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Human Rights in a Use Case World

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Human Rights in a Use Case World

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Abstract

Digital engineers diagram ‘use cases’ to design software, based on practical needs of the quotidian product user rather than big normative claims. Human rights lawyers work in the reverse direction, starting from principles of universal application then applying these to hard cases. These two modes of thinking and practice have existed separately. Digital automation of government services using algorithms and AI is bringing them abruptly together and into mutual learning. This paper examines controversies and court decisions over digital welfare state programmes in Australia (Robodebt), the Netherlands (Syri), and the United Kingdom (Universal Credit), highlighted by Philip Alston as UN Special Rapporteur. The normative practice of human rights must grapple with data concentration and computerized decisions wherever power is exercised. The paper proposes ‘thinking infrastructurally’ as a path to bring human rights thinking into the fast-escaping public–private practices of algorithmic government and machine learning. This paper was written as a chapter for *The Struggle for Human Rights: Essays in Honour of Philip Alston* (edited by Nehal Bhuta, Florian Hoffmann, Sarah Knuckey, Frédéric Mégret, and Margaret Satterthwaite, Oxford University Press.)

Introduction

The new institutions currently being set up by the UK government in the area of big data and AI focus heavily on ethics. While their establishment is certainly a positive development, we should not lose sight of the limits of an ethics frame. Ethical concepts such as fairness are without agreed upon definitions, unlike human rights which are law. Government use of automation, with its potential to severely restrict the rights of individuals, needs to be bound by the rule of law and not just an ethical code.¹

The languages and practices of international human rights law and those of digital engineering/data science, having evolved largely in isolation from one another in earlier decades, are now spoken in overlapping settings and sporadically interwoven. These co-locutions notwithstanding, a wide gulf can be expected to subsist in core concepts and in ways of thinking and doing. Nonetheless, for the future they will share a common space, at least in places where human rights persists as some sort of lingua franca and deep commitment. This chapter reflects on that cohabitation. Whereas terms such as ‘ethics’, ‘fairness’, and ‘community guidelines’ have been offered from the tech-sector as a traveller’s Esperanto, these do not reach the fundamental differences in modes of thought. This chapter struggles with the near-ubiquitous digital tech-design notion of the ‘use case’ as an illuminating representative of the myriad puzzles in this enterprise for the public lawyer, and in particular for the international human rights lawyer. The chapter takes the digital-algorithmic welfare state—for which the software and systems have been designed and built with innumerable use cases—as a setting where human rights and the use case meet, albeit often with limited real

¹ OHCHR, ‘Statement on Visit to the United Kingdom, by Professor Philip Alston, United Nations Special Rapporteur on Extreme Poverty and Human Rights’ (16 November 2018) 11 <<https://perma.cc/7CKJ-92FB>>.

convergence. Toward the end of the chapter it will be suggested that framing this meeting ground as infrastructure might be one unexpectedly promising means of bringing them into deeper commonality.

Human Rights Law

The UN Special Rapporteur on Human Rights and Extreme Poverty marching out into the field to do battle with the algorithmic administration of the UK welfare state's universal credit system has become a symbolic moment for the international human rights law establishment in its grappling with digital government services. This is not because the important deeds that were done that day were unusually heroic—Philip Alston, who earlier in his career had been UN Special Rapporteur on Summary and Arbitrary Executions, had worked on (and in) more horrific and dangerous settings than this official visit to the UK entailed. Nor was it quite the shot that was heard around the world—a rippling upheaval with momentous consequences reverberating for decades. But it did herald a re-grouping and reform for the conventional human rights forces, with new strategy and new tactical training in apposite use of the standard-issue weapons, in the face of the digitalization and automation of massively important public-facing government services.²

Philip Alston himself pointed to some of the reasons this engagement had been slow in coming:

Despite the enormous stakes involved not just for millions of individuals but for societies as a whole, these issues have, with a few notable exceptions, garnered remarkably little attention. The mainstream tech community has been guided by governmental pre-occupations with efficiency, budget-savings, and fraud detection. The welfare community has tended to see the technological dimensions as separate from the policy developments, rather than as being integrally linked. And those in the human rights community concerned with technology have understandably been focused on concerns such as the surveillance state, the

² The landmark report on this early phase was UNCHR 'Report of the Special Rapporteur on Extreme Poverty and Human Rights' (11 October 2019) UN Doc A/74/48037.

potentially fatal undermining of privacy, the highly discriminatory impact of many algorithms, and the consequences of the emerging regime of surveillance capitalism.³

Now, it was hoped, the arrival of the international human rights lawyers would cast upon the rushing gov-tech machine an enmeshing filigree of formal law, reaching beyond that of the specialized ‘digital rights’ movement, that might produce enough accountability and constraint to make a difference. These legal rules, techniques, institutions, and values did not have to be newly concocted—for the most part, the need was just to articulate and deploy them at speed and in the right ways.

One component is the lawyer’s fundamental commitment to legality as an essential requirement for exercises of state power toward persons.⁴ The possibilities and legal value of this were attested to by human rights-related litigation in national courts on use of automated or predictive-targeting digital technologies in governmental administration of welfare legislation. Illustrations of such legality-assertion include notable cases involving, respectively, human rights and data protection law, administrative law, and the private law of unjust enrichment and tort.

In the Netherlands, the Hague District Court ruled that the Syri big-data aggregation and analysis system (Systeem Risico Indicatie), used by the Dutch government to try to detect welfare benefits and taxes fraud, was unlawful because it breached Article 8 of the European Convention on Human Rights (right to private life).⁵ The risk model and risk indicators were not disclosed, nor did the targets know the process was occurring, hence review and scrutiny were lacking. Moreover, when triggered the Syri system took in a huge range of personal data (usually for a whole

³ Philip Alston, ‘What the “Digital Welfare State” Really Means for Human Rights’ (Open Global Rights, 8 Jan 2020) <<https://perma.cc/3TSP-3NRK>>.

⁴ Jeremy Waldron, ‘The Concept and the Rule of Law’ (2008) 43 *Georgia Law Review* 1; Jeremy Waldron, ‘The Rule of International Law’ (2006) 30 *Harvard Journal of Law & Public Policy* 15. Cf Fleur Johns, *Non-Legality in International Law: Unruly Law* (CUP 2013).

⁵ *Federation of the Dutch Trade Movement v State of the Netherlands*, Rechtbank Den Haag [District Court of the Hague], C/09/550982, HA ZA 18-388 (5 February 2020) <<https://perma.cc/RB9J-N6TJ>>.

neighborhood), raising concerns about the European law obligation of data minimization, and no single body conducted a unified overview to test whether all the data was in fact truly necessary in the specific instance. Instead, individual government units made this determination for portions of data for which they were responsible. Thus the extra scale achieved by big data was not accompanied by a comparably comprehensive assessment.

The English Court of Appeal ruled unlawful an idiosyncratic artefact of the digital system design that resulted in certain people being denied some of their universal credit payment if their employer happened to pay their monthly salary slightly earlier than scheduled due to bank closed days.⁶ The government's lawyer admitted this was arbitrary and that there was no policy reason for it.⁷ The government emphasized 'the importance to the system as a whole of having a simple way of identifying inputs required for the automated calculation of the monthly award for many millions of claimants',⁸ which the court accepted could be a legitimate aim. However, the situation suffered by the affected persons in this case was so needlessly adverse that no reasonable Secretary of State could have decided not to fix the problem. A government official responsible for the digital build testified that it was not possible for there to be an automated change to address this particular issue; the changes needed to solve this problem would 'require a new version of the calculator to be essentially rebuilt from scratch'.⁹ But the court was not prepared to accept this techno-determinism: with such a vast and complex computerized system as was deployed for universal credit, the court simply asserted that it must be capable of adjustment to deal with this egregious problem.

In Australia, the Federal government's 'Robodebt' system which automatically alleged and demanded return of overpayment to certain recipients of welfare monies by using big data to impute

⁶ *Secretary of State for Work and Pensions v Johnson & Ors* [2020] EWCA Civ 778 [2020] WLR(D) 360.

⁷ *ibid* para 47.

⁸ *ibid* para 34.

⁹ *ibid* para 78.

to them an averaged extra income they had not necessarily received, was challenged in various courts. The allegation that the government was unjustly enriched when it received back funds to which the beneficiaries should have been entitled was so clearly well-founded in law that the government conceded and refunded 373,000 people.¹⁰ The further questions whether the government owed a duty of care and had been negligent in the design and operation of the computerized scheme—which might have brought legal evaluation directly to bear on data science and digital infrastructure building practices—were postponed to a later day.

Collectively, these and many other court cases—including several in which claimants did not succeed or were victorious only due to procedural defects which governments quickly fixed—bring formality and the rule of law to appraise the algorithmic practices of welfare state reform.¹¹ This surge of litigation and judicial action, including important arguments about discrimination and about economic rights to housing or social security, was intensified by the public health epidemic that from 2020 increased pressure on welfare states and heightened governmental use of digital technologies (and redoubled the imperative of universal internet access and proficiency). Many welfare state reforms, and some COVID-19 digital responses, had been launched without full attention to legality, or compliance was waved off as too hard. In most legal systems, however, claims challenging algorithmic government only become ripe to be lodged late in the process, or *ex post*; and only very rarely would courts reverse a completed algorithmic roll-out. In complex cases courts may not find it easy to determine legal responsibility for digitally-constructed injustices. The international law-textbook emphasis on establishing legal responsibility for human rights violations

¹⁰ Luke Henriques-Gomes, 'Robodebt: Government to Refund 470,000 Unlawful Centrelink Debts Worth \$721M' *The Guardian* (London, 29 May 2020) <<https://perma.cc/7GCQ-6FWY>>.

¹¹ For US cases, see Rashida Richardson, Jason Schultz, and Vincent Southerland, 'Litigating Algorithms 2019 US Report: New Challenges to Government Use of Algorithmic Decision Systems' (AI Now Institute 2019) <<https://ainowinstitute.org/litigatingalgorithms-2019-us.pdf>>.

is challenged in relation to digital government, with many hands (perhaps located in many countries) involved in each digital design making attribution difficult, inadvertent co-production of unforeseen risks through multiple systems operating at once, and new-era problems of attributing responsibility to ‘intelligent’ machines or machine-human combinations.¹²

A second component thus has to be *ex ante* regulation. What techniques, however, would human rights-inspired regulation of gov-tech be able to use effectively? Statutory provisions experimented with requiring algorithmic and/or data protection impact assessment,¹³ a human in the loop in some governmental decision-making,¹⁴ design rules such as privacy-by-design, testing, and debiasing, and other controls on data inputs including artificial intelligence (AI) training data.¹⁵ To address demands for accountability for the use of algorithms and some curbs on automation, global administrative law-type accountability devices were often proposed and occasionally implemented: transparency, explainability/reason-giving, monitoring, and auditing of use of algorithms by governmental bodies.¹⁶ It might be doubted whether this was enough to exert real leverage from the

¹² Karen Yeung, ‘A Study of the Implications of Advanced Digital Technologies (including AI Systems) for the Concept of Responsibility Within a Human Rights Framework’ (Council of Europe 2019) MSI-AUT(2018)05 rev.

¹³ Dillon Reisman, Jason Schultz, Kate Crawford, and Meredith Whittaker, ‘Algorithmic Impact Assessments: A Practical Framework for Public Agency Accountability’ (AI Now Institute 2018) <<https://ainowinstitute.org/aiareport2018.pdf>> .

¹⁴ Katherine J Strandburg, ‘Adjudicating with Inscrutable Decision Rules’ in Marcello Pelillo and Teresa Scantamburlo (eds), *Machine We Trust: Getting Along with Artificial Intelligence* (MIT Press 2020); David Spiegelhalter, ‘Should We Trust Algorithms?’ (2020) 2 *Harvard Data Science Review* 1.

¹⁵ Some European examples are listed in Matthias Spielkamp, ‘Automating Society: Taking Stock of Automated Decision-Making in the EU’ (AlgorithmWatch and Bertelsmann Stiftung 2019) <<https://perma.cc/5PG5-LTH2>>. On the history of some European approaches from 1970: Meg Leta Jones, ‘The Right to a Human in the Loop: Political Constructions of Computer Automation and Personhood’ (2017) 47 *Social Studies of Science* 216. An influential but not implemented proposal for legislation in the US was Arthur R Miller, *The Assault on Privacy: Computers, Data Banks, and Dossiers* (University of Michigan Press 1971); a menu of proposals for India is in Amber Sinha, Elonnai Hickok, and Arindrajit Basu, ‘AI in India: A Policy Agenda’ (The Centre for Internet & Society 2018) <<https://perma.cc/FA73-KH9J>>.

¹⁶ Council of Europe Committee of Ministers, ‘Recommendation CM/Rec(2020)1 of the Committee of Ministers to Member States on the Human Rights Impacts of Algorithmic Systems’ (Adopted by

standpoint of fundamental human rights in the basic conflicts about resources, welfare, and poverty which underlie these struggles about welfare state ‘reform’. It was moreover unsurprising, if mildly ironic, that this panoply of measures for determining or nudging choices made by coders through regulation *of* algorithms, bears no little family resemblance to the various means through which regulation *by* algorithms is intended to shape behavior.¹⁷ The conventional human rights agenda thus remained unfulfilled by the designs in this important but choppy regulatory grab-bag.

The staging ground for the judicial and statute-making encounters just described—the ancient venues of law courts and legislative chambers, backed by drafters still more sure about quill pens or ink brushes than Github code repositories—gives law the upper hand. The public-lawyerly preoccupation was with the failure of the state to adopt adequate and enforceable public-regarding law, and concomitant apprehensiveness about government deferral to the widespread tendency of the tech sector (and government partners) to create its own extra-legal analogues—AI ethics commissions, vague principles of fairness, and community guidelines. These analogues were thought to be wholly insufficient, a risky deformalization that the formality and legal character of human rights law could and should overtake, and in government instances largely supplant. ‘Move fast and break things’, ‘blitzscale’, ‘fail fast’, and other Silicon Valley business mantras cannot defensibly be migrated into traditional governmental responsibility for life and livelihood or the corresponding

the Committee of Ministers on 8 April 2020 at the 1373rd meeting of the Ministers’ Deputies); Lorna McGregor, Daragh Murray, and Vivian Ng, ‘International Human Rights Law as a Framework for Algorithmic Accountability’ (2019) 68 *International & Comparative Law Quarterly* 309.

¹⁷ A typology of ways in which regulation by algorithm operates is in Karen Yeung, ‘Algorithmic Regulation: A Critical Interrogation’ (2017) 12 *Regulation & Governance* 505, 507–512. When deployed predictively to regulate or pre-empt behavior that has not (yet) occurred, based on patterns in historic data, algorithms may be designed to: focus limited intervention resources at areas of highest risk of harm; to manage risk pools in actuarial fashion and bring harm down to tolerable levels; and to use profiling, surveillance, and other risk-classifiers to target different resources to different cohorts to maximize alignment with policymakers’ preferences. See further Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (OUP 2019).

public law culture. All of this is well known. The intention of this chapter is to focus attention on a different fissure that the language and concepts of human rights law need to bridge and perhaps can bridge. In the engine rooms of digital tech construction, in coding sprints, in data warehouses, and indeed in the high levels of national civil services embracing digital techniques for government,¹⁸ an almost unrecognizably different language and way of thinking predominates. One term in frequent use there, which may be enough at least to open some basic discussion here, is the ‘use case’.

Use Cases

The ‘use case’ has its origins as a means of specifying requirements in software development, using text and often flow diagrams. In its software development reference, a use case is prepared to aid in the designing, testing, documenting, and modifying of software, and in particular to ensure all of the specific requirements are known so they can be written into the code. It begins with identification of the primary actor and all other actors. It is usually prepared from the standpoint of the primary actor to specify all the ways in which the primary actor interacts with a computer system to achieve a specified and observable goal. The primary actor may be a human, or a non-human such as another computer system. A standard example is of a human using a bankcard to withdraw cash at a bank machine. The primary actor initiates the process, the system responds and may send a prompt or request information, and a back and forth continues until the final result is reached. Other actors may also feature in the process flow. The final result (the termination outcome) may be success (the customer receiving their cash) or failure with regard to the initial goal. The basic path to success, and any alternative flows to success, are depicted. Preconditions, exceptions (which may occur during the process, such as the cash not being issued due to insufficient funds in the account),

¹⁸ Patrick Dunleavy and Mark Evans, ‘Australian Administrative Elites and the Challenges of Digital-Era Change’ (2019) 4 *Journal of Chinese Governance* 181; Michael Veale and Irina Brass, ‘Administration by Algorithm? Public Management Meets Public Sector Machine Learning’ in Yeung and Lodge (n 17).

and post-conditions (the things that will be true at the end) are all specified.¹⁹ Any single use case may well have associations with (and differentiations from) numerous other use cases. However, the aim of the single use case is to provide a complete description so that all aspects of the use are exhaustively stated and can then be built by software engineers writing code.

The ‘use case’ phrase has come to be employed by people in digital industries to refer more broadly to ways in which a user can (or might want to) use a digital system. A use case is neatly bounded, and fully separable from another use case even if they may share some of the same software library or hardware. This is an artefact of daily software design, but when abstracted, this method of separation blends with larger business methods and ultimately with public and political justifications. It is common for tech companies, and politicians, when announcing a new digital initiative to offer up a particular ‘use case’ as the reason. If artfully chosen, that use case will seem to the audience to respond to a pressing need and perhaps a demand from people who wanted (even if they did not yet know it) exactly this, and will be glad to have this facility once offered. Ideally the use case slogan will connote the socially desirable and even compelling: ‘banking the unbanked’,²⁰ ‘income smoothing’, ‘24/7 access’, ‘prevent fraud’. That the same tech platform or data collection system, once built out for this use case, will also support and make viable many other uses which would at the outset be controversial or shocking, goes strategically unmentioned, and indeed may not have been thought about by the use case developers. In cynical form, the method of justification

¹⁹ Examples of the general approach are set out at <IBM Knowledge Center available at <https://perma.cc/ER4B-U9DB>> [and](#) <Usability Gov available at <https://perma.cc/GY3T-X99K>>; Smartdraw’s website says: ‘A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform. In this context, a “system” is something being developed or operated, such as a web site. The “actors” are people or entities operating under defined roles within the system’ <<https://perma.cc/SFD4-EDUD>>.

²⁰ Rob Aitken, “‘All Data is Credit Data’: Constituting the Unbanked’ (2017) 21 Competition & Change 274.

through separating use cases resembles the political-military strategy of making gains by salami slicing, taking a little bit at a time so that the next step does not seem major or is finally normalized or inevitable.²¹ In practice, though, ordinary tech professionals in welfarist democracies don't usually understand their own purposes and beliefs in cynical terms, but if anything tend more to the genuinely hopeful and high-minded. Critiques of such liberal-tech high-mindedness postures may be cultural, but more fundamentally they are structural,²² some pointing in the United States to the decline of both blue-collar and middle-class life possibilities, the intensification of wealth concentration in tech sector business, and the production by the 'progressive clerisy' of welfare-related ideas such as universal basic income as a means to smooth over opposition to these massive displacements and gradients.²³

Many are suspicious of 'solutionist' tech mindsets, or that the aesthetic novelty and mass embrace of tech gadgets and culture have led to attention being diverted from fundamental issues of poverty, dignity, voice, and freedom. Some of these concerns are neatly articulated in Shannon Mattern's critique of 'methodolatry' in relation to digitization of 'smart cities', which parallels Alston's critique of digitization of government welfare administration:

Imagine... researchers merging massive streams of data to map all real-time traffic, weather, energy use, mobile device use, financial transactions, criminal activity, etc.—producing on their multiple flat-screens a map so rich that it becomes a territory itself. Then imagine that processed data, filtered through algorithms, feeding back into and transforming urban space or affecting human behavior in real-time (or pretty darn fast): re-syncing the streetlights or rerouting cabs to areas of high cell-phone activity. Morozov has identified the impulse behind such approaches as

²¹ Thomas Schelling, *Arms and Influence* (Yale University Press 1966) 66.

²² Julie Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (OUP 2019); Nick Couldry and Ulises A Mejiias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism* (Stanford University Press 2019); Catherine D'Ignazio and Lauren F Klein, *Data Feminism* (MIT Press 2020); Colin Koopman, *How We Became Our Data* (University of Chicago Press 2019); Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (Public Affairs 2019).

²³ Joel Kotkin, *The Coming of Neo-Feudalism: A Warning to the Global Middle Class* (Encounter Books 2020).

‘solutionism’, which recasts ‘complex social situations either as neatly defined problems with definite, computable solutions or as transparent and self-evident processes that can be easily optimized—if only the right algorithms are in place!’... Morozov says, ‘In promising almost immediate and much cheaper results’, solutionist techniques ‘undermine support for more ambitious, more intellectually stimulating, but also more demanding reform projects’. If we can simply automate the depersonalized dispensation of social welfare, there may not be sufficient motivation to get our hands dirty digging for root problems like poverty, unequal access to healthcare and information services, and socioeconomic disparity in school performance.²⁴

But with all of the warnings and apprehensions, the embrace of digital tech can be expected to profoundly change government, more so in the future than has happened thus far. How might the actual operationalization of digital welfare systems, and the refashioning of the socio-cultural and political basis on which they depend, be accomplished in ways that mesh the universal justice articulated by human rights, and the engineering of use case-practicality?

One pathway is to situate the specialized languages and techniques of digital engineering and of law—the digital ‘technology’ and the legal-administrative technology—in a wider framing in which their combined connections with the social, economic, and organizational can be foregrounded. ‘Gov-tech’, ‘tech’, ‘digital welfare state’, and ‘automated digital system’ all put the focus too much on the technology. ‘Law’ or ‘human rights law’ as framings put the focus too much on law. Potentially suggestive in-between framings include ‘platform’ and ‘ecosystem’. Especially

²⁴ Shannon Mattern, ‘Methodolatry and the Art of Measure: A New Wave of Urban Data Science’ (Places Journal, Nov 2013). Her reference is to Evgeny Morozov, *To Save Everything, Click Here: The Folly of Technological Solutionism* (Public Affairs 2013). The characterization ‘solutionism’ was originally used dismissively, sometimes to evoke dreadful dystopias, but its dialogical role can be reconstructed as being a rhetorical device to try to make space for contestation. cf UNCHR ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (11 October 2019) UN Doc A/74/48037 para 56: ‘digital services risk eliminating, almost entirely, much of the human interaction and compassion that are likely to be indispensable components in providing at least some welfare recipients with the care and assistance they need. The assumption that there is always a technological fix for any problem is highly likely to be misplaced in various aspects of a humane and effective system of social protection’.

promising, however, is ‘infrastructure’. The remainder of the chapter will explore ‘thinking infrastructurally’ as a way for human rights and use cases thinking to come together.

Infrastructure

‘Infrastructure’ is a concept that has physical referents—nearly all accept that the global system of fibre optic cables, internet exchange points, and data centres is an infrastructure (frequently called, with some irony, the cloud), and the same with interconnected systems of electric generation stations, long-distance transmission cables, substations, and local wiring (labelled the electricity grid), or an immense structure of waterways, locks, and supply lakes (encompassed in most references to the Panama Canal). New infrastructure, and new forms of information-management and logistics, are routinely announced as creating the possibilities for better realization of all kinds of human rights. In many developing countries, modernization projects such as supermarket-based food provision with new long-distance supply logistics are presented as vindications of such rights as food and food security.²⁵ The algorithmic welfare states, like these more tangible infrastructures, are large sociotechnical systems that enact complexity by connecting to and intertwining with assemblages of humans and non-humans.²⁶ For present purposes, ways of thinking that have developed in relation to traditional infrastructure, ‘thinking infrastructurally’, are of particular value.²⁷ To think infrastructurally about the digital innovations of the welfare state entails study not only of the ‘technical’: user interfaces, software packages, data accumulations, and machine-automated communications. It is also organizational: the siloed java-script code-writers

²⁵ Amy Cohen and Jason Jackson, ‘Rights as Logistics: Notes on the Right to Food and Food Retail Liberalization in India’ in Katharine G Young (ed), *The Future of Economic and Social Rights* (CUP 2019) 407.

²⁶ Mike Ananny and Kate Crawford, ‘Seeing Without Knowing: Limitations of the Transparency Ideal and its Application to Algorithmic Accountability’ (2018) 20 *New Media & Society* 973, 974.

²⁷ Benedict Kingsbury, ‘Infrastructure and InfraReg: On Rousing the International Law “Wizards of Is”’ (2019) 8 *Cambridge International Law Journal* 171.

imagining (or failing accurately to imagine) the users, the frontline case workers, the claimants, the job centres where improbable employment applications are made and boxes duly checked. And it is social: the new social meanings of the digital ID or the thumbprint scanner matching against the financial access card; the workarounds by caseworkers to maintain some of the old flexibility;²⁸ the new expertise of people helping claimants grapple with the internet platform in public libraries or community centres; the self-conscious visibility of the welfare-entitled when required to use an emblazoned stigmatizing card usage or to stand in a food bank line due to an unjust delay in payment of a benefit.²⁹ As Paul Edwards put it, ‘we now live in a world governed not by algorithmic systems per se, but rather by interacting ecologies of algorithmic systems, human individuals, social groups, cultures, and organizations’.³⁰

Human rights law and modern welfare states each have many origins and local specificities, but one orthodox view from 1940s–50s United Kingdom and Europe (and some other places) saw their development as part of an overall project that was broadly liberal, in the sense of a ‘political rationality that emphasizes individual freedom, mainly the protection of individuals from arbitrary interference, the rule of law, and market governance... also, in practice, deeply reliant on illiberalisms of all sorts; on the imposition of order, authority and coercion’.³¹ Their development

²⁸ Jennifer Raso, ‘Displacement as Regulation: New Regulatory Technologies and Front Line Decision Making in Ontario Works’ (2017) 32 *Canadian Journal of Law and Society* 75. This work extends the literature on experiences of beneficiaries by focusing on frontline agency case-workers, who in Ontario over many decades have been the object of efforts to regulate them by legalization, judicial review, and de-skilling by discretion reduction. Discretion however persists, implemented in some cases by workarounds of the confines of exhaustive drop-down menus and computer system-defined decision paths.

²⁹ UNCHR ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (11 October 2019) UN Doc A/74/48037.

³⁰ Paul N Edwards, ‘We Have Been Assimilated: Some Principles for Thinking About Algorithmic Systems’ in Ulrike Schultze and others (eds), *Living with Monsters? Social Implications of Algorithmic Phenomena, Hybrid Agency, and the Performativity of Technology* (Springer 2018) 19, 23.

³¹ Suzan Ilcan and Rob Aitken, ‘Postwar World Order, Displaced Persons, and Biopolitical Management’ (2012) 9 *Globalizations* 623, 625–626.

and internationalization were understood as linked to transnational market-opening and post-1945 reconstructive ordering, but also to an engagement with health, population, food, agriculture, and other dimensions of human life with a post-colonial (or end-of-empire) sensibility, and among some an explicitly global view of the field of social action. The rise of neo-liberalism in both right wing and Labour/social democrat versions involved demands for repurposing or at least for new narratives of both the welfare state and human rights. The (supposedly) freely-choosing individual was no longer to be a docile subject constituted by state action and disciplinary power, but instead to be influenced through state-market action, which framed (and priced) the allowable choices, later extended to a cognitive-science of nudging.³² The language of human rights became implicated in this project.³³ In this framing the welfare state became not primarily a set-off for jobs lost or health impaired, but a means for individuals to learn to plan themselves like an enterprise, become economically agile, avoid dependency, and find their own place in the economy. Where the project was motivated in that way, digitization was the next technology for pursuing a social and organizational process that was fully under way.³⁴

The digital operations of the welfare state are infrastructural in nature. Diverse computerized systems are meshed together; frequently the mesh-builders are confronted with misalignments or

³² An account of this kind is offered by Mitchell Dean, *Governmentality: Power and Rule in Modern Society* (2nd edn, Sage 2010).

³³ Jessica Whyte, *The Morals of the Market: Human Rights and the Rise of Neoliberalism* (Verso 2019). cf Wendy Brown, *In the Ruins of Neoliberalism: The Rise of Antidemocratic Politics in the West* (Columbia University Press 2019).

³⁴ In Alston's terms: 'the embrace of the digital welfare state is presented as an altruistic and noble enterprise designed to ensure that citizens benefit from new technologies, experience more efficient government, and enjoy higher levels of well-being. Often, however, the digitization of welfare systems has been accompanied by deep reductions in the overall welfare budget, a narrowing of the beneficiary pool, the elimination of some services, the introduction of demanding and intrusive forms of conditionality, the pursuit of behavioural modification goals, the imposition of stronger sanctions regimes, and a complete reversal of the traditional notion that the state should be accountable to the individual'. UN Doc A/74/48037 para 5.

missing links. Conversion of data from system to system—employers to tax office, tax office to welfare office—is beset by discordant legacy formats, and software designed for another purpose cobbled onto new welfare project-specific software. Some parts of the digitizing project move forward, others fall behind constituting a ‘reverse salient’ of cost and vulnerability. That there can be huge advantages for many users of digital systems is attested in their rapid voluntary uptake by individuals all over the world, and by high levels of user satisfaction with some online government services. Almost nowhere, however, has digital uptake become ‘universal’. No convincing solution has been found for the digitally-unable, and those who do not have the internet access and devices necessary for ‘user interfaces’. The automatic digital systems for government services thus tend to be layered on top of existing bureaucracies and service offices,³⁵ and can spur the growth of new cadres of suppliers of assistance, often in the voluntary sector, but sometimes as costly intermediaries (including data extractors and loan sharks) paid for, knowingly or unknowingly, by hard-pressed welfare beneficiaries. These symbioses are unspoken forms of public-private partnerships (PPPs), in which the infrastructure of digital government opens business opportunities. This has been an explicit aim in government outsourcing of digital provision including through use of ‘open source’ software, and in efforts to stimulate private markets in digital service supply for these government-society transformations. The latter have had highly uneven results, as when the British effort to spur a competitive private market for supply of log-on identity authentication for different government agencies saw the suppliers dwindle to two, with one of the competitors using the other’s system.³⁶

³⁵ *ibid* para 49: ‘there should always be a genuine non-digital option available’.

³⁶ Victoria Adelmant, ‘The Gatekeepers of Government Services: Authentication in the Age of Digital Identity’ (unpublished 2020).

Arguments made in relation to traditional infrastructure have been closely paralleled by those made in human rights-oriented critiques of digital welfare states. Among these have been the following.

- Demands for public oversight and transparency in the government’s own welfare infrastructure processes, and contestation of governmental practices of opacity intended to prevent both gaming and criticism.
- Efforts to set bounds on government outsourcing of tech development to private companies,³⁷ and to challenge excessive deference to their claims for business confidentiality and trade secrets.
- Robust public-interest based regulation of PPPs, a neo-liberal era staple of physical infrastructure projects,³⁸ and increasingly significant in digital infrastructure provision, including for healthcare and epidemic disease control.
- Extending the bite of hard-to-adjudicate substantive rights (such as rights to social security, to an adequate standard of living, to food, to mental health) by attaching to them both more readily adjudicable requirements such as non-discrimination, and statements of core values such as human dignity and subsistence.
- Co-design (more ambitious than the—sometimes-sham—mantra of stakeholder engagement): ‘in order to reduce the harm caused by incorrect assumptions and mistaken

³⁷ Cf UNHCR ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (26 September 2018) UN Doc A/73/396.

³⁸ Mariana Valverde, Fleur Johns, and Jennifer Raso, ‘Governing Infrastructure in the Age of the “Art of the Deal”: Logics of Governance and Scales of Visibility’ (2018) 41 (118) *Political and Legal Anthropology Review*.

design choices, digital welfare systems should be co-designed by their intended users and evaluated in a participatory manner'.³⁹

- Realistic cost and benefits estimates, as opposed to the established pattern of achieving political buy-in via wilful underestimation of capital and maintenance costs and frequent overestimation of project benefits, in deciding to build large physical infrastructure projects.⁴⁰
- Sophisticated cost-benefit analysis, including not only financial balance sheets but also 'the fiscally invisible intangibles that underpin human rights. Values such as dignity, choice, self-respect, autonomy, self-determination, privacy'.⁴¹
- Taking sober account of the likely reality of digital projects: 'every government technology project seems doomed to arrive late, underperform and come in over budget'.⁴²

Whereas the articulation of human rights objectives in relation to digital welfare state projects only slowly took on this infrastructural orientation, the deployment of 'use case' methodologies in relation to digital infrastructure is well established.⁴³ How then might human rights law and the use

³⁹ UNCHR 'Report of the Special Rapporteur on Extreme Poverty and Human Rights' (11 October 2019) UN Doc A/74/48037 para 49.

⁴⁰ Bent Flyvberg, 'The Fallacy of Beneficial Ignorance: A Test of Hirschman's Hiding Hand' (2016) 84 *World Development* 176; Bent Flyvberg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition* (CUP 2003).

⁴¹ UNCHR 'Report of the Special Rapporteur on Extreme Poverty and Human Rights' (11 October 2019) UN Doc A/74/48037 para 63.

⁴² *ibid* para 66, quoting a statement by Helen Margetts 'Back to the Bad Old Days, as Civil Service Infighting Threatens UK's Only Hope for Digital Government' *The Conversation* (9 April 2016) <<http://theconversation.com/back-to-the-bad-old-days-as-civil-service-infighting-threatens-uks-only-hope-for-digital-government-47683>>.

⁴³ For example: in 'infrastructure as a service' cloud provision (storage, hardware, networking); in 'internet of things' networking; and in cybersecurity, such as the sector-by-sector infrastructural cybersecurity protection promoted by the US National Institute of Standards and Technology (NIST) <<https://perma.cc/L5GC-23JV>>.

case both be located within an infrastructural framing, blending the technical, the organizational, and the social?

At first this might seem an improbable pursuit. Surely ‘human rights’ are to ‘use cases’ what gazelles are to gazebos?⁴⁴ One vibrant, creational, its future somewhat precarious, carrying the hopes and possibilities of the living; the other engineered, repetitive, deeply engrained in practice, functional but generally of little moral value. The scale of justification offered for a human rights claim is normally much more expansive than the justification offered for a use case. All else being the same, a human right is, or should be, held equally by everyone. A human right, and the duty the government is placed under by that right, is a justified one if (to take the Kantian approach) the underlying maxim is one that would be morally right if it applied universally.⁴⁵ By contrast, an engineer presenting a use case needs only to articulate a justification apposite to the specific ambit of this case—another use would need to be justified separately. Extending this contrast, a rough analogy might be made to:

an interesting distinction between top-down planning (where a bunch of people begin with an overall goal or the specification of complex action that they want to achieve, and deliberately and methodically carve it up into its component parts, assigning each part to some person or agency), which is what legislation is like, and bottom-up planning (where the overall plan is constructed on the wing as it were, **by** people who begin with some of the subplans and as they go along develop a sense of how they might mesh together in a larger project), which is what the emergence of common law doctrine is like.⁴⁶

⁴⁴ The imagery of gazebos and gazelles is from a trope, popularized c. 2007 in the work of digital engineer Alistair Cockburn, in an internecine debate about relations of use cases to user stories. There is of course virtually no comparison between a human right and a use case. The number of ‘human rights’ is small, and barriers for new entrants into this category are high, whereas design teams proliferate use cases freely and with abandon. But this piece posits that illuminating insights may result from evaluating together the concept of ‘human rights’ and the concept of ‘use cases’?

⁴⁵ Immanuel Kant, *Groundwork for a Metaphysics of Morals* (1785) s 4:421.

⁴⁶ Jeremy Waldron, ‘Planning for Legality’ (2011) 109 *Michigan Law Review* 883, 888–889, commenting on Scott Shapiro, *Legality* (Harvard University Press 2010).

The observation that in style of thought and argument, human rights work universal-down, whereas use cases work micro-up, does not however imply that they remain so far apart. For human rights to be operational, and balanced off with other human rights and with the constraints of limited resources or support in contemporary societal norms, a whole array of use cases are necessarily produced. Insofar as this is done through iterative legal adjudication, the edifice is constituted by thousands of small decisions. The whole gets meaning through technical doctrine and argumentation, organization forms which are parts of the whole operation, and the social structures and agents that produce, reproduce, and change the meanings, the practices, and their influence. Conversely, the digital use case starts from small structures and is tweaked with numerous slight modifications. It may, however, be integrated with adjacent use cases, embedded in the ‘minimum viable product’, and prove to have extraordinary scalability. Mantras of revisability and software engineer expectations of upgrading to meet technical debt notwithstanding, digital design decisions may come to be features (or bugs) embedded in vast systems which become prohibitively costly to change, just as happens in other infrastructures. This is exactly the argument the UK government made in *Johnson*—that the early design decisions not to build in a solution for the ‘non-banking day salary shift’ use case were by now too deeply embedded in the code to be changed. As in other decisions on Universal Credit, the Court of Appeal did not insist on a perfect solution, but declared that legality required some kind of patch or work-around for the standard situations that constituted at least the bulk of the persons detrimentally affected.⁴⁷

In form a use case is complete in itself once the user has been identified and the alternate paths and exceptions have been specified and embodied in the computer code. By contrast, a human

⁴⁷ *Johnson* (n 6). See also *R (oao TP, AR and SXC) v SSWP* [2020] EWCA Civ 37, declaring unlawful a ‘cliff edge’ when beneficiaries with severe disabilities became arbitrarily worse off when they move from one local authority area to another.

rights claim tends to be open in its signification, reflecting the idea of universalizability.⁴⁸ In practice, though, this contrast is not so sharp. Because use cases are also socially and organizationally embedded, the justifications implicit in one established use case rapidly diffuse to justify others, and in reverse a normatively problematic use case may blow back to unsettle hitherto uncontroversial ones. A human rights claim, once refined as a legal argument and trimmed to meet the various tests for assessing the justifiability of state restrictions and implications for the due rights and needs of others, often becomes precise, narrow, and closed-ended.

This flickering spark of convergence between the use case and the human rights legal claim could become a flare as interest grows in rendering legal rules in digital code and (somewhat) capable of automatic application.⁴⁹ Could human rights be expressed within digital code, rather than being a cassation positioned outside of digital government? Already core ideas of anti-discrimination, transposed into the idiom of fairness and anti-bias, have had considerable traction among machine learning and big data professionals⁵⁰ and in courts.⁵¹ Might legal adjudication, drawing on big data

⁴⁸ Philip Alston's well-known critique of sprawling proliferations of promulgations of new human rights—the human right to tourism, etc.—could be re-stated as an objection to a methodology in which it is sufficient justification for announcing a new human right that a plausible use case has been diagrammed. 'Conjuring up New Human Rights: A Proposal for Quality Control' (1984) 78 *American Journal of International Law* 607.

⁴⁹ Some simple algorithmic methods have long been used in decision-making on legal matters, for example in adjudicating mass claims, as in the United Nations Compensation Commission after the 1990–1991 Gulf War. However to adapt this to simple forms of intelligible rule-based automated digital decision-making calls for precise rules capable of being rendered in computer code—so to embrace this means in effect to dissolve general standards and then re-solidify the fragments as rules. In some situations, such detailed rules might themselves be made algorithmically. Katherine J Strandburg, 'Rulemaking and Inscrutable Automated Decision Tools' (2019) 119 *Columbia Law Review* 1851. Deep-learning systems such as neural networks can produce their new outputs by derivation from past data and decision patterns, and/or from goal-specifications, rather than needing a host of pre-specified prospective rules.

⁵⁰ Solon Barocas, Moritz Hardt and Arvind Narayanan, *Fairness and Machine Learning: Limitations and Opportunities* (work in progress 2020) available at <https://fairmlbook.org>.

⁵¹ Cf *Ewert v. Canada (Correctional Service)* 2018 SCC 30 [2018] 2 SCR 165, in which the Supreme Court of Canada upheld a challenge made to the use of five psychological and actuarial risk assessment tools by the Correctional Service of Canada ('CSC') to assess an offender's psychopathy and risk of

patterns processed through deep machine learning and with encoded inputs of numerous case-specific ‘facts’, become so granular that the address to universalizability becomes just a ritual acknowledgement?⁵² These questions are too reductionist to be quite the right ones to debate. But the sense that techniques accepted and embedded now will shape a long future has given the human rights mobilization toward the automated welfare state and the digitally-empowered pandemic government a more portentous shading.⁵³

Promising efforts have been made to develop the concept of ‘affordances’ as an organizing idea that is apposite to infrastructure and seems potentially operable in both use case and human rights modes.⁵⁴ Laurence Diver argues for imposing thin ‘constitutional’ design requirements on user-facing code, to provide some degree of contestability, choice, transparency, oversight, and delay.⁵⁵ These might be complemented by socio-technical initiatives, such as some professional training and certification on relevant human rights infrastructure matters for a cadre of software

recidivism, on the basis that they were developed and tested on predominantly non-Indigenous populations and that no research confirmed that they were valid when applied to Indigenous persons.

⁵² Christoph Busch and Alberto De Franceschi, ‘Granular Legal Norms: Big Data and the Personalization of Private Law’ in Vanessa Mak, Eric Tjong Tjin Tai, and Anna Berlee (eds), *Research Handbook in Data Science and Law* (Elgar 2018) 408; Christoph Busch and Alberto De Franceschi (eds), *Data Economy and Algorithmic Regulation* (Hart 2020).

⁵³ The debate has been slower than that regarding autonomous weapons and predictive, tactical and strategic AI in military and policing structures. Cf Nehal Bhuta, Susanne Beck, Robin Geiß, Hin-Yan Liu and Claus Kreß (eds), *Autonomous Weapons Systems—Law, Ethics, Policy* (CUP 2016).

⁵⁴ Julie E Cohen, ‘Affording Fundamental Rights: A Provocation Inspired by Mireille Hildebrandt’ (2017) 4 *Critical Analysis of Law* 78; Mark Nunes, ‘The Affordances of Place: Digital Agency and the Lived Spaces of Information’ (2019) 3 *Media Theory* 215.

⁵⁵ Laurence Diver, ‘Digisprudence: The Affordance of Legitimacy in Code-as-Law’ (PhD thesis, University of Edinburgh 2019) <<https://perma.cc/JFF8-7BBZ>>.

designers and programmers working on governmental algorithmic systems,⁵⁶ as well as for those drawn by the inevitable commercially-driven demand for lawyers-who-code.⁵⁷

Infrastructure studies open at least three additional lines of inquiry on the meeting of human rights and use case constructs in the digital welfare state. First are issues of time and maintenance. Internet-based mass-participation systems preserve an aura of the new and the future, although they antedate the childhoods of an ever-growing proportion of users. Their embrace overlapped neo-liberal enthusiasm for innovation and legacy-industry disruption. These in turn coincided with a devalorization of knowledge of existing systems and their repair, and a chronic under-funding of maintenance. The belittling or outright loss of (low-valued) previous learning and experience (often marked by lack of new training on old systems, and redundancies or retirement of seasoned personnel) has imperiled maintenance of many older infrastructural systems which lumber on unnoticed until they suddenly fail.⁵⁸ Digital systems also get old. Many from earlier computer eras

⁵⁶ Martin Lodge and Andrea Mennicken, 'Reflecting on Public Service Regulation by Algorithm' in Yeung and Lodge (eds), (n 17) 179, referring to Science and Technology Select Committee, *Algorithms in Decision-Making* (2017–19, HC 351).

⁵⁷ The transposition of the agenda and techniques of 'corporate social responsibility' (CSR) into private, private-public, and governmental digital power formations (with slogans such as Digital Social Responsibility) is unsurprising but problematic. As noted in Cohen (n 22) 245–46: 'CSR advocates and initiatives occupy a uniquely equivocal position within corporate decision-making processes and network-and-standard-based governance arrangements... From one perspective, initiatives such as the UN Global Compact represent pragmatic and flexible solutions to pressing global governance problems; from another, they are powerful expressions of neoliberal governmentality... they project an image of consensus around virtuous privatization of rights enforcement'. Comparable questions arise about other the value of transposing other slogans and techniques such as 'human rights mainstreaming' and 'human rights impact assessments'. More effective might be decision paths requiring that well-equipped lawyers review all key design decisions, policy documents, and rules before adoption; but these also draw substantial opposition if lawyers introduce high legalisms or repeatedly reject proposals. The history of partly-analogous debates on roles of lawyers in the World Bank is appraised in Dmitri van den Meersche, 'The World Bank's Lawyers—An Inquiry into the Life of Law as Institutional Practice' (PhD Thesis, EUI 2019).

⁵⁸ Electricity grid failures in cities unaccustomed to outages bring this home to many people. The 2003 North-East USA grid failure is a much-studied case. 'During this time, the city was "re-materialized". The visiting Brazilian architect Fernando Lara later wrote: "Forget Virilio and Baudrillard and the virtual realities, there is no compression of time and space anymore. You are left

are still propped up with recycled parts and ancient disk drives. Some users do not dare seek replacement of digital systems because of the risk of incompatibility with other infrastructural components. Others are stuck with relatively new but poorly-selected systems, and cannot internalize the enormous waste (and new cost) of stripping out or abandoning digital infrastructure that was a misguided choice when made. Digital welfare state systems of the recent era may well pose these problems for the next generation, raising combined human rights and use case challenges, some of which are already anticipatable and should be addressed at the outset.

Second are issues of use and purpose. Infrastructure is continuously being constructed and extended, degraded and neglected, ruined and re-fashioned. Its use cases in life are often far from anything the original designers imagined, and the imagined use cases may barely ever have been fully actuated. After rounds of patching and user modification, governmental and private repurposing, semantic shifts and organizational reform, the infrastructure may have an almost entirely different valence, and the human rights dimensions must be reframed accordingly.

Third are effects infrastructure can have that reconfigure scale and space. Infrastructures can bring significant returns to scale, including through network effects and interoperability managed by gateways. Low marginal costs after large start-up costs have made scalability (and connectability) integral to many digital business models. Welfare state digitization is pursued with similar aspirations to extendability.⁵⁹ Whereas the normalization of scalability has been met by counter-power

alone with the disvirtual reality of space”. Suddenly it was not possible to mediate one’s relation to the built environment, which had to be measured by the body and its ability to climb, to walk, and to adjust’. David Nye, *When the Lights Went Out: A History of Blackouts in America* (MIT Press 2010), quoted from online adaptation at <<https://perma.cc/EN6V-HLUT>>.

⁵⁹ Alston expressed concern, for example, about the UK government plans to develop in relation to welfare benefits a ‘fully automated risk analysis and intelligence system for fraud and error’, mentioned in Department for Work and Pensions, *Rolling Out Universal Credit, Report by the Comptroller and Auditor General, National Audit Office* (2017–19, HC 1123) 61.

movements in relation to large physical infrastructural and agro-business projects,⁶⁰ traction vis-a-vis large private social media or search platforms has been limited, and the pursuit of massive scalability of government digital surveillance or e-government infrastructure has remained orthodox. Scaling may be tempered, however, by constraints in the configuration of space. Whereas free data flow and the undivided global internet of 1990s digital lore is still vigorously promoted in US-led and Japan-led international trade agreements,⁶¹ assertions of digital sovereignty (in China, the European Union, India, the United States, and many other countries) have buttressed a pro-local or pro-regional motif in digital government, intensified by concern about global extraction of health data in epidemic management. ‘Data jurisdictions’ *could* become more like the ‘national jurisdictions’ of classic international human rights and rule-of-law models. But the human rights-based legal control of private, hybrid, and even purely governmental automated data-building and decision-making systems remains relatively elusive. Characterizations of the challenges of real application of human rights law to extraterritorial state conduct do not seem entirely inapt as assessments of challenges posed by digital systems:

in practice... the bearers of such rights are citizens without effective sovereigns, or with effective governors who are not *their* sovereigns; and the rights themselves may be ‘bare’ rights, indeterminate entitlements of uncertain content: values and principles interpreted in myriad ways by a range of actors, and subject to a variety of exigencies in any given context. The beneficiaries of these bare rights have the consolation of having the status of ‘rights-holders’, but can have recourse only to the judges of Strasbourg or the expert committees of Geneva to appreciate, in the end, whether this amounts to anything at all.⁶²

⁶⁰ Anna Lowenhaupt Tsing, ‘On Non-Scalability: The Living World Is Not Amenable to Precision-Nested Scales’ (2012) 18 *Common Knowledge* 505.

⁶¹ Benedict Kingsbury, David M Malone, Paul Mertenskötter, Richard B Stewart, Thomas Streinz and Atsushi Sunami (eds), *Megaregulation Contested: Global Economic Governance After TPP* (OUP 2019).

⁶² Nehal Bhuta, ‘The Frontiers of Extraterritoriality: Human Rights Law as Global Law’ in Nehal Bhuta (ed), *The Frontiers of Human Rights* (OUP 2016) 1, 19.

It might be thought that the issues being confronted in relation to digitization and digital infrastructure of the welfare state in long-prosperous societies such as the United Kingdom are not so much problems of algorithmic government as of basic and longstanding political disagreement about the desirability and sustainability of the 1940s-era UK welfare state.⁶³ That earlier ideal of universal human rights embodied in the welfare state has come under pressure linked both to political forces and to large changes in the nature of the capitalism in which the welfare states of the early to mid-twentieth century had emerged, and the opportunity structures in fast-growing economies are vastly different from those facing relative decline. Philip Alston indeed took a strong substantive position advocating for that fundamental conception of the welfare state and its purposes, and urging core measures to reverse or mitigate the huge rise in social inequality and radically uneven life chances.⁶⁴ This political antinomy, while heated and in some places visceral, should not obscure the profound issues posed by digital infrastructure, machine learning, and algorithmic government, which are more tectonic and prospectively irreversible. The meeting of human rights law and use case engineering may not be in the right register for an effective response, let alone a register in which to generate grand and viable solutions. But pursuing the agenda sketched here might prove empowering in the daunting but indispensable task of thinking into being a better common future than the one techno-power, AI, sporadic dangerous confrontation, and resigned apathy produce on their own.

⁶³ David Garland, *The Welfare State: A Very Short Introduction* (OUP 2016).

⁶⁴ Alston very bluntly concluded that the UK government had pursued ‘a parallel agenda to reduce benefits by every means available, including constant reductions in benefit levels, ever-more-demanding conditions, harsher penalties, depersonalization, stigmatization, and virtually eliminating the option of using the legal system to vindicate rights. The basic message, delivered in the language of managerial efficiency and automation, is that almost any alternative will be more tolerable than seeking to obtain government benefits. This is a very far cry from any notion of a social contract, Beveridge model or otherwise, let alone of social human rights’. UNCHR ‘Report of the Special Rapporteur on Extreme Poverty and Human Rights’ (17 July 2019) UN Doc A/HRC/41/39/Add.1, Annex I para 95.

