

University of New South Wales Law Research Series

THE RULE OF LAW AND AUTOMATION OF GOVERNMENT DECISION-MAKING

**MONIKA ZALNIERIUTE, LYRIA BENNETT MOSES AND
GEORGE WILLIAMS**

(2019) 82(3) *Modern Law Review*
[2019] UNSWLRS 14

UNSW Law
UNSW Sydney NSW 2052 Australia

The Rule of Law and Automation of Government Decision-Making

Monika Zalnieriute,^{*} Lyria Bennett Moses^{**} and George Williams^{***}

Governments around the world are deploying automation tools in making decisions that affect rights and entitlements. The interests affected are very broad, ranging from time spent in detention to the receipt of social security benefits. This article focusses on the impact on rule of law values of automation using: (1) pre-programmed rules (for example, expert systems); and (2) predictive inferencing whereby rules are derived from historic data (such by applying supervised machine learning). The article examines the use of these systems across a range of nations. It explores the tension between the rule of law and rapid technological change and concludes with observations on how the automation of government decision-making can both enhance and detract from rule of law values.

INTRODUCTION

Automation promises to improve a wide range of processes. The introduction of controlled procedures and systems in place of human labour can enhance efficiency as well as certainty and consistency. Given this, it is unsurprising that automation is being embraced by the private sector in fields including pharmaceuticals, retail, banking and transport. Automation also promises benefits to government. It has the potential to make governments – and even whole democratic systems – more accurate, more efficient and more fair. As a result, several nations have become enthusiastic adopters of automation in fields such as welfare allocation and the criminal justice system. While not a recent development, automated systems that support or replace human decision-making in government are increasingly being used.

The rapid deployment of automation is attracting conflicting narratives. On the one hand, the transformative potential of technologies such as machine learning has been lauded for its economic benefits. On the other, it has become customary to acknowledge the risks that these pose to rights such as privacy¹ and equality.² The question of how automation

^{*} Postdoctoral Research Fellow, Allens Hub for Technology, Law and Innovation, Faculty of Law, UNSW Sydney.

^{**} Director, Allens Hub for Technology, Law and Innovation, Faculty of Law, UNSW Sydney.

^{***} Dean, Anthony Mason Professor and Scientia Professor, Faculty of Law, UNSW Sydney; Barrister, New South Wales Bar. The authors thank Gabrielle Appleby and the anonymous referees for their comments on an earlier draft, and Adam Yu and Leah Grolman for their research assistance.

¹ For automation, data protection and privacy, see, eg, A. Roig, ‘Safeguards for the Right Not to be Subject to a Decision Based Solely on Automated Processing (Article 22 GDPR)’ (2017) 8 *European Journal of Law and Technology* 1; S. Wachter, B. Mittelstadt and L. Floridi, ‘Why a Right to Explanation of Automated Decision-Making does not Exist in the General Data Protection Regulation’ (2017) 7 *International Data Privacy Law* 76; S. Wachter, B. Mittelstadt and C. Russell, ‘Counterfactual Explanations without Opening the Black Box: Automated Decisions and the GDPR’ (2017) 31 *Harvard Journal of Law & Technology* 841; I. Mendoza and L. A. Bygrave, ‘The Right Not to Be Subject to Automated Decisions Based on Profiling’ in T. Synodinou et al (eds), *EU Internet Law: Regulation and Enforcement* (Cham: Springer: 2017); G. Malgieri and G. Comandé, ‘Why a Right to Legibility of Automated Decision-Making Exists in the General Data Protection Regulation’

interacts with foundational legal concepts and norms is also attracting attention among theorists working at the intersection of legal theory, technology and philosophy.³ These scholars examine possibilities such as the potential of automation and artificial intelligence to displace traditional legal concerns with prediction,⁴ and indeed to challenge the normative structure underlying our understanding of law.⁵ Others have interrogated the relationship between legal values and data-driven regulation.⁶ Another area of focus is ‘artificial legal intelligence’ and its potential for improving access to justice and to provide benefits for historically marginalised populations.⁷ These and other questions are typically examined in particular legal or factual contexts, such as in regard to administrative law or law enforcement.⁸

(2017) 7 *International Data Privacy Law* 243; B. Goodman and S. Flaxman, ‘European Union Regulations on Algorithmic Decision-Making and a “Right to Explanation”’ (2017) 38 *AI Magazine* 50. See also UN Office of the High Commissioner for Human Rights (OHCHR), *A Human Rights-Based Approach to Data: Leaving No One Behind in the 2030 Development Agenda* (2016); United Nations Development Group, *Big Data for Achievement of the 2030 Agenda: Data Privacy, Ethics and Protection – Guidance Note* (2017) at <https://undg.org/document/data-privacy-ethics-and-protection-guidance-note-on-big-data-for-achievement-of-the-2030-agenda/> (last accessed 27 November 2018).

² For automation and equality, see, eg, S. Barocas and A. D. Selbst, ‘Big Data’s Disparate Impact’ (2016) 104 *California Law Review* 671; M. B. Zafar et al, ‘Fairness Beyond Disparate Treatment & Disparate Impact: Learning Classification without Disparate Mistreatment’ (International World Wide Web Conferences Steering Committee, 2017) *Proceedings of the 26th International Conference on World Wide Web* at <https://dx.doi.org/10.1145/3038912.3052660> (last accessed 10 September 2018); A. Chouldechova, ‘Fair Prediction with Disparate Impact: A Study of Bias in Recidivism Prediction Instruments’ (2017) 5 *Big Data* 153; S. Goel et al, ‘Combatting Police Discrimination in the Age of Big Data’ (2017) 20 *New Criminal Law Review* 181. See also ‘The Toronto Declaration: Protecting the rights to equality and non-discrimination in machine learning systems’ 16 May 2018 at <https://www.accessnow.org/the-toronto-declaration-protecting-the-rights-to-equality-and-non-discrimination-in-machine-learning-systems/> (last accessed 27 November 2018)

³ See, eg, recent special issue ‘Artificial Intelligence, Technology, and the Law’ (2018) 68 *supp 1 University of Toronto Law Journal* 1, focused on legal theory, automation and technology beyond government decision-making. See also K. Yeung, ‘Algorithmic Regulation: A Critical Interrogation’ (2017) *Regulation & Governance* at <https://doi.org/10.1111/rego.12158> (last accessed 10 September 2018); A. Rouvroy and B. Stiegler, ‘The Digital Regime of Truth: From the Algorithmic Governmentality to a New Rule of Law’ A. Nony and B. Dillet (tr), 2016, 3 *La Deleuziana* 6 at http://www.ladeleuziana.org/wp-content/uploads/2016/12/Rouvroy-Stiegler_eng.pdf (last accessed 10 September 2018); E. Benvenisti, ‘EJIL Foreword – Upholding Democracy Amid the Challenges of New Technology: What Role for the Law of Global Governance?’ (2018) 29 *European Journal of International Law* 9; M. Hildebrandt and B. Koops, ‘The Challenges of Ambient Law and Legal Protection in the Profiling Era’ (2010) 73 *MLR* 428.

⁴ F. Pasquale and G. Cashwell, ‘Prediction, Persuasion, and the Jurisprudence of Behaviourism’ (2018) 68 *supp 1 University of Toronto Law Journal* 63.

⁵ M. Hildebrandt, ‘Law as Computation in the Era of Artificial Legal Intelligence: Speaking Law to the Power of Statistics’ (2018) 68 *supp 1 University of Toronto Law Journal* 12; B. Sheppard, ‘Warming Up to Inscrutability: How Technology Could Challenge Our Concept of Law’ (2018) 68 *supp 1 University of Toronto Law Journal* 36, 37; M. Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Cheltenham: Edward Elgar, 2015).

⁶ M. Hildebrandt, ‘Profiling and the Rule of Law’ (2008) 1 *Identity in the Information Society* 55; F. Pasquale, ‘Toward a Fourth Law of Robotics: Preserving Attribution, Responsibility, and Explainability in an Algorithmic Society’ (2017) 78 *Ohio State Law Journal* 1243; D. K. Citron and F. Pasquale, ‘The Scored Society: Due Process for Automated Predictions’ (2014) 89 *Washington Law Review* 1.

⁷ P. Gowder, ‘Transformative Legal Technology and the Rule of Law’ (2018) 68 *supp 1 University of Toronto Law Journal* 82.

⁸ In the context of administrative decision-making, see, eg, M. Oswald, ‘Algorithm-Assisted Decision-Making in the Public Sector: Framing the Issues using Administrative Law Rules Governing Discretionary Power’ (2018) 376 *Philosophical Transactions of the Royal Society A* 20170359 at <https://doi.org/10.1098/rsta.2017.0359> (last accessed 10 September 2018); C. Coglianese and D. Lehr, ‘Regulating by Robot: Administrative Decision Making in the Machine-Learning Era’ (2017) 105 *Georgetown Law Journal* 1147; D. Hogan-Doran, ‘Computer Says “No”’: Automation, Algorithms and Artificial Intelligence

This article adopts a broader perspective in assessing the benefits and challenges to the rule of law posed by automation of government decision-making.⁹ The goal is not to provide an exhaustive analysis, but to critically investigate how principles of the rule of law are affected by the increasing use of two kinds of automation: human-authored pre-programmed rules (such as expert systems) and tools that derive rules from historic data to make inferences or predictions (often using machine learning). Our focus in doing so is on three core rule of law concepts that have the widest acceptance across political and national systems: transparency and accountability; predictability and consistency; and equality before the law.

These rule of law values are applied to four case studies: automated debt-collection in Australia, data-driven risk assessment by judges in the United States, social credit scoring in China, and automated welfare in Sweden. The case studies have been selected to provide a diverse range of viewpoints from which to assess the benefits and risks to the rule of law posed by the use of automated decision-making by governments around the world. We do not provide a detailed consideration of jurisdiction-specific constitutional, administrative and statutory requirements constraining decision-making in these nations.¹⁰ Our aim instead is to analyse developments at the conceptual level of how they impact upon the rule of law, rather than seeking to develop a detailed prescription for the design or implementation of such systems.

We conclude that the alignment of automated government decision-making with rule of law values hinges on the appropriateness of design choices. The most significant factor is whether the automated system uses explicit rules written by humans (generally to align with legal requirements for the relevant decision) or rules derived empirically from historic data to make inferences relevant to decisions or to predict (and thus mimic) decisions. The latter raise greater issues for transparency and accountability, particularly as newer techniques are often more complex and therefore less susceptible to human explanation. Further, such systems are less likely to be consistent with the law and more likely to fall foul of the principle of equality before the law. In practice, however, systems of both types can fail to live up to rule of law ideals. The solution lies in ensuring that system design reflects rule of law values which are appropriate to the kind of decision being supported or made.

in Government Decision-Making' (2017) 13 *Judicial Review* 345. In the context of national security and law enforcement, see, eg, L. Bennett Moses and L. de Koker, 'Open Secrets: Balancing Operational Secrecy and Transparency in the Collection and Use of Data for National Security and Law Enforcement Agencies' (2017) 41 *Melbourne University Law Review* 530; Hildebrandt, n 6 above; T. Z. Zarsky, 'Transparent Predictions' [2013] *University of Illinois Law Review* 1503.

⁸ See, eg, M. Hildebrandt and S. Gutwirth (eds), *Profiling the European Citizen: Cross-Disciplinary Perspectives* (Dordrecht: Springer, 2008); Hildebrandt, n 6 above; D. Lyon, 'Surveillance, Snowden, and Big Data: Capacities, Consequences, Critique' (2014) 1 *Big Data & Society* 1; P. De Hert and S. Gutwirth, 'Privacy, Data Protection and Law Enforcement. Opacity of the Individual and Transparency of Power' in E. Claes, A. Duff and S. Gutwirth (eds), *Privacy and the Criminal Law* (Antwerpen & Oxford: Intersentia, 2006); A. D. Selbst, 'Disparate Impact in Big Data Policing' (2017) 52 *Georgia Law Review* 109.

⁹ A few short commentaries exist calling for more attention to be paid to the governmental context: see, eg, S. J. Mikhaylov, M. Esteve, and A. Campion, 'Artificial Intelligence for the Public Sector: Opportunities and Challenges of Cross-sector Collaboration' (2018) 376 *Philosophical Transactions of the Royal Society A* 20170357 at <https://doi.org/10.1098/rsta.2017.0357> (last accessed 10 September 2018); R. Kennedy: 'Algorithms and the Rule of Law' (2017) 17 *Legal Information Management* 170; M. Perry, 'iDecide: Administrative Decision-Making in The Digital World' (2017) 91 *Australian Law Journal* 29.

¹⁰ For example, in the United States, this would include due process protections in the Administrative Procedure Act, Pub L 79-404, 60 Stat 237, 5 USC §§ 551-559.

RULE OF LAW

The rule of law is a political work in progress, at the heart of which lies a widely held conviction that society should be governed by law. The prominence of the rule of law is such that diverse societies and seemingly irreconcilable political regimes, ranging from the European Union to Russia, China, Zimbabwe and Iran, have endorsed the concept. Some of these societies reject democracy and human rights, others oppose capitalism and globalisation, and some defy liberalism and are openly anti-Western,¹¹ but they all embrace an ideal of the rule of law.

Acceptance of the rule of law across so many nations and political systems is possible because the concept lacks an accepted definition. It is ubiquitous, yet elusive. As an ‘essentially contested concept’,¹² different societies can endorse the rule of law while disagreeing about what it entails. As Tamanaha notes:

Some believe that the rule of law includes protection of fundamental rights. Some believe that democracy is part of the rule of law. Some believe that the rule of law is purely formal in nature, requiring only that laws be set out in advance in general, clear terms, and be applied equally to all.¹³

At the highest level of abstraction, Tamanaha recognises that ‘the rule of law is analogous to the notion of “good,” in the sense that everyone is for it, but having contrasting convictions about what it is.’¹⁴

Some scholars have separated understandings of the rule of law into *formal* and *substantive* conceptions. The former focuses on sources and forms of legality, while the latter also includes stipulations about the content of the law.¹⁵ The idea that the rule of law embodies both procedural and substantive elements is widely accepted.¹⁶ For example, Lord Bingham argued that the core principle of the rule of law is ‘that all persons and authorities within the state, whether public or private, should be bound by and entitled to the benefit of laws publicly and prospectively promulgated and publicly administered in the courts’.¹⁷ He further articulated eight core principles, including accessibility and predictability, application of law, equality of law, protection of fundamental rights, availability of civil disputes proceedings, limits on power exercised by public officials, fairness of adjudicative procedures provided by the state, and state compliance with its obligations under international law.¹⁸ Lord Bingham’s articulation of the rule of law is a further attempt to expound a concept that, by its nature, defies universal definition.

It is not our goal to provide yet another account of the rule of law.¹⁹ Instead, we focus narrowly on aspects of the rule of law that have general acceptance, notably that it requires governance in which the law must be predictable, stable, accessible and everyone must be

¹¹ B. Z. Tamanaha, *On the Rule of Law: History, Politics, Theory* (Cambridge: Cambridge University Press, 2004) 2.

¹² J. Waldron, ‘The Concept and the Rule of Law’ (2008) 43 *Georgia Law Review* 1, 52. See also S. Sedley, *Lions under the Throne: Essays on the History of English Public Law* (Cambridge: Cambridge University Press, 2015). On essentially contested concepts more generally, see W. B. Gallie, ‘Essentially Contested Concepts’ in M. Black (ed), *The Importance of Language* (Ithaca, NY: Cornell University Press, 1962) 121.

¹³ Tamanaha, n 11 above, 3.

¹⁴ *ibid*, 3.

¹⁵ P. P. Craig, ‘Formal and Substantive Conceptions of the Rule of Law: An Analytical Framework’ [1997] PL 467.

¹⁶ See, *ibid*, 467.

¹⁷ Lord Bingham, ‘The Rule of Law’ (2007) 66 CLJ 67, 69.

¹⁸ *ibid*.

¹⁹ Modern accounts include Lord Bingham, n 17 above; Tamanaha, n 11 above; P. Gowder, *The Rule of Law in the Real World* (Cambridge: Cambridge University Press, 2016).

equal before the law.²⁰ In applying these principles, our focus is primarily upon the formal and procedural aspects of the rule of law, rather than its capacity to encompass a broader set of human rights, including to free speech and privacy. Hence, we limit our analysis to the following core components: transparency and accountability; predictability and consistency; equality before the law.

Transparency and accountability

One of the best-known aspects of the rule of law is that governments must be transparent and accountable in respect of the rules and decisions they make. Transparency requires publicity about the operation of the state and that individuals can access legal rules and administrative decisions.²¹ This is important so that individuals can understand the reasons for decisions affecting them and learn how future decisions might affect them. In democratic systems, some awareness as to the principles underlying the operation of the law (albeit not necessarily the specific details of decisions affecting others) is also useful for people seeking to understand and hence evaluate the performance of government. Accountability further requires that government be subject to the law and answerable for its actions (for example, that executive action can be overturned where it transgresses the law).²² Transparency and accountability are related because the transparency of a decision-making process or system is necessary (but not sufficient) for making that process or system accountable.²³ This includes accountability as to compliance with other rule of law principles, such as equality before the law.

Predictability and consistency

Another widely accepted aspect of the rule of law is that the law should be predictable and consistent.²⁴ Many regard this as indispensable for individual freedom and a fundamental part of ‘what people mean by the Rule of Law’.²⁵ Predictability and consistency of law is often thought to have dual purpose. It enhances certainty and efficiency so that individuals may

²⁰ Report of the International Congress of Jurists, ‘The Rule of Law in a Free Society’ (New Delhi: International Commission of Jurists, 1959) at [1].

²¹ See, Gowder, n 19 above.

²² R. Mulgan, *Holding Power to Account: Accountability in Modern Democracies* (New York, NY: Palgrave Macmillan, 2003); A. Schedler, ‘Conceptualizing Accountability’ in A. Schedler, L. Diamond and M.F. Plattner (eds), *The Self-Restraining State: Power and Accountability in New Democracies* (Boulder, CO: Lynne Rienner, 1999) 17.

²³ Bennett Moses and de Koker, n 8 above, 534–537.

²⁴ L. L. Fuller, *The Morality of Law* (New Haven, CT: Yale University Press, 1964); see also the lists in J. Finnis, *Natural Law and Natural Rights* (Oxford: OUP, 2nd ed, 2011) 270–271; J. Rawls, *A Theory of Justice* (Oxford: OUP, 1999) 208–210; J. Raz, *The Authority of Law: Essays on Law and Morality* (Oxford: OUP, 1979) 214–218.

²⁵ M. Schwarzschild, ‘Keeping it Private’ (2007) 44 *San Diego Law Review* 677, 686. For example, in his well-known book on the subject, Tom Bingham indicated that one of the most important things people needed from the law that governed them was predictability in the conduct of their lives and businesses. He quoted Lord Mansfield to the effect that: ‘[i]n all mercantile transactions the great object should be certainty: ... it is of more consequence that a rule should be certain, than whether the rule is established one way rather than the other.’: *Vallejo v Wheeler* (1774) 1 Cowp 143, 153 cited in T. Bingham, *The Rule of Law* (London: Allen Lane, 2010) 38. Similarly, Paul Gowder has recently argued that one of the main requirements for a political state under the Rule of Law is *regularity*: those who use state coercion must actually be bound by reasonably specific legal rules in that use: P. Gowder, ‘Transformative Legal Technology and the Rule of Law’ (2018) 68 *University of Toronto Law Journal* 82, 89 (summarising the main boundaries of the rule of law in his work, Gowder, n 19 above). See also F. A. von Hayek, *The Constitution of Liberty* (Chicago, Ill: University of Chicago Press, 1960).

