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Introduction

Automation refers to the use of technology, machines, or software to perform tasks without human intervention. The term originates from the Greek word *autos* meaning “self” and *matos* meaning “willing.” To be automated, then, is to have a self-willing or self-acting capacity: to have “the power of motion within.”¹ Automation has existed as a concept for millennia, with early technical examples including automated water mills for grinding grain and automated looms in textile production. These technologies were designed to reduce manual labor by simplifying daily tasks and increasing the overall productivity of human effort. It wasn't until the Industrial Revolution and the advent of mass manufacturing, however, that automation became a central fixture of capitalist production. The use of machines and assembly lines enabled companies to produce more goods faster than ever before, and as a result, many industries were transformed by automation.

In the US, automation became a topic of public concern after World War II, when automated technologies and mechanized production lines became hallmarks of the Fordist manufacturing process. In this context, automated technologies became associated with the organization of human labor and the large-scale displacement of routine task-intensive jobs by machines. The cultural meaning of automation evolved to include the belief that machines would replace human workers and lead to increased feelings of alienation and dissatisfaction in their jobs.

¹ Cecily Devereux and Marcelle Kosman, “Introduction: Our Automated Bodies/Our Selves.” *ESC: English Studies in Canada* 42, no. 1 (2016): 1–20, <https://doi.org/10.1353/esc.2016.0003>.

During the 1960s and 1970s, automation became a catalyst for change in the government and military sectors. As the growing power of digital computers opened new paths for the automation of *logical* and not just *physical* processes, technology came to be understood as a potential solution to the shortcomings and inefficiencies of state bureaucracy. The dream of automation has been key to the allure of the datafied state — automation promises speed, efficiency, and precision within a state apparatus often framed as slow, cumbersome, and beset by inertia. New infrastructures, political discourses, and public institutions emerged around notions of digital governance,² e-government,³ and the virtual state,⁴ reflecting the growing role of automated, data-driven technologies in shaping public policy and decision-making processes. But automation does not merely automate existing processes of state governance. In conjunction with techniques of the datafied state, like predictive analytics and biometric technologies, automation has produced a new and far-reaching re-organization of state power and elicited new forms of contestation and resistance.

Automation in the Contemporary Datafied State

In the last decade, big data and artificial intelligence have further transformed the way governments collect, analyze, and use data to automate decision-making processes in various fields, from health care and social services to transportation and policing. Increasing numbers of people now interact with the government online through digital platforms and mobile apps, such as the Mobile Passport Control app through which travelers entering the United States can upload their travel documentation prior to

- 2 Patrick Dunleavy, Helen Margetts, Simon Bastow, and Jane Tinkler, *Digital Era Governance: IT Corporations, the State, and e-Government*, 1st edition (OUP Oxford, 2008); Michael E. Milakovich, *Digital Governance: New Technologies for Improving Public Service and Participation* (New York: Routledge, 2011), <https://doi.org/10.4324/9780203815991>.
- 3 Robin Gauld and Shaun Goldfinch, *Dangerous Enthusiasms: E-Government, Computer Failure and Information System Development* (Dunedin: Otago University Press, 2006).
- 4 Jane E. Fountain, *Building the Virtual State: Information Technology and Institutional Change* (New York: Brookings Institution Press, 2001), <https://www.brookings.edu/book/building-the-virtual-state/>.

arrival. These interactions leave behind digital traces, or so-called data exhaust.⁵ These and other forms of data are analyzed to gain insights into citizens' behaviors, preferences, and needs, as well as inform policy making, service delivery, and resource allocation decisions.

Today, automated data collection and processing is an integral part of modern statecraft. For centuries, governments have sought to collect and analyze information about their populations, territories, and resources in order to exert power and control over them.⁶ The classification and counting of populations by nation-states beginning in the 19th century can be seen as providing a broad historical context for understanding contemporary forms of biopower, which encompasses both the disciplining of the individual and the regulation of the population.⁷ Yet the state's ability to collect information and exercise control underwent a significant transformation with the advent of modern computing. Initially, digital technologies, and more recently, big data analytics have expanded the state's surveillance capabilities, giving it unprecedented power to monitor and influence a vast range of activities, from communication and movement patterns to financial transactions and the use of government services.⁸

Data analysis is now so central to the workings of state bureaucracy that the objectives of government are increasingly shaped by the affordances of big data. No longer limited to the simple assessment of citizens' welfare status, data systems are increasingly used to anticipate behavior.⁹ Brian Massumi has described this technique as an "operative logic of preemption."¹⁰ Preemptive systems produce a logical reason to believe something about future behavior, constructed in a way that can justify intervention. The probabilistic nature of these models extends indefinitely into an unknowable and hence manipulable future. A predictive policing model, for

- 5 "The Power Of Data Exhaust," *TechCrunch*, May 26, 2013, <https://techcrunch.com/2013/05/26/the-power-of-data-exhaust/>; Melissa Gregg, "Inside the Data Spectacle," *Television & New Media* 16, no. 1 (January 1, 2015): 37–51, <https://doi.org/10.1177/1527476414547774>.
- 6 Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning*, (Cambridge, Massachusetts: Harvard University Press, 1998).
- 7 Taina Bucher, *If...Then: Algorithmic Power and Politics* (New York: Oxford University Press, 2018).
- 8 Sarah Valentine, "Impoverished Algorithms: Misguided Governments, Flawed Technologies, and Social Control," *Fordham Urban Law Journal* 46, no. 2 (January 1, 2019): 364.
- 9 Marc Schuilenburg and Rik Peeters, *The Algorithmic Society: Technology, Power, and Knowledge* (Abingdon and New York: Routledge, 2022).
- 10 Brian Massumi, "The Primacy of Preemption: The Operative Logic of Threat," in *Ontopower: War, Powers, and The State of Perception* (Durham: Duke University Press, 2015).

example, might identify a “pattern” of crime in a particular “high-risk” neighborhood, which in turn legitimates an increase in the number of police officers stationed in that neighborhood. If these police go on to make an above-average number of arrests, then the high-risk categorization of the model becomes “justified.” But such a logic is self-fulfilling. It tends toward ever more state intervention in the lives of citizens, the over-policing of marginalized groups, and the perpetuation of social inequality. So-called predictive policing purports to use machine learning systems to anticipate groups at risk of committing crimes, in the absence of actual evidence of crime.

In recent decades, there has been a significant shift toward the use of big data in governmental sectors that handle the provision of social welfare. Public resources are increasingly distributed via profiling, classification, and risk prediction algorithms that use data to classify citizens, assess their eligibility for social assistance, and monitor behaviors at an individual and population level.¹¹ This shift toward a data-driven welfare state aims to use data to gain a better understanding of citizens’ needs and behaviors. This enables more targeted interventions guided by purportedly neutral bureaucratic tools rather than potentially biased human decision makers. However, automated social profiling, also known as citizen scoring, is not without risks. These methods have resulted in discriminatory outcomes for already marginalized groups due to skewed datasets, technical errors, and, in some cases, administrative misfeasance on a system-wide scale.¹² Technology researchers have established that automated decision systems reproduce the biases and discrimination that exist within society, thereby exacerbating patterns of inequality rather than mitigating them.¹³ At a systemic level, predictive analytics are transforming the logic of welfare from one based on socialized risk pooling to an individualized approach, where social welfare is

- 11 Lina Dencik, Arne Hintz, Joanna Redden, and Harry Warne, “Data Scores as Governance: Investigating Uses of Citizen Scoring in Public Services,” December 2018; Joanna Redden, Lina Dencik, and Harry Warne, “Datafied Child Welfare Services: Unpacking Politics, Economics and Power,” *Policy Studies* 41, no. 5 (September 2, 2020): 507–26, <https://doi.org/10.1080/01442872.2020.1724928>.
- 12 Philip Alston, “Digital Technology, Social Protection and Human Rights: Report,” October 1, 2019, <https://www.ohchr.org/en/calls-for-input/digital-technology-social-protection-and-human-rights-report>; Valerie Braithwaite, “Beyond the Bubble That Is Robodebt: How Governments That Lose Integrity Threaten Democracy,” *Australian Journal of Social Issues* 55, no. 3 (2020): 242–59, <https://doi.org/10.1002/ajs4.122>.
- 13 Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*, (New York: St. Martin’s Press, 2017); Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Cambridge, UK: Polity Press, 2019); Safiya Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York: NYU Press).

distributed based on individual risk profiles and personalized assessments.¹⁴ There are concerns that the rise of automated decision-making may erode the core principles of the welfare state project, such as promoting social equity, reducing poverty, and upholding values of fairness, impartiality, and due process.

Emergence and Interaction

The specifics of how automation is implemented in different countries and periods may vary, but there are certain general tendencies. These tendencies can help us understand the inherent tensions that arise in discussions of automation and its impact on society. A general feature of automated systems is the existence of an internal dynamic of self-(re)production, or what Jessica Riskin calls emergence.¹⁵ The concept of *emergence* suggests that life and consciousness, including artificial forms of intelligence, do not exist solely within a specific substance or machine, but rather arise as properties of a physical system that reaches a certain level of complexity. A system is autonomous to the extent that the regularities it generates arise from conditions internal to the system. Riskin's dialectic moreover provides a useful way to conceptualize a number of tensions and contradictions that characterize the contemporary datafied state. Arguably, the most essential inconsistency is that, despite presenting itself as impartial and objective, the datafied state establishes new types of regulation, monitoring, and control through automation. The benefit of automation is typically framed in terms of the ability to deliver better administrative outcomes by introducing efficiency, optimization, and speed into existing bureaucratic procedures.¹⁶ But automation within the state does not simply replace what were once human actions and decisions with their machinic equivalent. Rather, automation

¹⁴ Torben Iversen and Philipp Rehm, *Big Data and the Welfare State: How the Information Revolution Threatens Social Solidarity* (Cambridge: Cambridge University Press, 2022).

¹⁵ Jessica Riskin, *Genesis Redux: Essays in the History and Philosophy of Artificial Life* (Chicago: University of Chicago Press, 2007).

¹⁶ Karen Levy, Kyla E. Chasalow, and Sarah Riley, "Algorithms and Decision-Making in the Public Sector," *Annual Review of Law and Social Science* 17, no. 1 (October 2021): 309–344, <https://doi.org/10.1146/annurev-lawsocsci-041221-023808>; Agneta Ranerup and Helle Zinner Henriksen, "Digital Discretion: Unpacking Human and Technological Agency in Automated Decision Making in Sweden's Social Services," *Social Science Computer Review* 40, no. 2 (April 2022): 445–61, <https://doi.org/10.1177/0894439320980434>.

begets automation, in what Mark Andrejevic terms a cascading logic of automation¹⁷ — once a particular task or decision is automated, it tends to generate new tasks and decisions that must also be automated, leading to a self-reinforcing cycle of technological expansion.

Antoinette Rouvroy, Thomas Berns, and Liz-Carey Libbrecht, in their work on algorithmic governmentality, argue that this form of rule “circumvents and avoids reflexive human subjects, feeding on infra-individual data which are meaningless on their own, to build supra-individual models of behaviors or profiles without ever involving the individual, and without ever asking them to themselves describe what they are or what they could become.”¹⁸ By “infra-individual” data, we understand the disaggregation of subjects into various types of data points, whose relations with one another can generate patterns that do not necessarily do justice to the subject in its entirety. A certain set of attributes, when compared with similar attributes across a population, might augur a credit or security risk, which can then be acted upon in ways that bypass subjective modes of response. A different set of attributes could mark an individual as a suspect of welfare fraud, leading the state to respond without allowing them to present their viewpoint or explain their version of events. In the automated distribution of care, statistical measures of impairment are often employed to assess eligibility for health and disability services. Yet this method overlooks subjective, embodied experiences of disability, and in doing so hinders people’s capacity to participate as equal epistemic agents in comprehending their own lived experience.

In other words, when automated systems are unleashed on the world, their interaction effects change how citizens relate to the state. Automated governance not only prevents citizens from participating in decision-making processes, but, in fact, undermines the very notion of a political subject.

¹⁷ Mark Andrejevic, *Automated Media* (New York and Abingdon: Routledge, 2020).

¹⁸ Antoinette Rouvroy, Thomas Berns, and Liz Carey-Libbrecht, “Algorithmic governmentality and prospects of emancipation,” *Reseaux* 177, no. 1 (October 2013): 163–96, <https://doi.org/10.3917/res.177.0163>

Historically, radical political theory has envisaged a revolutionary subject able to dismantle existing power structures through “some combination of will, position and knowledge alongside a certain force of history.”¹⁹ Yet as Justin Joque argues, “today, the revolutionary subject is beset simultaneously by an algorithmically fragmented reality and an intensely managed digital control.”²⁰ As Rouvroy, Berns, and Libbrecht put it, these forms of control rely upon “a certain type of (a)normative or (a)political rationality founded on the automated collection, aggregation and analysis of big data to model, anticipate and preemptively affect possible behaviours.”²¹ This analysis of automated platform governance points to (a)subjective modalities of control: automated systems rely on unlimited data collection (any data point is potentially relevant to the extent that it can form patterns with other data points) deployed according to logics of preemptive intervention, acting on individuals before they can act themselves. Risks are detected in advance of their actualization. The route to control is not via subjective agency but through external interventions in real time and modulations in the environment or milieu, at the level of the “rules of the game.”²²

Biometric Data and Automated Governance

The datafied state is increasingly operationalizing the logic of automated governance through biometric technologies — systems that analyze patterns in physical, biological data to identify trends or project behaviors. The implementation of facial recognition technology at international borders, for example, enables governments to regulate the movement of people across borders, using facial information to recognize and flag people perceived as posing a security threat. Governments use biometric identification systems to verify the identity of people receiving public benefits, such as welfare or

¹⁹ Justin Joque, *Revolutionary Mathematics: Artificial Intelligence, Statistics and the Logic of Capitalism*, (New York and London: Verso Books, 2022).

²⁰ Joque, *Revolutionary Mathematics*, 16.

²¹ Rouvroy, Berns, and Libbrecht, “Algorithmic Governmentality,” 231.

²² Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979* (New York: Picador, 2010), 159–184.

health care, drawing on data including fingerprints and iris scans. Maitreya Shah, one of the coauthors of this essay, has experienced firsthand the uneven impact of biometric technologies. He was denied enrollment in Aadhaar, India's digital ID program, after the biometric technology failed to recognize his iris due to his visual disability. Consequently, he faced significant barriers in accessing financial resources, health care, and government services. As the Indian government started linking Aadhaar with other state programs, many instances surfaced where people with disabilities, similarly situated, were denied crucial benefits.²³ Migrant laborers and rural communities lost access to food grants when Aadhaar's biometric authentication of their fingerprints failed.²⁴

Biometric technologies like Aadhaar play a crucial role in defining the limits of citizenship, the “social sorting”²⁵ of bodies considered worthy of rights and mobility, and discriminating between those who can be seen to belong and those who remain invisible.²⁶ These technologies redefine the very meaning of citizenship in a world where “human bodies become substantial carriers of information.”²⁷ What is significant here is not just the transformation of human bodies into data, but also the way in which these bodies, from the point of view of the datafied state, stand in for political personhood. The body is tasked with assuming a kind of coherence and order that is no longer available to the datafied, disaggregated political subject. For Avi Marciano, “the direct communication between technologies and bodies, paired with the declining prominence of the mind, renders human communication and negotiation superfluous.” This prioritization of body over mind transforms democratic politics: the “employment of biometric technologies ... produces mute individuals whose bodies speak for them, and who are not obligated — and sometimes not allowed — to participate, consent, or even speak.”²⁸ Citizens are “stripped of their political status (*bios*) and reduced

23 Smriti Parsheera, “Participation of Persons With Disabilities in India's Aadhaar Project,” SSRN Scholarly Paper, (September 2020), <https://doi.org/10.2139/ssrn.3700984>; Zubeda Hamid, “Aadhaar a Double Whammy for the Disabled,” *The Hindu*, November 21, 2017, <https://www.thehindu.com/news/cities/chennai/aadhaar-a-double-whammy-for-the-disabled/article20629931.ece>.

24 Human Rights Watch, “India: Identification Project Threatens Rights Ensure Access to Essential Services,” *Human Rights Watch*, January 13, 2018, <https://www.hrw.org/news/2018/01/13/india-identification-project-threatens-rights>.

25 Btihaj Ajana, *Governing through Biometrics: The Biopolitics of Identity* (London: Palgrave Macmillan, 2013).

26 Parsheera, “Participation.”

27 Avi Marciano, “Reframing Biometric Surveillance: From a Means of Inspection to a Form of Control,” *Ethics and Information Technology* 21, no. 2 (June 2019): 127–36, <https://doi.org/10.1007/s10676-018-9493-1>.

28 Marciano, “Reframing Biometric Surveillance,” 128.

to their biological status (*zoe*),”²⁹ with deleterious consequences for bodies marked deviant or marginal.³⁰

If we acknowledge the idea that automated systems are socially embedded, however, then we ought not exaggerate the power of technology to entirely eviscerate politics. As states pursue the path of automation, they are certain to rub up against the grain of that which resists automated recognition, that is, to encounter political resistance. Globally, there are many initiatives aimed at questioning how automated systems produce knowledge, how they refashion the world in ways that are detrimental to communities and democratic values. Activists are taking action against the datafied, automated state through organizing, direct action, and producing reports and documents that support grassroots resistance.³¹ In the UK, the Greater Manchester Coalition of Disabled People is initiating legal proceedings against the Department of Work and Pensions to draw attention to the potential bias in its algorithm for detecting fraud.³² The Stop LAPD Spying Coalition is working toward “building power toward abolition of the police state,” including its arsenal of automated tools that enact forms of police violence.³³ These resistance movements are vital in raising awareness about the potential harm caused by automated systems, and in ensuring that the power of technology is harnessed for the collective good, rather than for state and corporate interests. Activists and civil society groups are advocating for greater accountability in government, and ultimately a more democratic use of technology by challenging the values and injustices built into automated systems and pushing against their limits and inconsistencies.

29 Erin Kruger, Shoshana Magnet, and Joost Van Loon, “Biometric Revisions of the ‘Body’ in Airports and US Welfare Reform,” *Body & Society* 14, no. 2 (June 2008): 99–121, <https://doi.org/10.1177/1357034X08090700>.

30 Georgia van Toorn and Jackie Leach Scully, “Unveiling Algorithmic Power: Exploring the Impact of Automated Systems on disabled People’s Engagement with Social Services,” *Disability & Society*, 2023, <https://www.tandfonline.com/doi/full/10.1080/09687599.2023.2233684>.

31 Data for Black Lives (2023) <https://d4bl.org/>; Fabio Chiusi et al., “Automating Society Report 2020,” AlgorithmWatch, October 2020, <https://automatingsociety.algorithmwatch.org/>; <https://d4bl.org/>; “Face Off: The Lawless Growth of Facial Recognition in UK policing,” Big Brother Watch, May 2018, <https://big-brotherwatch.org.uk/wp-content/uploads/2018/05/Face-Off-final-digital-1.pdf>.

32 “Algorithmic Injustice: An Interview with Rick Burgess from GMCDP,” Greater Manchester Law Centre, <https://www.gmlaw.org.uk/2022/03/31/algorithmic-injustice-an-interview-with-rick-burgess-from-gmcdp/>.

33 Stop LAPD Spying Coalition, “Dismantling Predictive Policing in Los Angeles,” May 8, 2018, <https://stoplapdspying.org/wp-content/uploads/2018/05/Before-the-Bullet-Hits-the-Body-May-8-2018.pdf>.

Conclusion

The datafied state must work to make automation work. This work has often had violent or otherwise harmful effects upon those people and populations who have already borne the brunt of state discrimination and disregard, even as these harms are rearticulated within new logics of governance. To understand the meaning of automation in the datafied state, then, we must do two things. On the one hand, it is necessary to consider how automation serves as an ideal model for the transformation and modernization of the bureaucratic apparatus. On the other hand, we must critically examine how this ideal confronts and is challenged by the messy reality of underfunded services, on-the-ground exigencies, and the irreducible and confounding role of the political.