition/.

159. Tate Ryan-Mosley, *We Could See Federal Regulation on Face Recognition as Early as Next Week*, MIT TECH. REV. (May 21, 2021), https://www.technologyreview.com/2021/05/21/1025155/amazon-face-recognition-federal-ban-police-reform/.

160. Ng, *supra* note 148 (describing widespread private adoption of Ring cameras); Metz, *supra* note 132 (describing private use of facial recognition).

C. Immigration

Immigration enforcement has also become increasingly entwined with tech.[161] Particularly at the border, high-tech surveillance has become standard.[162] Like critics of facial recognition technology, activists concerned about the use of technology in immigration contexts have drawn on the potential for automated decision-making to aggravate bias, inaccuracy, and expansive discretion.

Consider, for example, the reaction to President Trump's "Muslim Ban" executive order, which called for aggressive screening of immigrants and visa applicants.[163] Soon after the order, ICE issued a Statement of Objectives for a contractor to "develop and implement a continuous vetting strategy" to automate substantial portions of what it called the "Extreme Vetting Initiative."[164] Representatives from a host of technology firms and defense contractors, including IBM and software company SAS, attended "Industry Days" about the project.[165]

Civil society organizations and technologists opposed "extreme vetting" on accuracy and objectivity grounds, arguing that it would

161. Anil Kalhan, *Immigration Surveillance*, 74 MD. L. REV. 1, (2014) (observing that immigration surveillance is transforming immigration control "into part of a more expansive regime of migration and mobility surveillance, operating without geographic bounds upon citizens and noncitizens alike"); Todd Miller & Nick Buxton, *Biden's Border: The Industry, the Democrats and the 2020 Elections*, TRANSNATIONAL INSTITUTE 1, 12 (Feb. 2021), https://www.tni.org/files/publication-downloads/bidens-border-briefing-tni-feb14.pdf (describing and documenting political contributions by key contractors providing detention, data processing, and surveillance services at the border). For a historical perspective on the emergence of the immigration surveillance apparatus, see Iván Chaar-López, *Sensing Intruders: Race and the Automation of Border Control*, 71 AM. Q. 495 (2019).

162. Emma Knight & Alex Gekker, *Mapping Interfacial Regimes of Control: Palantir's ICM in America's Post-9/11 Security Technology Infrastructures*, 18 SURVEILLANCE & SOCIETY 231 (2020); Shannon Mattern, *All Eyes on the Border*, PLACES (2018), https://placesjournal.org/article/all-eyes-on-the-border/?cn-reloaded=1; Ron Nixon, *On the Mexican Border, a Case for Technology Over Concrete*, N.Y. TIMES (June 20, 2017), https://www.nytimes.com/2017/06/20/us/politics/on-the-mexican-border-a-case-for-technology-over-concrete.html.

163. Exec. Order No. 13780, 82 Fed. Reg. 13209 Sec. 5 (Mar. 9, 2017).

164. *ICE Statement of Objectives*, BRENNAN CTR. FOR JUST. (June 12, 2017), http://www.brennancenter.org/sites/default/files/Extreme%20Vetting%20Inititate%20-%20Statement%20of%20Objectives.pdf.

165. *ICE Industry Days Sign-In Sheets*, BRENNAN CTR. FOR JUST. (July 18–19, 2017), https://www.brennancenter.org/sites/default/files/Industry%20Day%20Sign-in%20sheets%20-%20July%2018%2C%202017_0.pdf and https://www.brennancenter.org/sites/default/files/Industry%20Day%20Sign-in%20sheets%20-%20July%2019%2C%202017.pdf.

enable ICE to exercise "maximal latitude to discriminate beneath the cover of an unproven algorithm."[166] Nevertheless, ICE moved forward with plans to spend $100 million on an automated screening mechanism.[167] Months later, ICE dropped its goal of automating screening after it became clear that artificial intelligence and machine learning were not going to be able to fulfill its automation imperative, instead turning to human labor to accomplish the same goals.[168]

The expansion and increasing severity of immigration enforcement have also fueled the Abolish ICE! movement.[169] As Marisol Orihuela details, Abolish ICE! advocates for the abandonment of the current model of immigration enforcement, including deportations and detention.[170] Infamous policies of "zero tolerance," courthouse arrests, and family separation led to numerous demonstrations and acts of civil disobedience in

166. *See Coalition Letter to DHS Opposing the Extreme Vetting Initiative*, BRENNAN CTR. FOR JUST. (Nov. 16, 2017), https://www.brennancenter.org/sites/default/files/Coalition%20Letter%20to%20DHS%20Opposing%20the%20Extreme%20Vetting%20Initiative%20-%2011.15.17.pdf; *Technology Experts Letter to DHS Opposing the Extreme Vetting Initiative*, BRENNAN CTR. FOR JUST. (Nov. 16, 2017), https://www.brennancenter.org/sites/default/files/Technology%20Experts%20Letter%20to%20DHS%20Opposing%20the%20Extreme%20Vetting%20Initiative%20-%2011.15.17.pdf ("There is a wealth of literature demonstrating that even the 'best' automated decision-making models generate an unacceptable number of errors when predicting rare events.").

167. Faiza Patel & Harsha Panduranga, *DHS' Constant Vetting Initiative: A Muslim-Ban by Algorithm*, JUST SECURITY (Mar. 12 2018), https://www.justsecurity.org/53671/dhs-constant-vetting-initiative-muslim-ban-algorithm/.

168. Drew Harwell & Nick Miroff, *ICE Just Abandoned Its Dream of "Extreme Vetting" Software That Could Predict Whether a Foreign Visitor Would Become a Terrorist*, WASH. POST (May 17, 2018, 1:33 PM), https://www.washingtonpost.com/news/the-switch/wp/2018/05/17/ice-just-abandoned-its-dream-of-extreme-vetting-software-that-could-predict-whether-a-foreign-visitor-would-become-a-terrorist/.

169. Rachel Levinson-Waldman & Haley Hinkle, *The Abolish ICE Movement Explained*, BRENNAN CTR. FOR JUST. (July 30, 2018), https://www.brennancenter.org/our-work/analysis-opinion/abolish-ice-movement-explained; Sean McElwee, *It's Time to Abolish ICE*, THE NATION (Mar. 9, 2018), https://www.thenation.com/article/archive/its-time-to-abolish-ice/.

170. Marisol Orihuela, *Crim-Imm Lawyering*, 34 GEO. IMMIGR. L.J. 613, 638 (2020); *see also* Allegra M. McLeod, *Envisioning Abolition Democracy*, 132 HARV. L. REV. 1613, 1623 (2019); Akbar, *supra* note 28, at 461 (describing the call in the Vision for Black Lives for an end to "immigration detention and deportation and ICE raids"); *see also* Peter L. Markowitz, *Abolish ICE – and Then What*, 129 YALE L.J. F. 130 (2019).

resistance to the immigration enforcement apparatus and to ICE more specifically.[171]

Detentions and deportations depend on an informational infrastructure made possible by partnerships with technology firms.[172] Mijente, a Latinx rights organization active in the movement to abolish ICE, has targeted tech firms such as Amazon, Palantir, and Anduril, using Freedom of Information Act requests to gather information on the contracts these companies have entered into with ICE.[173] Under the motto "NoTechForICE," Mijente has also organized students to oppose Palantir's ability to recruit on campuses around the globe.[174] Drawing on critiques of the purported "fairness" and "objectivity" of predictive policing, Mijente has described Palantir's software as reflecting a "racist feedback loop."[175]

President Trump's anti-immigration policies fostered an unprecedented degree of solidarity between labor activism in the

171. Jacqueline Thomsen, #*Womendisobey March Shuts Down DC Streets to Protest Trump Immigration Policies*, THE HILL (June 12, 2018, 2:26 PM), https://thehill.com/blogs/blog-briefing-room/news/394667-womendisobey-march-shuts-down-dc-streets-to-protest-trump; Shira Feder, *1,000 Protesters with Jewish Group Block Entrance to ICE Headquarters for Hours*, THE DAILY BEAST: POLITICS (July 16, 2019, 5:22 PM), https://www.thedailybeast.com/never-again-action-1000-protesters-with-jewish-group-block-entrance-to-ice-headquarters; Monsy Alvarado, *36 Protesters Arrested at Elizabeth ICE Detention Center, Charged with Blocking Street*, NORTH JERSEY (July 1, 2019, 12:00 PM), https://www.northjersey.com/story/news/new-jersey/2019/07/01/ice-detention-center-nj-protesters-arrested-obstruction-charges/1617018001/; Sarah Ruiz-Grossman, *"Occupy ICE" Movement Spreads Across Cities Nationwide*, HUFFINGTON POST (July 5, 2018, 6:43 PM), https://www.huffpost.com/entry/occupy-ice-protests-san-francisco-nationwide-trump-immigration_n_5b3e89b8e4b09e4a8b2b451a.

172. *See* Orihuela, *supra* note 170, at 638 ("Mijente is also firmly opposed to privatization of immigration enforcement.").

173. *Who's Behind ICE? The Tech and Data Companies Fueling Deportations*, NAT'L IMMIGR. PROJECT (Oct. 24, 2018), https://www.nationalimmigrationproject.org/PDFs/community/2018_23Oct_whos-behind-ice.pdf; *Anduril's New Border Surveillance Contract with the US Marine Corps & CBP*, MIJENTE (July 24, 2019), https://mijente.net/2019/07/anduril/; Jennifer Lee et al., *Power and Technology: Who Gets to Make the Decisions?*, 28 INTERACTIONS 38, 40 (2020); *see also* Sarah Lamdan, *When Westlaw Fuels ICE Surveillance: Legal Ethics in the Era of Big Data Policing*, 43 N.Y.U. REV. L. & SOC. CHANGE 255 (2019) (documenting the role of Westlaw in ICE surveillance).

174. *Students Vs ICE*, NO TECH FOR ICE, https://notechforice.com/studentpower/ (last visited Sept. 25, 2022).

175. *Who's Behind ICE? The Tech and Data Companies Fueling Deportations*, supra note 173, at 53; *see supra* Section I.A (describing the concerns about fairness that arise when algorithms are trained on data that reflect racist law enforcement practices).

tech industry and movements that support dismantling the architecture of immigration enforcement. In January 2017, tech workers picketed outside Palantir's headquarters after The Verge published a story about the firm's role in facilitating the Trump Administration's "extreme vetting" program.[176] The following year, demonstrators from Tech Workers Coalition, Silicon Valley Rising, and a variety of labor groups again protested outside the Palantir headquarters.[177]

Workers at other firms have also protested the provision of services to ICE. In 2018, employees at Amazon wrote a letter demanding that the firm cease providing Amazon Web Services to Palantir.[178] Workers at GitHub, and its parent company, Microsoft, have also organized in protest of the firm's contracts with ICE.[179] In 2016, ICE licensed GitHub's Enterprise Server, software for developing code.[180] The agreement was not public until 2019 when GitHub CEO Nat Friedman wrote an internal letter justifying the decision to renew the license.[181] Shortly thereafter, tech workers protested outside Friedman's keynote at an annual GitHub conference, and several employees publicly resigned.[182] At Microsoft, over 100 employees signed onto a 2018 internal letter

176. Sarah Buhr, *Tech Employees Protest in Front of Palantir HQ Over Fears It Will Build Trump's Muslim Registry*, TECHCRUNCH (Jan. 18, 2017, 1:43 PM), https://social.techcrunch.com/2017/01/18/tech-employees-protest-in-front-of-palantir-hq-over-fears-it-will-build-trumps-muslim-registry/.

177. Sue Dremann, *Protesters Demand Palantir End ICE Contract*, PALO ALTO WEEKLY (July 31, 2018, 7:28 PM), https://www.paloaltoonline.com/news/2018/07/31/protesters-demand-palantir-end-ice-contracts.

178. Ali Breland, *Dear Jeff*, SCRIBD, https://www.scribd.com/document/382334740/Dear-Jeff (last visited Nov. 2, 2022). The letter also protested the provision of facial recognition services to law enforcement agencies. *See supra* Section II.B.

179. Shirin Ghaffary, *GitHub is the Latest Tech Company to Face Controversy Over Its Contracts with ICE*, VOX (Oct. 9, 2019, 3:21 PM), https://www.vox.com/recode/2019/10/9/20906605/github-ice-contract-immigration-ice-dan-friedman.

180. Nat Friedman, *GitHub and US Government Developers*, GITHUB (Oct. 9, 2019), https://github.blog/2019-10-09-github-and-us-government-developers/.

181. *Id.*

182. Janus Rose & Lauren Gurley, *As GitHub's Conference Begins, Five Employees Resign Over ICE Contract*, VICE (Nov. 13, 2019, 9:59 AM), https://www.vice.com/en/article/evjwwp/as-githubs-conference-begins-five-employees-resign-over-protest-ice-contract.

protesting the firm's contract to provide cloud services to ICE.[183] Similar protests took place at Salesforce, which entered into a contract with Customs and Border Patrol to provide cloud services for the agency in 2018.[184]

Increasingly, Mijente has organized alongside tech workers, not just in parallel. In July 2019, tech workers, immigrants, and social justice movement groups demonstrated together at the Amazon Web Services summit in New York City in protest of the firm's business relationships with ICE.[185] In a 2020 open letter, Microsoft employees explicitly supported Mijente's campaign to get ICE to stop rounding up immigrants during the coronavirus crisis.[186]

From one perspective, this advocacy has failed to achieve the intended results. As Mary Fan describes it, these firms determined—notwithstanding worker advocacy—to "keep the contracts" and continue their work with immigration enforcement agencies.[187] Recent evidence also shows that technology firms are growing their relationships with CBP/ICE. In November 2020, ICE announced a pre-solicitation for a $100 million contract to provide cloud services using Amazon Web Services and Microsoft Azure.[188] Palantir's footprint in the U.S. government has only grown: the company's disclosures in connection with its initial public offering

183. Sheera Frenkel, *Microsoft Employees Protest Work with ICE, as Tech Industry Mobilizes Over Immigration*, N.Y. TIMES (June 19, 2018), https://www.nytimes.com/2018/06/19/technology/tech-companies-immigration-border.html. *See generally* Tom Keane, *Federal Agencies Continue to Advance Capabilities with Azure Government*, MICROSOFT (Jan. 24, 2018), https://devblogs.microsoft.com/azuregov/federal-agencies-continue-to-advance-capabilities-with-azure-government/.

184. Fan, *supra* note 95, at 1015–16.

185. Hannah Denham, *"No Tech for ICE": Protesters Demand Amazon Cut Ties with Federal Immigration Enforcement*, WASH. POST (July 12, 2019, 3:45 PM), https://www.washingtonpost.com/business/2019/07/12/no-tech-ice-protesters-demand-amazon-cut-ties-with-federal-immigration-enforcement/.

186. Benjamin Pimentel, *Immigrant Rights Group and Microsoft Workers Blast ICE Raids Amid Coronavirus Crisis: 'The Way ICE is Operating is Reckless'*, BUS. INSIDER (Mar. 19, 2020, 5:29 PM), https://www.businessinsider.com/ice-mijente-microsoft-coronavirus-crisis-2020-3.

187. Fan, *supra* note 95 at 1017.

188. Dave Nyczepir, *ICE's $100M Cloud Deal Could Renew Pressure on AWS, Microsoft Over Human Rights Abuses*, FEDSCOOP (Nov. 25, 2020), https://www.fedscoop.com/ice-cloud-deal-amazon-microsoft/.

in 2020 showed that its government work accounted for most of its revenue and that its share was increasing.[189]

Yet the emerging collaboration between tech workers and movement organizations such as Mijente has also fueled change. Mijente's frontal attack on the role of privatization in bolstering immigration enforcement generally, and the specific roles of contractors such as Amazon, Palantir, Anduril, and others in facilitating deportations, has shaped worker advocacy within these firms and throughout the industry. As tech worker Matt Schaefer put it, "Trump can't build a Muslim registry without tech. He can't build surveillance tools without some support from tech. He can't target an entire population of undocumented immigrants without tech."[190] In January 2021, Google workers formed the Alphabet Workers Union with the stated goal to "examine Google's role in society and help reshape the company's culture."[191] In February, workers at blogging platform Medium also formed a union.[192] Like Google workers, Medium workers emphasized the desire to consider the social context and role of the firm "in a landscape of tech and media that has historically deprioritized user safety and combating misinformation."[193] Though tangible changes to business practices remain elusive, the emergence of socially conscious tech-worker unions signals greater demands for worker participation and voice in business decisions with ramifications for society.[194]

189. Marisa Franco, *Palantir Filed to Go Public. The Firm's Unethical Technology Should Horrify Us*, GUARDIAN (Sept. 4, 2020, 6:23 AM), http://www.theguardian.com/commentisfree/2020/sep/04/palantir-ipo-ice-immigration-trump-administration.

190. Gretchen Röehrs, *"A World to Win," with Matt Schaefer and Kristen Sheets from the Tech Workers Coalition*, LOGIC (June 9, 2017), https://logicmag.io/tech-against-trump/matt-schaefer-and-kristen-sheets-tech-workers-coalition/; *see also* Estefania McCarroll, *Weapons of Mass Deportation: Big Data and Automated Decision-making Systems in Immigration Law*, 34 GEO. IMMIGR. L.J. 705 (2020).

191. Bobby Allyn, *Google Workers Speak Out About Why They Formed a Union: 'To Protect Ourselves'*, NPR (Jan. 8, 2021, 5:06 AM), https://www.npr.org/2021/01/08/954710407/at-google-hundreds-of-workers-formed-a-labor-union-why-to-protect-ourselves.

192. Zoe Schiffer, *Workers at Medium Are Unionizing*, THE VERGE (Feb. 11, 2021, 3:58 PM), https://www.theverge.com/2021/2/11/22278684/medium-union-unionizing-communications-workers-america.

193. *Our Vision for Medium*, MEDIUM WORKERS UNION (MWU), https://mediumworkersunion.org/(last visited Sept. 25, 2022).

194. *See infra* Section III.B.

Social and labor movements are increasingly converging around issues related to the state's use of technologies in high-stakes settings. Mobilization both within and outside tech firms has shaped companies' decisions to develop or abandon some products (like facial recognition) and some partnerships (like Project Maven). But while social and labor movements' influence appears to have grown, the approach to company-by-company activism is necessarily limited. When one firm steps away due to social and labor pressure, another is almost always there to fill the gap.

III. ALGORITHMIC ACCOUNTABILITY FROM TOP TO BOTTOM

One might imagine that the kinds of social and labor mobilization described in the preceding Part could significantly impact the nascent law that will constrain, shape, and limit algorithmic governance.[195] Indeed, the democratic vision can also be understood as a powerful form of advocacy for direct "algorithmic accountability," in the sense that people are calling both the state and the firms that enable its policies to account for their decisions.[196] But the legal status quo does not reflect these demands, and bottom-up reforms may also disappoint.

A. Top-Down Approaches

Existing legal and policy approaches offer only a tepid response to the democratic vision for algorithmic governance. Today, the dominant law and policy of algorithmic accountability,

195. *See, e.g.*, Lani Guinier & Gerald Torres, *Changing the Wind: Notes Toward a Demosprudence of Law and Social Movements*, 123 YALE L.J. 2740, 2750 (2014) ("[O]ngoing collective action by ordinary people can permanently alter the practice of democracy by changing the people who make the law and the landscape in which that law is made."); Tomiko Brown-Nagin, *Elites, Social Movements, and the Law: The Case of Affirmative Action*, 105 COLUM. L. REV. 1436, 1488–89 (2005) (describing how constitutional scholarship had "traditionally overlooked the ability of ordinary people to influence the path of the law"); Akbar, *supra* note 28, at 474 (summarizing legal scholarship on social movements and explaining how it "tends to focus on how social movement claims are translated or saturated by law").

196. Edward Rubin, *The Myth of Accountability and the Anti-Administrative Impulse*, 103 MICH. L. REV. 2073, 2119 (2005) (defining accountability as "the ability of one actor to demand an explanation or justification of another actor . . . and to reward or punish that second actor on the basis of its performance or its explanation").

transparency, bias, and accuracy reaffirm powerful actors' control over algorithmic design, use, and policy.[197]

1. Ethics and Principles

Growing attention to "AI ethics" points toward one potential path forward for algorithmic accountability and transparency.[198] But private firms' commitments to "ethical AI" are often vague and devoid of practical application.[199] Despite broad promises of fidelity to principles of accountability and transparency, many private sector "AI ethics" guidelines include scant detail about how they will be operationalized.[200] Although to some extent consensus around ethical principles of transparency and accountability has begun to solidify, researchers have also found that private organizations are less inclusive and less participatory in the design and creation of their ethical principles than public and non-

197. Mulligan & Bamberger, *supra* note 17; Solow-Niederman, *supra* note 17.

198. *See* Jessica Fjeld, Nele Achten, Hannah Hilligoss, Adam Nagy & Madhulika Srikumar, *Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-based Approaches to Principles for AI*, BERKMAN KLEIN CTR. FOR INTERNET & SOC'Y (2020), http://nrs.harvard.edu/urn-3:HUL.InstRepos:42160420; Mittelstadt et al., *supra* note 27; Mike Ananny, *Toward an Ethics of Algorithms: Convening, Observation, Probability, and Timeliness*, 41 SCIENCE, TECHN., & HUM. VALUES 93 (2016); Abeba Birhane & Fred Cummins, *Algorithmic Injustices: Towards a Relational Ethics* (2019), http://arxiv.org/abs/1912.07376; Chelsea Barabas, Karthik Dinaker, Joichi Ito, Madars Virza & Jonathan Zittrain, *Interventions over Predictions: Reframing the Ethical Debate for Actuarial Risk Assessment*, (2017), http://arxiv.org/abs/1712.08238; Luciano Floridi, Josh Cowls, Monica Beltrametti, Raja Chatila, Patrice Chazerand, Virginia Dignum, Christoph Luetge, Robert Madelin, Ugo Pagallo, Francesca Rossi, Burkhard Schafer, Peggy Valcke & Effy Vayena, *AI4People – An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations*, 28 MINDS & MACHINES 689 (2018); Daniel Greene, Anna Hoffmann & Luke Stark, *Better, Nicer, Clearer, Fairer: A Critical Assessment of the Movement for Ethical Artificial Intelligence and Machine Learning*, PROC. OF THE 52ND HAW. INT'L CONF. ON SYS. SCI'S (2019).

199. Brent Mittelstadt, *Principles Alone Cannot Guarantee Ethical AI*, NATURE MACH. INTEL. (Nov. 5, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3391293 ("The absence of a fiduciary relationship in AI means that users cannot trust that developers will act in their best interests when implementing ethical principles in practice.").

200. *Artificial Intelligence at Google: Our Principles*, GOOGLE AI, https://ai.google/principles/ (last visited Nov. 2, 2022) (promising that AI will be "accountable to people"); *IBM's Principles for Trust and Transparency*, IBM (June 2018), https://www.ibm.com/policy/wp-content/uploads/2018/06/IBM_Principles_SHORT.V4.3.pdf ("IBM will make clear: when and for what purposes AI is being applied . . . .").

governmental organizations.[201] As vendors assert their own interests in accountability and transparency, they simultaneously reframe those values as technical ones that can only be achieved from the top down.[202]

Emerging efforts to translate AI ethics into public policy do not fundamentally question the power of the private sector to define key terms and values. At the federal level, a light-touch approach to AI has meant the proliferation of ethics rules, principles, and guidelines with uncertain impact. Executive Order 13859 stressed the potential of artificial intelligence technologies to contribute to "scientific discovery, economic competitiveness, and national security."[203] While the Order also acknowledged, in general terms, the need to "protect civil liberties, privacy, and American values," it offered no clear guidance on how to do so.[204] Instead, it tasked the Office of Management and Budget with developing a memorandum to "inform the development of regulatory and non-regulatory approaches" to AI and instructed the National Institute of Standards and Technology to develop a plan for U.S. federal government involvement in the "development of technical standards" for AI.[205]

Nor do "ethical AI" principles developed in the public sector offer much clarity. Some national security and defense agencies have already adopted their own principles for AI. For instance, the Principles of Artificial Intelligence Ethics for the Intelligence Community stresses that the Intelligence Community ought to "provide appropriate transparency" and "identify and mitigate bias" with respect to its use of AI.[206] Outside of the national security context, Executive Order 13960 sets principles for the use of AI

201. D. Schiff, Jason Borenstein, Justin Biddle & Kelly Laas, *AI Ethics in the Public, Private, and NGO Sectors: A Review of a Global Document Collection*, 2 IEEE TRANSACTIONS ON TECH. AND SOC'Y 31, 41 (Mar. 2021).

202. Hannah Bloch-Wehba, *Transparency's AI Problem*, *supra* note 54, at 10 ("The private sector not only occupies a central role in making 'transparency' technically achievable, but also in interpreting its core meaning.").

203. Exec. Order No. 13859, 84 Fed. Reg. 3967, § 1(a) (Feb. 14, 2019).

204. *Id.* at § 1(d).

205. *Id.* at § 6(a), (d).

206. *Principles of Artificial Intelligence Ethics for the Intelligence Community*, INTEL.GOV, https://www.intelligence.gov/principles-of-artificial-intelligence-ethics-for-the-intelligence-community (last visited Nov. 2, 2022).

by federal government agencies, requiring agencies to use AI in a way that is "lawful," "accurate, reliable, and effective," and "transparent."[207]

Articulating standards for "AI ethics" helps to establish minimal norms. But without further definition and elaboration of these values, these requirements cannot provide meaningful legal constraint. As a result, efforts to promote "ethical AI" largely do not reflect democratic demands for accountability, transparency, and democratic control.

2. Task Forces

Some governments have addressed critiques of algorithmic decision-making through a "task force" model designed to shed light on potential areas of concern and inform future policy recommendations.[208] Task forces tend to perform the role of studying or investigating the implications of AI but usually have no power to make policy.[209] The result is a form of AI policymaking that appears to take seriously AI's harms while maintaining a permissive, *laissez-faire* regulatory environment.[210]

Even when governments have explicitly required task forces to address the use of AI in government, significant obstacles have at times prevented meaningful public participation. Take, for instance, New York City's experience with its Automated Decision System Task Force (ADS). The ADS task force was created in 2017 to "develop recommendations that will provide a framework" for the city's use of ADS, but opportunities for public input and

207. Exec. Order No. 13960, 85 Fed. Reg. 13960, § 3(c) (Dec. 8, 2020).

208. *Cf.* Dorf & Sabel, *supra* note 48, at 318 (describing how "municipal task forces" could provide opportunities for "effective participation").

209. *See, e.g.*, STATE OF VT. AGENCY OF COM. & CMTY. DEV., ARTIFICIAL INTELLIGENCE TASK FORCE, FINAL REPORT, at 16 (Jan. 15, 2020) (endorsing the creation of a permanent A.I. commission to "study and monitor artificial intelligence development and use, and report to the Legislature and the Executive branches"). *State Artificial Intelligence Policy*, ELEC. PRIV. INFO. CENTER, https://epic.org/state-policy/ai/ (last visited Nov. 2, 2022) *(*Alabama and New York have created AI commissions to study legal and policy aspects of artificial intelligence, presumably including accountability and transparency issues.).

210. Rebecca Crootof & B.J. Ard, *Structuring Techlaw*, 34 HARV. J. L. & TECH. 347, 379 (2021) (distinguishing between permissive and precautionary approaches).

engagement were exceedingly limited.[211] After city agencies failed to turn over required records,[212] what had been hailed as a groundbreaking achievement in public governance of AI was ultimately deemed a "spectacular failure."[213]

Even when it works well, though, the task force model has significant limitations as a mechanism for fostering immediate change. While task forces can bolster the political salience and visibility of algorithmic governance in public discourse, their limited powers generally make them unable to effectuate legal reforms.

3. Disclosure and Trade Secrecy Reforms

Other government entities have focused on limiting or eliminating what is perhaps the most obvious barrier to transparency: the routine invocation of trade secrecy to shield key information from view by affected individuals or the public. As both Amy Kapczynski and Julie Cohen have recognized, trade secrecy claims can obstruct democratic control and regulation.[214]

Trade secrecy claims present novel entanglements between the interests of private vendors and those of the government. Increasingly, public agencies are being placed in the position of advancing or protecting private vendors' trade secrecy interests to the detriment of the public. When advocates sought access to information about Palantir, for example, the New York Police Department resisted the request, arguing that Palantir's trade secrecy interests precluded it from releasing information under

211. NEW YORK CITY AUTOMATED DECISION SYSTEMS TASK FORCE REPORT 3, 15 (2019), https://www1.nyc.gov/assets/adstaskforce/downloads/pdf/ADS-Report-11192019.pdf (describing how the Task Force had two public forums and six smaller "community sessions" at which members of the public were permitted to testify).

212. Rashida Richardson, *Confronting Black Boxes: A Shadow Report of the New York City Algorithmic Decision System Task Force*, A.I. NOW INST. (Dec. 4, 2019), https://static1.squarespace.com/static/5f2c8da15040df578f6b6b34/t/5f9b85707b34c73724dc2b6a/1604027762243/ads-shadowreport-2019.pdf.

213. Albert Fox Cahn, *The First Effort to Regulate AI Was a Spectacular Failure*, FAST CO. (Nov. 26, 2019), https://www.fastcompany.com/90436012/the-first-effort-to-regulate-ai-was-a-spectacular-failure.

214. Amy Kapczynski, *The Law of Informational Capitalism*, 129 YALE L.J. 1460, 1509–10; COHEN, *supra* note 54, at 191 (describing how trade secrecy claims can undermine regulatory accountability).

New York's Freedom of Information Law.[215] New Jersey prosecutors have likewise argued that trade secrecy interests belonging to a vendor of probabilistic DNA software precluded the prosecution from disclosing source code to the defense.[216]

Legislation has been proposed or enacted to address these problems in several jurisdictions. For example, the Justice in Forensic Algorithms Act would amend the Federal Rules of Evidence to prevent institutions from invoking trade secrecy to prevent disclosure of evidence to criminal defendants.[217] A similar statute enacted in 2019 in Idaho requires pretrial risk assessment algorithms to be "transparent" and specifies that "[n]o builder or user of a pretrial risk assessment algorithm may assert trade secret or other protections in order to quash discovery in a criminal matter by a party to a criminal case."[218]

At the same time, however, these interventions fall short of fully addressing the problem of algorithmic opacity. To be sure, evidentiary tweaks to trade secrecy rules will help address profound inequities in criminal discovery.[219] But because they only address criminal discovery, rather than broader pathologies of secrecy and opacity within law enforcement more generally, these fixes suggest that even if trade secrecy is addressed within the discovery process, vendors that supply law enforcement agencies can continue to impede public inquiry.[220]

In order to understand how algorithmic governance works, trade secrecy reforms are crucial. Current law enables the government to partner with private vendors who can conceal the inner functions of their products.[221] But current proposals to

215. Brennan Ctr. for Just. at N.Y.U. Sch. of L. v. N.Y.C. Police Dep't, 2017 N.Y. Misc. LEXIS 5138, at *9 (Sup. Ct.).

216. State v. Pickett, 246 A.3d 279, 301 (N.J. Super. Ct. App. Div. 2021) (rejecting New Jersey's argument that a private vendor's trade secrecy interests in a probabilistic DNA genotyping software compelled nondisclosure to a defendant).

217. H.R. 4368, 116th Cong. (2019).

218. H.B. 118, 65th Leg., 1st Sess. (Idaho 2019).

219. *See generally* Wexler, *supra* note 30.

220. *See, e.g.*, Hannah Bloch-Wehba, *Visible Policing: Technology, Transparency, and Democratic Control*, 109 CALIF. L. REV. 917, 955–56 (2021) (describing NYPD's argument that it could not disclose information about audits or test results pertaining to Palantir's predictive policing software because to do so would endanger Palantir's trade secrets).

221. *Id.* (explaining that law enforcement interests in secrecy often coincide and overlap with trade secrecy claims).

address trade secrecy do not go far enough to ensure that the public has the information it needs to understand how algorithmic governance works and is operationalized in practice.

4. Algorithmic Auditing

Scholars and policymakers have also called for algorithmic audits and impact assessments to detect discrimination and bias in both private- and public-sector applications.[222] Borrowing from the use of "testers" and audit studies in the context of civil rights, an "algorithmic audit" can involve examination of a decision process, its inputs, and its outputs to understand whether automated decision systems have discriminatory effects.[223] While technology scholars have, broadly speaking, considered how algorithmic audits might be designed and implemented, legal scholars have considered how the law might incentivize or require firms to undergo internal and/or external auditing.[224]

Emerging proposals hint at paths toward algorithmic auditing requirements: in the context of online platforms, the European Commission's Digital Services Act (DSA) requires that very large online platforms shall bear the cost of annual independent audits conducted by auditors with the "technical competence to audit algorithms."[225] The DSA likewise anticipates that regulators may require online platforms to provide access to data and

222. Christian Sandvig, Kevin Hamilton, Karrie Karahalios & Cedric Langbort, Auditing Algorithms: Research Methods for Detecting Discrimination on Internet Platforms, 8 (unpublished manuscript) (paper presented at the 64th Annual Meeting of the International Communication Association on May 22, 2014); Pauline T. Kim, *Auditing Algorithms for Discrimination*, 166 U. PA. L. REV. ONLINE 189 (2017); Dillon Reisman, Jason Schultz, Kate Crawford & Meredith Whittaker, *Algorithmic Impact Assessments: A Practical Framework for Public Agency Accountability*, A.I. NOW INST. (Apr. 2018); Selbst, *supra* note 89, at 168.

223. Kim, *supra* note 222, at 190 (relating algorithmic audits to "testing for discrimination").

224. Ajunwa, *An Auditing Imperative*, *supra* note 72, at 674 (describing the competing visions of internal and external auditing); COHEN, *supra* note 54, at 179 ("In an era when decision-making is mediated comprehensively by so-called big data, regulators seeking to fulfill antidiscrimination mandates must learn to contend with the methods by which regulated decisions are reached—with data and algorithms as instrumentalities for conducting (regulated) activity.").

225. *Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act) and Amending Directive 2000/31/EC*, at ¶ 60, COM (2020) 825 final (Dec. 15, 2020).

algorithms so that the Commission has the ability to enforce the substantive provisions of the legislation.[226] In New York City, proposed legislation would require automated employment decision tools to be the "subject of a bias audit"—an "impartial evaluation" of the tool's compliance with city laws governing employment discrimination.[227]

To date, however, no U.S. jurisdiction mandates algorithmic auditing. Without clear auditing standards, an "audit" can give firms positive publicity while allowing them to avoid meaningful oversight.[228] Ambiguity about the definition of an "algorithm" might also keep audits from widespread adoption.[229] Moreover, as Inioluwa Deborah Raji and her coauthors have shown, the auditing process itself might come with real tradeoffs for privacy and may well lead private actors to become "wary" of scrutiny.[230] Most importantly, algorithmic audits are often designed by and for experts and bureaucrats, not for use by the public or by those who are directly affected by algorithms' disparate impacts.[231]

Ambiguity about the content, scope, and significance of algorithmic audits contributes to their ineffectiveness as a mechanism for public oversight. The qualities that make an audit useful for internal purposes may be very different from what makes it

226. *Id.* at ¶ 100.

227. N.Y. City, N.Y. Int. No. 1894 § 20-871(1).

228. Alfred Ng, *Can Auditing Eliminate Bias from Algorithms?*, THE MARKUP (Feb. 23, 2021), https://themarkup.org/ask-the-markup/2021/02/23/can-auditing-eliminate-bias-from-algorithms ("Companies might use them to make real improvements, but they might not. And there are no industry standards or regulations that hold the auditors or the companies that use them to account.").

229. Rumman Chowdhury & Kristian Lum, *What Is an "Algorithm"? It Depends Whom You Ask*, MIT TECH. REV. (Feb. 26, 2021), https://www.technologyreview.com/2021/02/26/1020007/what-is-an-algorithm/.

230. Inioluwa Deborah Raji, Joy Buolamwini, Emily Denton, Timnit Gebru, Joonseok Lee & Margaret Mitchel, *Saving Face: Investigating the Ethical Concerns of Facial Recognition Auditing*, at 3.2.3, (Jan. 3, 2020), http://arxiv.org/abs/2001.00964 (describing how IBM "removed its facial recognition capabilities from its publicly distributed API" after the highly publicized Buolamwini and Gebru *Gender Shades* study, *supra* note 67).

231. Michael Katell, Corinne Binz, Dharma Dailey, Vivian Guetler, Bernease Herman, P.M. Krafft, Daniella Raz, Aaron Tam & Meg Young, *An Algorithmic Equity Toolkit for Technology Audits by Community Advocates and Activists*, (Dec. 6, 2019), http://arxiv.org/abs/1912.02943 (preprint: under review) (on file with Cornell University).

effective for the purposes of public oversight.[232] At a minimum, unless audits are public, and conducted through a standardized, public-oriented process, they are unlikely to be a direct mechanism for public participation and democratic control.

5. Algorithmic Impact Assessments

Algorithmic impact assessments (AIAs) are likewise intended to promote fairness and nondiscrimination in algorithms, particularly in public-sector contexts. For instance, Andrew Selbst has proposed requiring police to produce "algorithmic impact statements" designed to ensure that they consider the potentially discriminatory impacts of predictive policing before using the technology.[233] The AIA model draws on analogies to impact assessments in other contexts, such as environmental law and privacy law.[234] The AIA also facilitates critical information flow and public engagement, which are particularly important because the public often struggles to get access to key information about how algorithmic governance functions.[235]

In practice, while regulations requiring algorithmic impact assessments are becoming more prevalent, they vary widely.[236] Three examples illustrate the divergences. In 2019, the Government of Canada enacted a directive that requires algorithmic impact assessments "prior to the production of any automated decision

232. Sasha Costanza-Chock, Inioluwa Deborah Raji & Joy Buolamwini, *Who Audits the Auditors? Recommendations from a Field Scan of the Algorithmic Auditing Ecosystem*, 2022 ACM CONF. ON FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY 1571 (June 20, 2022).

233. Selbst, *supra* note 89, at 168–69.

234. *Id.* at 170–71; Reisman et al., *supra* note 222, at 7.

235. Reisman et al., *supra* note 222, at 4 (describing the AIA framework as a mechanism for ensuring the flow of information).

236. Emanuel Moss, Madeleine Clare Elish, Jacob Metcalf, Ranjit Singh & Elizabeth Anne Watkins, *Governing with Algorithmic Impact Assessments: Six Observations*, AAAI/ACM CONF. ON A.I. ETHICS, AND SOC'Y, at 2 (2021), https://ssrn.com/abstract=3846300 (describing the AIA as "a compelling intervention . . . [that] leaves more questions than answers"); Emanuel Moss, Madeleine Clare Elish, Jacob Metcalf, Ranjit Singh & Elizabeth Anne Watkins, *Assembling Accountability: Algorithmic Impact Assessment for the Public Interest*, DATA & SOC'Y, at 7 (June 29, 2021), https://datasociety.net/library/assembling-accountability-algorithmic-impact-assessment-for-the-public-interest/ [hereinafter *Assembling Accountability*] (observing that "[n]o existing impact assessment process provides a definition of 'impact' that can be simply operationalized").

system[,]" but appears not to require any kind of public notice or engagement on the assessment itself.[237] In contrast, a Washington law that took effect in 2021 forbids government agencies to "develop, procure or use" facial recognition technology without first preparing a detailed "accountability report"—which must be subject to public review and comment, including at least three community meetings, before being finalized.[238] While initiatives in Canada and Washington focus on the public sector, the proposed Algorithmic Accountability Act of 2019 focused instead on private entities and would have required businesses above a certain size to conduct "automated decision system impact assessments" of their own systems, subject to the Federal Trade Commission's jurisdiction.[239]

To a degree, fluidity in AIAs' design can be a good thing: impact assessments can and should vary depending on context and implementation. For example, some impact assessments will require public consultation, as is the case under Washington's new FRT law.[240] At other times, as a new Data & Society report points out, impact assessments might be produced as part of a consent decree or settlement agreement and held under seal by a court for "potential future action."[241] But this same flexibility can also obscure the absence of an underlying consensus about the degree of public consultation or input that is appropriate in the context of an AIA. Indeed, like all of the preceding proposals, AIAs have significant gaps that can undermine their ability to promote meaningful accountability.

237. GOV'T OF CAN., *Directive on Automated Decision-making*, (Apr. 1, 2021), https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32592#appA. "Automated Decision System" is defined as "any technology that either assists or replaces the judgement of human decision-makers." "Algorithmic Impact Assessment" is defined very broadly to mean "[a] framework to help institutions better understand and reduce the risks associated with Automated Decision Systems and to provide the appropriate governance, oversight[,] and reporting/audit requirements that best match the type of application being designed." *Id.* at Appendix A.

238. S.B. 6280, 66th Reg. Sess. § 3(1) (Engrossed Substitute, Wash. 2020).

239. Algorithmic Accountability Act of 2019, S. 1108, 166th Cong. (2019).

240. S.B. 6280, *supra* note 238.

241. *Assembling Accountability*, *supra* note 234, at 20.

B. Bottom-Up Solutions

The emerging policy responses outlined above fail to fully address the kinds of demands for democratic input, participation, and control that labor and social movements are making. Perhaps, then, policymakers could draw on a different set of institutional arrangements for democratic governance inspired by movements for community control over law enforcement institutions.[242] Jurisdictions might consider designing institutions that would facilitate community control over law enforcement agencies, including their technology.

So-called "community control over police surveillance" is moving forward in several jurisdictions around the nation, including San Francisco, Seattle, Nashville, Pittsburgh, and Cambridge.[243] But the degree of control that these initiatives actually secure for the people remains unclear. Transparency mandates and legislative control remain the gold standard of many surveillance reform-oriented proposals, which emphasize the role of city councils and other oversight agencies. For instance, in June 2020 New York's City Council enacted the Public Oversight of Surveillance Technologies (POST) Act, which requires the NYPD to make regular reports to the City Council regarding the surveillance technologies it uses. A key aspect of the POST Act rests on the conviction that NYPD's regular disclosures of information will be sufficient to bring secretive policing technologies into the open and invite public debate over them. Nonetheless, the POST Act provides for no real legislative or public control over NYPD's policing technologies other than that generated by potential outrage over future disclosures.[244]

242. *See generally* K. Sabeel Rahman & Jocelyn Simonson, *The Institutional Design of Community Control*, 108 CALIF. L. REV. 679 (2020) (examining how community control mechanisms can be crafted).

243. *Community Control Over Police Surveillance*, AM. CIV. LIBERTIES UNION, https://www.aclu.org/issues/privacy-technology/surveillance-technologies/community-control-over-police-surveillance (last visited Sept. 21, 2022).

244. *Fuck the Police, Trust the People: Surveillance Bureaucracy Expands the Stalker State*, STOP LAPD SPYING COAL. (June 24, 2020), https://stoplapdspying.org/surveillance-bureaucracy-expands-the-stalker-state/ (critiquing the POST Act because it "allows police to say that the community 'controls' surveillance . . . when the truth is that police set the agenda and hold the power").

Other examples of so-called "community control" also exemplify a technocratic response.[245] In a model bill, the ACLU has suggested that jurisdictions ought to require legislative approval and police publication of impact assessments and use policies prior to the acquisition of any new surveillance technology.[246] Catherine Crump has also written about how police acquisition of surveillance technology might be made subject to legislative oversight.[247] Amid broadening calls to defund law enforcement institutions, democratic power over police budgets surely is a significant step toward community control.[248] But it remains the norm for legislators, not citizens, to wield direct control of police budgets.[249]

What might authentic community control of law enforcement's use of technology look like? To begin, it would require undoing the many ways in which the law protects law enforcement's preferences for secrecy. Entrenched opacity about how police acquire and use surveillance technology makes it difficult to even conceptualize a form of effective community control.[250] At a minimum, these dynamics make it critical for any community control or civilian review institution to be empowered to compel the disclosure of key information about law enforcement technology through subpoena power or through litigation.[251] But transparency alone, of course, is

245. Ferguson, *Surveillance and the Tyrant Test*, *supra* note 13, at 250 (At their core, "[t]he goals of transparency, accountability, and fair process are central to the technocrat's toolkit.").

246. CMTY. CONTROL OVER POLICE SURVEILLANCE (CCOPS) MODEL BILL (AM. CIV. LIB. UNION, Draft Apr. 2021), https://www.aclu.org/other/community-control-over-police-surveillance-ccops-model-bill.

247. Catherine Crump, *Surveillance Policy Making by Procurement*, 91 WASH. L. REV. 1595, 1659–60 (2016).

248. *See supra* at Section III.B.1 (discussing participatory budgeting).

249. *See, e.g.*, Matt Sepic, *A Year After George Floyd's Death, Plans for Minneapolis Police Reform Have Softened*, NPR (May 25, 2021, 5:20 PM), https://www.npr.org/2021/05/25/1000298293/a-year-after-george-floyds-death-plans-for-minneapolis-police-reform-have-soften (describing how, after a majority of the Minneapolis City Council pledged to defund and disband the police, little has changed).

250. *See generally* Jonathan Manes, *Secrecy & Evasion in Police Surveillance Technology*, 34 BERKELEY TECH. L.J. 503 (2019).

251. *See, e.g.*, Rahman & Simonson, *supra* note 242, at 701 n.97 (2020) (describing how Houston activists have called for the creation of a "civilian review board with subpoena power"); Clare Dignan, *New Haven Approves New Police Civilian Review Board*, NEW HAVEN REG. (Jan. 7, 2019) https://www.nhregister.com/news/article/New-Haven-approves-new-

not enough. While some cities have embraced efforts to make surveillance technology more transparent, this is only a first step toward empowering communities to have a say in police decisions about new technologies.[252]

One potential path forward is the use of participatory budgeting, a "form of local direct democracy" in which people gather at the local level to deliberate and make decisions about expending funds and allocating resources.[253] Participatory budgeting was first developed in Porto Alegre, Brazil but has spread throughout Latin America and Europe.[254] The United States' largest participatory budgeting program exists in New York, where it was introduced as the result of advocacy by welfare recipients and public housing residents.[255]

Some scholars of democratic politics see participatory budgeting as a "promising democratic experiment within a larger tool kit to reimagine the relationship between citizens and their governance institutions."[256] But participatory budgeting has significant limitations. While participatory budgeting can give the

police-Civilian-Review-13515897.php (describing New Haven's creation of a civilian review board with subpoena and investigatory authority); Udi Ofer, *Getting It Right: Building Effective Civilian Review Boards to Oversee Police*, 46 SETON HALL L. REV. 1033, 1035 (2016) ("[M]any of these regimes were rigged to fail in the first place . . . .").

252. Dana Afana, *Detroit to Boost Surveillance Transparency but Skeptics Remain*, DETROIT FREE PRESS (May 29, 2021), https://www.freep.com/story/news/2021/05/29/detroiters-feedback-facial-recognition-surveillance/7486598002/; Kyle Wiggers, *NYC Passes POST Act, Requiring Police Department to Reveal Surveillance Technologies*, VENTUREBEAT (June 18, 2020), https://venturebeat.com/2020/06/18/new-york-city-council-passes-law-requiring-nypd-to-reveal-its-surveillance-technologies/; City of Helsinki AI Register, https://ai.hel.fi/en/ai-register/ (last visited Sept. 21, 2022); Algorithmic Systems of Amsterdam, https://algoritmeregister.amsterdam.nl/en/ai-register/ (last visited Sept. 21, 2022).

253. GEORGE ROBERT BATEMAN, JR., THE TRANSFORMATIVE POTENTIAL OF PARTICIPATORY BUDGETING: CREATING AN IDEAL DEMOCRACY 1 (2019); HOLLIE RUSSON GILMAN, PARTICIPATORY BUDGETING AND CIVIC TECH: THE REVIVAL OF CITIZEN ENGAGEMENT vii (2016) ("PB is a democratic process to empower citizens to decide on public budget allocations and vote on where and how to implement."); Brian Wampler, *Participatory Budgeting: Core Principles and Key Impacts*, 8 J. PUB. DELIBERATION, Dec. 30, 2012, at 1, 2.

254. GRAHAM SMITH, DEMOCRATIC INNOVATIONS: DESIGNING INSTITUTIONS FOR CITIZEN PARTICIPATION 65 (3rd ed. 2013).

255. Isaac Jabola-Carolus, Luke Elliott-Negri, James M. Jasper, Jessica Mahlbacher, Manès Weisskircher & Anna Zhelnina, *Strategic Interaction Sequences: The Institutionalization of Participatory Budgeting in New York City*, 19 SOC. MOVEMENT STUD. 640, 641, 646–47 (2018).

256. GILMAN, *supra* note 253, at viii.

public a voice in important budgetary decisions, it can also be a device to "co-opt" activists in service of the "needs of elites and politicians rather than the citizen participants themselves."[257] Jurisdictions can also limit participatory budgeting to narrow areas, preserving legislative control of the majority of a city's fiscal decisions.[258] Jurisdictions can thus appear to accommodate demands for democratic participation while simply replicating preexisting spending patterns.[259]

At the local level, participatory budgeting might be employed as part of a legislative and public oversight strategy to determine how police ought to be spending funds, including on technology. Communities might be asked, for instance, whether they would prefer that police spend $74,000 on enhanced surveillance cameras, on officer overtime, or on a robotic dog "to keep police officers out of harm's way."[260]

But law enforcement presents a particularly thorny case for participatory budgeting. Police often rely on sources of funding outside the budgeting process, weakening local control over law enforcement.[261] These external sources of funding may amplify law enforcement's militarization and other harmful behaviors.[262] And even if participatory budgeting were guaranteed to succeed in local

257. Thad Calabrese, Dan Williams & Anubhav Gupta, *Does Participatory Budgeting Alter Public Spending? Evidence from New York City*, 52 ADMIN. & SOC'Y 1382, 1386 (2020).

258. *Id.* at 1389 (describing how, in New York City, city council members can commit, at their discretion, to allocate one million dollars annually to participatory budgeting).

259. *Id.* at 1403.

260. Maria Cramer & Christine Hauser, *Digidog, a Robotic Dog Used by the Police, Stirs Privacy Concerns*, N.Y. TIMES (Feb. 27, 2021), https://www.nytimes.com/2021/02/27/nyregion/nypd-robot-dog.html; *see also* I. Bennett Capers, *Race, Policing, and Technology*, 95 N.C. L. REV. 1241, 1273 (2017) (arguing that, in order to deracialize policing and make it more equitable, law enforcement should add cameras and facial recognition to extend surveillance to nearly all public spaces in a uniform manner).

261. Rachel A. Harmon, *Federal Programs and the Real Costs of Policing*, 90 N.Y.U. L. REV. 870, 873 (2015) (observing that many federal public safety programs "undermine the local political control over police departments" that would otherwise serve as a check on abuse and misconduct).

262. *Id.* at 912–13 ("Many of the federal programs that seek to reorient local law enforcement also encourage significant additional marginal coercion costs."); Nora V. Demleitner, *Commodifying Policing: A Recipe for Community-Police Tensions*, 51 GA. L. REV. 1047, 1069–70 (2017) (arguing that external sources of funding, including police foundations and federal grant programs, have propelled militarization); Crump, *supra* note 247, at 1659–60 (describing passage of state legislation to require local approval of police acquisition of surplus military equipment).

contexts, it is an awkward fit for addressing *federal* expenditures in the domains of national security, immigration enforcement, and criminal law enforcement. For one thing, it is difficult to conceptualize an effective mechanism of "community control" without local ties. There are also entrenched informational obstacles at the federal level. Particularly in the national security context, where classification is frequent, spending on novel high-stakes technologies may not always be public.[263]

Although "community control" of police surveillance and algorithmic governance is routinely touted, most of the existing initiatives fail to empower communities directly and face significant obstacles in doing so. None of this is to suggest that direct community control of law enforcement's use of algorithmic governance is not achievable or warranted. But given the current context of widespread secrecy, privatization, and automation, it is difficult to imagine without substantial legal and political change.

IV. THE LAW AND POLITICAL ECONOMY OF ALGORITHMIC GOVERNANCE

Responding to the growing enmeshment of private technology firms within public governance requires activism that engages inside firms as well as outside them. At its root, the democratic vision contests the synthesis of state and corporate power that makes algorithmic governance possible and that underpins its socially and racially disparate effects. To fully understand the significance of the democratic vision, this Part examines some broader obstacles to democratic control of private and public governance. It explains the central role of workers and social movements in determining the appropriate scope of algorithmic governance. Finally, it raises some questions about the law's limited ability to facilitate meaningful change.

263. For example, the federal intelligence budget is classified even though the total amount is known. David E. Pozen, *Deep Secrecy*, 62 STAN. L. REV. 257, 274–75 n.51 (2010) (arguing that the intelligence budget is a relatively shallow secret); Steven Aftergood, *An Inquiry into the Dynamics of Government Secrecy*, 48 HARV. C.R.-C.L. L. REV. 511, 519 (2013) (describing how "the intelligence community totally revised its view of intelligence budget disclosure").

A. Obstacles to Democratic Control

Democratizing algorithmic governance requires more than what the existing menu of approaches offers. The current approaches to algorithmic governance replicate the power of private vendors and take advantage of their control over defining and implementing key values without building commensurate institutional protections for public interests. The growing influence of private sector technology vendors in governance has thus exacerbated obstacles to democratic control.

At the most basic level, governments often decide to deploy algorithmic governance through procurement processes that entail little or no democratic involvement. As Deirdre Mulligan and Kenneth Bamberger have observed, the procurement process provides for "little or no agency or outside expertise beyond that provided by the vendor: no public participation, no reasoned deliberation, and no factual record."[264] When government actors contract out to private vendors, they often lack the expertise or ability to understand how the technology itself functions, raising troubling questions about accountability and oversight.[265] At the state and local level, privatization is widespread, but governments' capacity to adequately oversee its private partners may be particularly underdeveloped.

In theory, the pivotal moment for democratic accountability occurs on Election Day. But the procurement process is so tilted in favor of technology vendors that even changes in political leadership might not foster true accountability. In the context of algorithmic governance, outsourcing and public-private cooperation may risk the "abdication" of governmental responsibilities in favor of discretion embedded within technology firms which retain control over the design of products used even in public settings.[266] If government capacity to oversee technology cannot keep up, the power of firms

264. Mulligan & Bamberger, *supra* note 17, at 780; *see also* Crump, *supra* note 247, at 1604.

265. Calo & Citron, *supra* note 30, at 833.

266. *See, e.g.*, Mulligan & Bamberger, *supra* note 17, at 782–83; Solow-Niederman, *supra* note 17.

to engage in de facto policymaking through design may not be adequately constrained.[267]

Procurement rules that optimize for low cost virtually invite government agencies and their private-sector partners to circumvent opportunities for public participation and contestation of new modes of algorithmic governance. By short-circuiting democratic accountability, the procurement process can also generate potential future legal problems: Kate Crawford and Jason Schultz have observed that a "monolithic technology-procurement model" prioritizes short-term cost savings while overlooking potential constitutional problems that might generate more substantial costs down the line.[268] The result is that the process of adopting new technologies of governance itself creates democratic obstacles.

Specific legal doctrines also shield the private role in algorithmic governance from democratic control (what scholars of law and political economy call "encasement").[269] For example, successful trade secrecy claims insulate technology vendors from scrutiny, even when the vendors enjoy expansive "technical and legal power."[270] Indeed, trade secrecy can help to conceal the existence or operation of entire government programs. Consider how the vendor Harris Corp. sold stingray surveillance devices to law enforcement agencies it bound to secrecy through nondisclosure agreements.[271] The secrecy protected Harris's interests, but it also permitted law enforcement to evade public records requests and transparency obligations, illustrating how the

267. Mulligan & Bamberger, *supra* note 17, at 801 ("The adoption of machine learning systems through procurement can render policymaking invisible."); Waldman, *supra* note 27, at 627 ("[A]lgorithmic decision-making empowers engineers to make policy decisions, embedding their ingrained commitment to efficiency and their indifference to privacy and other social values in society.").

268. Crawford & Schultz, *supra* note 30, at 1950.

269. Amy Kapczynski, *The Law of Informational Capitalism*, 129 YALE L.J. 1460, 1508 (2020) ("[L]egal ordering is being used not simply to help generate and sustain private power but to *insulate it from democratic control*.") (emphasis in original).

270. Crawford & Schultz, *supra* note 30, at 1971.

271. Elizabeth E. Joh, *The Undue Influence of Surveillance Technology Companies on Policing*, 92 N.Y.U. L. REV. ONLINE 19, 24 (2017).

interests of vendors and of government institutions sometimes align against those of the public.[272]

More generally, algorithms are frequently used in law enforcement, immigration, national security, and other "low-rights" environments encased from democratic control. State-sanctioned secrecy creates informational obstacles that prevent the public from learning about controversial law enforcement practices and policies.[273] Courts routinely use doctrines such as standing, the political question doctrine, and qualified immunity to insulate government actors against liability, particularly when lawsuits implicate law enforcement and national security programs.[274] Private and secret sources of funding and equipment also permit law enforcement to grow more powerful, free from the prying eyes of the public.[275]

As a result, the private status of algorithmic governance does not diminish government power—in important ways, it expands it.[276] Private firms can act as force multipliers for government agencies eager to harness potential efficiency gains from automation and privatization. Consider surveillance firm Palantir, which harvests vast amounts of data that it repackages into software and sells to state actors from the Los Angeles Police Department to ICE.[277]

272. *Id.*; *see supra* Section III.A.3.

273. *See generally* Heidi Kitrosser, *Secrecy in the Immigration Courts and Beyond: Considering the Right to Know in the Administrative State*, 39 HARV. C.R.-C.L. L. REV. 95 (2004) (examining secrecy in the immigration context); Laura K. Donohue, *The Shadow of State Secrets*, 159 U. PA. L. REV. 77 (2010) (examining the state secrets privilege); Jonathan Manes, *Secret Law*, 106 GEO. L.J. 803, 840–55 (2018) (examining the legal ecosystem that regulates "secret law"); Koningisor, *supra* note 89 (arguing that secrecy obligations have migrated from national security to local law enforcement settings).

274. Stephen I. Vladeck, *The New National Security Canon*, 61 AM. U. L. REV. 1295, 1321–23 (2012) (discussing the political question doctrine in the context of post-9/11 cases); David Gray, *Collective Standing Under the Fourth Amendment*, 55 AM. CRIM. L. REV. 77, 89 (2018) (arguing that Fourth Amendment standing rules have "dramatically diminished the security of the people against threats of unreasonable search and seizure"); Joanna C. Schwartz, *How Qualified Immunity Fails*, 127 YALE L.J. 2, 65 (2017) (arguing that qualified immunity may not fulfill the doctrine's stated goals, but still can "significantly damage law enforcement accountability").

275. *See, e.g.*, Gorman, *supra* note 102 (noting the NSA's use of the "black budget" to conceal warrantless wiretapping programs); Harmon, *supra* note 261, at 872.

276. *Cf.* COHEN, *supra* note 94, at 242 ("The vast and growing extent of commercial surveillance facilitates a pervasive entanglement of public and private power, producing a practical reality within which each feeds off the other and neither can be effectively constrained.").

277. SARAH BRAYNE, PREDICT AND SURVEIL 7 (2021).

Palantir's model, and the expansion of predictive policing models more generally, does not diminish the power of the state. Rather, it entangles the interests of private firms with those of government entities. Outsourcing and privatization entwine the legal interests of governments and private sector actors.[278] Both government entities and private vendors benefit from the expansion of contracting and procurement, which simultaneously permits governments to reap the benefits of cost minimization and efficiency (at least in theory), while vendors, in turn, profit. The private role in algorithmic governance can thus provide cover for expanded surveillance and control.

B. Democratizing the Algorithmic State

The legal framework for algorithmic governance permits powerful private entities to wield increasing public authority—at the expense of ordinary people's oversight. What would it mean, then, to democratize the algorithmic state—to give every citizen equal voice and equal opportunity to determine how the power of technology ought to be wielded?

An emerging body of work on technology law and political economy is paving the way toward a broader reckoning with the foundational legal and political structures that provide the conditions for automation to flourish. For instance, Frank Pasquale called for a "second wave" of algorithmic accountability scholarship to consider not just the degree to which algorithmic decision-making can be procedurally satisfactory but also whether it is substantively justifiable.[279] Other scholars have stressed the urgency of moving away from a narrow rights-based approach toward a mechanism for ordinary people to "contest" algorithmic decisions.[280] At bottom, the

278. *Cf.* Kate Sablosky Elengold & Jonathan D. Glater, *The Sovereign Shield*, 73 STAN. L. REV. 969, 1030–31 (2021) (describing, in the context of the "sovereign shield" doctrines, how private contractors have benefited from the support of their agency partners).

279. Frank Pasquale, *The Second Wave of Algorithmic Accountability*, LPE BLOG (Nov. 25, 2019), https://lpeblog.org/2019/11/25/the-second-wave-of-algorithmic-accountability/.

280. Julia Powles, *The Seductive Diversion of "Solving" Bias in Artificial Intelligence*, ONEZERO (Dec. 7, 2018), https://onezero.medium.com/the-seductive-diversion-of-solving-bias-in-artificial-intelligence-890df5e5ef53 ("Any A.I. system that is integrated into people's lives must be capable of contest, account, and redress to citizens and

growth of privatized automated decision-making calls into question not only the individual's ability to seek redress, but the public's ability to hold the powerful accountable.[281]

Responding to private power in algorithmic governance requires strategies that engage both inside and outside firms. As Part II detailed, workers at technology firms are stepping forth to advocate against the development of nefarious technology and its sale to the public sector.[282] White-collar tech worker mobilization has two defining characteristics: demands for democratic representation at the workplace and resistance to unethical uses of the technology workers build.[283]

In this way, advocates for the democratic vision of algorithmic accountability are perhaps best understood as demanding radical forms of participatory democracy that extend even beyond the public sphere and into the workplace. This vision reflects a broader challenge to some of the underlying presumptions of democratic theory. Consider, for instance, Joseph Schumpeter's skepticism about public participation, which dates back to the early 1940s.[284] Schumpeter's pessimism about the "typical citizen"—whom he viewed as irrational, unwise, and prone to outbursts—led him to reconceive democracy as a method of minimizing potentially destabilizing democratic inputs.[285] Instead, Schumpeter defined the "democratic method" as the "institutional arrangement for arriving at political decisions in which individuals acquire the

representatives of the public interest."); Mariano-Florentino Cuéllar & Aziz Z. Huq, *The Democratic Regulation of Artificial Intelligence*, KNIGHT FIRST AMEND. INST. (Jan. 31, 2022), https://knightcolumbia.org/content/the-democratic-regulation-of-artificial-intelligence.

281. Fourcade & Gordon, *supra* note 30, at 85 (distinguishing between "holding the state to account for its decisions . . . and holding the state accountable for what sort of data it collects in the first place"); Salomé Viljoen, *A Relational Theory of Data Governance*, 131 YALE L.J. 573, 584 (2021) ("[Both] propertarian and dignitarian proposals . . . resolve to individualist claims and remedies that do not represent, let alone address, the relational nature of data collection and use.").

282. *See supra* Part II.

283. *See* Sam Harnett, *The Biggest Tech Unionization Effort Is Happening at the New York Times*, KQED (Apr. 13, 2021), https://www.kqed.org/news/11869185/the-biggest-tech-unionization-effort-is-happening-at-the-new-york-times.

284. JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 245 (Routledge 2003) ("How is it technically possible for 'people' to rule?").

285. *Id.* at 261–63 (describing the "typical citizen"); *see also* IAN SHAPIRO, THE STATE OF DEMOCRATIC THEORY 11 (2003) ("[D]emocracy fosters mob rule rather than the common good.").

power to decide by means of a competitive struggle for the people's vote."[286]

While Schumpeter feared the participation of "authoritarian" citizens as destabilizing for democracy, Carole Pateman stressed the potential for ordinary people to participate.[287] Indeed, Pateman argued that participation is crucial in order to ensure that citizens can "develop . . . [the] qualities needed for the successful operation of the democratic system."[288]

Most relevant to understanding contemporary worker and social movements, Pateman rejected a vision of democracy that stopped at the firm's front door, instead drawing on the "central assertion that individuals and their institutions cannot be considered in isolation from one another," and that "democracy must take place in other spheres" outside of formal governance in order to develop the citizenry as active participants.[289] Pateman argued that democracy requires employees to be able to participate in and influence managerial decisions.[290]

Pateman's work finds a contemporary parallel in that of Elizabeth Anderson, who has described how "the impoverished vocabulary of contemporary public discourse" attempts to draw a sharp line between government by the state and "[t]he supposed counterpart *private sphere* . . . where, it is imagined, government ends, and hence where individual liberty begins."[291] In Anderson's telling, workplace governance is "a form of authoritarian, private government" in which workers are presumptively deprived of all rights not affirmatively guaranteed them by law.[292]

286. SCHUMPETER, *supra* note 284, at 269.

287. CAROLE PATEMAN, PARTICIPATION AND DEMOCRATIC THEORY 15 (1970). Indeed, Pateman argued for a redefinition of democracy along participatory lines, critiquing existing definitions as simply replicating "the existing, Anglo-American democratic system." *Id.*

288. *Id.* at 64.

289. *Id.* at 42.

290. *Id.* at 72–73 (It is not enough for trade unions or organized labor to play the role of the "opposition," while management "perform[s] the role of 'government.'").

291. ANDERSON, *supra* note 93, at 41.

292. *Id.* at 60.

C. The Promise—and Limits—of Tech Worker Power

Demands for more control over corporate decision-making are driving white-collar tech workers to support unionization.[293] Although Silicon Valley firms have long been strongly anti-union, efforts to unionize date back to at least the 1990s, and like contemporary disputes, they chiefly concerned worker misclassification, pay, and benefits.[294] Today, the highest-profile battles regarding labor and employment in the technology industry deal with blue-collar workers and the gig economy.[295] Workers have also resisted the use of technology in management and disciplinary settings.[296]

Changes to labor law that make it easier to unionize might increase worker power inside firms—and result in greater influence outside firms as well. In high-profile unionization efforts such as those at Alphabet (Google's parent company), Medium, and the New York Times, workers argue that they are entitled to democratic representation at work and a "seat at the table" with people in charge.[297] Workers also want control over the kinds of decisions their managers and employers make about developing, selling, and using new technologies.[298] Indeed, as technology firms take on an increasingly significant role in public governance, their workers could have dramatic effects on public policy. As Brishen

293. Sam Harnett, *Tech Workers Organizing Is Nothing New . . . But Them Actually Forming Unions Is*, KQED (June 2, 2021), https://www.kqed.org/news/11874325/tech-worker-organizing-is-nothing-new-but-actually-forming-unions-is (describing how support for unionization among tech workers grew from 33 percent in 2004 to 59 percent in 2016).

294. Danielle D. Van Jaarsveld, *Collective Representation Among High-Tech Workers at Microsoft and Beyond: Lessons from WashTech/CWA*, 43 INDUS. REL. 364, 368 (2004); Steven Greenhouse, *Unions Pushing to Organize Thousands of Amazon.Com Workers*, N.Y. TIMES (Nov. 13, 2000), https://www.nytimes.com/2000/11/23/business/technology-unions-pushing-to-organize-thousands-of-amazoncom-workers.html.

295. *See, e.g.*, Alec MacGillis, *Lessons from Bessemer: What Amazon's Union Defeat Means for the American Labor Movement*, PROPUBLICA (Apr. 13, 2021, 6:45 PM), https://www.propublica.org/article/lessons-from-bessemer-what-amazons-union-defeat-means-for-the-american-labor-movement?token=2ivZCyi-F25Tx_k7j8aywTkbU3pkF5Rs; Kate Conger, *Uber and Lyft Drivers in California Will Remain Contractors*, N.Y. TIMES (Nov. 4, 2020), https://www.nytimes.com/2020/11/04/technology/california-uber-lyft-prop-22.html.

296. Brishen Rogers, *The Law and Political Economy of Workplace Technological Change*, 55 HARV. C.R.-C.L. L. REV. 531, 568, 576–77 (2020).

297. *Id.* Allyn, *supra* note 191.

298. Koul & Shaw, *supra* note 123; MEDIUM WORKERS UNION (MWU), *supra* note 193.

Rogers has argued, "Congress could make it far easier for workers to unionize in the first place" and could change the rules to require firms to bargain over additional matters that concern workers.[299]

As the case studies in Part II illustrate, however, workers' efforts to build power do not always take the form of unionization. Sometimes, walkouts, open letters, and other forms of protest create internal pressures for employers to consider or adopt worker demands.[300] But this kind of worker advocacy is usually beyond the reach of labor and employment law.[301] Whistleblower laws do not protect tech workers who disclose unethical uses of their employers' technological innovations.[302] Indeed, the law does little to constrain firms from retaliating against internal critics, leakers, or organizers, who often lack any recourse under the law of labor and employment.[303] As a result, while tech workers may seek avenues to influence the provision of private-sector technology to government agencies for certain uses, the law of labor and employment instead empowers firms to override worker demands.

Changes to whistleblower laws could fundamentally shift this power by providing broader protections to workers who bring forth ethical concerns about technology. Google's 2020 firing of AI scientist Timnit Gebru highlights this problem. After Gebru co-authored a paper that raised ethical concerns about large natural

299. Rogers, *supra* note 296, at 581.

300. *See, e.g.*, Nitasha Tiku, Tony Romm & Craig Timberg, *Twitter Bans Trump's Account, Citing Risk of Further Violence*, WASH. POST (Jan. 8, 2021), https://www.washingtonpost.com/technology/2021/01/08/twitter-trump-dorsey/ (describing how hundreds of workers wrote a letter to Twitter management in the aftermath of the January 6, 2021, putsch to demand the platform take down Donald Trump's account).

301. Rogers, *supra* note 296, at 545–46.

302. *See, e.g.*, WASH. REV. CODE ANN. § 49.60.210 (making it unlawful for firms to fire or retaliate against individuals who have opposed employment discrimination and other unfair employment practices). Some states protect workers who disclose or oppose unlawful practices. *See, e.g.*, CAL. LAB. CODE § 1102.5(a); N.J. STAT. ANN. § 34:19-3(a)(1)–(2)(b).

303. Tom Simonite, *What Really Happened When Google Ousted Timnit Gebru*, WIRED (June 8, 2021, 6:00 AM), https://www.wired.com/story/google-timnit-gebru-ai-what-really-happened; Kyle Wiggers, *How Google Treats Meredith Whittaker is Important to Potential AI Whistleblowers*, VENTUREBEAT (Apr. 24, 2019, 10:45 AM), https://venturebeat.com/2019/04/24/how-google-treats-meredith-whittaker-is-important-to-potential-ai-whistleblowers/; Kate Conger & Noam Scheiber, *The Great Google Revolt*, N.Y. TIMES (Feb. 18, 2020), https://www.nytimes.com/interactive/2020/02/18/magazine/google-revolt.html. *But see* Conger & Scheiber, *supra* note 116.

language processing models, Google asked her to remove her name or retract the paper—and fired her when she refused.[304] Gebru's ethical concerns left her unprotected by the California whistleblower statute, which allows employees to bring whistleblower claims if they have a reasonable belief that their information "discloses a violation of state or federal statute."[305] In light of the current approach to AI, technology that might facilitate overbroad or discriminatory surveillance appears perfectly lawful—and whistleblowing on these topics is therefore unprotected.[306]

Still, relying on workers and the labor movement as a check against algorithmic governance has several drawbacks. While organizers have found modest success at major firms, such as Google, other worker-led efforts have faltered.[307] And even when workers succeed in getting their employers to drop a government contract, as in the case of Project Maven, another firm is almost always ready, willing, and able to step into the gap.[308] For that reason alone, a firm-by-firm approach to countering algorithmic governance is unlikely to fundamentally reshape either policy or the market.[309]

Moreover, even assuming that white-collar tech worker mobilization can shift power from employers to workers, can it directly and meaningfully empower marginalized communities? The answer is far from obvious. Labor's commitment to "solidarity" with the oppressed is a matter of both historical and intellectual debate. Although the labor movement played an important role in the civil rights struggle of the 1960s, from its earliest days, organized labor

304. Simonite, *supra* note 303.

305. Cal. Lab. CODE § 1102.5(a).

306. *See supra* Section III.A.

307. For example, worker-led resistance at GitHub and Palantir appears not to have had enduring consequences. *See supra* Section II.C.

308. In the case of Project Maven, that firm was Palantir. Tristan Greene, *Palantir Took over Project Maven, the Military AI Program Too Unethical for Google*, THENEXTWEB (Dec. 11, 2019, 8:37 PM), https://thenextweb.com/news/report-palantir-took-over-project-maven-the-military-ai-program-too-unethical-for-google.

309. *But see* Kate Andrias, *The New Labor Law*, 126 YALE L.J. 2, 46–47 (2017) (describing how low-wage workers' movements are increasingly "seeking to bargain at the sectoral and regional level, rather than at the firm level").

and management have also exploited racial hierarchies.[310] Even today, Leftist thinkers continue to grapple with the perception that emphasizing racial struggle can be incompatible with ardent advocacy for workers' rights.[311]

Despite this fraught legacy, alliances across labor and social movements appear to bolster both causes. As union power has withered and different "organizational models" for protecting workers' rights have emerged, workers' movements have joined hands with movements for women's rights and immigrants' rights.[312] Perhaps partly in response to what Estlund calls the "ossification" of labor law, workers have employed "extralegal" ways of building power, such as public protests.[313] Charles Heckscher has likewise argued that the labor movement cannot succeed unless it embraces "systematic alliances with related groups" and unfamiliar tactics to build pressure on employers.[314]

Tech workers and social movements are entering into analogous alliances, networks, and campaigns. Both labor and social movements stand to gain from these partnerships. Labor unions can make policy more responsive to the needs of ordinary

310. Paul Frymer, *Race, Labor, and the Twentieth-Century American State*, 32 POL. & SOC'Y 475, 479 (2004) (describing how union leaders, confronted by civil rights activists about racism in the labor movement, generally "tried to deny the existence of internal racism as being anything more than incidental, blame its existence on outside forces, or attack the civil rights activists as racists, radicals, and antiunion"); DAVID R. ROEDIGER, THE WAGES OF WHITENESS: RACE AND THE MAKING OF THE AMERICAN WORKING CLASS 49 (2007); DAVID R. ROEDIGER & ELIZABETH D. ESCH, THE PRODUCTION OF DIFFERENCE: RACE AND THE MANAGEMENT OF LABOR IN U.S. HISTORY 147 (2012). *But see Civil Rights*, AFL-CIO, https://aflcio.org/issues/civil-rights (last visited Sept. 21, 2022) ("The labor movement has been at the forefront of the struggle for every major civil rights law.").

311. *See, e.g.*, Akbar, *supra* note 28, at 447–48 (describing the influence of Cedric Robinson's *Racial Capitalism* within the Movement for Black Lives); *see also* DAVID R. ROEDIGER, CLASS, RACE, AND MARXISM 1–29 (2017) (describing the Left's hostile reception of Ta-Nehisi Coates's arguments about reparations).

312. Catherine L. Fisk, *Workplace Democracy and Democratic Worker Organizations: Notes on Worker Centers*, 17 THEORETICAL INQUIRIES L. 101, 101–03 (2016).

313. Cynthia L. Estlund, *The Ossification of American Labor Law*, 102 COLUM. L. REV. 1527, 1605 (2002) (describing "campaigns that appeal directly to the public by way of rallies, pickets, speeches, and leafleting in public streets and parks, often with the active support of churches and other community organizations outside the labor movement itself").

314. Charles Heckscher, *Organizations, Movements, and Networks*, 50 N.Y.L. SCH. L. REV. 313, 313 (2006).

people.[315] Alliances with workers may also serve to broaden and strengthen social movements that are Left-aligned but more identity-based.[316] Both scholars and activists have noted that social movements tend to gain power when they bring multiple constituencies and interest groups together.[317] In an era of diminished civic associations, social movements' alliances with labor may also bolster political capacity while taking advantage of labor's national reach and reputation.[318]

Finally, social and labor advocacy might bring controversies to the surface for political debate and resolution through deliberative means. Public protests, demonstrations, and organizing around issues of tech accountability can make the disadvantages of automation for workers and for impacted communities visible in a way that, perhaps, the focus on technocratic accountability does not. Likewise, these movements may be able to stimulate political change notwithstanding the absence of any particular legal rights or obligations.[319] To be sure, then, white-collar tech workers can be powerful advocates for democratization and social justice in the workplace. But the private sector's role in providing the infrastructure of governance is also overdue for a broader rethinking.

315. Benjamin I. Sachs, *The Unbundled Union: Politics Without Collective Bargaining*, 123 YALE L.J. 148, 151 (2013); Tabatha Abu El-Haj, "*Live Free or Die*"—*Liberty and the First Amendment*, 78 OHIO STATE L.J. 917, 944 (2017) (describing how unionism contributes to a pluralist civil society comprised of membership-based "organizations that foster informed political participation").

316. Some social theorists distinguish between class-based movements and the "new social movements" of the postindustrial age. *See, e.g.*, Steven M. Buechler, *New Social Movement Theories*, 36 SOCIO. Q. 441 (1995); Nelson A. Pichardo, *New Social Movements: A Critical Review*, 23 ANN. REV. SOCIO. 411 (1997).

317. *See, e.g.*, James Gustave Speth, *American Passage: Towards a New Economy and a New Politics*, 84 ECOLOGICAL. ECON. 181, 183 (2012) (calling for "a fusion of those concerned about environment, social justice, and political democracy into one progressive force. All are communities of shared fate because they face the same reality: a political economy that does not prioritize sustaining human and natural communities[]").

318. Tabatha Abu El-Haj, *Making and Unmaking Citizens: Law and the Shaping of Civic Capacity*, 53 U. MICH. J.L. REFORM 63, 91 (2019) (describing how unions are "the only genuine exception" to the trend of weakening civic associations).

319. For a take on this in another setting, see William H. Simon, *Contract Versus Politics in Corporation Doctrine*, *in* THE POLITICS OF LAW: A PROGRESSIVE CRITIQUE 511, 526 (David Kairys ed., 3d ed. 1998) ("[T]he disadvantages associated with recent mass capital movement have been visited largely on workers and local communities, who do not appear in corporation doctrine.").

CONCLUSION

Concerns about the fairness, accountability, and transparency of algorithmic governance have now reached the mainstream. But the role of social mobilization and resistance has been surprisingly absent from scholarly and policy conversations about algorithmic governance. This omission is a mistake. Demands for bottom-up control ought to occupy a central position in contemporary debates about algorithmic governance. Indeed, it is long past time to consider how law and policy might reallocate the power to govern algorithms to those who are most directly affected.[320]

But limiting these interventions to the state itself is not enough. At bottom, social and labor advocacy demands greater control not only of these practices by powerful state institutions but also of the firms that enable them. Together, labor and social movements build on some of the sharpest critiques of algorithmic governance: unfairness, opacity, and lack of accountability contribute to the perception that AI/ML cannot be trusted and must be dismantled. But these movements also go beyond the standard critiques, demanding greater control of technology and of its uses by powerful actors. These demands face significant obstacles. As long as the political system presumes that governance by algorithm is objective, neutral, fair, and efficient, encourages privatization, and promotes oversight only at a bureaucratic remove from the people, a more equal distribution of political power will be difficult to achieve.

These movements for bottom-up control offer important lessons for progressive change in an era of widespread privatization. The state's reliance on new technology illustrates the "pervasive entanglement of public and private power," but private control is prevalent even in low-tech contexts.[321] The erosion of the line between public and private governance demands new, boundary-crossing forms of mobilization, resistance, and engagement. In short, privatization heightens the urgency for progressive labor and social movements to partner with one another in order to build countervailing power.

320. *See* Okidegbe, *supra* note 18, at 774.

321. COHEN, *supra* note 38, at 242.

To be sure, not all attempts to "democratize" algorithmic governance will be successful. But efforts to democratize algorithmic governance in cities, workplaces, and communities across the nation are not simply attempts to throw sand in the gears. Instead, they express a particular vision of democracy, one in which ordinary people should be able to choose how powerful institutions—whether private or public—ought to govern us. The law stands in the way of our ability to make these choices. It should not.