



Questionnaires conference

GOVERNMENT BY ALGORITHMS: A COMPARATIVE ANALYSIS OF HOW NEW TECHNOLOGIES CHANGED AND INFLUENCED THE ADMINISTRATION AND JUDICIARY.

1. Introduction

Technologies such as AI, Big Data analytics, and the Internet of Things (IoT) are changing the world as we know it. Although not an entirely new phenomenon, the characteristics of these new technologies - such as Big Data analytics' ability to capture and analyse massive quantities of real-time data - are revolutionary. The rise of these new technologies therefore has triggered a paradigm-shift within governments across the world. The Weberian "paperwork" driven government, in which public bodies mainly relied upon paper-data or administrative data to make and support administrative decisions, has been replaced by data-driven government. This paradigm-shift has also changed administrative decision-making processes: governments across the globe can collect, process, and analyse large amounts of data and translate them into valuable information about its citizenry,¹ which in turn can be used to improve policymaking and administrative decision-making processes.² In addition, this data can be used by public bodies as a tool to provide public services to citizens (e.g. granting permits, welfare benefits) and data can serve as a basis to create predictive algorithms that can guide the efficient allocation of public services, for example where and how to monitor, and generate predictive algorithms that create profiles which can be used to detect and prevent fraud.³

The increased use of administrative decision-making based on profiling⁴ or algorithmic decisions-making procedures⁵ by public bodies offers both promises and perils. On the one hand, algorithmically-determined decision-making may herald enormous positive potential for governments around the world. New technologies such as AI enable public bodies to take

¹ Member States of the European Union need to comply with the General Data Protection Regulation. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, repealing Directive 95/46/EC.

² The Netherlands Scientific Council for Government Policy, *Exploring the Boundaries of Big Data*, (Amsterdam University Press 2016), Centre national de la recherche scientifique, *Le travail de la science et la numérique. Une analyse systématique de la loi numérique*, (Direction de l'information scientifique et technique 2017), Katrin Nyman Metcalf, 'e-Governance: A New Reality For Legislative Drafting?', (2017) 6 International Journal of Legislative Drafting and Law Reform, Peter Blume, 'The Public Sector and the Forthcoming EU Data Protection Regulation' (2015) 1 European Data Protection Law Review p. 258-264.

³ Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 Georgetown Law Journal 1147, Janine S. Hiller and Jordan M. Blanke, 'Smart Cities, Big Data, and the Resilience of Privacy' (2017) 68 Hastings Law Journal 30, 311, Sarah Giest, 'Big Data for Policymaking: fad or fast-track?' (2017) 50 Policy Sciences.

⁴ Administrative decisions based on predictive profiling refers to the broad use of big data analytics and to collect and process data that the public body indirectly uses to decide upon an administrative decision, such as algorithms trained in finding patterns in large data sets that is used to identify high risk-cases of tax- and social-welfare fraud tax- and social-welfare fraud

⁵ Algorithmic decision-making procedures or algorithmically-determined decision-making refers to the use of technologies such as AI, big data analytics and machine learning, to grant **administrative decisions (such as granting building/environment permits, social welfare benefits)**.



administrative decisions, such as building permits, social welfare benefits, more rapidly. This not only renders administrative decision-making procedures more efficient, but also improves quality standards by grounding these procedures in a data- and evidence-based approach.⁶ Additionally, algorithmically determined decision-making can enhance the fairness of administrative decisions, since this method guards civil servants against biases that may implicitly or explicitly affect human decision-making processes. On the other hand, however, algorithmically determined decision can also produce great risks. First, they pose special risks related to the opaqueness of administrative decision-making processes on two levels: the creation of a profile and the administrative decision that is based on that data. The opacity of this process is problematic since public bodies typically do not disclose the legal standards that govern these processes or the ways in which algorithmic decision-making processes work.⁷ This creates a loss of accountability of decision-making procedures within the administration. Second, algorithmically informed decision-making procedures pose special risks to the privacy of citizens due to heightened surveillance, and may entrench discrimination flowing from the social sorting of citizens into categories and stereotypes.⁸

The administration is not the only branch of government that has changed due to rise of new technologies, the judiciary is also undergoing changes.⁹ Judiciaries across the world (e.g. France,¹⁰ the Netherlands,¹¹ Norway,¹² and China¹³) are in the midst of reforming and digitizing parts of their traditionally paper-based judicial procedures. . This digitalization of judicial proceedings has profoundly changed the way in which litigating parties interact with courts: litigating parties can file petitions online, communicate electronically with courts, submit procedural documents online, make complaints, and exchange evidence digitally.¹⁴ The Dutch

⁶ Robert Brauneis and Ellen Goodman, 'Algorithmic Transparency for the Smart City', (2018) 20 *The Yale Journal of Law and Technology* 103, Johann Höchtl, Peter Parycek, and Ralph Schölhammer, 'Big Data in the Policy Cycle: Policy Decision Making in the Digital Era' (2015) 26(1) *Journal of Organizational Computing and Electronic Commerce* 147.

⁷ Sandra Wachter and Brent Mittelstadt, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 *International Data Privacy Law* p. 76-99, Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 *Georgetown Law Journal* 1147, Jenna Burrell, 'How the Machine Thinks: Understanding Opacity in Machine Learning Algorithms' (2016) 3 *Big Data and Society* 1.

⁸ Balasz Bodo et al., 'Tackling the Algorithmic Control Crises – the Technical, Legal and Ethical Challenges of Research into Algorithmic Agents' (2017) 19 *The Yale Journal of Law & Technology* 135, The Netherlands Scientific Council for Governmental Policy, *Exploring the Boundaries of Big Data*, Amsterdam University Press 2016, p. 143.

⁹ Mila Gasco-Hernandez and Carlos Jimenez-Gomez, 'Achieving Open Justice Through Citizen Participation and Transparency' (2017) IGI Global, OECD, 'Open Government. The global context and the way forward' (2016), p. 235-237.

¹⁰ <http://www.justice.gouv.fr/la-garde-des-sceaux-10016/restitution-des-chantiers-de-la-justice-31181.html>.

¹¹ Martijn Kroeze, 'Programma KEI: het begin van een paradigmawisseling' (2016) 2 *RM Themis* 53, The Netherlands Scientific Council for Governmental Policy, *Exploring the Boundaries of Big Data*, Amsterdam University Press 2016.

¹² Halvard Haukeland Fredriksen and Magne Strandberg, 'Is E-Justice Reform of Norwegian Civil Procedure Finally Happening?' (2016) 2 *Oslo Law Review* 72.

¹³ Alison Xu, 'Chinese judicial justice on the cloud: a future call or a Pandora's box? An analysis of the 'intelligent court system' of China' (2017) 26 *Information & Communication Technology Law* 59,

¹⁴ See for example, China's e-court model. Alison Xu, 'Chinese judicial justice on the cloud: a future call or a Pandora's box? An analysis of the 'intelligent court system' of China' (2017) 26 *Information & Communication*



legislator, for example, has implemented the ‘Quality and innovation in the Legal System’ program (KEI) nationwide in order to modernize the way in which courts handle cases. Litigating parties can initiate proceedings online and communicate with the court registry and other parties involved in litigation digitally via a web portal called ‘Mijn Zaak’ (My Case), which is provided by the Dutch judiciary and can send requests and submit procedural documents electronically. This allows parties to track each step within administrative proceedings digitally, enhancing the transparency of administrative procedures in the courts.¹⁵ In the Netherlands, digital litigation is already mandatory in Asylum Law and Detention cases – read to what extent? What counts as ‘digital litigation’ in this context?¹⁶ Comparable developments are also occurring in China and in the United States. The Chinese government has implemented ‘intelligent court system’ back in 2014, this intelligent court aims ‘to make full use of technologies such as internet, cloud computing, big data artificial intelligence and so on, to promote the modernization of trial system and judgment capability, so as to achieve the highly intellectualized operation and management of the people’s court’.¹⁷

The past years, Chinese courts have already uploaded twenty-nine million judicial documents and decisions to a centralized digital database of the Chinese Supreme People’s Court.¹⁸ This digitalisation of judicial proceedings, combined with the rise of Open Governmental Data- and Open Justice Data initiatives across the globe, has also increased the amount of judicial data.¹⁹ Once anonymized, these resources can be used to transform scattered pieces of data into valuable knowledge on judicial service delivery and judicial behaviour.²⁰ For example, sophisticated algorithms and its machine learning capabilities, have the computational ability to analyse large quantities of judicial data, can predict the outcome, change of success, and

Technology Law 59, Benjamin Liebman et.al., ‘Mass Digitization of Chinese Court Decisions: How to Use Text in the Field of Chinese Law’ (2017) Columbia Public Law Research Paper 551.

¹⁵ Frans van Dijk, ‘Improved Performance of the Netherlands Judiciary: Assessment of the Gains for Society’ (2014) 6 International Journal for Court Administration p. 1, Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59.

¹⁶ In fact, 18.000 cases related to Asylum law have already been brought to the Dutch Council of State. See Bart-Jan van Etteken, ‘Behoorlijke bestuursrechtspraak in Big Data Tijdperk’ p. 233, in Barbara Beijen and Anette Bos (eds.), *In het nu. Over toekomstig bestuursrecht*, (Deventer: Kluwer 2018).

¹⁷ Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59,

¹⁸ Jonathan Lippman, ‘Towards a Unified Court System: A Comparison Between New York State Courts and Chinese Courts’, (2015) 8 Tsinghua China Law Review, Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59, Benjamin Liebman et.al., ‘Mass Digitization of Chinese Court Decisions: How to Use Text in the Field of Chinese Law’ (2017) Columbia Public Law Research Paper 551.

¹⁹ OECD, ‘Rebooting Public Service Delivery: How Can Open Government Data Help to Drive Innovation?’ (2016) OECD Comparative Study, Carlos Jiménez-Gómez and Mila Gascó-Hernández, ‘Achieving Open Justice Through Citizen Participation and Transparency’ (2017).

²⁰ Daniel Katz, ‘Quantitative Legal Prediction – Or – How I Learned to Stop Worrying and Start Preparing for the Data-Driven Future of the Legal Service Delivery’ (2013) 62 Emory Law Journal, 909, Davide Carneiro et.al., ‘Online Dispute Resolution: An Artificial Intelligence Perspective’, (2014) 41 Artificial Intelligence Review 211, Brian Simpson, ‘Algorithms or Advocacy: Does the Legal profession have a Future in the Digital World?’ (2016) 25 Information & Communication Technology Law 1, Daniel Katz et.al., ‘A general approach for predicting the behavior of the Supreme Court of the United States’, *Public Library of Science* (PLOS, www.plos.org)



failure of judicial proceedings, develop a data-based portrait of judicial review patterns, predict how long it takes for judges to make rulings and how often their rulings are overturned in appeal. Predictive AI-driven techniques are already being used by legal practitioners and data scientists. Artificial Intelligence models, for example, have been able to predict decisions of the European Court of Human Rights with seventy-nine percent accuracy in cases related to possible violations of articles 3, 6, and 8 of the European Convention of Human Rights.²¹ In the United States, machine learning models have successfully predicted the voting behaviour and case outcome of the United States Supreme Court.²² The French government, for example, has made nearly 350.000 judicial decisions available as part of its open data-policy. It has also implemented artificial intelligence models that can analyse this data and transform it into valuable information on judicial activities.²³

2. Approach

The Société de Législation Comparée (SLC) and Leiden University (LU) will conduct a thorough legal research on current digitalization developments in administrative law in fifteen selected countries. The aim of this research project is to, first, identify developments in digitalization and administrative law and second, to compare the developments and legal frameworks of fifteen selected countries. Our project asks respondents in fifteen countries across the world to fill in a questionnaire of 23 questions. The questionnaire is divided into four subtopics that represent four chronological phases in which the rise of new technologies influence a process in which an administrative decision is rendered and contested at an administrative court:

- (i) public bodies and the digitalisation of administrative decision-making processes;
- (ii) digitalization of judicial proceedings and administrative proceedings;
- (iii) judicial review of algorithmic and data driven decision-making processes, and
- (iv) treatment of judicial data.

QUESTIONS

i. Subtopic 1: Public bodies and the digitalisation of administrative decision-making processes

²¹ Nikolaos Aletras et al, “Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective”(2016) 2 Computer Science 1.

²² Daniel Katz e.a., ‘A general approach for predicting the behavior of the Supreme Court of the United States’, *Public Library of Science* (PLOS, www.plos.org). See also Blakeley B McShane et al, ‘Predicting Securities Fraud Settlements and Amounts: A Hierarchical Bayesian Model of Federal Securities Class Action Lawsuits’ (2012) 9 *Journal of Empirical Legal*

Studies 482 which predicts settlement outcomes of securities fraud class action law suits.

²³ Supra Legem Recherche analyse et intelligence juridique, www.supralegem.fr and <https://www.data.gouv.fr/fr/reuses/supra-legem/>.



Public bodies across the world use computer algorithms to conduct public affairs, develop administrative decision-making frameworks, prioritize regulatory activities, and deploy public resources.²⁴ Algorithmically determined decision-making is made possible due to the rise of new information technologies, such as Big Data analytics and AI, which enable the collection, analysis, and exchange of large amounts of data in the public sector. Algorithms, in this sense, can be used as an instrument in administrative decision-making processes. Thus, algorithmically determined profiles can be made for administrative purposes, such as the levying of taxes, granting building permits, and granting social welfare benefits without further investigation.²⁵ The following question relates to algorithmically determined administrative decision-making procedures.

1. Do administrative bodies in your country make use of algorithmically determined decision-making processes?²⁶

a. If yes, please elaborate on the specific field in which this algorithmically determined decision-making typically occurs.

Yes, to date, this form of decision-making has typically been used in administrative decisions relating to welfare and tax, immigration and residence checks, and social care. It has further been more publicly and controversially implemented in criminal justice.²⁷ The types of technology used, and the influence which these have on the final decision being made, varies among different sectors. The majority of these technologies are either in the early stages of development or currently being explored for future uses. This means that there is little data on methods of implementation and further research is required to understand how they work in practice now and how this will develop in future.

b. If yes, please provide examples derived from administrative practice and/or case law.

The following examples represent technologies which are either in ongoing development, or are undergoing pilot deployment. Much of what is known about each specific technology can be gleaned from publicly-available information such as government reports and consultations, academic research, and in-house

²⁴ Robert Brauneis and Ellen Goodman, 'Algorithmic Transparency for the Smart City' (2018) 20 *Yale Journal for Law and Technology* 103,

²⁵ Sofia Ranchordás, 'Cities as Corporations? The Privatization of Cities and the Automation of Law' (2018) *Oxford Business Law Blog*, <https://www.law.ox.ac.uk/business-law-blog/blog/2018/04/law-and-autonomous-systems-series-cities-corporations-privatization> Accessed at 19th April 2018.

²⁶ Algorithmic decision-making procedures or algorithmically-determined decision-making refers to the use of technologies such as AI, big data analytics and machine learning, to grant administrative decisions such as granting building/environment permits, social welfare benefits.

²⁷ House of Lords Select Committee on Artificial Intelligence, *AI in the UK: ready, willing and able?* (HL100, 2018); House of Commons Science and Technology Committee, *Algorithms in decision-making: Fourth Report of Session 2017-19* (HC351, 2018); Further details are provided on specific projects in the answers below.



publications. In the context of England and Wales, there is no case law to date in this area. Though, as is outlined in Subtopic 3 below, this does not mean that existing common law principles and case law cannot apply to these instances of decision-making. Each of the categories mentioned in Answer 1(a) can now be elaborated upon in turn.

Welfare and Tax

Her Majesty's Revenue and Customs service (HMRC) is responsible for tax collection and some welfare provision in the United Kingdom, the latter working within the remit of policy set by the Department for Work and Pensions (DWP). In recent years, budget pressures, coupled with the availability of new technologies, have led these departments towards automation as a method of improving service delivery. This has been supported by the Government Transformation Strategy 2017-20, targeting it as a key area of digital transformation, alongside the responsibilities of the Home Office and Her Majesty's Courts and Tribunal's Service (HMCTS).²⁸ Such changes are intended to produce infrastructural transformations, in terms of how government operates in the UK, and not simply a new method of service delivery.

In practice however, to date, the effect that the transformation strategy has had in terms of automation is not clear. More research is required to understand the extent to which important administrative decisions are being determined using algorithmic decisions, and *how* this is being undertaken. Testing of systems is ongoing and concepts such as the 'regulatory sandbox' have been embraced.²⁹ Where algorithmic technologies are used to automate processes, it is also often the case that these are considered 'mundane' tasks.³⁰ Nevertheless, there are indications as to how this is developing and it has been reported that the HMRC Automation Delivery Centre had around 50 ongoing automation projects in 2017.³¹ Similarly, the DWP have created their own automation 'garage,' which is currently exploring machine learning and deep learning to facilitate 'augmented' decision-making.³² Overall, these changes have produced new

²⁸ Government Digital Service, 'Government Transformation Strategy' (9 February 2017) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/590199/Government_Transformation_Strategy.pdf> accessed 13 November 2018, 34

²⁹ Ibid. 39; Secretary of State for Business, Energy and Industrial Strategy, Government response to House of Lords Artificial Intelligence Select Committee's Report on AI in the UK: Ready, Willing and Able? (CM 9645, 2018) Government Digital Service (n 28), 4

³⁰ Carly Graveling, '10 million transactions processed by our robotic automations' (19 April 2018, HMRC Digital) <<https://hmrcdigital.blog.gov.uk/2018/04/19/10-million-transactions-processed-by-our-robotic-automations/>> accessed 13 November 2018

³¹ Ibid.

³² Shaun Williamson, 'How we are using robotics and intelligent automation' (23 April 2018, Government Computing) <<https://www.governmentcomputing.com/central-government/features/how-we-are-using-robotics-and-intelligent-automation>> accessed 13 November 2018



forms of algorithmically determined decision-making in the areas of welfare and tax, in the following ways.

Making Tax Digital

By 2020, HMRC intends to fully automate and digitise taxation services, for both personal and business accounts. These represent two separate strands of one transformation project, which seeks to end the paper-based tax return, and integrate multiple streams of real-time data, so as to make automated decisions on personal and business accounts.³³ This may involve the provision of tax rebates, the prevention of tax-code errors, ensuring the collection of debts, and also fraud detection.³⁴

Although specific details are not readily available in terms of how exactly decisions may be taken automatically by, or at least informed by, algorithmic tools, it is clear that there is significant scope for the development of a system with broad ranging powers that could be responsible for serious actions. HMRC's 'Connect' database project further supplements the capabilities of this system, enabling big data analysis for the detection of tax fraud, across a wide range of government and public data sources (including social networks).³⁵

Universal Credit

Universal Credit is a new welfare scheme currently being intermittently introduced by the UK government, which combines six previously separate benefits, into one single monthly payment.³⁶ Facilitating this system requires co-operation between the DWP and HMRC, using a single data platform, built from HMRC's Real-Time Information (RTI) system.³⁷ This means that there are at least two significant points where algorithmic tools are used to determine decisions.

³³ Government Digital Service (n 28), 73

³⁴ Government Digital Service (n 28), 73-75; For further information on the Personal Tax Account, see <<https://www.gov.uk/personal-tax-account>> accessed 13 November 2018

³⁵ Paul Rigney, 'The all seeing eye – an HMRC success story?' (November 2016, Institute of Financial Accountants) <<https://www.ifa.org.uk/media/653935/Tax-HMRC-Connect-system.pdf>> accessed 13 November 2018

³⁶ This includes: Child Tax Credit, Housing Benefit, Income Support, Income-based Jobseeker's Allowance, Income-related Employment and Support Allowance, and Working tax Credit. More info available at: <<https://www.gov.uk/universal-credit>> accessed 13 November 2018

³⁷ Department of Work and Pensions, 'Tackling fraud, error and debt in the benefits and tax credits system' (26 March 2016) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/417718/tackling-fraud-error-debt-benefit-tax-system.pdf> accessed 13 November 2018



Firstly, RTI is used to analyse and assess claimants regarding their benefit entitlements.³⁸ This can be supplemented with face-to-face interviews, and will be pooled into larger groups, for the purposes of categorisation at the population level—meaning that pools of claimants can be sorted and segmented based on their entitlements. This is an ongoing process.³⁹

Secondly, as with the Making Tax Digital programme, these new systems allow significant scope to detect and analyse potential fraud and error, meaning, at least, that algorithmic tools will make decisions on when to begin investigations, and who should be investigated.⁴⁰ In addition, other processes are open to automation, and as discussed above in relation to HMRC’s Automation Delivery Centre and DWP’s Innovation Garage, this will be an ongoing process of development.

Immigration and Residence Checks

HMPO

Her Majesty’s Passport Office (HMPO) has been gradually digitalising its application processes, with the aim of providing a service that is 90% digital by 2020.⁴¹ As part of this transformation strategy, technologies are being developed to enable the validation and issue of passports, without human intervention. This requires a number of automated checks, including facial matching, ‘life event verification’, residency checks and travel records.⁴² Much like the other services already discussed, this is still in development and entails data sharing with the Home Office and the UK Visa and Immigration Service (UKVI).⁴³

EU Settlement Scheme

The EU Settlement Scheme has been established to enable EU citizens and their family members, currently residing within the UK, to apply for ‘settled status’ following its withdrawal from the Union beyond 2020.⁴⁴ As part of this process, should they be successful in their application, individuals and their families can

³⁸ Government Digital Service (n 28), 72

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Government Digital Service (n 28), 78

⁴² Government Digital Service (n 28), 79; Freedom of Information Request on data collected available at: <https://www.whatdotheyknow.com/request/467499/response/1153541/attach/3/47497%20King%20Response.pdf?cookie_passthrough=1> accessed 13 November 2018

⁴³ Government Digital Service (n 28), 79

⁴⁴ EU Settlement Scheme guidance booklets for caseworkers available at: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/753971/eu-settlement-scheme-pb2-v1.0-ext.pdf> accessed 13 November 2018



be awarded with ‘indefinite leave to remain’ (settled status), or ‘limited leave to remain’ (pre-settled status), which lasts for a period of 5 years.

To apply, claimants must complete an online application, and pay a pre-determined fee.⁴⁵ This portal opens to the public in March 2019, but is currently undergoing beta testing.⁴⁶ As part of this process, individuals must demonstrate a continuous period of residency within the UK, where they have not been absent from the country for more than 6 months, within any 12 month period.⁴⁷ To confirm and establish this period of residency, the Home Office are now testing automated checks, using the HMRC and DWP databases and systems, as discussed above.⁴⁸ Where it has been algorithmically determined that a claimant has not met the requirements, they must then provide evidence to the contrary.

The results from the first beta test of this system have now been publicly released. Of 1023 applications, where it was possible for the individuals involved to provide a national insurance number, 96% could be automatically matched to HMRC records. 3% required further information, and 1.4% could not be automatically matched. Further, of 924 decisions made by the end of the first beta cycle, 85% were made automatically, and 15% required further information.⁴⁹ Of these 924 decisions, all applications were successful. The second beta cycle began on 1 November 2018.⁵⁰

Social Care: Child Services

At least five local councils in England, have begun using algorithmic modelling for the purposes of predicting risk in the care of children, and identifying potential child services interventions for families that require additional support. This is not a unified process, and multiple systems have been developed, both in-house and by private companies, in order to achieve these aims.⁵¹ The information used to produce profiles includes ‘school attendance and exclusion data, housing association repairs and arrears data, and police records on antisocial behaviour and domestic violence,’ but these datasets are not final.

⁴⁵ Results of initial pilot scheme available at <<https://www.gov.uk/government/collections/eu-settlement-scheme-pilot-applicant-information>> accessed 13 November 2018

⁴⁶ Information on application process available at <<https://www.gov.uk/settled-status-eu-citizens-families>> accessed 13 November 2018

⁴⁷ Settlement Scheme caseworker guidance booklet (n 44), 39

⁴⁸ Ibid. 41, 50. A full list of acceptable and unacceptable evidence is available at pages 70-71

⁴⁹ Pilot scheme results (n 45), 4

⁵⁰ Ibid.

⁵¹ Niamh McIntyre and David Pegg, 'Councils use 377,000 people's data in efforts to predict child abuse' (16 September 2018, The Guardian) <<https://www.theguardian.com/society/2018/sep/16/councils-use-377000-peoples-data-in-efforts-to-predict-child-abuse>> accessed 13 November 2018



Criminal Justice

Although not strictly within the realms of administrative decision-making, more is known and publicised regarding automated decision-making in criminal justice, and such decisions are already being employed openly. It is unclear whether this is the case because of intentional attempts at transparency, or because of the more public nature of policing activity, as opposed to the forms of administrative bureaucracy which generally operate with a greater degree of secrecy. In at least one case though, there is certainly an effort towards generating transparency.⁵²

Despite not dealing with administrative law specifically, it is important to acknowledge the effect of automated decision making in this area, because with its experimental nature and ongoing deployment *in practice*, it is likely that this will have an effect in terms of how automated decision-making is dealt with by the administration in future (*i.e.* it could form a precedent in relation to its uses, regulation, and the body of ethics and codes of conduct within which governmental actors must work within). Examples include Durham Constabulary's Harm Assessment Risk Tool (HART), the Metropolitan Police's Gangs Matrix, and the use of Automated Facial Recognition for the identification of offenders.⁵³

Further algorithmically-determined decisions, without the use of sophisticated profiling techniques, is also increasingly a possibility within criminal procedure. For example, through the Common Platform, Her Majesty's Courts and Tribunals Service are developing a system to allow defendants to enter their plea and receive their conviction and sentence online. Unlike the existing Single Justice Procedure, this process does not require a magistrate or adjudicator to process the case. It can be opened and closed automatically, with the defendant agreeing to a pre-determined penalty, such as a fine that can be paid through the platform.⁵⁴ Moves towards this method of case resolution have begun with fare evasion convictions, in conjunction with Transport for London. It is also currently being developed to cover offences related to the Driver and Vehicle Licensing Agency and TV licensing, to be implemented in 2019.⁵⁵

Conclusion

⁵² Marion Oswald, Jamie Grace, Sheena Urwin and Geoffrey Barnes, 'Algorithmic risk assessment policing models: Lessons from the Durham HART model and 'Experimental' proportionality' [2017] 27(2) *Information & Communications Technology Law* 223

⁵³ *Ibid.*; Silkie Carlo, Jennifer Krueckeberg and Griff Ferris, 'Face off: The lawless growth of facial recognition in UK policing' (2018) Big Brother Watch; Amnesty International, 'Trapped in the Matrix: Secrecy, stigma, and bias in the Met's Gangs Database' (May 2018)

⁵⁴ Ministry of Justice, 'Transforming our justice system: Summary of Reforms and consultation' (2016), 15

⁵⁵ National Audit Office, 'Early progress in transforming courts and tribunals' (2018) ("NAO"), 28, 35



Overall, the general picture for algorithmically-determined decision making in the UK is one of flux and transition. Current developments have set the scene for future transformation and innovation, but are contingent on the results of testing, and policy requirements. It is certainly clear though – particularly through the central part that HMRC and DWP data plays in many of these decision-making processes - that a style of administration is developing within the United Kingdom that focuses upon exploiting the opportunities and capabilities of data sharing, across governmental departments, and that this has the potential to continue to produce new administrative infrastructures which rely upon the availability of data and the functions of automated systems.

- c. Please elaborate on what kind of laws, regulations, or (legal) principles govern algorithmic decision-making processes (such as state law, local law, national law, European law, soft law)?**

European Law

Algorithmic decision-making processes in the UK, including administrative decisions, are for now, first and foremost governed and regulated by the European Union’s General Data Protection Regulation (GDPR).⁵⁶ This provides the current legislative framework by which the data protection rights of individuals must be protected (stemming from Article 9 of the Charter on Fundamental Rights, and it has specific provisions regarding automated decision making. More specifically, Article 22 sets out the rights of data subjects where *fully* automated decisions have taken place.

This legislates for a general prohibition on *solely* automated decisions, with a set of safeguards that must be implemented where derogations exist—including where such decisions are authorised by EU or member state law, where they are necessary for the performance of a contract, and where the data subject’s explicit consent has been provided and secured. For each of these situations, ‘suitable measures to safeguard the data subject’s rights and freedoms and legitimate interests’ must be in place⁵⁷, and decision-making cannot be based on sensitive data.⁵⁸ One crucial safeguard states that subjects must have “at least the right to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision.”⁵⁹ However, as mentioned above, this

⁵⁶ 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 (“GDPR”)

⁵⁷ Ibid. Art. 22 (1)-(3)

⁵⁸ Ibid. Art. 22(4)

⁵⁹ Ibid. Art. 22(3)



only applies where decisions are *fully* automated, and the legal situation is not so clear where humans maintain a significant input into the decision.

Decisions in the UK must also comply with the Council of Europe's *Convention 108 for the Protection of Individuals with regard to Automatic Processing of Personal Data*, which is largely influenced by the text of the GDPR.⁶⁰

State/National Law

The GDPR has been incorporated into UK law by the Data Protection Act 2018. This ensures that the current protection available under the GDPR is provided, on the UK's exit from the European Union, but it also brings additional safeguards for data subjects, by specifically legislating for a mandatory reconsideration process, within a month of a qualifying automated decision being taken.⁶¹

The Information Commissioner's Office (ICO) is further responsible for enforcement the rights and procedures provided to data subjects, by the Data Protection Act 2018.⁶² For the purposes of enforcement, government bodies are recognised as data controllers, and are therefore responsible for ensuring the legal use of data within *all* of their activities.⁶³

Soft law/Professional Frameworks

A number of soft law frameworks are currently being developed in the UK, to be effective as more and more algorithmic tools increasingly become operational. For example, the Data Ethics Framework builds upon the Civil Service Code, to provide guidance on the ethical use of data and algorithmic technologies in the public sector.⁶⁴ In future, this will be further supplemented and regulated by the Centre for Data Ethics and Innovation, as part of the Department for Digital, Culture, Media and Sport.⁶⁵ Other professional codes of practice are being developed, including ALGO-CARE, to promote the

⁶⁰ *Modernised Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data* [2018] Council of Europe ("Modernised Convention 108")

⁶¹ UK Data Protection Act 2018, Section 14(4)

⁶² See <<https://ico.org.uk/>> accessed 13 November 2018

⁶³ See the HMRC Privacy Notice at <<https://www.gov.uk/government/publications/data-protection-act-dpa-information-hm-revenue-and-customs-hold-about-you/data-protection-act-dpa-information-hm-revenue-and-customs-hold-about-you#automated-decision-making>> accessed 13 November 2018

⁶⁴ Information on the Data Ethics Framework available at <<https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework>> accessed 13 November 2018

⁶⁵ Information on the Centre for Data Ethics and Innovation available at: <<https://www.gov.uk/government/consultations/consultation-on-the-centre-for-data-ethics-and-innovation/centre-for-data-ethics-and-innovation-consultation>> accessed 13 November 2018



responsible and fair use of data and algorithmic technologies in the context of policing.

The rise of new information technologies has also made predictive profiling possible as a governmental instrument of control and regulation in the public sector. Public bodies can use predictive profiling to, for example, identify and prevent tax and social welfare fraud. A Dutch example is the **SyRI (System Risk Indication)** instrument. The SyRI system is legitimized by the *Wet structuur uitvoeringsorganisatie werk en inkomen*, and aims to identify and combat fraud and the abuse of public resources. Public bodies in the social domain pool their data resources and screen citizens using risk models. A broad range of data can be used for these risk models, varying from data on taxes, social security, property registers, and debt registers. Public bodies receive a risk notification after the analysis has been made. This data is then stored into an administrative register so that public bodies can take further action on the basis of this data. The following question relates to predictive profiling in the public sector.

2. Do administrative bodies in your country make use of administrative decisions based on predictive profiling in the public sector?⁶⁶

a. If yes, please elaborate on the specific field in which the predictive profiling typically occurs

Profiling takes place in almost all of the examples provided in response to Question 1 above, excluding the Common Platform programme. It would seem that the most sophisticated profiling techniques, as far as one can tell from the available information (and by assessing risk analysis techniques in criminal justice), take place where decisions are being made on the basis of risk. This includes fraud detection for HMRC, child services algorithms, and residency checks.

b. If yes, please provide examples derived from administrative practice and/or case law.

As above.

c. Please elaborate on what kind of laws, regulations, or (legal) principles govern predictive profiling processes (such as state law, local law, national law, European law, soft law)?

⁶⁶ Administrative decisions based on predictive profiling refers to the broad use of big data analytics and to collect and process data that the public body indirectly uses to decide upon an administrative decision, such as algorithmic trained in finding patterns in large data sets that is used to identify high risk-cases of tax- and social-welfare fraud tax- and social-welfare fraud,



As answered above in relation to Question 1(c).

3. Does this subtopic generate public debate in your country apart from legal scholarship discourse? If so, can you provide examples?

There are currently some journalistic examples of general public debate over automated decision-making, and the mass collection of data in general. This can be seen with the child services scandal mentioned above, and in regards to decisions in criminal justice.⁶⁷ Further, a previous scandal involving HMRC was widely publicised in the media, without the technical details ever being fully elaborated upon.⁶⁸ Where debate and disagreement occurs regarding automated decision-making in government, it tends to be framed as a political problem, rather than being elaborated upon for its more complex socio-technical dimensions.

ii. Subtopic 2: Digitalization of judicial and administrative proceedings

Governments across the world are setting up programs and are adopting new legislation with the aim of digitizing, improving, and modernizing judicial procedures. These initiatives entirely/partly replace existing paper-based procedures. The following questions relate to the digitalisation of judicial proceedings.

4. Are digital forms of judicial proceedings used in your country? If yes, please provide a general outline of this digital procedure.

Yes, to an extent. Alternative platforms are currently being developed and deployed in various fields of law, in an effort to enable individuals to avoid traditional proceedings. For example, as part of Her Majesty's Courts and Tribunal Services transformation programme, which aims at providing alternative, and quicker, methods for the completion of a case, small money claims, divorce and probate applications, and power of attorney requests, can all be submitted and approved online.⁶⁹ Social security tribunals will also be piloted later in 2018. Traffic Penalty Tribunals appeals have long been resolved online. In addition, for the purposes of serious criminal proceedings in England and Wales, cases can be dealt with digitally via the Crown Court Digital Case System.⁷⁰

⁶⁷ McIntyre and Pegg (n 51); Mark Smith, 'Can we predict when and where a crime will take place?' (30 October 2018, BBC News) <<https://www.bbc.co.uk/news/business-46017239>> accessed 13 November 2018

⁶⁸ Sam Lister and Lizzie Dearden, 'Tax credit claimants who suffered from botched Concentrix outsourcing plan paid just £14 compensation each' (21 January 2018, The Independent) <<https://www.independent.co.uk/news/uk/politics/tax-credits-concentrix-scandal-cut-compensation-14-hmrc-scandal-outsourcing-privatisation-a8170246.html>> accessed 13 November 2018

⁶⁹ Ministry of Justice (n 54)

⁷⁰ Information on Crown Court Digital Case System available at <<https://www.gov.uk/guidance/crown-court-digital-case-system-training-guides-and-videos>> accessed 13 November 2018



- a. **Are digital proceedings mandatory or optional in your legal system? Do they fully substitute paper-based judicial procedures?**

The use of digital proceedings is generally optional, particularly in civil cases. In criminal cases however, digital proceedings tend to be mandatory in practice.⁷¹ Time will tell whether this other online court processes become mandatory or whether ‘opt-out’ procedures will be maintained.⁷²

- b. **Are digital judicial proceedings possible:**
- i. **in all court cases (civil law, criminal law, administrative law), or only in certain fields of law?**

As mentioned above, digital proceedings are available in civil, criminal and administrative law, but not all aspects of each area.

- ii. **in all stages of the procedure (first instance, appeal, cassation)?**

This too is dependent on the specific case. However, the appeal courts tend seem to have now plans to move proceedings online, but may be developing online evidence processes *etc.*

5. **Is the possibility or obligation to litigate through a digital procedure codified in law? If yes, please elaborate on this.**

Digital procedure is regulated by the Criminal Procedure Rules, Civil Procedure Rules, Tribunal Procedure Rules, and associated Practice Directions. These did not originally *specifically* legislate for digital litigation and should therefore could considered as creating the ‘possibility to litigate through a digital procedure’, because it did not preclude such instances.⁷³ However, they *are* continually amended over time, as more and more procedures become digitised.⁷⁴

- a. **What were the reasons for codification?**

⁷¹ For more information see <<http://www.barcouncilethics.co.uk/wp-content/uploads/2018/03/Use-of-the-Crown-Court-Digital-Case-System-pdf-2.pdf>> accessed 13 November 2018

⁷² Tomlinson (n 70)

⁷³ Criminal Procedure Rules 2015; Civil Procedure Rules 2015

⁷⁴ For example, see the 96th Update to the Civil Procedure Rules 2015, which makes amendments to incorporate online court pilots <<https://www.justice.gov.uk/courts/procedure-rules/civil/pdf/update/96th-update-online-court-LiP-public-pilot-2-pilot-extensions.pdf>> accessed 13 November 2018



To ensure litigation procedures are correctly regulated, and continually modernised and kept up to date.

b. When was it codified?

They are continuously updated, as and when required. Codification of digital parts of process are incremental innovations.

c. How is the code structured?

These codes are separated into the different stages of litigation and the main actions that must take place.

d. Was there a strong debate about this codification?

No more than would be expected vis-à-vis procedural rules.

6. How are the identities of litigating parties verified? Please elaborate on the requirements and/or procedures for the authentication of the identification of litigating parties?

a. If yes, which digital authentication method, such as digital signature method, is used to authenticate the identity of litigating parties?

Parties in criminal proceedings will be authenticated through their respective legal representatives and personal representations. Documents can be submitted for digital proceedings in civil cases via two methods: email or through the digital portals for divorce and small money claims etc. Emails require only the party's personal details, and a signature where a statement of truth is involved.⁷⁵ For those cases which are to be conducted through a portal, it is likely that this will continue to follow the example of the Money Claim Online practice direction, which states: "Any provision of the CPR which requires a document to be signed by any person is satisfied by that person entering their name on an online form."⁷⁶

7. Is the digital submission of procedural documents subject to digital authentication regulated?

⁷⁵ See guidance on emails <<https://www.justice.gov.uk/courts/email-guidance#canfile>> accessed 13 November 2018.

⁷⁶ See <http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part07/pd_part07e> accessed 13 November 2018



- a. **If yes, which digital authentication method, such as digital signature method, is used to authenticate the submission of procedural documents and exchange them amongst litigating parties?**

This differs depending on the type of case. Digital divorce applications and document authentication are completed by the courts via email.⁷⁷ Similarly, the Traffic Penalty Tribunal employs arbitrators who handle said documents. Multiple actors are responsible for document verification and upload in criminal proceedings and digital evidence must comply with Association of Chief Police Officers (ACPO) guidance.⁷⁸ For digital money claims, claimants are responsible for the exchange and serving of documents upon defendants.⁷⁹

8. **Is it obligatory or optional to digitally submit procedural documents, such as pleadings or defenses, in judicial proceedings?**

- a. **Which parties (e.g. lawyers, representatives, experts) are *obliged* to digitally submit documents in judicial proceedings? Is this codified by law?**

Where digital proceedings take place, the parties (claimant and defendant/prosecution and defence), and their respective legal representatives, will be responsible for uploading their specific case file and documents.⁸⁰ As noted above, this is generally an optional process for civil claims, and is required in practice for criminal proceedings.⁸¹ Where disclosure involves electronic documents, the use of digital case management is generally viewed as a benefit by the court.⁸² This will be further supplemented by moves towards electronic ways of working.⁸³

- b. **Which parties *are not obliged* to digitally submit documents in judicial proceedings? Is this codified by law? Who decides on these exemptions (judge, legislature)?**

⁷⁷ Information on divorce application service available at: <<https://www.apply-divorce.service.gov.uk/index>> accessed 13 November 2018

⁷⁸ For information on the types of files included in the Digital Case System, and related responsibilities of litigating parties, see <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/708823/BCM_-_DCS_File_Structure_V2.3.docx> accessed 13 November 2018

⁷⁹ Information on the 'Money Claim Online' service available at <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/715684/MC_OL_Userguide_for_Claimants_May_2018.pdf> accessed 13 November 2018

⁸⁰ See notes 76-78 above.

⁸¹ Further information on electronic filing in criminal proceedings available at <<https://www.justice.gov.uk/courts/procedure-rules/criminal/docs/2015/crim-practice-directions-I-general-matters-2015.pdf>> accessed 13 November 2018

⁸² See <http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part31/pd_part31b> accessed 13 November 2018

⁸³ See <<http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part51/practice-direction-51o-the-electronic-working-pilot-scheme#3.1>> accessed 13 November 2018



N/A

- c. What are the legal and factual consequences when parties do not submit procedural documents digitally when required? Can they, for example, redress this omission?**

Without express permission from the court, no party may rely upon a document that has not been submitted within the agreed upon time limit.⁸⁴

9. Regarding classified documents:

- a. How is the access of parties to the digitally submitted classified documents regulated?**

This is regulated by the HMCTS Privacy Notice.⁸⁵

- b. How is a safe submittal of classified documents guaranteed?**

Through encrypted submission and notice to be given where data must be shared.⁸⁶

- c. Is this codified in law? If yes, please elaborate on this.**

No but it is governed by existing data protection rules. Privacy notices are used to demonstrate compliance, where required.

10. How does the digital submitting of documents change the role of the judge? For example:

- a. Does the digital submission of procedural documents speed up the duration of the judicial procedure?**

This is one of the key intended effects of ongoing digitalisation reforms.

- b. Does the digital submission of procedural documents increase the possibility of a final settlement of a conflict?**

In many of the ongoing reform projects, to increase the rate of early settlement is a key aim.

⁸⁴ See <<http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part31#31.21>> accessed 13 November 2018

⁸⁵ HMCTS Privacy Notice available at <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/710608/HMCTS_Privacy_Notice_.pdf> accessed 13 November 2018

⁸⁶ Ibid.



- c. Does the digital submission of procedural documents mean that there is less need for an oral court session?**

This is the intended effect in ‘easy’ cases which could be concluded more quickly than they are in traditional processes.

- d. Does the digital submission of procedural documents also increase the amount of digital evidence, such as emails, websites, digital recordings, videos, and other data?**

We have no evidence on this. On the one hand, there is optimism that current digitalisation reforms will make evidence sharing quicker, easier, cheaper, and better (especially for colour photos and videos). On the other hand, there is a concern that users of online systems, when acting at litigants in person, may be unable to collect evidence when use their devices.

- 11. Does your domestic law make a distinction between administrative proceedings within the administration and judicial proceedings? If yes:**

- a. Are the abovementioned questions also applicable on digital forms of administrative proceedings used in your country? If yes, can you elaborate on this?**
- b. Is this codified in law? If yes, please elaborate on this.**

There is a distinction however administrative processes vary widely. There is also little detail available on this.

- 12. Does an administrative body coordinate, supervise, or regulate the use of digital proceedings by public bodies, including courts?**

Her Majesty’s Courts and Tribunals Service (HMCTS) have oversight over courts and tribunals proceedings. The Government Digital Service, based within the Cabinet Office, sets various service standards for government digital processes, both in administration and the courts.

- a. Is this codified in law? If yes, please elaborate on this.**

HMCTS created in 2011 through the merger of Her Majesty’s Courts Service and Her Majesty’s Tribunals Service, as an executive agency. These agencies has previously been created by the Courts Act 2003.⁸⁷ Introduced in 2011 as ‘Alphagov,’ the Government Digital Service is a unit within the Cabinet Office

⁸⁷ Courts Act 2003



with a mandate across the whole of government concerning digital strategy, services, hiring, and procurement.

13. Does subtopic two generate public debate in your country apart from legal scholarship discourse? If so, can you provide examples?

Yes, but not always in reference to the effects of digitalising procedure, specifically. For example, concerns have been raised regarding the job security of current courts and tribunal staff, as part of development HMCTS digitalisation reform, as well as the financial impact of the courts modernisation programme and court closures.⁸⁸

iii. Subtopic 3: Judicial review of algorithmic and data driven decision-making processes

Judicial review typically obliges judges to scrutinize whether governmental actions, decision-making, or policy-making comply with the law. The datafication of administrative decision-making processes has created tremendous problems with regards to the accountability and judicial review of such programs, since judicial review executed by administrative courts was initially developed to scrutinize human rather than digital decision-makers. For their part, data-driven decision making processes are often harder to since the opacity and complexity of AI and data-driven decisions shield them from scrutiny. Hence, meaningful judicial review could be jeopardized⁸⁹, as was the case in the recent PAS-judgment of the Dutch Council of State.⁹⁰ The question, therefore, remains whether judges are sufficiently capable to scrutinize decision made by computer software (e.g. big data analytics and algorithms)? Does the judiciary need new methods adapted to new technologies in order to oversee whether automated decisions comply with the rule of law? The following questions relate to the judicial review of algorithmic- and data-driven decision making procedures.

14. What are typically (i) the burden of proof, (ii) rules and norms on the admissibility of evidence, (iii) and evidentiary standards for public bodies and litigating parties in such cases in order to prevail on their claim?

⁸⁸ e.g. Owen Bowcott, '6,500 jobs to be lost in modernisation of courts' (2 May 2018, The Guardian) <<https://www.theguardian.com/law/2018/may/02/6500-jobs-to-be-lost-in-modernisation-of-uk-courts>> accessed 13 November 2018; Jane Croft, 'Court modernisation project 'risks missing 2023 deadline'' (9 May 2018, Financial Times) <<https://www.ft.com/content/1e1542c2-4f93-11e8-9471-a083af05aea7>> accessed 13 November 2018; Rajeev Syal and Owen Bowcott, 'Delays and spiralling costs hamper MoJ's digital courts project' (9 May 2018, The Guardian) <<https://www.theguardian.com/law/2018/may/09/moj-delays-and-spiralling-costs-hamper-digital-courts-project-wtachdog>> accessed 13 November 2018; Owen Bowcott, 'MoJ spending huge sums on consultants to help deliver digital courts' (2 Jan 2018, The Guardian) <<https://www.theguardian.com/law/2018/jan/02/moj-spending-huge-sums-on-consultants-to-deliver-digital-courts>> accessed 13 November 2018

⁸⁹ B. Bodo e.a., 'Tackling the Algorithmic Control Crises – the Technical, Legal, and Ethical Challenges of Research into Algorithmic Agents', *Law Journal for Law and Technology*, vol.19, 2017. See also: J.A. Kroll e.a., 'Accountable Algorithms', *University of Pennsylvania Law Review* 2016, vol 165.

⁹⁰ ABRvS 17 May 2017, ECLI:NL:RVS:2017:1259. See also: M. Mekki, 'If code is law, then code is justice. Droits et algorithmes', *Gazette du Palais* no.24, p. 10 (2017).



- a. Are (i) the burden of proof, (ii) rules and norms on the admissibility of evidence, and (iii) evidentiary standards different in cases related to the judicial review of algorithmic profiling and algorithmic decision-making processes, or does the general standard of proof apply? If yes, please provide examples derived from case law.

This is currently untested, in relation specifically to algorithmic decision-making tools. As laid out in answer 15 below, it is likely that current principles will generally apply to the judicial review of algorithmic decision-making processes, but there may be a need for new evidentiary standards in relation to predictive risk factors, the types of input data used, and the forms of machine learning models employed.

There may also be different requirements for fully-automated and semi-automated decisions. It could be that administrative bodies may need to ensure evidence of active human involvement in decision-making processes, so as to demonstrate compliance.

In light of this, it is unclear how the burden of proof will be developed and established in the context of the judicial review of algorithmic decision-making. Nonetheless, compliance requirements for other legal frameworks, including data protection, may lead to a situation where public bodies will need to actively maintain a pre-requisite set of records as to how and why a given decision was made, which can be produced in the case of a judicial review. As noted in the description to Subtopic 3, the opacity and complexity of algorithmic tools hinders scrutiny by individuals who are subject to such decisions. It is therefore unlikely that claimants will be able to identify specific, technical, reasons as to why a given decision may have breached the general principles set out in Answer 15(a) below, where they are required to demonstrate the unreasonableness of a decision, or to demonstrate error. It is for this reason that important research has been taking place regarding algorithmic explanations and the potential for the provision of counterfactuals.⁹¹ Even in this instance, there is no clearly defined

⁹¹ Lilian Edwards and Michael Veale, 'Enslaving the algorithm: From a "right to an explanation" to a "right to better decisions"?' [2018] 16(3) *IEEE Security & Privacy* 46 ; Andrew Selbst and Julia Powles, 'Meaningful Information and the Right to Explanation' (2017) in 7 *International Data Privacy Law* 233, 2; Bryce Goodman and Seth Flaxman, 'European Union regulations on algorithmic decision-making and a "right to explanation"' (2016) <<https://arxiv.org/abs/1606.08813>> accessed 13 November 2018; Article 29 Working Party, 'Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679' WP251 (2017) ("A29"); 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) in 16 *Duke Law & Technology Review* 18; Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation'(2017) in 7 *International Data Privacy Law* 76; Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations without Opening the Black Box: Automated Decisions and the GDPR' (2017) <<https://arxiv.org/abs/1711.00399>> accessed 13 November 2018



standard as to what would constitute a sufficient explanation in UK law, but it will be influenced by the legal frameworks discussed below.

Further, in certain circumstances, the most appropriate way of dealing with this issue may be through an internal process at first instance, which could then provide sufficient evidence for a review claim to be taken forward. For example, if a claimant feels that they have not sufficiently been granted their right to be heard in regards to an algorithmic decision, or have not been given sufficient reasons as to why and how a decision has been made, it may be more appropriate to enable alternative avenues of appeal or dispute resolution, before the case reaches the judicial review stage. If this does not satisfy the claimant, or the decision has not gone in their favour, and they now feel that the situation meets the potential conditions for review (as laid out in answer to Question 15), evidence from this initial appeal would be relevant, and subject to disclosure by the courts. As such, this is as much about the structure and design of administrative processes and procedures, as it is about the technical workings of the algorithms involved.

15. How does the (administrative) judge review algorithmic decision-making processes or profiling cases?

- a. Does the (administrative) judge review profiling cases or algorithmically determined administrative decisions fully or marginally (e.g. applying the standard of unreasonableness or a manifest of error)? Please elaborate on the scope and intensity of judicial review of profiling cases and algorithmically determined administrative decisions.**

Although algorithmic decisions have not yet come under the microscope of judicial review in the United Kingdom - in that they have not been challenged before the courts for their compliance with existing common law and constitutional/administrative principles, as they have been in other jurisdictions (e.g. *Loomis vs Wisconsin* in the United States) – a number of researchers have made the attempt to situate these technologies within existing frameworks, so as to understand how this may be approached in the future. This means that while it might not be possible to explain how such cases are *currently* being dealt with – and whether the decisions are dealt with fully or marginally - it is possible to explain the current state of public law thought on the possibility of such cases. However, the context of specific cases will be key to the development and application of public law principle. Moreover, the courts may choose to develop distinct principles.

Oswald has argued that English administrative law is: ‘flexible enough to respond to many of the challenges raised by the use of predictive machine



learning algorithms and can signpost key principles for the deployment of algorithms within public sector settings.⁹² Nevertheless, this does not mean that such principles of accountability transfer automatically, or easily, to the realm of algorithmic decision-making.⁹³ To ensure that English administrative law provides sufficient, robust, methods of reviewing algorithmic decisions, this flexibility will need to be maximised, so as to be interpreted in the broadest manner possible – while providing specific guidance for review that does not overburden the courts. Using the work of the aforementioned researchers, it is now possible to answer question 15 by analysing each of the aforementioned principles in turn.

In the most basic terms, for an administrative decision to be taken to judicial review in the United Kingdom, at least one of three grounds must be argued: illegality, irrationality, or procedural impropriety.⁹⁴ It is also possible to make claims under the Human Rights Act 1998. These categories are neither fixed nor strictly separated, and significant overlap occurs between the three. For this reason, and for the purposes of ensuring that this answer is specifically relevant to algorithmic decisions, it is more useful to speak of a number of subcategories, which go beyond the three traditional grounds, that may be particularly relevant. These include errors of law or fact, unreasonableness, the duty to give reasons and right to be heard, relevant and irrelevant considerations, and the fettering of discretion. Answer 15(a)(i) deals with the first two of these, while Answer 15(b) deals with the latter three.

i. Please provide examples derived from case law if possible.

Error of law or fact

Where an administrative decision-maker makes an error of law or fact, and this has been recognised by the relevant courts, the decision will be considered *ultra vires* and therefore made outside of the bounds of their powers.⁹⁵ This is an important sub-category of the ground of Illegality. In the context of algorithmic decisions, an error of law may involve the use of a technical system which does not meet the requirements of data protection, or those of specific institutional contexts where specific factors regarding an individual's situation must be taken into account. An error of fact may arise where either *incorrect* information is

⁹² Marion Oswald, 'Algorithm-assisted decision-making in the public sector: framing the issues using administrative law rules governing discretionary power' [Forthcoming, 2018] *Philosophical Transactions of the Royal Society A.*, 3

⁹³ Jamie Grace, 'Algorithmic impropriety' https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3221981 (Draft) accessed 13 November 2018, 2

⁹⁴ *Council of Civil Service Unions v Minister for the Civil Service* [1984] UKHL 9

⁹⁵ *R v Hull University Visitor, ex parte Page* [1993] 3 WLR 1112



included in the algorithmic calculation, or where the correct balance has not been struck between relevant and irrelevant considerations, and the accuracy of the tool.

In order to discern whether either of these principles will apply, it will be important that individuals can make use of the decision-makers duty to give reasons, to provide transparency to decisions, so as to understand *how* and *why* a decision has been produced in a certain way – and the extent to which there was human involvement. This is dealt with in more detail in Answer 15(b) below.

Wednesbury unreasonableness

Where an individual challenges a decision on the grounds of irrationality, they must demonstrate that it was “so outrageous in its defiance of logic or of accepted moral standards that no sensible person who had applied his mind to the question could have arrived at it.”⁹⁶ It is likely that this principle should apply equally to algorithmic tools, as it does to human decision-makers, though it is less clear how it will work in practice. This is particularly the case where decisions are made through combination of the two.

A further problem with this categorisation is the meaning of ‘reasonableness’ in this context. It is unlikely that the algorithmic tools currently in practice will generally produce a decision that meets the Wednesbury threshold *in isolation*, whereby ‘no reasonable person acting reasonably could have made it.’ This is largely due to the scientific practice behind the tools, which does produce results with a certain level of verifiable accuracy. What constitutes acceptable accuracy, however, is a matter of debate. For example, operational decision-making tools in criminal justice settings—where profiling tools inform custodial decisions through defendant risk profiling—generally require an AUC score of 0.7 or higher. Area under the receiver operating characteristic curve (AUC) scores are the standard measure for predictive validity in the risk scores of such tools.⁹⁷ To drag the court into a debate over reasonableness in this context, would likely produce highly complex and technical debates, which the principle itself was not designed for.

⁹⁶ *Associated Provincial Picture Houses v Wednesbury Corporation* [1948] 1 KB 223

⁹⁷ AUC (Area Under the Curve) is calculated by through the measurement and comparison of true positive and false positive rates, and can be interpreted as the probability that a randomly selected true positive would have a higher predicted risk score than a randomly selected false positive: L. Maaïke Helmus and Kelly M. Babschishin, "Primer on risk assessment and the statistics used to evaluate its accuracy" [2017] 44 *Criminal Justice and Behaviour* 8, 11; David J. Hand and Robert J. Till, "A simple generalisation of the Area Under the ROC Curve for multiple class classification problems" [2001] 45 *Machine Learning*



Setting aside questions of accuracy though, the wider institutional context of the use of a given tool will be relevant for such questions of reasonableness, and *could* meet the requirements of this test. The reasons why a tool has been implemented, the specific ways it has been implemented into decision-making procedures, the dynamics of human-machine interaction in this process, and the various policy trade-offs involved, will all be relevant. For example, Durham Constabulary's Harm Assessment Risk Tool has been designed in such a manner, that when a prediction of an individual's risk is borderline – for example between medium and high risk – the tool will 'err on the side of caution' and predict the higher risk level.⁹⁸ This has been implemented to prioritise the detection of false negatives over false positives, which theoretically protects the public against potential dangerousness, but also comes with significant procedural consequences for the individual being analysed.⁹⁹

By invoking the judgment in *Doody*, a claimant may be able to argue that public bodies will need to show how the 'mind' of the algorithmic tool involved is working, so as to assess its reasonableness.¹⁰⁰ This cannot be achieved without consideration of its policy context, and also the input of the final human decision-maker. Again, this is reliant on principles of reason-giving, and claimants must be able to avail of some form of explanation of the decision-making procedure, before its reasonableness can be assessed using the *Wednesbury* test.

Proportionality

In addition to the reasonableness test, UK courts *can* review decisions based on proportionality, though it is not a general requirement. This broadens the scope of the reasonableness test, by incorporating a balancing of the rights of the claimant, and the aims of the measure or decision being undertaken by the public administration. This normally requires an administrative decision to have been connected to, or governed by, a provision of either ECHR or European Union law, though the courts have suggested that this could be extended further.¹⁰¹

Automated decision-making is governed by European Union legislation relating to data protection, and specifically the General Data Protection Regulation,

⁹⁸ Sheena Urwin [2016] 'Algorithmic forecasting of offender dangerousness for police custody officers: An assessment of accuracy for the Durham Constabulary model', Research Presented as for the purposes of gaining a Master's Degree in Applied Criminology and Police Management at Cambridge University <<http://www.crim.cam.ac.uk/alumni/theses/Sheena%20Urwin%20Thesis%2012-12-2016.pdf>> accessed 13 November 2018, 75

⁹⁹ Sheena Urwin (n 89), 53, 75

¹⁰⁰ Oswald (n 82), 5; *R v Secretary of State for the Home Department ex parte Doody* [1994] 1 AC 531, 19 (Lord Mustill)

¹⁰¹ *Pham v Secretary of State for the Home Department* [2015] UKSC 19



which means that while the UK continues to remain within the legal framework of the EU, this would certainly meet the test to be considered for proportionality.¹⁰² However, much like the reasonableness question, this cannot duly be tested without adequate processes of reason giving.

- b. What is the role of general principles of good/sound administration in these disputes? Does the (administrative) judge take general principles of good/sound administration such as the right to be heard or principles of reason-giving and transparency into account in algorithmic decision-making processes or profiling cases? How does the (administrative) judge scrutinize (these cases? You need a lijdend voorwerp)?**

- i. Please provide examples derived from case law if possible.**

Duty to give reasons/ Right to be heard

As mentioned above, purely within the common law of England and Wales, the ability of a claimant to challenge algorithmic decisions via judicial review will be dependent on the extent to which the principles of reason-giving and the right to be heard are applicable. In general, as Oswald notes, claimants are at least entitled to be informed of the ‘gist’ of the case against them. However, a general duty to provide reasons, or a framework through which these reasons must be presented, has not been developed. Whether a duty exists is dependent on the existence of relevant legislation, and the specific context and seriousness of the decision.¹⁰³ Further, decisions may not be required where providing such would prove particularly onerous on the decision-maker, and reasons should not be provided in the form of an ‘information dump’.¹⁰⁴

Nevertheless, the courts have been willing to assess the reasons provided by decision-makers where they leave “genuine doubt” as to how and why a given decision was reached.¹⁰⁵ And in *Porter*, a number of important points have been set out, which if not strict requirements, act as useful guidelines towards the provision of reasons.¹⁰⁶ These include:

¹⁰² Jennifer Cobbe, 'Administrative Law and the Machines of Government: Judicial Review of Automated Public-Sector Decision-Making' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3226913> accessed 13 November 2018, 13

¹⁰³ Cobbe (n 93) 35

¹⁰⁴ *R v Higher Education Funding Council, ex parte Institute of Dental Surgery* [1994] 1 All ER 651 at [665]-[666]; Oswald (n 82), 6

¹⁰⁵ *Clarke Holmes Ltd v Secretary of State for the Environment* (1993) 66 P & CR 263, 271–272.

¹⁰⁶ *South Buckinghamshire District Council v Porter (No 2)* [2004] 1WLR 1953, para 36.



- Reasons must be intelligible and adequate;
- They must allow a reader to understand why a decision was reached, and with what conclusions; and
- They must not give rise to reasonable doubt that a decision-maker may have erred in law, or by failing to reach a rational decision

The latter point demonstrates that the issues of illegality and irrationality are both tied up with the ability to receive reasons for a particular decision. How this principle develops for the purposes of algorithmic decisions will depend on the influence of the Data Protection Act 2018 (as discussed in answer to Question 1(c) above), and the ethical frameworks and considerations of public decision-makers. This is further complicated by the complexity of algorithmic technology, and the need to understand their technical workings, as well as the institutional context and purpose for their use. This is an ongoing academic debate across Europe, and no standard currently exists for England and Wales.¹⁰⁷

Relevant/Irrelevant considerations

Related to the duty to give reasons, is the concept of relevant and irrelevant considerations. Put simply, administrative decision-makers in England and Wales must take into account all relevant considerations, and set aside those which are considered irrelevant.¹⁰⁸ Where a judge agrees that a decision has been made outside of these boundaries, it will be considered *ultra vires* under the grounds of illegality.¹⁰⁹

Analysing an algorithmic decision – that makes use of profiling - based on these grounds is particularly complex, because as discussed above, any explanation of a decision will require either technical explanations of the predictive factors involved, or one as to how a given output was produced and its calculative logic. Such profiling tools have the capacity to take *any* factor into account, should it prove to produce or strengthen correlation, and therefore potentially increase the accuracy of the tool. For example, to return to Durham Constabulary's HART system, significant concerns were raised regarding discrimination, based on its

¹⁰⁷ Edwards and Veale, 'Slave to the algorithm...' (n 92); Edwards and Veale, 'Enslaving the algorithm...' (n 92); Wachter, Mittelstadt and Floridi (n 92); Wachter, Mittelstadt and Russel (n 92)

¹⁰⁸ Grace (n 83) 21; Oswald (n 82) 10; Cobbe (n 93), 26; *R v Home Secretary ex p. Venables* [1998] AC 407; *R (DSD and others) v Parole Board of England and Wales and others* [2018] EWHC 694 (Admin)

¹⁰⁹ *Ibid.*



use of residential postcode as a predictive factor.¹¹⁰ This has however since been removed.

Analysing whether given factors are relevant or irrelevant will therefore likely be an ongoing process, and a situation where there is no clear picture as to its future development, for now. There are clear protections for sensitive data, as mentioned above, but what makes such algorithmic profiling tools so effective, is their ability to *infer* descriptions and behaviours from seemingly innocuous data.¹¹¹ Framing this within existing common law principles is not an easy task.

Fettered Discretion/Unlawful delegation

The final ground upon which a decision can be challenged is that of the fettering of discretion. This principle is largely concerned with ensuring that all decision-making powers are being exercised with the appropriate discretion, and by the proper authority.¹¹² There are therefore two elements involved here. Firstly, decision-makers should be *actively* considering the decision being made and the factors involved, rather than relying solely on the prediction of an algorithm. Secondly, this means that decision-makers cannot abdicate their position of discretionary power to a third party. Such third parties could include the predictive abilities of algorithmic tools in this context, even where they have been produced in co-operation with a public or administrative institution.¹¹³

- c. Has the judicial review of algorithmic decision-making processes or profiling cases led to the development of new legal principles, such as the principle of accountability, the right of explicability, or other rules and principles concerning administrative transparency, and access to (public) data?**
- i. If yes, please elaborate on this.**

No, as discussed above, these tools have not been tested via judicial review, though this does not prevent such an occurrence. For example,

¹¹⁰ Matt Burgess, 'UK police are using AI to inform custodial decisions – but it could be discriminating against the poor' (1 March 2018, Wired) <<https://www.wired.co.uk/article/police-ai-uk-durham-hart-checkpoint-algorithm-edit>> accessed 13 November 2018; Big Brother Watch, 'Police use Experian Marketing Data for AI Custody Decisions' (6 April 2018) <<https://bigbrotherwatch.org.uk/all-media/police-use-experian-marketing-data-for-ai-custody-decisions/>> accessed 13 November 2018

¹¹¹ Sandra Wachter and Brent Mittelstadt, 'A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3248829> accessed 13 November 2018; GDPR (n 56), Art. 22(3)

¹¹² *British Oxygen Co Ltd v Minister of Technology* [1971] AC 610, 625

¹¹³ Oswald (n 82), 14-15; Cobbe (n 93), 28-29; Grace (n 83)



Oswald has proposed a number of ‘re-framings’ for the principles discussed in answers 15(a) and 15(b).¹¹⁴ Grace has in addition proposed the concept of algorithmic impropriety, which takes the above principles and amalgamates them into one working concept for the use of algorithms.¹¹⁵

16. Evidence concerning complex issues of science and technology plays an increasingly important role in scrutinizing algorithmic decision-making processes and profiling cases. Appointing an expert referee is often suggested as a means for judges to deal with such issues. Can judges ask experts or advisory boards questions relating to the usage of data-driven or algorithmic decisions during judicial administrative proceedings?

No, such experts must be brought forward by the parties to the case.

- a) **If yes, on the basis of which method do courts appoint these expert referees? Can judges, for example, appoint expert referees themselves or are expert referees pre-selected by the court?**

N/A

- b) **Can you provide examples derived from case law that illustrate how expert referees scrutinize algorithmic decision-making processes and profiling cases?**

There are currently no examples available for the UK context.

17. Are cases on the judicial review of algorithmic decision-making processes or profiling cases a trend or an outlier in case law of your country?

- a. **Please provide examples derived from case law.**

Given that there is currently now case law for the judicial review of algorithms, it should be defined as an outlier. However, any future cases would likely still be considered in light of pre-existing judicial review principles and precedent.

18. Does subtopic three generate public debate in your country apart from legal scholarship discourse,? If so, can you provide examples?

¹¹⁴ Oswald (n 82)

¹¹⁵ Grace (n 83)



Public debate regarding these issues is covered within the same context as subtopic one, whereby there is a general concern regarding automated decision-making, but outside of legal scholarship, this does not seem to extend to the realms of judicial review.

iv. Subtopic 4: Treatment of (open) judicial data

While in the recent year Open Government Data (OGD) policies have strongly increased, judiciaries have remained relatively reluctant in embracing open data policies, generally due to the conservative tradition of the legal profession.¹¹⁶ However, this has changed drastically over the past decade. Around the world, several initiatives were launched to adopt open judicial data policies. For example, countries such as France and Spain have already established open data for judicial decisions policies. The benefits attributed to open judicial data are many: open judicial data policies will enhance the integrity and performance of people involved in the administration of the judiciary, improve the accountability of the judiciary, promote citizens' trust in the judiciary, and enhance justice service delivery. The following questions relate to the treatment of (open) judicial data.

19. Are there open judicial data initiatives promoting access to open judicial data in your country? If yes, could you provide a brief overview of these initiatives and what they entail?

Yes, some judicial statistics are generally released by the Ministry of Justice, including information.¹¹⁷

a. Does the judiciary in your legal system have a systematic judicial policy or specific regulation (such as general data protection laws or a general law on access to public information) that governs access to judicial data?

Where statistics have not been released on a certain issue, it is possible to submit a Freedom of Information (FOI) request for this data.¹¹⁸ Where an individual requires specific statistics for the purposes of research, it is possible to make a request to the HMCTS Academic Data Access Panel for this information.¹¹⁹

20. What kind of data does the judiciary in your legal system publish?

A full list is available on the Ministry of Justice's website. Relevant statistics are available in relation to: civil justice, coroner activity, criminal justice, equality,

¹¹⁶ OECD, 'Rebooting Public Service Delivery: How Can Open Government Data Help to Drive Innovation?' (2016) OECD Comparative Study, Carlos Jiménez-Gómez and Mila Gascó-Hernández, 'Achieving Open Justice Through Citizen Participation and Transparency' (2017).

¹¹⁷ See <<https://www.gov.uk/government/organisations/ministry-of-justice/about/statistics>> accessed 13 November 2018

¹¹⁸ See <<https://www.gov.uk/government/collections/freedom-of-information-disclosure-log>> accessed 13 November 2018

¹¹⁹ See <<https://www.gov.uk/guidance/access-to-courts-and-tribunals-for-academic-researchers>> accessed 13 November 2018



family court, judiciary appointments and diversity, the activities of the Data Justice lab, legal aid, legal aid, prisons and probation, reoffending, tribunals and youth justice. This also includes *ad hoc* statistics, which relate to specific projects or topical issues.¹²⁰

- a. **Does the judiciary publish all court rulings from all government bodies (e.g. district courts, courts of appeals, supreme courts)? By court rulings, we refer to judicial decisions of courts that bring cases to an end.**

Yes, though rulings may not be available from all cases at the magistrates level.¹²¹

- b. **Does the judiciary publish quantitative data that provides an overview of judicial performance, such as caseload, solved caseload, average duration judicial procedure, and the amount of annulments per court/per judge?**

Yes, and there is a commitment that this forms the basis of future policy reforms. For example, civil justice statistics have been tracking trial lengths over a number of years, and this has significantly influenced the current Courts and Tribunals transformation programme-which itself is attempting to reduce the number of cases that reach trial.¹²² HMCTS also makes use of a ‘Performance Database,’ which collects quantitative analysis to enable future reform. Information on what this contains is not readily available.¹²³

- c. **Does the judiciary publish other type of data that you find relevant to mention?**

N/A

- d. **How do judiciaries deal with this data? Do they analyse this data in order to find, for example, patterns in case law, or how certain judges rule in certain type of cases?**

This is not clear.

21. **Do the following governmental institutions in your country make use of algorithms that can analyze judicial data in order to translate this into information and patterns in case law, how certain judges rule in certain type of cases, or for other purposes?**

¹²⁰ See <<https://www.gov.uk/government/organisations/ministry-of-justice/about/statistics>> accessed 13 November 2018; See <<https://www.gov.uk/government/collections/ad-hoc-justice-statistics>> accessed 13 November 2018

¹²¹ See <<https://www.judiciary.uk/judgments/>> accessed 13 November 2018

¹²² See <<https://www.gov.uk/government/collections/civil-justice-statistics-quarterly>> accessed 13 November 2018

¹²³ See <<https://data.gov.uk/dataset/ac451514-a44c-4b39-abde-6c4cc0123120/her-majesty-s-courts-and-tribunals-service-hmcts-performance-database>> accessed 13 November 2018; Attempted FOI request available at <https://www.whatdotheyknow.com/request/hmcts_performance_database> accessed 13 November 2018



It is possible that this may be achieved with the HMCTS Performance Database, but this is unclear because data on its functions is not direction available.

a. The legislator

i. If yes, please elaborate by providing examples.

N/A

b. The judiciary

i. If yes, please elaborate by providing examples.

N/A

c. Administrative legislative advisory bodies

i. If yes, please elaborate by providing examples.

N/A

22. Do private parties such as law firms or corporations analyze legal data in order to translate this into information and patterns in case law, how certain judges rule in certain type of cases, or for other purposes?

Developing such technologies is an ongoing process, which has been directly targeted by many law firms and associated organisations. ‘Case outcome prediction’ is still in its early stages however.¹²⁴

a. If yes, please elaborate on examples.

The most notable example of such technology under development in the UK is *CourtQuant*, which aims to provide ‘quantitative litigation risk analysis’ by employing machine learning models to undertake specific tasks.¹²⁵ Firstly, to analyse cases and predict their outcomes (win/settle/lose), including profiling of the ruling patterns, and case management styles, of specific judges. And secondly, to analyse data on lawyers, individuals and corporations, so as to enable claimants to prepare for the litigation strategies of opposing parties.¹²⁶ This technology evolved from a tool known as *CaseCrunch* which at a previous one-off event, outperformed

¹²⁴ The Law Society, ‘Horizon Scanning: Forward Thinking’ (2018) <<https://www.lawsociety.org.uk/news/documents/horizon-scanning-artificial-intelligence-and-the-legal-profession/>> accessed 13 November 2018; Richard Susskind, *Tomorrow’s Lawyers: An Introduction to Your Future* (Oxford University Press, 2013)

¹²⁵ See <<https://www.courtquant.com/>> accessed 22 November 2018

¹²⁶ To see a video explanation of the platform, see <<https://www.youtube.com/watch?v=-Dr-Qau5nt8>> accessed 22 November 2018



human lawyers, in terms of predicted the outcome of Personal Payment Insurance (PPI) mis-selling claims.¹²⁷

It is important to note that this has been developed by a private company, as a product to be sold to law firms, rather than being developed within the firms themselves.

23. Does subtopic four generate public debate in your country apart from legal scholarship discourse. If so, can you provide examples?

In addition to the *CaseCrunch* software discussed above, a study by Aletras *et al*, which focused on the algorithmic analysis of judicial statistics for the purposes of predicting court performance, received significant media attention in the UK. However, these issues do not seem to be otherwise debated widely.¹²⁸

¹²⁷ Michael Cross, 'Robot beats human lawyers in outcomes challenge' (31 October 2017, *The Law Society Gazette*) <<https://www.lawgazette.co.uk/practice/robot-beats-human-lawyers-in-outcomes-challenge/5063471.article>> accessed 22 November 2018

¹²⁸ Andrew Griffin, 'Robot Judges could soon be helping with court cases' (24 October 2016, *The Independent*) <<https://www.independent.co.uk/life-style/gadgets-and-tech/news/ai-judge-robot-european-court-of-human-rights-law-verdicts-artificial-intelligence-a7377351.html>> accessed 13 November 2018; Nikolaos Aletras, Dimitrios Tsarapatsanis, Daniel Preotiuc-Pietro and Vasileos Lampos, 'Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing Perspective' (2016) *PeerJ Comput. Sci.*, DOI 10.7717/peerj-cs.93; D M Katz, M Bommarito II, J Blackman, 'A general approach for predicting the behaviour of the Supreme Court of the United States' (2017) 12(4) *PLoS ONE* 1