Technology and Regulation

The Inscrutable Code? The Deficient Scrutiny Problem of Automated Government

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Abstract

Public administration in the United Kingdom increasingly features automated decision-making. From predictive policing and prisoner categorisation, to asylum applications and tenancy relationships, automated government exists across various domains. This article examines an underlying issue concerning government automated decision-making systems: the lack of public scrutiny they receive across pre- to post-deployment. Branches of the state tasked with scrutinising government, namely Parliament and the courts, appear outmoded to address this problem. These circumstances prompt a concern of where the public can expect safeguards from government overreach manifested through computer software. Two regulatory solutions are proposed. First, mandating pre-deployment impact assessments of automated decision-making systems intended for use by government, either during their design, or before procurement. Second, incorporating algorithmic auditing as part of reinforcing the duty of candour in judicial review, so as to better inform courts about specific systems and the data underpinning them.

1. Introduction

Automated government is an alluring idea. At least to those who believe it decreases costs, increases accuracy, and boosts efficiency in the administration of public life. In the United Kingdom, uses of automated decision-making (ADM) systems appear to be increasing, as do efforts aimed at further incorporating their

use across the public sector.[1] To date, government has used at least fifty-five automated systems.[2] Of these, many are not well understood. Some examples are *RentSense*, developed for analysing payment patterns of those in social housing to predict what tenants are unlikely to pay rent,[3] a risk-profiling tool that determines in what prison someone should be jailed and how they should be treated during their sentence,[4] and the Self Employment Income Support Scheme, which predicted revenue in order to issue support payments to people put out of work during the COVID-19 pandemic.[5] Government has trialled chatbots based on technology from OpenAI to 'find content and answer user questions on GOV.UK'.[6] Ministers also piloted 'the use of generative artificial intelligence to analyse responses to government consultations and write draft answers to parliamentary questions'.[7] Algorithms drafting legislation may not be far off as well, assuming legislators do not already rely on digital products to do so.[8] What is evident today is that public governance is being undertaken via ADM systems deployed by government. A central question is how to adapt regulatory frameworks accordingly, particularly so as to ensure executive accountability to the public for the development and use of ADM.

Before proceeding further, it is necessary to define ADM for the purposes of this article. This is no easy task, as ADM can involve human participation, as can humans make decisions in the same way a computer might – for example, people that will not take into consideration relevant information beyond that which is required according to a set of instructions governing a particular decision. Human decision-making in this sense can become automated, in that the process ends up being devoid of the very attributes that make humans human, which allows for feelings, intuition, and reasoning to form part of decision-making processes. Human decisions entail more than following steps on an applicable checklist, and if such adherence is all that is considered appropriate to make a particular decision, then computers in such cases may well make for better decision-makers, especially when considering issues such as bias, ignorance about relevant information, or the inability to weigh long-term benefits more heavily than short-term costs. Inserting 'solely' before ADM, as similar to the General Data Protection Regulation,[9] is also problematic. Not only as a matter of legal interpretation, but also because such a formulation fails to accurately capture how ADM systems function in practice, 'whereby minimal human involvement in a process involving ADM, potentially with no feasible possibility to affect the related outcome, would make the subsequent decision fall outside the scope' of such a definition.[10] ADM can be understood in many different ways.[11] But the difference between ADM and human decision-making is not a simple binary distinction between the two. As such, and adapting a definition from another study,[12] ADM is defined here as a practice reliant on data processing by a computer application that: (i) summarises information to present different options

1. UK Government, Cabinet Office, Central Digital & Data Office https://www.gov.uk/government/organisations/central-digital-and-data-office
2. Public Law Project, Tracking Automated Government (TAG) Register (2024) https://trackautomatedgovernment.shinyapps.io/register/
3. Big Brother Watch, *Poverty Panopticon: The Hidden Algorithms Shaping Britain's Welfare State* (20 July 2021), 47-64 https://bigbrotherwatch.org.uk/wp-content/uploads/2021/07/Poverty-Panopticon.pdf
4. The Bureau of Investigative Journalism, 'Prisoner Risk Algorithm Could Program in Racism' (14 November 2019) https://www.thebureauinvestigates.com/stories/2019-11-14/prisoner-risk-algorithm-could-program-in-racism
5. *The Motherhood Plan v HM Treasury* [2021] EWHC 309 (Admin).
6. Sam Trendall, 'GOV.UK Chat – government tests AI from ChatGPT firm to answer online users' questions' (*PublicTechnology*, 31 October 2023) https://www.publictechnology.net/2023/10/31/science-technology-and-research/gov-uk-chat-government-tests-ai-from-chatgpt-firm-to-answer-online-users-questions/
7. Lucy Fisher, 'UK government to trial "red box" AI tools to improve ministerial efficiency' (*Financial Times*, 28 February 2024) https://www.ft.com/content/f2ae55bf-b9fa-49b5-ac0e-8b7411729539
8. Nathan E. Sanders and Bruce Schneier, 'How AI could write our laws' (*MIT Technology Review*, 14 March 2023) https://www.technologyreview.com/2023/03/14/1069717/how-ai-could-write-our-laws/
9. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) – GDPR, Art. 22.
10. Elena Abrusci and Richard Mackenzie-Gray Scott, 'The questionable necessity of a new human right against being subject to automated decision-making' (2023) 31 *International Journal of Law & Information Technology* 114, at 121.
11. See Francesca Palmiotto, 'When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis' (2024) 25 *German Law Journal* 210.
12. Anna Katharina Boos, 'Conceptualizing Automated Decision-Making in Organizational Contexts' (2024) 37 *Philosophy & Technology* 92, provides this definition: 'ADM is the practice of using algorithms to solve decision problems, where these algorithms can play a suggesting, offloading, or superseding role relative to humans, and decisions are defined as action triggering choices'.

for a human decision-maker to choose between, reject, or request alternatives; (ii) recommends a single decision outcome to a human that can be accepted, altered, recast, or rejected; (iii) executes a decision outcome unless overridden by a human; (iv) delegates or transfers a decision-making process to a human; (v) supersedes the decision outcome reached by a human with a different decision; or (vi) undertakes the decision-making process, reaches a decision, and executes it without human involvement.

The challenges of ADM forming part of public governance in particular concern the underlying features of these systems, and the inputs that set their decision-making parameters (at least initially[13]). While the computer code underpinning ADM can be reasonably understood as a form of law that has existed for decades now,[14] when compared to what is understood to be law in a more traditional sense – especially when considering its accompanying sources, methods of creation, and institutional features encompassing the legislative process and judicial review – scrutiny of software that translates data into government decisions is lacking.[15] The contexts where code is created 'are not subject to the legitimising procedural or formal standards of rule-making we might expect to find in constitutional democracies'.[16] Delegating decision-making to computer software is transforming the ways in which government power is manifested, creating a potentially wide scope for abuse.[17] This merging of algorithmic, corporate, and political power creates challenges for the apportionment of accountability and liability.[18]

A feature compounding these problems is (un)knowability: whereas laws are (mostly[19]) accessible, aspire to be legible, and are thus capable of revealing what underlying government policies are trying to achieve, code lacks such transparency. At least where it cannot be accessed, understood, and that knowledge made public, whether due to matters of proprietary, or because programmers cannot explain how a particular decision came about. Yet code remains a conduit to enact government policy via ADM systems. In adopting these novel technologies, government is endowed with new capabilities that are 'distinctly difficult to understand from the perspective of both participants in the legal system and the public'.[20] This opacity and inexplicability is increasing, as the technologies utilised to design ADM systems shift from rule-based methods, to statistical models, to machine learning, and most recently, to large language models and generative 'artificial intelligence', designed and operated by private sector providers in unknown ways. Previous research brings further attention to an important question of whether increases in automated government power will be correlated with a 'diminishing capacity on the part of regulated subjects to understand or challenge exercises of that power'.[21] It is a concerning prospect that as the scope of automated government grows, so too may the inability to properly monitor and respond to it.

The public being subject to modulation by a combination of corporate and political interests manifesting in policy created, influenced, or applied by ADM, puts at risk the ability of individuals and groups to form, pursue, and fulfil their aspirations.[22] Government sliding toward overreliance on the private sector to attempt addressing issues of public need with technical approaches may also worsen the issue of rapidly

13. Acknowledging that some computer applications can change these parameters without human involvement.
14. Lawrence Lessig, 'The Law of the Horse: What Cyberlaw Might Teach' (1999) 113 *Harvard Law Review* 501; Lawrence Lessig, *Code: And Other Laws of Cyberspace* (Basic Books, 1999).
15. Emre Bayamlıoğlu and Ronald Leenes, 'The "Rule of Law" Implications of Data-Driven Decision-Making: A Techno-Regulatory Perspective' (2018) 10 *Law, Innovation and Technology* 295.
16. Laurence Diver, 'Digisprudence: the design of legitimate code' (2021) 13 *Law, Innovation and Technology* 325, at 328.
17. Jamie Susskind, *The Digital Republic: On Freedom and Democracy in the 21st Century* (Bloomsbury, 2022), 35-84; Jamie Susskind, *Future Politics: Living Together in a World Transformed by Tech* (Oxford University Press, 2018), 168-187.
18. Miriam Buiten, Alexandre de Streel and Martin Peitz, 'The law and economics of AI liability' (2023) 48 *Computer Law & Security Review* 1; Reuben Binns, 'Algorithmic Accountability and Public Reason' (2018) 31 *Philosophy & Technology* 543.
19. Daniel Hoadley, Joe Tomlinson, Editha Nemsic and Cassandra Somers-Joce, 'How Public is Public Law? The Current State of Open Access to Administrative Court Judgments' (2022) 27 *Judicial Review* 95; Daniel Hoadley, Joe Tomlinson, Editha Nemsic and Cassandra Somers-Joce, 'How public is public law? Approximately 55%' (*UK Constitutional Law Association*, 25 February 2022) https://ukconstitutionallaw.org/2022/02/25/daniel-hoadley-joe-tomlinson-editha-nemsic-and-cassandra-somers-joce-how-public-is-public-law-approximately-55/
20. Aziz Z. Huq, 'Constitutional Rights in the Machine-Learning State' (2020) 105 *Cornell Law Review* 1875, at 1883.
21. Ibid.
22. Julie Cohen, 'What Privacy is For' (2013) 126 *Harvard Law Review* 1904, at 1912.

developing technology being poorly regulated.[23] Aggravating this particular issue is the lobbying prowess of the largest multinational technology conglomerates that skew legislation and regulation in their favour to serve corporate interests.[24] Private interests can outweigh risks to the public in the absence of adequate oversight, with vast financial sums 'being spent on malfunctioning digital products' that subject the public to unjust treatment.[25] Furthermore, the presumption that the 'public sector is the rule-maker and tech providers are the rule-takers' has been exposed as faulty.[26] Under current conditions, ADM systems are not necessarily being procured responsibly for the benefit of individuals and society, but instead arguably 'for the convenience of public sector entities and for the benefit of tech providers—with citizen interests and individual rights at risk of significant harm'.[27] The broader implications here concern democratic constitutionalism, human rights, and the rule of law, the strength of which depend, in part, on a separation of powers that provides adequate scrutiny of government decision-making.[28] Executive accountability is a constituent element of any aspiring democracy.[29] Considering the numerous facets of public life with which automated government interacts, there exists a corresponding demand that the public be protected from its pitfalls.[30] But related efforts present challenges. Erecting appropriate safeguards requires understanding how ADM systems work, establishing the risks they pose to individuals and groups, and mitigating or eliminating them before they occur, or at least providing access to remedy if or when they do. As it forms a decisive part of such regulatory efforts, public scrutiny of automated government is therefore crucial.

The harms connected to ADM systems have so far received considerable attention.[31] As have the ways in which some harms can be mitigated or eliminated.[32] But why do these harms occur? And in the context of public sector ADM, is government complying with its legal obligations? The Digital Regulation Cooperation Forum notes that 'DRCF members are increasingly having to assess whether algorithmic systems lead to unlawful outcomes'.[33] These matters share a common theme. Determining what harms are at risk of

23. Joanna Mazur and Maciej Bernatt, 'Can the Automated State Be Trusted? The Role of Rule of Law Safeguards for Governing Automated Decision-Making and Artificial Intelligence' (2024) 58 *Georgia Law Review* 1089.
24. Shaleen Khanal, Hongzhou Zhang and Araz Taeihagh, 'Why and how is the power of Big Tech increasing in the policy process? The case of generative AI' (2024) *Policy and Society*.
25. Anna Artyushina, 'Will You Take This Algorithm to Court?' (*Centre for International Governance Innovation*, 18 April 2024) https://www.cigionline.org/articles/will-you-take-this-algorithm-to-court/
26. Albert Sanchez-Graells, 'Responsibly Buying Artificial Intelligence: A "Regulatory Hallucination"' (2024) 77 *Current Legal Problems* 81, at 107.
27. ibid. at 124.
28. Bruce Ackerman, 'The New Separation of Powers' (2000) 113 *Harvard Law Review* 633.
29. Tarun Khaitan, 'Executive aggrandizement in established democracies: A crisis of liberal democratic constitutionalism' (2019) 17 *International Journal of Constitutional Law* 342.
30. See generally Stefan Schäferling, *Governmental Automated Decision-Making and Human Rights: Reconciling Law and Intelligent Systems* (Springer, 2023).
31. See, for some (of many) examples, Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (New York: Crown Publishers, 2016); Noah Bunnell, 'Remedying Public-Sector Algorithmic Harms: The Case for Local and State Regulation via Independent Agency' (2021) 54 *Columbia Journal of Law & Social Problems* 261; Maciej Kuziemski and Gianluca Misuraca, 'AI governance in the public sector: Three tales from the frontiers of automated decision-making in democratic settings' (2020) 44 *Telecommunications Policy* 6; Kate Crawford and Jason Schultz, 'Big Data and Due Process: Toward a Framework to Redress Predictive Privacy Harms' (2014) 55 *Boston College Law Review* 93; Jef Ausloos, Jill Toh and Alexandra Giannopoulou, 'The case for collective action against the harms of data-driven technologies' (*Ada Lovelace Institute*, 23 November 2022) https://www.adalovelaceinstitute.org/blog/collective-action-harms/; Laura Hughes and Bethan Staton, 'A-level and GCSE students to have downgraded results restored' (*Financial Times*, 17 August 2020) https://www.ft.com/content/273ff590-9651-4e25-aaa4-157d5b2948e1
32. See, for example, Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 *Duke Law & Technology Review* 18; Reuben Binns, 'Algorithmic Decision-Making: A Guide for Lawyers' (2020) 25 *Judicial Review* 2; Hammaad Adam, Aparna Balagopalan, Emily Alsentzer, Fotini Christia and Marzyeh Ghassemi, 'Mitigating the impact of biased artificial intelligence in emergency decision-making' (2022) 149 *Nature: Communications Medicine* 2; Nicol Turner Lee, Paul Resnick and Genie Barton, 'Algorithmic bias detection and mitigation: Best practices and policies to reduce consumer harms' (*Brookings Institution*, 22 May 2019) https://www.brookings.edu/articles/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms/; Richard Mackenzie-Gray Scott and Elena Abrusci, 'Automated Decision-Making and the Challenge of Implementing Existing Laws (*Verfassungsblog*, 5 October 2023) https://verfassungsblog.de/automated-decision-making-and-the-challenge-of-implementing-existing-laws/
33. Digital Regulation Cooperation Forum, *Auditing Algorithms: The Existing Landscape, Role of Regulators and Future Outlook* (23 September 2022), p. 5 https://assets.publishing.service.gov.uk/media/626910658fa8f523c1bc666c/DRCF_Algorithmic_audit.pdf

occurring, before they occur, and thus without the benefit of hindsight on which to base proposals regarding mitigation and future prevention measures, requires understanding how specific ADM systems work, particularly within the contexts where they are intended to apply, and what legal compliance questions are implicated by their design and deployment in those domains. This knowledge gathering, in turn, depends on being able to scrutinise the ADM systems that are or will be used by government. In other words, without this public scrutiny, there are few ways to ascertain, distinguish, and, crucially, pre-empt the actual and potential harms arsing from these systems, let alone begin to understand whether the design and deployment of a particular ADM system is lawful – unless or until harm comes to light and is subsequently assessed against legal criteria. As Joanna Redden summarises:

> Often, people only learn that they have been affected by an [ADM] application when one of two things happen: after things go wrong, as was the case with the A-levels scandal in the United Kingdom; or when controversies are made public.[34]

Attention towards government ADM systems should not be limited to instances where harm becomes manifest. Automated government requires accompanying oversight at all times, lest harm and illegality remain undetected or unquestioned.

The purpose here is therefore to address the extent to which public scrutiny of automated government occurs, and offer insights as to how it might improve, because current circumstances raise significant concerns. More generally, the research prompts consideration about core functions of the UK constitutional framework, which relates to whether this state is capable of providing adequate checks on government power within a shifting administrative landscape that appears to be placing greater emphasis on ADM,[35] with government possibly succumbing to the allure of technosolutionism as an approach to public governance.[36] Recent developments fit into this understanding, with government announcing a 'new Regulatory Innovation Office today to speed up public access to new technologies' in order to 'reduce the burden of red tape and speed up access to new technologies that improve our daily lives – from AI in healthcare to emergency delivery drones'.[37] Furthermore, with the reported decreases in satisfaction with public services and in productivity and efficiency within this sector, services being 'under-digitised' and data being 'underused' are considered key factors linked to these problems.[38] In response, government believes 'artificial intelligence' should be 'mainlined into the veins' of the UK,[39] setting out its *Blueprint for Modern Digital Government* at the beginning of 2025.[40] While some ADM systems may help deliver 'progressive public services',[41] considering the perceived need for more speed in terms of further incorporating digital technologies into public administration and other sectors, the need for public scrutiny of these systems remains pressing.

This article critically chronologises the existence of government ADM systems, from their creation to post-deployment immersion into public administration, highlighting key junctures where public scrutiny

34. Joanna Redden, 'Governments' use of automated decision-making systems reflects systemic issues of injustice and inequality' (*The Conversation*, 21 September 2022) https://theconversation.com/governments-use-of-automated-decision-making-systems-reflects-systemic-issues-of-injustice-and-inequality-185953

35. UK Government, *National AI Strategy* (September 2021) https://assets.publishing.service.gov.uk/media/614db4d1e90e077a2cbdf3c4/National_AI_Strategy_-_PDF_version.pdf

36. Evgeny Morozov, *To Save Everything, Click Here: Technology, Solutionism, and the Urge to Fix Problems that Don't Exist* (Penguin, 2013).

37. UK Government, Department for Science, Innovation and Technology, 'Game-changing tech to reach the public faster as dedicated new unit launched to curb red tape' (8 October 2024) https://www.gov.uk/government/news/game-changing-tech-to-reach-the-public-faster-as-dedicated-new-unit-launched-to-curb-red-tape

38. UK Government, Department for Science, Innovation and Technology, *State of Digital Government Review* (21 January 2025) https://www.gov.uk/government/publications/state-of-digital-government-review/state-of-digital-government-review

39. Robert Booth, 'Mainlined into UK's veins': Labour announces huge public rollout of AI' (The Guardian, 12 January 2025) <https://www.theguardian.com/politics/2025/jan/12/mainlined-into-uks-veins-labour-announces-huge-public-rollout-of-ai

40. UK Government, Department for Science, Innovation and Technology, *A Blueprint for Modern Digital Government* (21 January 2025) https://www.gov.uk/government/publications/a-blueprint-for-modern-digital-government/a-blueprint-for-modern-digital-government-html

41. See Helen Margetts, Cosmina Dorobantu and Jonathan Bright, 'How to Build Progressive Public Services with Data Science and Artificial Intelligence' (2024) 95 *The Political Quarterly* 653.

is absent or limited. This process encapsulates what can be understood as one that may, and arguably should, begin with the consultation and incorporation of applicable legal sources into these systems. But it ends in a way whereby related rules may have remained unimplemented, resulting in them being infringed by the applicable software.[42] Traditional branches of the state apparatus tasked with scrutinising government, namely Parliament and the courts, appear outmoded to address this issue, particularly in light of three separate elements combining. First, during the design phase, or before the procurement of software that ends up being used as part of automated government, there is little sign that scrutiny of related systems is undertaken with reference to applicable laws, particularly those on data protection, equality, and human rights. Second, in the post-design, pre-deployment phase of ADM systems, legislative inspection is bypassed, meaning accompanying code and systems design, even if eventually operating as a form of law, does not undergo the parliamentary approval process that is necessary when proposing new or amended legislation. Third, after ADM systems are deployed, should they be subject to legal challenge, courts may be deferential to the government position without examining the details of the system at issue, including the data informing – or misinforming – its processing.[43] And even if this risk does not occur, related judgments rendered against government cannot address systemic issues concerning the particular technology in question. The amalgamation of these three components amounts to what is referred to here as the 'deficient scrutiny problem' of automated government. Not knowing whether illegality is occurring is the key harm attached to this problem, where government remains unaccountable for unlawful ADM applications. This harm lies in the public being unaware of other harms that are occurring via automation at the expense of individuals, groups, and UK society more generally – the harm that is ignorance about harm.

The research prompts concern for where the public can expect safeguards from illegality manifested through government ADM systems, especially if government overreach occurs, with technologies being used even if they are not necessary to pursue a legitimate aim, and which may even oppose such aims. Two possible regulatory solutions are proposed to form part of tackling the deficient scrutiny problem. First, mandating pre-deployment impact assessments of ADM systems intended for use by government, either during the design phase, or before procurement. Second, incorporating algorithmic auditing as part of reinforcing the duty of candour in judicial review, so as to inform courts about specific systems and the data underpinning them, which can assist judges when ruling on matters involving government ADM systems. The conclusion brings these strands together, reflecting on the importance of developing the regulatory framework in this area, which, in light of the global nature of this issue and related lawmaking efforts,[44] also concerns approaches to effectively regulating automated government in jurisdictions beyond the UK.[45]

2. From software design to deployment: A chronology of deficient public scrutiny

When ADM systems are developed, procured, and then deployed by government, decisions in the public interest regarding the design and implementation of related software are left to the discretion of programmers.[46] This dynamic means policy enacted by the related code and systems design can receive little or no outside input 'beyond that provided by the vendor: no public participation, no reasoned deliberation,

42. Dag Wiese Schartum, 'From Legal Sources to Programming Code: Automatic Individual Decisions in Public Administration and Computers under the Rule of Law' in Woodrow Barfield (ed.), *The Cambridge Handbook of the Law of Algorithms* (Cambridge University Press, 2020), 301, at 302-307.
43. Georgina Sturge, *Bad Data: How Governments, Politicians and the Rest of Us Get Misled by Numbers* (Bridge Street Press, 2022).
44. Regulation (EU) 2024/1689 (EU AI Act); Council of Europe, *Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law*, Treaty Series - No. 225 (5 September 2024); See also Sandra Wachter, 'Limitations and loopholes in the EU AI Act and AI Liability Directives: What this means for the European Union, the United States, and Beyond' (2024) 26 *Yale Journal of Law & Technology* 671; David Leslie, Christopher Burr, Mhairi Aitken, Michael Katell, Morgan Briggs and Cami Rincon, *Human Rights, Democracy, and the Rule of Law Assurance Framework for AI Systems: A Proposal* (The Alan Turing Institute, 2021).
45. Cary Coglianese, 'Administrative Law in the Automated State' (2021) 150 *Daedalus* 104.
46. Karen Yeung, 'The New Public Analytics as an Emerging Paradigm in Public Sector Administration' (2022) 27 *Tilburg Law Review* 1; Jody Freeman, 'Extending Public Accountability Through Privatization: From Public Law to Publicization' in Michael L. Dowdle (ed.) *Public Accountability: Designs, Dilemmas and Experiences* (Cambridge University Press, 2006), 83.

and no factual record'.[47] Yet this encoding process involves an attempt to translate legal and philosophical concepts into mathematical formulations.[48] These systems design choices are an exercise of the 'discretionary power to convert legal frameworks into concrete algorithms, decision trees, and modules'.[49] Therefore, during the design phase of ADM systems, lack of involvement of people with proficient understanding of legal rules applicable to the ultimate domain of deployment can create difficulties concerning legality in the context where a particular system is ultimately used. Regardless of the developer being a contractor, multinational company, civil servant, or some combination of these legal fictions, they need to be aware of legal rules' application to the software in the context where it will be deployed; otherwise the software at hand risks infringing applicable laws. In addition to laws changing over time, their ordinary meaning can differ from their legal meaning, and such complexity may result in errors during their translation into code.[50] Reducing or removing the risk of legal breaches arising from government deploying ADM systems depends on them being scrutinised and tested against legal criteria *before* they are used in public administration. And, if approved for use, meaningful post-deployment oversight demands that public bodies have the ability to effectively supervise ADM in the public sector, and make alterations or disband systems where necessary to align with the law. Yet the extent to which such scrutiny occurs in the UK is concerning.

A. Beginning with the unknown: The design and procurement phase

Perhaps the most striking aspect of the absent or limited scrutiny of automated government concerns software where the developers are unknown. At present, undisclosed or unknown developers have created at least twenty-nine software applications that have been used by the UK Government.[51] This figure accounts for the known majority of automated systems. There is no way to scrutinise how these systems were designed, and the processes they relied upon to be created, including the data used to inform – or misinform – their processing.[52] This situation is unsettling, especially considering the domains of application.

For example, the 'Identify and Prioritise Immigration Cases (IPIC)' tool is used to select priority cases for (human) immigration officers to intervene, the filters related to which concern at least case-subject nationality, age, and another protected characteristic that is redacted from documents provided by government in response to a freedom of information request.[53] Another example is the 'Legal aid - SCA/DV claims' tool, which is used to review bills submitted by legal aid providers with respect to domestic violence claims.[54] Considering the variables the software takes into account, such as frequency of submitted bills and their average value, should this system result in more bills from cases of domestic violence being reduced or rejected, it may restrict access to legal aid for such claims, potentially discriminating against women,[55] who comprise a higher proportion of people suffering domestic abuse.[56]

The unknowability about what actors are providing software that is making or shaping government policy makes public scrutiny difficult from the outset. Without knowing who is providing software, there is no actor to approach to inquire about what is being provided, and how the system was created, in particular the data underpinning it and how it is processed, which is especially troublesome should procurement

47. Deirdre K. Mulligan and Kenneth A. Bamberger, 'Procurement as Policy: Administrative Process for Machine Learning' (2019) 34 *Berkeley Technology Law Journal* 773, at 780.
48. Merve Hickok, 'Public procurement of artificial intelligence systems: new risks and future proofing' (2022) *AI & Society*, at 5.
49. Mark Bovens and Stavros Zouridis, 'From Street-Level to System-Level Bureaucracies: How Information and Communication Technology is Transforming Administrative Discretion and Constitutional Control' (2002) 46(2) *Public Administration Review* 174, at 181.
50. Anna Huggins, 'Addressing Disconnection: Automated Decision-Making, Administrative Law and Regulatory Reform' (2021) 44 *UNSW Law Journal* 1048, at 1053.
51. Public Law Project, TAG Register (n 2). https://trackautomatedgovernment.shinyapps.io/register/
52. Rangita de Silva de Alwis, Amani Carter and Govind Nagubandi, 'Equitable Ecosystem: A Two-Pronged Approach to Equity in Artificial Intelligence' (2023) 29 *Michigan Technology Law Review* 165, at 171-176.
53. Public Law Project, TAG Register (n 2).
54. ibid.
55. ibid.
56. ONS, 'Characteristics of victims of domestic abuse based on findings from the Crime Survey for England and Wales and police recorded crime' (24 November 2023) https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/domesticabusevictimcharacteristicsenglandandwales/yearendingmarch2023#sex

agreements between government and private companies be made without appropriate records being kept.[57] Merve Hickok makes an important point through a pertinent example:

> When a private vendor interacts with a public entity, the quickest and easiest point of entry is preferred over a public discussion on what their AI system might mean for the community or society. For example, there might be times of crisis when a need for a quick action and solution might be used as an excuse to skip the regular procurement process and obligations. In UK, NHS onboarded Palantir in March 2020 to help develop NHS Covid-19 Data Store, with a no-bid contract valued at £1 between NHS and Palantir. The contract was awarded using what is called the G-Cloud 11 Framework, an accelerated procurement system for minor contracts and does not require a tender to be published. The contract was only revealed after questions from data privacy activists. It is still not clear if impact assessments have been conducted. The cost of continuing with Palantir, however, was clear when contract was extended at £23.5m at the end of the trial period.[58]

Lack of transparency is compounded by another factor, namely the shift to the private sector in terms of relying on it to provide ADM systems ostensibly for the public benefit. This shift may undermine public interests, including because the related processes and outcomes involve 'privatising gains while socialising risks'.[59] There appears to be considerable outsourcing to the technology industry, with more government expenditure being directed towards securing contracts with private sector providers than on government providing services itself.[60] The potential for overreliance to build-up on the private sector to shape and implement public policy is significant. This is where the assumption that automation reduces financial costs may be challenged. Instead of outsourcing the design, development, and maintenance of ADM systems, it could be that creating and maintaining such software in-house is less costly.[61] Public sector providers may also be better placed to design and implement digital systems for public services, including because, as the previous UK government put it, 'a solid understanding of ways of working' are already in place alongside a 'limited need for new financial or contractual arrangements', which helps improve operational delivery.[62] For the purposes of public scrutiny, this approach of preferring public sector providers is also advantageous if it reduces the likelihood of the software at issue being proprietary, the laws related to which may prevent any public disclosures being made about the technical details of a particular system.

Not being able to access code and its connected datasets renders the notion of explainability something of a non-starter. With no way to examine what constitutes a specific ADM system used by government, it is not possible for the public to understand what its use, as a means of regulating public life, will entail until *after* the effects connected to its deployment emerge. By such a point, any unlawful harm connected to its use has already occurred. Unlike traditional laws 'on the books', such code-based ADM systems of regulation may fail to clearly set out what is expected from the public in order to observe any new policy manifested through the software. To put it another way, there is a lack of transparency regarding what government is trying to achieve should ADM systems be deployed without accompanying public communication, as code masks the underlying policy unless someone translates it into a language comprehensible to the applicable society, and then makes this knowledge public. Traditional laws already exist in that language and are public, even if they are sometimes incomprehensible. The reasons supporting a particular law, which can be gleaned from sources such as government announcements, preparatory works, and parliamentary debates, also form part of allowing the public to grasp why particular policy choices were made, and why others were rejected.

57. Jim Pickard, Anna Gross, Laura Hughes and Lukanyo Mnyanda, 'Is rule by WhatsApp sending wrong message on transparency?' (*Financial Times*, 1 November 2023) https://www.ft.com/content/5b91aaf2-0909-4255-bd5a-777a90632324
58. Hickok, 'Public procurement of artificial intelligence systems' (n 48, 7).
59. Yeung, 'The New Public Analytics as an Emerging Paradigm in Public Sector Administration' (n 46, 28).
60. National Audit Office, *Commercial and contract management: insights and emerging best practice* (November 2016) https://www.nao.org.uk/wp-content/uploads/2016/11/Commercial-and-contract-management-insights-and-emerging-best-practice.pdf
61. O. E. Williamson, 'Markets and hierarchies: Some elementary considerations' (1973) 63 *American Economic Review* 316.
62. UK Government, Department of Health & Social Care, *Technical report on the COVID-19 Pandemic in the UK*, Chapter 7: Contact tracing and isolation (updated 10 January 2023) https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation

The same is not true for code and associated automated decisions that are not or cannot be explained to the public, where post-deployment outcomes connect to design choices of programmers.[63] Recalling these choices may not be possible, whether they were made by a human, or were outputs of a large language model. There is no paper trail. And even if these choices are documented, they may still not be able to explain why a particular decision was made by an application running the related code.

Intensifying these problems connected to their design, is when ADM systems are programmed by companies or contractors with little to no knowledge of the government branch in which the software will ultimately form part, including with respect to the related roles and responsibilities of civil servants. Failing to integrate related legal expertise into the process of systems design creates dangers to constitutional governance.[64] Having no individuals with applicable legal knowledge involved in the specification of software risks the bias and noise in programmers' thinking introducing code that articulates such thoughts in a manner that can contravene laws when deployed through a particular system.[65] Mitigating or eliminating such legal exposure therefore depends on whether and to what extent people with knowledge of applicable laws are involved in the process of designing ADM systems deployed by government.

It is little surprise that 'parts of systems development work can be seen as a legal decision-making process'.[66] The significance of approaching systems design for automated government as a process that incorporates applicable laws can be further appreciated when reflecting on the manageability of scale. If ADM systems are not created with reference to applicable law regarding their ultimate domain of deployment, then meaningful human oversight of the software after it is deployed seems unfeasible as a way to ensure legal compliance, especially when considering automation bias and the deference lent to decisions taken by ADM because of it.[67] These computer systems can make myriad decisions in minutes. Even if small portions of these are unlawful, the public are put at unjustifiable risk, and government risks incurring legal costs. It may then incur further costs related to re-designing or disbanding a particular system, or to reversing each individual decision that was made erroneously. The accumulation of such costs may even be to an extent that surpasses any cost reduction that automation may have *initially* provided.[68]

In addition, when these systems in government 'displace agency reasoning and expertise',[69] they also replace the ability of humans to *adapt* decision-making *in light of* new information, as is required when situations change. The experts involved in public administration enable government competence through deliberative decision-making processes.[70] Supplanting human involvement in public administration risks eradicating 'cultural knowledge about what is or is not an appropriate decisional heuristic in a particular case',[71] while impoverishing the public sector overall.[72] While ADM systems and humans can both arrive at the same conclusion, the associated processes are different. And, at this time, it is humans that can reason and shift their considerations *beyond* a set of rules, and, crucially, clarify *why* this rule-deviating approach was taken in a specific case. Karen Yeung emphasises that 'machine intelligence remains decidedly "dumb", unable to

63. Lessig, 'The Law of the Horse' (n 14, 540).
64. Karen Yeung and Adam Harkens, 'How do "technical" design choices made when building algorithmic decision-making tools for criminal justice authorities create constitutional dangers? (Part I)' (2023) *Public Law* 265; Karen Yeung and Adam Harkens, 'How do "technical" design choices made when building algorithmic decision-making tools for criminal justice authorities create constitutional dangers? (Part II)' (2023) *Public Law* 448.
65. See generally Daniel Kahneman, Olivier Sibony and Cass R. Sunstein, *Noise: A Flaw in Human Judgment* (Little, Brown Spark, 2021).
66. Schartum, 'From Legal Sources to Programming Code' (n 42, 304).
67. Danielle K. Citron, 'Technological Due Process' (2008) 85 *Washington University Law Review* 1249, at 1271-1272, defining 'automation bias' as the 'use of automation as a heuristic replacement for vigilant information seeking and processing'. See also Rita Gsenger and Toma Strle, 'Trust, Automation Bias and Aversion: Algorithmic Decision-Making in the Context of Credit Scoring' (2021) 19 Interdisciplinary Description of Complex Systems 542, at 547; Stephanie K. Glaberson, 'Coding Over the Cracks: Predictive Analytics and Child Protection' (2019) 46 Fordham Urban Law Journal 307, at 355.
68. Abrusci and Mackenzie-Gray Scott, 'The questionable necessity of a new human right against being subject to automated decision-making' (n 10, 35).
69. Mulligan and Bamberger, 'Procurement as Policy' (n 47, 815).
70. Elizabeth Fisher and Sidney A. Shapiro, *Administrative Competence: Reimagining Administrative Law* (Cambridge University Press, 2020).
71. Margot E. Kaminski, 'Binary Governance: Lessons from the GDPR's Approach to Algorithmic Accountability' (2019) 92 *Southern California Law Review* 6, at 13-14.
72. Neli Frost, 'The Impoverished Publicness of Algorithmic Decision Making' (2024) *Oxford Journal of Legal Studies*.

ascribe human meaning and significance to the patterns thereby identified, let alone interpret and properly grasp the meaning and significance of "missing" or erroneous data, and what should be done about it'.[73] The weight of these points relate to the contestability of government decision-making, as it is not possible to challenge a decision if there is no meaningful way to engage *with the decision-maker* about how and why a particular decision was made. Accountability deficits can therefore arise, because meaningful ways to invoke answerability for public sector decision-making are lacking, and through ADM become mechanistic instead of norm-driven.[74]

These problems connected to deficient public scrutiny of the design stages of ADM systems that ultimately form part of governing public life create deleterious downstream effects. Whether it is a mother being harassed in front of her children because software incorrectly flagged her to fraud investigators,[75] hundreds of postal workers being wrongly imprisoned,[76] tens of thousands of citizens being mistakenly sent to quarantine by an application costing roughly £35m,[77] or individuals not receiving the financial support they need,[78] automated government has serious implications. Yet the extents of the risks connected to it are hard to grasp when little is known about whether and what safeguards are being erected when designing and procuring applicable software. As Albert Sanchez-Graells notes,

> the government's pro-innovation approach to AI does not include any tools to ensure it will meet its mission to 'lead from the front and set an example in the safe and ethical deployment of AI', despite the prime minister's claim that the UK will lead on 'guard rails' to limit dangers of AI. The stakes are too high for citizens to pin their hopes on the public sector regulating itself, or imposing safety and transparency requirements on tech companies.[79]

Scrutinising the upstream components of ADM systems deployed by government, namely those concerning design and procurement, is significantly limited at this time. The beginning of the chronology from software creation to use by government is thus not off to a good start. What exacerbates this lack of public scrutiny is that Parliament, the very institution considered by some to be central in public governance, does not form part of scrutinising government ADM systems at present.

B. Skipping parliamentary inspection: The pre-deployment phase

Policymakers and shapers work with legislative drafters to co-create regulations for administering public life. The same may go for policymakers and shapers working with software engineers in the co-creation of ADM systems, unless government sources software from a private sector provider without having made any contributions to its design. Nonetheless, the analogy holds that as draft legislation can eventually become law, so draft code as part of an ADM system can eventually become another form of law, even if their means of production, operation, implementation, and enforcement are distinct. Like other forms of influencing human behaviour – such as art,[80] architecture (including so-called 'choice' architecture), markets, and sociocultural norms – the rules applied by code and by legislation exist to regulate societies. A crucial difference is that Parliament is involved in the creation of legislation. The institution provides political scrutiny of legislative proposals, at least in principle, if not always effectively in practice. Yet it does not

73. Yeung, 'The New Public Analytics as an Emerging Paradigm in Public Sector Administration' (n 46, 25).
74. Ellen Rock, *Measuring Accountability in Public Governance Regimes* (Cambridge University Press, 2020), 22.
75. Eva Constantaras, Ganriel Geiger, Justin-Casimir Braun, Dhruv Mehrotra and Htet Aung, 'Inside the Suspicion Machine' (*Wired*, 6 March 2023) https://www.wired.com/story/welfare-state-algorithms/
76. John Croker, 'The Law That Shapes Us: Law, Artificial Intelligence and Human Rights; Connecting the Dots' (University of Oxford) https://www.law.ox.ac.uk/content/article/law-shapes-us-law-artificial-intelligence-and-human-rights-connecting-dots
77. Office of the Auditor General of Canada, 2024 Reports of the Auditor General of Canada to the Parliament of Canada, *COVID-19 Pandemic – ArriveCAN: Glaring disregard for basic management and contracting practices surrounds the Government's ArriveCAN application* (2024) https://www.oag-bvg.gc.ca/internet/docs/parl_oag_202402_01_e.pdf
78. *The Motherhood Plan v HM Treasury* [2021] EWHC 309 (Admin); *The Motherhood Plan v HM Treasury* [2021] EWCA Civ 1703.
79. Albert Sanchez-Graells, 'The UK public sector is already using AI more than you realise – without oversight it's impossible to understand the risks' (*The Conversation*, 24 May 2023) https://theconversation.com/the-uk-public-sector-is-already-using-ai-more-than-you-realise-without-oversight-its-impossible-to-understand-the-risks-203723
80. With many thanks to Daniele Nunes for a wonderful discussion where she noted this other potential 'modality' for regulating human behaviour. See others in Lawrence Lessig, *Code: And Other Laws of Cyberspace, Version 2.0* (Basic Books, 2006), 120-137.

currently scrutinise ADM systems intended for government use, despite the connected code being another form of law that enacts government policy. Considering the lack of political and legal oversight during the design and procurement phases of government ADM systems, in that private companies simply sell sought software to government, government makes its own, or public and private actors co-create it, there is a vacuum of public scrutiny at this initial stage. And this vacuum of deficient scrutiny is maintained by the lack of parliamentary involvement in inspecting government ADM systems after they have been designed or procured, and *before* they have been deployed.

The problem here boils down to the role of parliament in public administration as a check on government power. This role is part of ensuring government is accountable to the public for its decisions,[81] including those made by ADM systems. There is a democratic deficit when Parliament does not have the opportunity to scrutinise government. Yet it is questionable whether Parliament is currently capable of providing adequate political scrutiny of automated government.[82] A number of festering issues within constitutional practice arguably limit, and maybe even prevent, Parliament from doing its job here. Heavy legislative agendas overloading the parliamentary process, loss of political independence of Members of Parliament beholden to government (or its allies), a majority government in Parliament, or a reduction in time allowing for dissenting debate of government proposals, are but a few of the problems that curtail Parliament in its scrutiny of government.[83] Introducing ADM systems for the public sector exacerbates these issues, because unlike law that is made known to the public during all stages of its existence, from proposition, to drafting, to enactment and possible abrogation, the data, code, and systems design underpinning ADM is not. Furthermore, while, in theory, parliamentary select committees can inspect specific government ADM systems *after* they have been incorporated into public administration, in practice, these bodies are constructed and function in such a way that appears to exercise little power in terms of being able to prevent or alter the use of such systems.[84] It is no wonder structural reforms have been called for over the years to make Parliament a more effective legislature in terms of its ability to scrutinise government.[85] Despite all the rhetoric about 'parliamentary sovereignty', the UK constitutional framework is a governance system dominated and (sometimes) manipulated by the executive.[86] Too often, Parliament can be little more than a 'creature of the executive'.[87] The implications of not regulating government ADM via the legislative branch are manifest, not least government having free reign to adopt short-sighted, technosolutionist reactions to problems in the public interest that may ultimately undermine those very interests, with the public being 'lulled, by a false sense of familiarity, into passively accepting inadvisable forms of automation'.[88]

Beyond governmental discretion, the institutional mechanisms for assessing whether and how ADM systems should form part of public administration appear to be lacking. At present, government is being left to self-regulate, or is allowing the private sector to self-regulate the design, development, maintenance, and use of ADM. It has been noted that '[i]f the political choice is to automate administrative decision-making, legislators should pass legislation that is as far as possible suitable for automation'.[89] Enacting *primary*

81. Meg Russell and Lisa James, 'Parliamentary scrutiny: what is it, and why does it matter? (*The Constitution Unit*, 12 September 2023) https://constitution-unit.com/2023/09/12/parliamentary-scrutiny-what-is-it-and-why-does-it-matter/
82. Andrew Le Sueur, 'Robot Government: Automated Decision-Making and its Implications for Parliament' in Alexander Horne and Andrew Le Sueur (eds.), *Parliament, Legislation and Accountability* (Bloomsbury, 2016), 183-202.
83. Alexandra Sinclair, 'Covid-19 Has Highlighted Why Secondary Legislation Needs Reforming' (*Each Other*, 4 March 2021) https://eachother.org.uk/covid-19-brexit-secondary-legislation/
84. Patrick Dunleavy, 'The Commons' two committee systems and scrutiny of government policy-making' in Patrick Dunleavy, Alice Park and Ros Taylor (eds.), *The UK's Changing Democracy: The 2018 Democratic Audit* (LSE Press, 2018), 159-172.
85. Artemis Photiadou and Patrick Dunleavy, 'How effective is Parliament in controlling UK government and representing citizens?' (*London School of Economics, British Politics and Policy*, 29 December 2017) https://blogs.lse.ac.uk/politicsandpolicy/how-effective-is-parliament-in-controlling-uk-government-and-representing-citizens/
86. Diana Woodhouse, *Ministers and Parliament: Accountability in Theory and Practice* (Oxford University Press, 1994).
87. Conor Gearty, 'In the Shallow End: Conor Gearty on the UK Supreme Court' (*London Review of Books*, 27 January 2022), vol. 44(2).
88. Kiel Brennan-Marquez, Karen Levy and Daniel Susser, 'Strange Loops: Apparent Versus Actual Human Involvement in Automated Decision-Making' (2019) 34 *Berkeley Technology Law Journal* 745, at 771.
89. Schartum 'From Legal Sources to Programming Code' (n 42, 335).

legislation could reduce the extent to which government ADM systems evade parliamentary scrutiny.[90] Yet the reality of such legislation not already being required is telling of the constitutional latitude involved in sustaining automated government. Although changes may occur depending on whether and how plans to introduce an 'AI Bill' and related legislation materialise, Parliament has not positioned itself to address system-wide problems regarding government ADM.[91] If the political will existed, legislation could be passed to ensure Parliament is involved in the pre-deployment scrutiny of these systems. Potentially aggravating this lack of political scrutiny is the manner in which courts can provide their legal scrutiny in cases involving such systems.

C. The risk of judicial deference to computer software: The post-deployment phase

Government ADM systems exert code as a form of law onto the public, regulating lives via unseen software. Little is discernable about the design and procurement of ADM systems, rendering public scrutiny at this phase of their existence limited. Parliamentary scrutiny of these systems is then bypassed, as software and related policies are unaccompanied by legislation, which means government ADM remains politically unaccountable. This setting puts pressure on the courts to rebalance the scales of public scrutiny regarding government ADM systems. Intensifying this demand is that courts, considering their constitutional role is limited to the legal scrutiny of government, cannot easily alleviate the lack of political scrutiny calling into question the legitimacy of automated government.[92]

A question lying at the centre of this strain concerns due process, particularly whether courts can weigh in on the processes by which government ADM systems are created and come into use without conflating law and politics. When considering the analogous situation of judicial review of the legislative process, the answer to this question is not straightforward.[93] To elaborate, if scrutiny of ADM systems were to one day be carried out by Parliament in a similar way to the legislative process, the justiciability of the systems design process could be limited or even prevented as a matter of law.[94] A tension could exist between a court evaluating parliamentary scrutiny of a government ADM system (whether in terms of the time spent scrutinising it, or the quality of that scrutiny), and Article 9 of the Bill of Rights, which provides: 'That the freedom of speech and debates or proceedings in Parliament ought not to be impeached or questioned in any court or place out of Parliament'.[95] More recently, the Supreme Court ruled:

> [T]he law of Parliamentary privilege is not based solely on the need to avoid any risk of interference with freedom of speech in Parliament. It is underpinned by the principle of the separation of powers, which, so far as relating to the courts and Parliament, requires each of them to abstain from interference with the functions of the other, and to treat each other's proceedings and decisions with respect. It follows that it is no part of the function of the courts under our constitution to exercise a supervisory jurisdiction over the internal procedures of Parliament.[96]

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90. John Zerilli, 'Process Rights and the Automation of Public Services through AI: The Case of the Liberal State' (*Just Security*, 26 October 2023) https://www.justsecurity.org/89758/process-rights-and-the-automation-of-public-services-through-ai-the-case-of-the-liberal-state/

91. Anna Gross and Lukanyo Mnyanda, 'Starmer plans to introduce AI bill in King's Speech' (*Financial Times*, 14 July 2024) https://www.ft.com/content/1013c46f-247b-4d47-8e0f-ab7387b4f22c

92. A matter that in and of itself requires more attention. See Jake Stone and Brent Mittelstadt, 'Legitimate Power, Illegitimate Automation: The problem of ignoring legitimacy in automated decision systems' (2024) *ACM Conference on Fairness, Accountability, and Transparency*; Stephan Grimmelikhuijsen and Albert Meijer, 'Legitimacy of Algorithmic Decision-Making: Six Threats and the Need for a Calibrated Institutional Response' (2022) 5 *Perspectives on Public Management and Governance* 232; Ryan Calo and Danielle K. Citron, 'The Automated Administrative State: A Crisis of Legitimacy' (2021) 70 *Emory Law Journal* 797.

93. Suzie Navot, 'Judicial Review of the Legislative Process' (2006) 39 *Israel Law Review* 182.

94. But see, in the context of human rights cases, Eastside *Cheese Company (A Firm) & Anor, R (on the application of) v Secretary Of State For Health* [1999] EWCA Civ 1739, which highlights the relativity connected to the margin of appreciation afforded to government, and the significance of the extent to which a government measure is scrutinised by Parliament, meaning this margin can correspond to the degree of parliamentary scrutiny, in that less of the latter would mean less of the former.

95. Bill of Rights (1689), Art. 9.

96. *R (on the application of SC, CB and 8 children) (Appellants) v Secretary of State for Work and Pensions and others (Respondents)* [2021] UKSC 26, para. 165.

But it is difficult to understand how this feature of the constitution accounts for situations where government does not respect Parliament, whether by 'relegating' it 'to the subordinate role of merely rubberstamping legislation',[97] or not allowing it the opportunity to examine the data, code, and systems design behind software used in public administration, nor to question providers of ADM systems that ultimately form part of governing the UK.

The software involved in making and shaping government decision-making may be viewed as a matter concerning policy only, lying beyond the remit of judicial scrutiny, with oversight thus being limited to political bodies. However, connected to the concerns raised above about systems design and function affecting matters of legality upon the deployment of related software, courts have already been called upon to examine related matters. Circumstances during the COVID-19 pandemic resulted in courts ruling on matters concerning the use of computer software as part of public governance.[98] Although not of all these applications involved ADM, courts engaged with these matters *without* examining the details of software forming part of the governance approaches adopted by government.[99] Courts were also deferential to government on enough occasions that labelling judicial deference during COVID-19 as a 'trend' would not be an overstatement.[100] Court rulings had a negligible impact on pandemic measures, and there was no judicial partnership with government in shaping related rules.[101] Case law during the pandemic showed, among other things, that technical information can remain unseen and unquestioned unless its effects present as being manifestly illogical.[102] A risk with respect to future cases involving government ADM systems is that their use may be assumed and accepted to be 'appropriate', 'neutral', 'rational', and/or 'reliable' exercises of government power, even if they are far from it.[103] ADM systems can end up being perceived as a tool that allows government to govern better, without questioning whether the underlying data, code, and systems design of a particular application is actually capable of doing so, and without infringing applicable laws.

The significance of courts partly lies in their ability to expose government wrongdoing, which becomes significant when other public institutions do not, or cannot, examine whether unlawful conduct has occurred. And there exist signs for hope on this front. The *Bridges* case is a good example of the courts engaging with evidence concerning computer software used by government to ensure that deployment of automated systems are compliant with data protection, equality, and human rights laws.[104] As Rebecca Williams points out, 'in future judicial reviews of this kind', courts will need 'to engage at a detailed level with the technical evidence' concerning ADM systems in order to ensure legal compliance.[105] The *Bates* case against the Post Office concerning its use of Horizon software also highlights the ability of the courts to uncover computer system defects through their scrutiny.[106] Combined, courts and Parliament shape the extent of authority granted to government to lawfully exercise its powers when commissioning and deploying ADM systems. Should these two institutions complement each other, in terms of 'one catching what the other might miss',[107] there can exist a mixture of political and legal safeguards to ensure that government overreach via ADM systems does not occur, where the combination of algorithmic, corporate, and political power extend beyond the bounds of authority. Should judicial deference become a feature in cases concerning

97. Ronan Cormacain, 'Unaccountability – The Disease within Government' (*UK Constitutional Law Association*, 17 May 2021) https://ukconstitutionallaw.org/2021/05/17/ronan-cormacain-unaccountability-the-disease-within-government/
98. See, in particular, *Manchester Airport v SS Transport* [2021] EWHC 2031 (Admin); *The Motherhood Plan v HM Treasury* [2021] EWHC 309 (Admin); *Khalid & Ors v SS Health and Social Care* [2021] EWHC 2156.
99. For further insights, see Richard Mackenzie-Gray Scott, *Judicial Scrutiny of COVID-19 Regulations in the UK: Addressing Deference to Data-Driven Decision-Making in Human Rights Cases* (Bingham Centre for the Rule of Law, 2021).
100. ibid.
101. Tom Hickman and Joe Tomlinson, 'Judicial Review during the Covid-19 Pandemic' (2023) 27 *Edinburgh Law Review* 252.
102. Mackenzie-Gray Scott, *Judicial Scrutiny of COVID-19 Regulations in the UK* (n 99, 13).
103. Michael Veale and Irina Brass, 'Administration by Algorithm? Public Management Meets Public Sector Machine Learning' in Karen Yeung and Martin Lodge (eds.), *Algorithmic Regulation* (Oxford University Press, 2019), 121-149.
104. *R (Bridges) v Chief Constable of South Wales Police* [2020] EWCA Civ 1058.
105. Rebecca Williams, 'Rethinking Administrative Law for Algorithmic Decision-Making' (2022) 42 *Oxford Journal of Legal Studies* 468, at 478.
106. *Alan Bates and Others v Post Office Limited (No. 6) "Horizon Issues"* [2019] EWHC 3408 (QB).
107. Richard Mackenzie-Gray Scott, 'Rebalancing upstream and downstream scrutiny of government during national emergencies' (*UK Constitutional Law Association*, 21 September 2021) https://ukconstitutionallaw.org/2021/09/21/richard-mackenzie-gray-scott-rebalancing-upstream-and-downstream-scrutiny-of-government-during-national-emergencies/

government applications of ADM, along with Parliament being sidelined in the scrutiny of these systems, UK society remains at risk of any unlawful software being part and parcel of public administration, where that usage goes unnoticed, or is accepted in ignorance.

What COVID-19 further exposed is that, in situations calling for an active and effective government to protect public interests, there can be limited opportunities for public scrutiny of the decision-making and conduct of government.[108] A number of cracks in the UK constitutional framework were highlighted. This was especially so with respect to the software that government chose to deploy during this national emergency, some of which was in tension or conflict with data protection, equality, and human rights laws.[109] The use of these technologies (for example, the international travel traffic light system, contact tracing apps, venue check-in apps, vaccine passports, and vaccine allocation algorithms) attracted criticism when viewed against the yardsticks of due process, adequate public scrutiny, and respecting the rule of law and human rights.[110] As noted elsewhere:

> [G]iven the government's heavy reliance on secondary legislation during the pandemic and the lack of opportunity given, and sometimes perhaps taken, by Parliament and the courts to impose accountability and scrutiny [...] We became aware [...] that governance by app – 'code as law' – is a relatively unaddressed problem in terms of rule of law and human rights scrutiny in the UK. This issue has come to the fore in COVID-19, where apps such as vaccine passports have the potential to substantially affect rights and freedoms yet are subject to little or no public or legislative scrutiny in their development phases.[111]

The robust governance of public affairs includes equilibrium between the executive, the legislature, and the courts, which guards against the exceptional becoming the normal. A risk with courts not scrutinising the details behind government ADM systems is that government is provided considerable scope for abusing its power. This scope is particularly concerning when nothing or little is known about the computer systems themselves, and that the technology and unknown accompanying policy can become sticky, remaining in use even if it is not helpful, necessary, or lawful. Technological approaches to governing can be deployed in order to give the *appearance* that government has a handle on sensitive situations in the public interest, without actually addressing the issue at hand,[112] and perhaps even worsening it,[113] as may have been the case with the adoption of vaccine passports.[114] What government bases its decisions on is crucial for the public to understand and trust its policies. There exists a demand that reasons be provided for conduct that is in the public interest.[115] Adequate scrutiny of government ADM systems is part of striving for democracy in an era of digitization, and ensuring that powers connected to serving the public are not ceded to algorithmic and corporate power. Surrendering to automated government risks leading to further and prolonged encroachment on human rights and democracy.

A further issue connected to judicial deference in cases involving government ADM systems is judiciaries lacking knowledge about the technological components of software and its datasets. This epistemic shortfall

108. Daniella Lock, Fiona de Londras and Pablo Grez Hidalgo, 'Delegated legislation in the pandemic: further limits of a constitutional bargain revealed' (2023) 43 *Legal Studies* 695; Pablo Grez Hidalgo, Fiona de Londras and Daniella Lock, 'Parliament, the Pandemic, and Constitutional Principle in the United Kingdom' (2022) 85 *Modern Law Review* 1463.

109. Emma Irving and Lilian Edwards, *Good Governance and Rule of Law Principles for Data-Driven Technologies in Public Health Emergencies* (Bingham Centre for the Rule of Law, 2021).

110. ibid.

111. ibid. p. 4.

112. Stefania Milan, Michael Veale, Linnet Taylor and Seda Gurses, 'Promises Made to Be Broken: Performance and Performativity in Digital Vaccine and Immunity Certification' (2021) 12 *European Journal of Risk Regulation* 382.

113. Richard Mackenzie-Gray Scott, *The Ethics of Relying on Vaccine Certifications for International Travel during times of Vaccine Inequity* (Bingham Centre for the Rule of Law, 2021).

114. Alexandre de Figueiredo, Heidi J. Larson and Stephen D. Reicher, 'The potential impact of vaccine passports on inclination to accept COVID-19 vaccinations in the United Kingdom: Evidence from a large cross-sectional survey and modeling study' (2021) 40 *The Lancet: EClinicalMedicine* 101.

115. Patrick Neill, 'The Duty to Give Reasons: The Openness of Decision-Making' in Christopher Forsyth and Ivan Hare (eds.), *The Golden Metwand and the Crooked Cord: Essays in Honour of Sir William Wade QC* (Oxford University Press, 1998), 161-184.

is not necessarily always or perhaps even ever going to centre on judges not having expertise regarding particular ADM systems. Many judges wield the mental dexterity and learning capacity to comprehend and meaningfully engage with a vast array of subjects beyond the law. While the complexity of certain software applications may partially explain any judicial deference afforded to government when cases involving ADM systems are brought before the courts, perhaps more significant is courts not being provided access to relevant information about how a particular system functions in the first place, including to extents where judges are misled.[116] This lack of disclosure may go unnoticed. And even if evidence is brought to the attention of a court, it may be misunderstood.

Considering problems such as bugs in software, or so-called 'hallucinations' occurring in large language models, where these 'bullshit machines' produce outputs that make no sense, or are false or inaccurate,[117] it is understandable that there are calls to update computer evidence laws.[118] Current practice is based on a 'legal presumption that computers are reliable [which] stems from an older common law principle that "mechanical instruments" should be presumed to be in working order unless proven otherwise'.[119] Commencing any judicial review in cases involving ADM systems from a standpoint that assumes the software at issue is reliable and based on robust data is a troublesome approach in an era of digitization and 'infocracy',[120] *especially because* providers of digital technologies can over-promise and under-deliver.[121]

While there are recent examples of government appearing to take the notion of public governance by ADM seriously,[122] the justiciability of software design processes should be kept sharply in focus as the design, use, and oversight of government ADM develops. System defects resulting in illegality that may go unnoticed for potentially decades is not an acceptable scenario. The Post Office/Horizon scandal is perhaps one of the most striking examples of the legal system punishing the innocent as a consequence of deference to computer software.[123] To come full circle, there is a balance to be struck when scrutinising automated government, between the political scrutiny provided by Parliament, and the legal scrutiny provided by the courts. And this balance has yet to be found. The implications for courts are that, should Parliament remain in its current position where its scrutiny of government ADM systems is absent or limited, then it remains questionable whether and why judicial deference should ever occur in cases concerning these systems. While the onus is not on courts alone to solve the deficient scrutiny problem, they have a role to play in forming part of the solution. A key matter is improving the tools judiciaries have at their disposal to properly examine government ADM systems that form part of legal claims.

3. Possible solutions to the deficient scrutiny problem

In light of the deficient scrutiny problem, the range of possible harms that may come about via ADM systems deployed by government is extensive, and in some respects unknowable. This lack of understanding about what harms may come to fruition is not only due to factors such as bugs in software and bullshit production,[124] but also because data and datasets have multiple potential uses, which government 'may seek to harness to serve purposes not anticipated or contemplated at the time of their creation'.[125] In addition to such repurposing being potentially unlawful considering purpose-specification rules under data

116. Karl Flinders, 'More evidence emerges that Post Office executive misled High Court judge' (*Computer Weekly*, 25 April 2024) https://www.computerweekly.com/news/366582214/More-evidence-emerges-that-Post-Office-executive-misled-High-Court-judge
117. Michael Townsen Hicks, James Humphries and Joe Slater, 'ChatGPT is Bullshit' (2024) 26 *Ethics & Information Technology* 38.
118. Alex Hern, 'Update law on computer evidence to avoid Horizon repeat, ministers urged' (*The Guardian*, 12 January 2024) https://www.theguardian.com/uk-news/2024/jan/12/update-law-on-computer-evidence-to-avoid-horizon-repeat-ministers-urged
119. ibid.
120. See Byung-Chul Han, *Infocracy: Digitization and the Crisis of Democracy* (Polity Press, 2022).
121. Arvind Narayanan and Sayash Kapoor, *AI Snake Oil: What Artificial Intelligence Can Do, What It Can't, and How to Tell the Difference* (Princeton University Press, 2024).
122. UK Government, *Generative AI framework for HM Government* – Created by the Central Digital and Data Office: V1.0 (2024), guidance available for download at: https://www.gov.uk/government/publications/generative-ai-framework-for-hmg
123. Harold Thimbleby, *Fix IT: See and Solve the Problems of Digital Healthcare* (Oxford University Press, 2021), 99-101.
124. Hicks, Humphries and Slater, 'ChatGPT is Bullshit' (n 117).
125. Yeung, 'The New Public Analytics as an Emerging Paradigm in Public Sector Administration' (n 46, 21).

protection law, it bears repeating that the use of government ADM systems 'may escape public notice',[126] which is particularly troubling should their deployment be unlawful. Compounding these issues connected to the unknowability of the harms arising from ADM is function creep, where one software application that was initially designed and used for a specific purpose is expanded or repurposed to form part of governing a separate aspect of public life.[127] Related questions of legal compliance depend on the details of software that government is using, or is intending to use, being brought to light. By clarifying how government ADM systems function, and what purpose their use serves, the unseen and invisible aspects of automated government can be uncovered and made visible to the public.

A key question that arises from the deficient scrutiny problem is from where the public can expect safeguards from government and corporate overreach manifested through ADM systems. Recall, code can mask underlying government policy, making it all the more crucial that systems design and management is examined or undertaken by public institutions when government uses or intends to use related software for public governance. It is therefore crucial to provide solutions to the deficient scrutiny problem. There are many important discussions to be had here. For example, prior consultation with the Information Commissioner's Office under the Data Protection Act for data processing that poses a high risk to individual rights and freedoms,[128] especially considering that government itself 'is aware that compliance [with this rule] is low';[129] or the proposal of Lord Sales to create an 'Algorithm Commission' to instruct government, Parliament, and the courts on matters concerning ADM systems.[130]

The substance below concerns different, albeit related matters. The first focuses not just on the use of impact assessments in regulating government ADM systems, but on the timing of their use and their content, meaning mandating them pre-deployment, and ensuring their content incorporates not only data protection considerations, but also those regarding equality and human rights as well. The purpose of this mechanism is thus to comprehensively inform systems design decisions, and procurement choices. The second focuses on the utilisation of algorithmic auditing as part of reinforcing the duty of candour in judicial review, so that courts are fully informed about ADM systems part of claims brought before them. Both of these regulatory mechanisms are aimed at improving public scrutiny of automated government, and thus enhancing government accountability and transparency for its decision-making connected to automation. But they are also distinct. The first is a component upstream governance and risk mitigation, which forms part of preventing future harms. The second is a component of downstream governance and remedying harm, which forms part of redressing past harms. These two mechanisms can also combine to provide awareness and understanding of, as well as checks on, the combined power of algorithms, corporations, and government, which is embodied in public sector ADM systems.

Constitutional constraints on automated government of this sort are essential to prevent abuse, including because when 'code structures displace values of public law, public law has a reason to intervene to restore these public values'.[131] It is 'precisely because code lacks the checks and balances of legality but nevertheless has immense power to shape behaviour that it is necessary to instantiate some form of "constitutional" protection in the materiality of its design'.[132] Human rights, democracy, and the rule of law are all endangered by government ADM, stressing the significance of subjecting systems design and management to public scrutiny. Related regulatory mechanisms are thus needed to help ensure 'the state' 'remains safely corralled within its boundaries'.[133] While the proposed solutions to the deficient scrutiny problem set out below are not a panacea to the currently known and possible future harms of automated government, they have potential. Particularly as a means of overseeing, and providing checks on, developments in government

126. ibid.
127. L. Edwards, 'Part 1: The Great Vaccination Passports Debate: "ID Cards on Steroids" or the Rational Way Forward?' (*British Institute of International and Comparative Law*, 1 April 2021) https://www.biicl.org/blog/22/part-1-the-great-vaccination-passports-debate-id-cards-on-steroids-or-the-rational-way-forward
128. Data Protection Act 2018, s. 65.
129. UK Government, Department for Digital, Culture, Media & Sport, Consultation Outcome – *Data: a new direction - government response to consultation* (23 June 2022) https://www.gov.uk/government/consultations/data-a-new-direction/outcome/data-a-new-direction-government-response-to-consultation
130. Philip Sales, 'Algorithms, Artificial Intelligence and the Law' (2020) 25 *Judicial Review* 46.
131. Lessig, 'The Law of the Horse' (n 14, 530).
132. Diver, 'Digisprudence' (n 16, 336).
133. Kate O'Regan, 'Public Law, the Digital World and Human Rights: Challenges Ahead' (2020) 25 *Judicial Review* 39, at 45.

and in industry indicating that democratic governance is at risk of being 'replaced by *data-driven systems management*, with decisions taken on the basis of big data and artificial intelligence',[134] which produce harm and illegality while the public remain none the wiser.

A. Mandating pre-deployment impact assessments

It is apparent that more focus needs to fall on the production of software used by government. Attention falling solely on the operation of government ADM systems and the known harms they contribute to or cause leaves a sizeable segment of the regulatory landscape unaddressed. Laurence Diver points out that:

> If lawyers are properly to grapple with the realities of how code regulates, we must embrace an analytical shift that takes into account not just its effects but also the practical realities of its production. This means we ought to consider the processes and tools that make up the 'legislature' where code is 'enacted', including, for example, software development methodologies and the integrated development environments (IDEs) where the text of code is actually written. They are the point at which 'constitutional' protections can be built into the very fabric of the code.[135]

Embedding guarantees in systems design that account for data protection, equality, and human rights laws has the potential to prevent harms connected to ADM from occurring. But in order to inform such technical standard-setting, mechanisms are needed to gather and scrutinise information about ADM systems, including in order to provide clarity regarding how precisely norms from applicable bodies of law can best be incorporated into these systems. One such mechanism is impact assessments, which can 'help providers and deployers of ADM see the true value of the particular system under scrutiny',[136] while guiding government choices about whether and what ADM system should be used in a particular setting, assisting courts and regulatory bodies in assessing 'the apportionment of responsibility for when these systems malfunction', and allowing the public to grasp 'what occurs during the use of a particular ADM system, what steps were taken for the purposes of mitigating possible harms, and what are reasonable expectations under the circumstances of its deployment'.[137] There are many types of impact assessments, which can cover environmental, economic, and social considerations in addition to those concerning data protection, equality, and human rights.[138] The limitations of this regulatory mechanism are also noteworthy, particularly regarding how much discretion private sector providers may have in implementing them,[139] and the risk of their use being little more than a box-ticking exercise for the purposes of compliance theatre. It is therefore important that regulation incentivises the execution of meaningful impact assessments of government ADM systems, particularly so as to guard against ethics washing and its related negative impacts,[140] where insincere rhetoric helps 'provide a means of feigning commitment to regulation, while ignoring the very laws capable of providing it'.[141] It is necessary to prevent the misuse of impact assessments, lest they become a meaningless regulatory mechanism and legitimise ADM systems that may be unlawful, but are perceived as lawful due to a perfunctory impact assessment being conducted.[142] These concerns speak to the significance of ensuring analyses within these assessments refer to legal frameworks beyond data protection.[143] Failing to do so will present an incomplete picture regarding whether a government ADM system is legally compliant.

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134. Han, *Infocracy* (n 120, 39) (emphasis original).
135. Diver, 'Digisprudence' (n 16, 327).
136. Abrusci and Mackenzie-Gray Scott, 'The questionable necessity of a new human right against being subject to automated decision-making' (n 10, 135).
137. ibid. at 134.
138. Emanuel Moss, Elizabeth Anne Watkins, Ranjit Singh, Madeleine Clare Elish and Jacob Metcalf, *Assembling Accountability: Algorithmic Impact Assessment for the Public Interest* (Data & Society, 2021), pp. 10-11.
139. Andrew D. Selbst, 'An Institutional View of Algorithmic Impact Assessments' (2021) 35 *Harvard Journal of Law & Technology* 117.
140. Ben Wagner, 'Ethics As An Escape From Regulation. From "Ethics-Washing" To Ethics-Shopping?' in Emre Bayamlioglu , Irina Baraliuc , Liisa Albertha Wilhelmina Janssens and Mireille Hildebrandt (eds.), *Being Profiled:Cogitas Ergo Sum – 10 Years of Profiling the European Citizen* (Amsterdam University Press, (2018), 84-89.
141. Elena Abrusci and Richard Mackenzie-Gray Scott, 'AI: we may not need a new human right to protect us from decisions by algorithms – the laws already exist' (*The Conversation*, 10 October 2023) https://theconversation.com/ai-we-may-not-need-a-new-human-right-to-protect-us-from-decisions-by-algorithms-the-laws-already-exist-214525
142. Andrew Murray, 'Automated public decision making and the need for regulation' (2024) 3 *LSE Public Policy Review*.
143. Elizabeth M. Renieris, *Beyond Data: Reclaiming Human Rights at the Dawn of the Metaverse* (MIT Press, 2023).

A growing body of work is being undertaken in this area of ADM systems design, management, and oversight, particularly with respect to incorporating human rights considerations into software engineering practice.[144] Impact assessments serve to inform and shape this practice. The scrutiny they provide can help address system-wide problems of software applications, meaning adopting their findings can reduce or eliminate the risks associated with deploying a particular ADM system. In turn, limiting or preventing infringements of legal rules becomes possible should government use that system. Upholding compatibility with data protection, equality, and human rights laws through such oversight, which feeds into shaping system guarantees and management, forms part of a procedural architecture that protects against harms occurring in the future when ADM is deployed by government. By mandating impact assessments that account for the public sector equality duty,[145] data protection law, and the human rights applicable to the domain of a specific ADM system's deployment, there exists an opportunity to take the burden off courts. Safeguarding legal compliance upstream (pre-deployment) reduces the likelihood of downstream (post-deployment) illegality, and courts being called upon to remedy it.

Utilising impact assessments in this way also arguably satisfies an element of exercising due diligence: adopting precautionary measures.[146] From this standpoint, it is in the interest of government to undertake thorough impact assessments. Doing so not only reduces the likelihood of a particular ADM system resulting in unlawful harms upon deployment, but also helps ensure they are defensible against legal claims, while demonstrating compliance with applicable laws.[147] Government would be able to show that efforts were made that attempted to avert harm, which when considering legal obligations *of conduct* (as opposed to those *of result*),[148] would mean even if harm ultimately occurred, the precautions taken by government via conducting an impact assessment and implementing its findings, could be sufficient to show that it should not bear responsibility for that harm.

It is crucial that such efforts are undertaken *before* government deploys ADM systems, including so as to save on costs relating to altering, substituting, or disbanding faulty, poor quality, and/or unlawful systems from private sector providers. What body should undertake this task of administering, overseeing, and reviewing the findings of impact assessments has yet to be settled. It could form part of the role of any new 'AI Commission', or fall within the responsibilities of Parliament under one of its committees, or the Digital Regulation Cooperation Forum. While further work may gauge what public body (or bodies) should implement mandatory impact assessments of government ADM systems, the point being made here is that such an institutional process should be legally mandated pre-deployment, so that there is in place an accountable and practical method to determine whether ADM systems are acceptable for use by government when accounting for data protection, equality, and human rights laws. This procedure would mean that should an assessment reveal inadequacies against these legal yardsticks, government would be prohibited from deploying the applicable ADM system. Impact assessments inform and help indentify whether a basic minimum threshold has been met, below which an ADM system cannot fall if it is going to form part of public governance.

144. See, for example, Alessandro Mantelero, *Beyond Data: Human Rights, Ethical and Social Impact Assessment in AI* (Springer, 2022); Diver, 'Digisprudence' (n 16); Karen Yeung, Andrew Howes and Ganna Pogrebna, 'AI Governance by Human Rights–Centered Design, Deliberation, and Oversight: An End to Ethics Washing' in Markus D. Dubber, Frank Pasquale and Sunit Das (eds.), *The Oxford Handbook of Ethics of AI* (Oxford University Press, 2020), 76-106; Paul Nemitz, 'Constitutional democracy and technology in the age of artificial intelligence' (2018) 376 *Philosophical Transactions of the Royal Society* 1.

145. Equality Act 2010, s. 149.

146. Richard Mackenzie-Gray Scott, *State Responsibility for Non-State Actors: Past, Present and Prospects for the Future* (Bloomsbury, 2022), 199-203; Richard Mackenzie-Gray Scott, 'Due diligence as a secondary rule of general international law' (2021) 34 *Leiden Journal of International Law* 343, at 364-367; Antonio Coco and Talita Dias, '"Cyber Due Diligence": A Patchwork of Protective Obligations in International Law' (2021) 32 *European Journal of International Law* 771, at 775-778 and 803-805.

147. Robin Allen and Dee Masters, 'Government Automated-Decision Making' (*AI Law*, 30 March 2020) https://ai-lawhub.com/2020/03/30/government-automated-decision-making/

148. On the difference between 'of conduct' and 'of result' obligations, see Pierre-Marie Dupuy, 'Reviewing the Difficulties of Codification: On Ago's Classification of Obligations of Means and Obligations of Result in Relation to State Responsibility' (1999) 10 *European Journal of International Law* 371, at 376-378.

The particular criteria, form, and process these assessments should follow have yet to be settled, with hundreds of proposals currently in circulation,[149] raising numerous questions that cannot be settled in this space, ranging from whether such assessments should be limited to ADM systems that are considered to fall within a particular risk category,[150] to the composition of the teams conducting this work, and whether members of the public should be permitted to participate. Methodologies adopted in other jurisdictions differ, and can be used to inform regulatory developments on this matter. For example, the questionnaire model in Canada,[151] the mapping of risks to human rights model in the Netherlands,[152] or the Council of Europe four-part model that comprises indentifying and understanding what risks a system poses, incorporating insights from stakeholder engagement, proposing steps considered necessary to undertake an adequate risk and impact assessment, and developing and applying a mitigation plan that includes access to remedies and multiple review cycles of the system pre- and post-deployment.[153] These approaches essentially concern setting and upholding stringency requirements that determine whether to permit deployment of a particular ADM system, which should then be periodically referred to (and, if necessary, updated) post-deployment, so as to decide whether that system remains in use.

The overall usage of impact assessments not only has the potential to enhance public scrutiny of automated government, but, crucially, it also implements the laws already applicable to ADM in a way that takes the onus off individuals. Individuals have been placed in positions where they take on a 'default responsibility' to establish the occurrence of system errors, and then have to persuade public officials to correct them, meaning government off-loads 'the financial, emotional and health consequences onto affected individuals, typically without explanation, resulting in the systematic dehumanisation and stigmatisation of individuals'.[154] It is not sufficient that the results of ADM impact assessments be shared publicly, even though this may assist *some* members of the public in understanding what software will or will not be used in governing the UK, and, if the former, what its use entails. This is because although legal rights applicable to ADM can be used to help regulate it,[155] the extent to which they do so *effectively* depends on the individual and their circumstances. Current implementation and enforcement of laws concerning rights applicable to ADM involves the responsibilization of individuals to protect themselves, instead of more powerful actors, particularly corporations and government, enacting measures that protect rights on behalf of individuals.[156] These difficulties are made more problematic when considering the many different understandings of what constitutes 'ADM', which influence whether and what legal protections individuals can invoke.[157]

Impact assessments place the burden on both government and industry to demonstrate compliance with laws applicable to specific ADM systems, which is especially significant when considering ambiguities in these laws (for example, 'solely' automated processing[158]), because government and industry have considerably more knowledge and resources to demonstrate that a specific ADM system is lawful, compared to an individual having to demonstrate that it is unlawful. Reversing burdens of proof and enabling procedural

149. Dennis Vetter, Julia Amann, Frédérick Bruneault, Megan Coffee, Boris Düdder, Alessio Gallucci, Thomas Krendl Gilbert, Thilo Hagendorff, Irmhild van Halem, Eleanore Hickman, Elisabeth Hildt, Sune Holm, Georgios Kararigas, Pedro Kringen, Vince I. Madai, Emilie Wiinblad Mathez, Jesmin Jahan Tithi, Magnus Westerlund, Renee Wurth, Roberto V. Zicari and Z-Inspection® initiative (2022), 'Lessons Learned from Assessing Trustworthy AI in Practice' (2023) 2 *Digital Society* 35.

150. As under Regulation (EU) 2024/1689 (EU AI Act), Art. 27; See also Asress Adimi Gikay, 'Risks, innovation, and adaptability in the UK's incrementalism versus the European Union's comprehensive artificial intelligence regulation' (2024) 32 *International Journal of Law & Information Technology* 1-25.

151. Government of Canada, Treasury Board of Canada Secretariat, *Algorithmic Impact Assessment tool* (August 2019) https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html

152. Janneke Gerards, Mirko Tobias Schäfer, Arthur Vankan and Iris Muis, Government of the Netherlands, Ministry of the Interior and Kingdom Relations, *Fundamental Rights and Algorithm Impact Assessment* (March 2022) https://www.government.nl/documents/reports/2022/03/31/impact-assessment-fundamental-rights-and-algorithms

153. Council of Europe, Committee on Artificial Intelligence, *HUDERIA Methodology* (28 November 2024).

154. Yeung, 'The New Public Analytics as an Emerging Paradigm in Public Sector Administration' (n 46, 24).

155. Williams, 'Rethinking Administrative Law for Algorithmic Decision-Making' (n 105, 474-476).

156. Daniel J. Solove, 'The Limitations of Privacy Rights' (2023) 98 *Notre Dame Law Review* 975; Abrusci and Mackenzie-Gray Scott, 'The questionable necessity of a new human right against being subject to automated decision-making' (n 10, 123-124).

157. Palmiotto, 'When Is a Decision Automated?' (n 11).

158. Data Protection Act 2018, s. 14.

framework shifts of this sort have the potential to affect change in how the law applicable to ADM is applied so as to better protect individuals, instead of leaving individuals to navigate all the regulatory complexities themselves. Focusing on the production of how well government ADM systems are designed when referring to legal criteria also provides avenues for contestability in situations where approved software results in harm. Impact assessments can thus also form part of evidence in claims brought before the courts.

B. Algorithmic auditing and reinforcing the duty of candour in judicial review

Public scrutiny of automated government is, in part, aimed at ensuring ADM systems are legally compliant before their deployment, so as to prevent harm and, relatedly, relieve regulatory pressures on courts to review allegations of illegality. But this scrutiny should not be limited to upstream forms. Mandating impact assessments during design or before procurement of ADM systems cannot be relied upon alone to address the deficient scrutiny problem. This mechanism, even if combined with others that are implemented pre-deployment, is not some sort of catch-all fix. Downstream regulatory measures are important as well. They serve as a governance supplement. Courts in particular are an essential part of providing public scrutiny of ADM, even if that scrutiny is limited to a case-by-case basis. A key factor is judiciaries being sufficiently informed about how particular software applications function, and how they are managed when in operation. The discussion here thus focuses on combining two separate regulatory practices that have the potential to assist judicial review of automated government when applied together: algorithmic auditing and the duty of candour. While this approach may be considered unconventional, previous research helps underscore that 'traditional approach[es] to public law may be less effective' at appropriately engaging with government ADM during judicial review.[159] The implications of automated government require flexible and contemporary interpretations and implementation of applicable laws and regulatory procedures.[160]

The auditing of algorithms is a procedure carried out to determine how ADM systems work.[161] This mechanism is not limited to examining the code and datasets of software, which can be conducted pre-deployment.[162] It goes beyond scrutinising system inputs and outputs, taking into account contextual information concerning the particular ADM system as a whole when in use, with the aim of more fully understanding each decision made by it.[163] The process 'encompasses technical and non-technical measures that range from assessing organisational algorithmic governance policies to the specific data and models being used',[164] and can be carried out by a variety of actors across the public-private continuum. The purposes of algorithmic auditing are wide-ranging, such as to provide assurances to ADM system deployers, establish user trust in a specific application, or assess regulatory compliance.[165] While algorithmic auditing is not an extensive practice at present, and brings implementation challenges and limitations that require careful consideration,[166] it may be that the demand for this regulatory mechanism, and its use, grows, including potentially as a means to help inform courts in claims regarding ADM systems.

The significance of this approach links to courts being suited to determine matters of legal compliance regarding ADM. Although regulators and government can certainly undertake these audits, reviewing their findings from a perspective that considers questions of law requires the involvement of legal experts. On one view, 'it is not for an administrative agency itself to decide on the intrinsic legality of ADM systems; this is primarily a role for the courts'.[167] While identifying legal risks beyond those generally applicable to ADM

159. Christopher Knight, 'Automated Decision-Making and Judicial Review' (2020) 25 *Judicial Review* 21, at 27.
160. Yee-Fui Ng and Maria O'Sullivan, 'Deliberation and automation - when is a decision a "decision"?' (2019) 26 *Australian Journal of Administrative Law* 21.
161. Digital Regulation Cooperation Forum, *Auditing Algorithms* (n 33). https://assets.publishing.service.gov.uk/media/626910658fa8f523c1bc666c/DRCF_Algorithmic_audit.pdf
162. Benjamin Cartwright, 'Regulating the Robot: A Toolkit for Public Sector Automated Decision-Making' (2021) 10 *Oxford University Undergraduate Law Journal* 23, at 30.
163. ibid. at 48.
164. Digital Regulation Cooperation Forum, *Auditing Algorithms* (n 33, 5).
165. ibid, p. 2.
166. See Sasha Costanza-Chock, Inioluwa Deborah Raji and Joy Buolamwini, 'Who Audits the Auditors? Recommendations from a field scan of the algorithmic auditing ecosystem' (2022) *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency*, Association for Computing Machinery, New York, NY, USA, 1571-1583.
167. Cartwright, 'Regulating the Robot' (n 162, 51).

systems requires a degree of 'legal literacy' that software engineers may lack,[168] judges and their judicial assistants make this task of identifying specific types of illegality easier, precisely because of their legal knowledge. In coupling algorithmic audits with judicial scrutiny, there thus exists an opportunity to reinforce the duty of candour.

This duty concerns the openness of government regarding its decision-making. It requires the disclosure of 'relevant facts and information needed for the court to fairly determine an issue before it', and is not only applicable when permission for judicial review has been granted.[169] Its application and compliance monitoring by the courts appears to be wide-ranging and adaptable.[170] Applying it in a way connected to the findings of algorithmic audits as part of judicial review consists of expert evidence being commissioned to aid judges in assessing audits of ADM systems that form part of legal claims. The courts have clarified that there is a 'very high duty on central government to assist the court with full and accurate explanations of all the facts relevant to the issue that the court must decide'.[171] The duty of candour also creates an obligation to share 'materials which are reasonably required for the court to arrive at an accurate decision'.[172] Algorithmic audits can provide such information, revealing details about specific ADM systems and the data underpinning them. Considering government itself recommended that such reviews take place periodically,[173] algorithmic audits can provide courts with up-to-date information about systems design, operation, and management. And including technical experts of applicable software during judicial review allows insights obtained from audits to be accurately interpreted, and helps avoid judges and judicial assistants misunderstanding how particular systems work. The *Bridges* and *Bates* cases show the potential of combining technical and legal knowledge that speaks directly to the details of ADM systems, so as to accurately determine their legality.[174]

Although there appears to be no general legal requirement to inspect algorithms used in government ADM systems, courts can do so.[175] There is a balance to be struck here that, on the one hand, is not dismissive of the significance with respect to requesting any proprietary or sensitive information be disclosed, and, on the other hand, appreciates that the more complex a government ADM system becomes, the higher the need there is for rigorous public scrutiny of it.[176] Considering past examples of public authorities being prepared to reveal algorithms and connected datasets that they use,[177] government cooperation with the courts to make such disclosures are arguably reasonable in light of the duty of candour, especially in cases where the system at issue poses a high risk to individual rights.[178] Executive and judicial interaction of this sort would speak to a more collaborative separation of powers in the regulation of government ADM,[179] which is of added significance given Parliament's lack of involvement in scrutinising these systems at present.

Rectifying system deficiencies by relying on judicial review alone is nonetheless restricted due to public scrutiny of this sort being limited to individual claims instead of system-wide concerns, especially those extending beyond legal considerations. There are also unresolved questions regarding a range of matters that may arise in future cases, such as the precise scope of the duty of candour,[180] being mindful of cases

168. ibid. at 45.
169. Elizabeth A. O'Loughlin, Gabriel Tan and Cassandra Somers-Joce: 'The Duty of Candour in Judicial Review: The Case of the Lost Policy' (*UK Constitutional Law Association*, 7 December 2022) https://ukconstitutionallaw.org/2022/12/07/elizabeth-a-oloughlin-gabriel-tan-and-cassandra-somers-joce-the-duty-of-candour-in-judicial-review-the-case-of-the-lost-policy/
170. For a contemporary overview see Cassandra Somers-Joce and Elizabeth A. O'Loughlin, 'Recent Judicial Perspectives on the Duty of Candour' (2023) 28 *Judicial Review* 155.
171. *R (Quark Fishing Ltd) v Secretary of State for Foreign and Commonwealth Affairs (No. 1)* [2002] EWCA Civ 1409, para. 50.
172. *Graham v Police Service Commission* [2011] UKPC 46, para. 18.
173. UK Government, *Ethics, Transparency and Accountability Framework for Automated Decision-Making* (2021) https://www.gov.uk/government/publications/ethics-transparency-and-accountability-framework-for-automated-decision-making
174. [2020] EWCA Civ 1058; [2019] EWHC 3408 (QB).
175. Yeung, Howes and Pogrebna, 'AI Governance by Human Rights–Centered Design, Deliberation, and Oversight' (n 144, 76-106).
176. Andrew Tutt, 'An FDA for Algorithms' (2017) 69 *Administrative Law Review* 83, at 107.
177. Matt Burgess, 'UK police are using AI to inform custodial decisions—but it could be discriminating against the poor' (Wired, 1 March 2018) https://www.wired.com/story/police-ai-uk-durham-hart-checkpoint-algorithm-edit/
178. Marion Oswald, Jamie Grace, Sheena Urwin and Geoffrey C. Barnes, 'Algorithmic risk assessment policing models: lessons from the Durham HART model and "Experimental" proportionality' (2018) 27 *Information & Communications Technology Law* 223.
179. See generally Aileen Kavanagh, *The Collaborative Constitution* (Cambridge University Press, 2023).
180. Independent Review of Administrative Law (Crown copyright, 2021), pp. 102 and 111 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/970797/IRAL-report.pdf

where it might not be helpful to invoke it,[181] or whether government explanations of ADM systems can satisfy reason-giving requirements.[182] Another potential hurdle to meaningful judicial review also includes cases where government is unwilling to disclose how a particular ADM system works, which it may attempt to justify on grounds such as safeguarding national security, maintaining the integrity of ongoing criminal investigations, or preventing potential violators of rules overseen and enforced by ADM being provided information that could allow such individuals to 'game the system'.[183] That said, incorporating algorithmic auditing as part of reinforcing the duty of candour in judicial review has the potential to ensure that government ADM systems are subject to meaningful public scrutiny, by providing a concrete 'evidential trial' for securing accountability over such software.[184] This process goes beyond box-ticking, and:

> need not be, and indeed should not be, wholly antithetical to the interests of public authorities. The aim of judicial review as a 'judge over your shoulder' is intended to provide positive *ex ante* guidance, as well as challenging conclusions *ex post*. Enhancing the lawfulness of decisions made by public authorities can have the result of increasing public confidence and trust in them.[185]

Judicial review of automated government does not just function as a downstream regulatory mechanism, only capable of redressing past harm. It also shares a symbiotic relationship with upstream forms of governance. One that is needed during a period where all stages of the automated government practice, from systems design to usage, currently lacks adequate public scrutiny.

4. Conclusion

There is much to be concerned about when reflecting on the deficient scrutiny problem of automated government. The timeline connected to ADM systems can begin with no institutional control over their design or procurement, progress with no oversight from Parliament, and end with courts being deferential to government in cases involving its use of ADM in manner whereby related data, code, and accompanying software are not examined. Government ADM that avoids this legal and political scrutiny could be unlawful, and the public would never know. Even in the absence of judicial deference, courts alone cannot address the deficient scrutiny problem on a systemic level, but mostly provide redress connected to it on a case-by-case basis, while perhaps informing regulatory guidance. Government power for commissioning and deploying ADM systems that shape public administration appears to be considerably unconstrained at present, providing a wide scope for abuse. The implications of this situation connect to a lopsided separation of powers rendering government unaccountable for its use of society-altering software. The only evident exception is cases where knowledge of harm and illegality becomes apparent, potentially years later, and then leads to some form of accountability, potentially decades later. If government cares about generating public trust in its decision-making, it is in the interest of government to ensure that its ADM systems can be appropriately scrutinised by public bodies beyond government itself, including with respect to questions about why any technical response and accompanying software are chosen over governance approaches that do not rely on ADM. The UK constitutional framework appears to be vulnerable at present to the pitfalls of automated government, particularly in cases that are not challenged in the judiciary, and especially due to the extent of the apparent leeway government has when engaging the private sector

181. Tom Hickman, 'Candour Inside-Out: Disclosure in Judicial Review' (*UK Constitutional Law Association*, 16 October 2023) https://ukconstitutionallaw.org/2023/10/16/tom-hickman-kc-candour-inside-out-disclosure-in-judicial-review/

182. Jennifer Cobbe, 'Administrative Law and the Machines of Government: Judicial Review of Automated Public-Sector Decision-Making' (2019) 39 *Legal Studies* 636, at 648-649; Will Bateman, 'Algorithmic Decision-Making and Legality: Public Law Dimensions' (2020) 94 *Australian Law Journal* 520, at 527; Lyria Bennett Moses and Edward Santow, 'Accountability in the Age of Artificial Intelligence: A Right to Reasons' (2020) 94 *Australian Law Journal* 829, at 831-832.

183. See Philip Alston, Brief by the United Nations Special Rapporteur on extreme poverty and human rights as *Amicus Curiae* in the case of NJCMc.s./De Staat der Nederlanden (SyRI) before the District Court of The Hague (case number: C/09/550982/HA ZA 18/388) (United Nations, Office of the High Commissioner for Human Rights, 26 September 2019), paras. 25-27.

184. Joanna J. Bryson and Andreas Theodorou, 'How Society Can Maintain Human-Centric Artificial Intelligence' in Marja Toivonen and Eveliina Saari (eds.), *Human-Centered Digitalization and Services* (Springer, 2019), 305-323.

185. Williams, 'Rethinking Administrative Law for Algorithmic Decision-Making' (n 105, 480).

regarding the design, development, use, and management of ADM systems. Those affected by ADM have so far lacked opportunities to participate in democratic processes about whether and how government should use ADM systems in specific domains. Considering the evident harms that ADM systems have resulted in already, whether because of faulty feedback loops, oversimplified risk scoring, inaccurate inferences, or wrongful targeting of specific social groups, preventing future harm and illegality is a priority. While pre-deployment impact assessments and algorithmic auditing forming part of judicial review are not the only solutions to the deficient scrutiny problem, these regulatory mechanisms at least help determine whether government ADM systems are lawful. Accordingly, they should be appropriately financed and resourced, while remaining cocooned from the influence of the largest multinational technology conglomerates that skew legislation and regulation in their favour to serve corporate interests. It is essential to ensure that government complies with its legal obligations. ADM systems make this task harder because of the unseen data, code, and software design underpinning them. The deficient scrutiny problem indicates that government can provide the society it governs with precisely what it does not know. Through this opacity and inexplicability, automated government threatens to further transform the public into a docile and dispersed body of individuals that ultimately becomes incapable of shepherding the hydra of algorithmic, corporate, and political power, who are instead shepherded into a future where they remain unaware of the extent to which they are being governed in illegality. A digital dystopia could creep up so subtly that ignorance of its very existence provides for its preservation. Uncovering antecedents suggestive of any such future is thus essential. Public scrutiny of automated government has never been more important.

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