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EU administrative decision-making delegated to machines – legal challenges and issues

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Abstract:

Increasing computing power, the constant development of different types of digital tools or even the use of AI systems provide the EU administration with an opportunity to use automated decision-making (ADM) tools to improve the effectiveness and efficiency of administrative action. At the same time, however, the use of these tools raises several concerns, issues or challenges. From a legal perspective, there is a risk of compromising or reducing the accountability of public actors. The use of new technologies in decision-making may also affect fundamental values and principles of the EU as a whole. Automation, the use of large amounts of data and the extremely rapid processing of such data may affect or jeopardise the rights of individuals protected by EU law, including the fundamental rights guaranteed by the EU Charter. In order to keep administrative action within the limits of the law and to guarantee the rights of individuals, it is necessary to keep an eye on the various legal challenges associated with these phenomena. This article looks at three inter-connected levels of automated decision making - the data, the ADM tool and the way it is programmed, and the output and its reviewability - and presents the legal issues or challenges associated with each of these levels.

Keywords: *automated decision-making, ADM tools, EU administrative law, good administration, protection of fundamental rights, judicial review*

1. Introduction

Thanks to the development of technology and the increasing computing power, the automation of various kinds, algorithmic decision-making, and even the use of elements of artificial intelligence (“AI”) seem to be omnipresent. These tools are largely used mainly in the business world for commercial purposes since they present a promising tool to offer new products or

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services, to booster innovation, to reduce costs, to optimize outputs, or to provide with more efficiency and effectiveness. Not only can such systems solve tasks faster and more efficiently than any human being, but they can also discover patterns, relations, or correlations in data, which human neural systems are hardly capable of noticing.² However, as a regulatory agent, the EU is aware of the potential risks of using these technologies, and therefore it tries to find appropriate ways to regulate them, in order to mitigate the risks, to protect the rights and interests of more vulnerable actors, but also to protect public interests, such as democracy and the values, on which it is based.

The necessity to regulate automated or algorithmic decision-making (“ADM”) and AI systems in the EU goes hand in hand with the EU's attempt to use these types of technologies or tools within regulation. It comes somehow naturally that the EU administration cannot ignore the calling of the potential benefits which lie in the automation and various AI tools,³ since they can help to comply with the principle of good administration.⁴ They are part of the attempts of digitalisation of public law because they are believed to provide with a possibility of a swifter administrative action, a faster administrative decision-making, more objective assessment of facts, or more efficient decision-making processes.⁵ Various tools for automating the administrative decision-making are therefore used in more and more EU policy fields. Some of the tools are already employed within the EU administration,⁶ but the dynamic development of technology shows a high probability that the use of such tools will increase in the future.⁷

As Hofmann argues, the more tasks within the EU administration are delegated to automated processes, AI systems or various machines, the more one can talk about so-called “cyber-delegation”.⁸ Similar to the process of delegation of competences to agencies or other

² Cf. Michele Finck, ‘Automated Decision-Making and Administrative Law’ in Peter Cane and others (eds), *The Oxford Handbook of Comparative Administrative Law* (Oxford University Press 2021).

³ Cf. Jacob Livingston Slosser, ‘Artificial Intelligence and Public Law’ in Mariana Valverde and others (eds), *The Routledge handbook of law and society* (Routledge 2021).

⁴ Cf. Ulrik BU Roehl, ‘Automated Decision-Making and Good Administration: Views from inside the Government Machinery’ (2023) 40 *Government Information Quarterly* 101864; Arjan Widlak, Marlies van Eck and Rik Peeters, ‘Towards Principles of Good Digital Administration’ in Marc Schuilenburg and Rik Peeters (eds), *The algorithmic society: Technology, power, and knowledge* (Routledge 2020).

⁵ Cf. Carol Harlow and Richard Rawlings, ‘Proceduralism and Automation: Challenges to the Values of Administrative Law’ in Carol Harlow and Richard Rawlings, *The Foundations and Future of Public Law* (Oxford University Press 2020) 292–295.

⁶ For the overview, see mainly Oriol Mir, ‘Algorithms, Automation and Administrative Procedure at EU Level’ [2023] Indigo Working Papers <<https://project-indigo.eu/>>.

⁷ Cf. Herwig Hofmann, ‘Automated Decision-Making (ADM) in EU Public Law’ [2023] Indigo Working Papers 1–2 <<https://project-indigo.eu/>>.

⁸ Herwig Hofmann, ‘An Introduction to Automated Decision Making (ADM) and Cyber- Delegation in the Scope of EU Public Law’ [2021] Indigo Working Papers 39 <<https://project-indigo.eu/>>.

specialized bodies, the concept of cyber-delegation refers to the technique of transferring some powers to another entity, namely a machine, an algorithmic tool or an automated system.⁹ Although machines or automated systems do not have the capacity to perform mental operations, the way in which they process facts and even laws and legal requirements can mimic the decision-making processes of human officials. In fact, these systems are not given any real “power” to decide on their own, but they are nevertheless trusted to produce correct results (on the basis of the criteria on which they have been designed and the data that have been supplied to them), which form an important part, or even the core, of the subsequent administrative decision.¹⁰ It follows that the processes based on, or supported by, ADM tools have the potential to have a significant impact on procedures within the EU administration and to change the way in which the EU administration generally operates.

Like within business and commercial practices, the administration also faces risks and challenges that automation, algorithmic tools and AI systems may pose. The EU has already started to respond to the risks and challenges associated with the expansion of ADM or AI systems by preparing acts, which will regulate the use of such systems.¹¹ The main target is the business community, but some of the rules also apply to public actors. From the perspective of EU administrative law, there is a risk of jeopardising or reducing the accountability of public actors. The use of new technologies in decision-making may also affect fundamental values and principles of the EU as a whole, including those related to the rule of law.¹² Automation, the use of large amounts of data and the extremely rapid processing of such data may affect or endanger the rights of individuals protected by EU law, including fundamental rights guaranteed by the EU Charter. Moreover, while there may be a kind of optimistic perception that ADM tools are more objective and rather neutral when it comes to assessing facts, there

⁹ Cf. Mariano-Florentino Cuéllar, ‘Cyberdelegation and the Administrative State’ in Nicholas R Parrillo (ed), *Administrative Law from the Inside Out* (Cambridge University Press 2017); Herwig Hofmann, ‘Automated Decision-Making and Delegation: Discussing Implications for EU Public Law’ in Russell L Weaver and Herwig Hofmann (eds), *Digitalisation of administrative law and the pandemic-reaction* (Cambridge Scholars Publishing 2022) 113.

¹⁰ Cf. Finck (n 2) 7–8.

¹¹ Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (recast), PE/28/2019/REV/1, OJ L 172, 26.6.2019, p. 56–83. See also the Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts from April 2021.

¹² For the overview of the effects of automated decision-making on the rule of law, see Markku Suksi (ed), *The Rule of Law and Automated Decision-Making: Exploring Fundamentals of Algorithmic Governance* (Springer International Publishing 2023).

are studies that show that even ADM can be biased, flawed or make mistakes in a manner similar to human decision-making.¹³

It follows that while computing power and various types of automated processes can improve the effectiveness and efficiency of administrative action, ADM tools should be welcomed as useful tools, but always with caution. As cliché as it may sound, the automation, computing power and large data processing present both opportunities and challenges for public administration in the EU. In order to keep administrative action within the boundaries of law and to guarantee rights of individuals, it is necessary to keep an eye on the various legal challenges related to these phenomena.

2. Automation, automated processing of data, ADM and AI in the EU administrative decision-making

From a technological point of view, the EU administration can choose from a wide range of different computational, algorithmic or even AI systems or tools, which are constantly being developed and improved. What these tools have in common is that they are based on computer software and data and are designed to assist human officials in making decisions or taking steps in the decision-making process, or even to replace some phases in the human decision-making process.¹⁴ Different phases of administrative action make space for the use of different ADM tools, which can play different roles depending on the objective – they can be used for agenda setting and policy considerations, but also for rule implementation, investigation, fact finding or fact assessment. In general, ADM systems can be used by the administration both as reactive tools (to assess the facts of an event that has already occurred) and as preventive tools (to predict behaviour and take action based on that prediction).¹⁵

The results of the automated processes within the administration are considered as automatically processed information,¹⁶ or – if the result is more complex – as an automated (or algorithmic) public administrative decision.¹⁷ At this moment, an ADM tool usually generates an *input*, which makes part of the following human decision, or it can produce a *default*

¹³ John Zerilli and others, ‘Transparency in Algorithmic and Human Decision-Making: Is There a Double Standard?’ (2019) 32 *Philosophy & Technology* 661.

¹⁴ Cf. Hofmann, ‘Automated Decision-Making (ADM) in EU Public Law’ (n 7).

¹⁵ Karen Yeung, ‘Algorithmic Regulation: A Critical Interrogation’ (2018) 12 *Regulation & Governance* 505, 507–508.

¹⁶ Cf. Simona Demková, ‘The Decisional Value of Information in European Semi-Automated Decision-Making’ (2021) 14 *Review of European Administrative Law* 29.

¹⁷ Stefano Civitarese Matteucci, ‘Public Administration Algorithm Decision-Making and the Rule of Law’ (2021) 27 *European Public Law* 103.

decision, which is subject to a human examination and potential annulment or correction.¹⁸ Since the administrative authorities normally do not issue fully automated decisions, but rather use ADM tools as an aid at certain phases of their action, legal scholars label the employment of such tools as “semi-automated decision-making”,¹⁹ “algorithm-assisted decision-making”,²⁰ or “mixed algorithmic decision-making”.²¹ These labels refer to the fact that an ADM tool only generates a result, a hit, a match, an alert, or a recommendation, which is further processed by a human official who makes the final decision.²²

It is rare to find an administrative process that is, or can be, fully automated. An example of such a rarity could be the automatic generation and sending of a speeding ticket based on the evaluation of cameras along roads or motorways. This would be an example of an *automated decision* without any human intervention.²³ Interestingly, the Federal Court of Australia does not consider a computer-generated letter to be an administrative decision at all because its production does not involve “mental process of reaching a conclusion”.²⁴ On the other hand, it can be said that EU law somehow foresees the possibility of automated decision-making in the GDPR. Its Article 22 defines automated decision making as “a decision based solely on automated processing”, but allows it only on the basis of the explicit consent of the data subject or where there is an explicit legal basis in EU or national law. Automated processing means that it takes place without human intervention. However, as Brkan argues, the human element is not completely removed: Since the ADM tool processes data, there has to be a human decision about which data are put into the tool. There is also a human decision in the construction of the ADM tool. Finally, a result of automated decision making requires interpretation by a human.²⁵

¹⁸ Cary Coglianese, ‘A Framework for Governmental Use of Machine Learning’ Report to the Administrative Conference of the U.S., 8 Dec 2020 72–73 <<https://www.acus.gov/sites/default/files/documents/Coglianese%20ACUS%20Final%20Report.pdf>>.

¹⁹ Demková (n 16).

²⁰ Marion Oswald, ‘Algorithm-Assisted Decision-Making in the Public Sector: Framing the Issues Using Administrative Law Rules Governing Discretionary Power’ (2018) 376 *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* <<https://royalsocietypublishing.org/doi/10.1098/rsta.2017.0359>> accessed 20 November 2023.

²¹ Madalina Busuioc, ‘Accountable Artificial Intelligence: Holding Algorithms to Account’ (2021) 81 *Public Administration Review* 825, 828.

²² For the typology of results of ADM tools see Francesca Palmiotto, ‘When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis’ [2023] SSRN (Forthcoming in *German Law Review*) <<https://ssrn.com/abstract=4578761>>.

²³ Coglianese (n 18) 72–73.

²⁴ *Pintarich v Deputy Commissioner of Taxation*, FCAFC 79, judgment of 25 May 2018. More about the case in Paul Daly, Jennifer Raso and Joe Tomlinson, ‘Administrative Law in the Digital World’ in Carol Harlow (ed), *A Research Agenda for Administrative Law* (Edward Elgar Publishing 2023) 257.

²⁵ Maja Brkan, ‘Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond’ (2019) 27 *International Journal of Law and Information Technology* 91, 93.

Therefore, it is not clear whether it is accurate to speak of fully automated administrative decision-making at all.

Some of the EU's activities use a rather simple version of automated processing of information contained in large-scale information systems. An example is the processing of data contained in the Schengen Information System,²⁶ which stores biometric data for use in migration policy or to combat crime or enforce criminal law in the area of freedom, security and justice (AFSJ). The system is able to compare biometric data to verify the identity of the individual. On the basis of the comparison, such a person may be denied a visa or may be apprehended, detained or even prosecuted. Such a practice may be referred to as semi-automated conduct or semi-automated decision-making.²⁷

More advanced ADM tools use large databases and process the data contained in them according to pre-defined rules to calculate probabilities in order to respond to tasks embedded in the programme. Some software tools used in public administration may also be based on so-called artificial intelligence (AI) or may contain AI components. However, it is difficult to find a clear definition of AI, as even technology experts cannot agree on what such a system is and what it should be able to do. At the same time, it is not clear where to draw the line between an advanced algorithm, usually based on a decision tree (“white box” where its branches are traceable and understandable, at least for IT experts²⁸), and a true AI system, which is presented as a “black box” because it is difficult or even impossible to identify the way it learns and generates results.

The European Commission has suggested a definition of AI in its communication,²⁹ saying that AI “refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or Internet of Things

²⁶ Regulation (EU) 2018/1860 of the European Parliament and of the Council of 28 November 2018 on the use of the Schengen Information System for the return of illegally staying third-country nationals. PE/34/2018/REV/1, OJ L 312, 7.12.2018, p. 1–13.

²⁷ Demková (n 16).

²⁸ Davide Liga, ‘The Interplay Between Lawfulness and Explainability in the Automated Decision-Making of the EU Administration’ [2023] Indigo Working Papers 4 <<https://project-indigo.eu/>>.

²⁹ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on Artificial Intelligence for Europe, Brussels, 25.4.2018, COM(2018) 237 final.

applications).” However, this broad definition is not very helpful in understanding the AI components used within administrative action.

Moreover, there are many ways and techniques to build an AI system. Some AI systems process data on the basis of pre-defined rules (so-called rule-based systems), while there are others which are given testing data and testing results (e.g. past decisions) and are capable of inferring the algorithm by themselves without being given the pre-defined rules. The first group of systems is therefore based on “if-then” algorithms: The system is given certain rules, facts, and structures, and based on the input data, it calculates probabilities to generate outcomes. The latter use a technology known as machine learning or, as a subcategory, deep learning, which mimics the way neural networks work: Instead of telling the tool what to do, the tool learns by looking at examples. It is able to deduce correlations from the input data, on the basis of which it generates its own algorithm.³⁰

There are other ways to classify different AI systems or AI components included in ADM tools according to the type of training data, the type of rules, or the type of supervision: On the one hand, there are supervised AI systems, where a human is able to explain to some extent how the AI system learns, and on the other end of the spectrum, there are unsupervised AI systems, which operate as a true “black box” tool, and it is difficult for humans – including IT experts – to decode or decipher how the system learns and how it produces results.³¹ In both cases and across the range of AI tools, the result usually imitates human reasoning and communication very convincingly, but – as it has been argued – the tools themselves, at least at the present-day stage of development, lag behind in determining the reasons and sources from which the result was made, or in explaining the relations between such reasons and sources.³² The process that precedes the result is therefore less convincing.

Although the AI systems based on unsupervised learning pose questions about their legitimacy, accuracy and reviewability, they can still have their place within administration as “creative advisors” – they can help with agenda setting, or they can be asked to generate questions, advises or patterns stemming from the large amount of data, which a single human being does not have a capacity to analyse.

³⁰ Cf. Michèle Finck and Melanie Fink, ‘Reasoned A(I)Dministration: Explanation Requirements in EU Law and the Automation of Public Administration’ [2022] *European Law Review* 379, 378.

³¹ Cf. Cary Coglianese and David Lehr, ‘Regulating by Robot: Administrative Decision Making in the Machine Learning Era’ (2017) 105 *The Georgetown Law Journal* 1147, 1157–58, fn 37.; Finck (n 2) 3.

³² Cf. Hofmann, ‘Automated Decision-Making (ADM) in EU Public Law’ (n 7) 2.

The EU institutions have already started to experiment with the benefits of AI-assisted alerting systems. One example is a pilot experiment by DG Agri, which uses satellite monitoring of fields and AI to assess potential non-compliance with agricultural subsidy rules. The alert generated by the AI system is further investigated by human officials, and only then a legal decision is taken.³³ The EUIPO is also experimenting with AI tools and has already launched a pilot project that allows for an AI-based comparison of goods and services for trademark registration purposes.³⁴

In any case, regardless of their partial role within the cycle or process of administrative action, and regardless of their particular nature, ADM tools have the capacity to influence the final outcomes of administrative authorities. In the EU, the ever-increasing capacity and power of these tools is capable of changing the way in which EU rules are implemented and even enforced. It is arguably not an exaggeration to say that the employment of ADM tools can “re-shape the procedural design of implementation of EU policies.”³⁵

Such a capacity or ability may seem like a promising advantage, and the use of ADM or AI tools may be truly beneficial. At the same time, however, the dynamic evolution of such systems, together with the potential lack of human capacity to understand them properly, raises important questions from the perspective of the law, its fundamental principles and the fundamental rights of individuals who may be affected by the use of these tools.

Depending on the stage at which automation is used, or the objective for which an ADM tool is used, but also on the specific type of ADM, different values, interests and rights protected by the EU may be affected. When ADM tools are used in the context of policy planning, agenda setting or administrative rule making, but also in the investigation phases of administrative actions, the legal challenges are of a different nature than in the case of individual decisions. In the first case, the principles of accountability, good governance, quality of administration, reasonableness in decision-making and efficiency or effectiveness are at stake and need to be assessed from a more systemic perspective. In the latter case, on the other hand, the question of legality and the rights of individuals must be at the centre of the assessment of the impact of the automation or algorithmic elements.³⁶

³³ Details about the experiment in Mir (n 6) 20. See also other examples of the use of AI or ADM tools in EU administrative law explained there.

³⁴ EUIPO: New AI-based comparison of goods and services, 29 March 2022, <<https://euipo.europa.eu/>>.

³⁵ Hofmann, ‘Automated Decision-Making (ADM) in EU Public Law’ (n 7) 2.

³⁶ Cf. Hofmann, ‘An Introduction to Automated Decision Making (ADM) and Cyber- Delegation in the Scope of EU Public Law’ (n 8) 23.

These legal challenges are aggravated by the multi-level system of EU law and by the complexity of its enforcement structures where authorities both from EU level and national level are involved.³⁷ Administrative cooperation often includes information sharing or informational cooperation between authorities.³⁸ In addition, the phenomenon of composite procedures requires input from several authorities at national or EU level, which poses challenges in terms of judicial review of the final outcome.³⁹ In sum, the multi-level system appears to multiply the legal challenges associated with the use of ADM instruments in EU administrative action.

It is therefore clear that the legal issues, problems and challenges related to automated processes in administrative decision-making in the EU are numerous. They can be analysed from different perspectives and angles, depending on the type of administrative action in which ADM tools are used, the actors involved in the process and how they are affected, or with regard to a type of tool, a stage of the administrative action in which it is used, or a result it produces. Yeung, for example, emphasises that our concerns about automated decision making are mainly about two interrelated aspects: first, the reliance on machines and the sole entrustment of decision-making to these tools, and second, the personal nature of the data, with which the machines are fed.⁴⁰ The following text takes a look at three levels of automated decision making where these concerns meet – the data, the ADM tool and the way it is programmed, and the output and its reviewability – and presents the legal issues or challenges associated with each of these levels.

3. Three levels of legal challenges

3.1. The data in the automated decision-making

The precondition for the effective and legal use of any ADM or AI tool is the existence of (accurate) data, its adequate storage and processing. The large amounts of information, usually stored in large databases, are indispensable both for the programming of the tool and for its use in practice. The legal challenges related to the use of ADM within the administrative action therefore start with the collection, storage and processing of the training data during the creation

³⁷ Cf. Herwig Hofmann, ‘Composite Decision Making Procedures in EU Administrative Law’ in Herwig Hofmann and Alexander Türk (eds), *Legal Challenges in EU Administrative Law* (Edward Elgar Publishing 2009).

³⁸ Cf. Jan Benjamin, ‘Safeguarding the Right to an Effective Remedy in Algorithmic Multi-Governance Systems: An Inquiry in Artificial Intelligence-Powered Informational Cooperation in the EU Administrative Space’ (2023) 16 *Review of European Administrative Law* 9.

³⁹ Cf. Mariolina Eliantonio, ‘Judicial Review in an Integrated Administration: The Case of “Composite Procedures”’ (2015) 7 *Review of European Administrative Law* 65, 66.

⁴⁰ Karen Yeung, ‘Why Worry about Decision-Making by Machine?’ in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019) 23.

of the ADM tool, which has to comply with the EU data protection regulations: GDPR and EUDPR.⁴¹ Another set of legal challenges also arises when the ADM tool is used in practice, processing concrete (personal) data in order to make a concrete administrative decision.

With regard to data and their efficient use in the EU, there are at least three categories of legal challenges and of necessary legal rules, which must be made and observed. First, it is necessary to provide a framework for the creation and maintenance of large-scale databases. A prominent example is the Schengen Information System which stores data for the purposes of the AFSJ, specifically for border management. The EU has even established a specialised agency, which is charged with the collection and storage of data in this policy – eu-LISA.⁴² Similar information systems have been developed for the purposes of other EU policies, such as human and veterinary medicine products, plant health, or food and non-food products safety.⁴³ They usually serve as platforms for information exchange and provide alerts in risk regulation.

In order to make efficient use of such stored data, the EU must lay down rules to ensure interoperability.⁴⁴ The principle of interoperability is a prerequisite for linking different data collections, which enables data processing by different ADM tools.⁴⁵ Interoperability allows databases to be interconnected and enables ADM tools to search for data in different databases and to match the data for pre-defined purposes. The EU legislator has already regulated the interoperability of databases in the field of borders and visas,⁴⁶ and the proposal for the adoption

⁴¹ GDPR: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88; and EUDPR: Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC, OJ L 295, 21.11.2018, p. 39–98.

⁴² Established by Regulation (EU) No 1077/2011 of the European Parliament and of the Council of 25 October 2011 establishing a European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice, OJ L 286, 1.11.2011, p. 1–17. The original regulation was replaced by Regulation (EU) 2018/1726 of the European Parliament and of the Council of 14 November 2018 on the European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice (eu-LISA), and amending Regulation (EC) No 1987/2006 and Council Decision 2007/533/JHA and repealing Regulation (EU) No 1077/2011, PE/29/2018/REV/1, OJ L 295, 21.11.2018, p. 99–137.

⁴³ More on large scale information systems in these policies in Demková (n 16) 33–35.

⁴⁴ Cf. Deirdre M Curtin and Filipe Brito Bastos, ‘Interoperable Information Sharing and the Five Novel Frontiers of EU Governance: A Special Issue’ (2020) 26 European Public Law 59.

⁴⁵ Cf. Teresa Quintel, ‘Connecting Personal Data of Third Country Nationals. Interoperability of EU Databases in the Light of the CJEU’s Case Law on Data Retention’ [2018] *Europarättslig tidskrift*; Francesca Tassinari, ‘ADM in the European Union: An Interoperable Solution’ in Henrik Legind Larsen and others (eds), *Flexible Query Answering Systems*, vol 14113 (Springer Nature Switzerland 2023).

⁴⁶ Regulation (EU) 2019/817 of the European Parliament and of the Council of 20 May 2019 on establishing a framework for interoperability between EU information systems in the field of borders and visa and amending Regulations (EC) No 767/2008, (EU) 2016/399, (EU) 2017/2226, (EU) 2018/1240, (EU) 2018/1726 and (EU)

of general interoperability rules in the EU is currently under negotiation.⁴⁷ Another set of rules is needed to enable an efficient exchange of information.⁴⁸ Especially in the context of multi-level and decentralised enforcement of EU law, actors at both EU and national level need to have access to the data they need to fulfil their respective mandates. Data sharing and information exchange therefore need to be regulated and facilitated in EU public law. Moreover, there are EU policies where public actors at EU or national level need access to data collected and stored by private actors. Therefore, the EU needs to establish obligations for private actors to provide data, which will then be accessed and processed by public actors in policies such as financial regulation, communications, or travel safety.⁴⁹

The second category of data-related legal challenges is the necessity to guarantee an adequate quality of data. Regardless of whether the data are collected by private or public actors, the latter are responsible for the outcome based on such data. Therefore, the EU has already started issuing rules to supervise the quality of collected and stored data, and to set standards of data of adequate quality, when it comes, for example, to biometric data, or photographs and dactyloscopic data.⁵⁰ Not only must the individual pieces of information stored in the datasets be of adequate quality, but the datasets as a whole must meet certain standards. This is especially true for data used as training material for the development of more advanced ADM or AI tools. There is a risk that biased training data will lead to a biased AI model. The most obvious threat seems to be the potential discrimination induced by flawed datasets.⁵¹ Therefore, for the purposes of high-risk AI systems, the proposal for AI Act states that “[t]raining, validation and testing data sets shall be relevant, representative, free of errors and complete. They shall have the appropriate statistical properties, including, where applicable, as regards the persons or

2018/1861 of the European Parliament and of the Council and Council Decisions 2004/512/EC and 2008/633/JHA, PE/30/2019/REV/1, OJ L 135, 22.5.2019, p. 27–84.

⁴⁷ Proposal for a Regulation of the European Parliament and of the Council laying down measures for a high level of public sector interoperability across the Union (Interoperable Europe Act).

⁴⁸ Cf. Curtin and Bastos (n 44).

⁴⁹ More on this in Hofmann, ‘Automated Decision-Making (ADM) in EU Public Law’ (n 7) 11–12.

⁵⁰ E.g. Commission Implementing Decision (EU) 2021/31 of 13 January 2021 on laying down rules for the application of Regulation (EU) 2018/1862 of the European Parliament and of the Council as regards the minimum data quality standards and technical specifications for entering photographs, DNA profiles and dactyloscopic data in the Schengen Information System (SIS) in the field of police cooperation and judicial cooperation in criminal matters and repealing Commission Implementing Decision (EU) 2016/1345 (notified under document C(2020) 9228), C/2020/9228, OJ L 15, 18.1.2021, p. 1–6.

⁵¹ Cf. Antonio Vetrò, Marco Torchiano and Mariachiara Mecati, ‘A Data Quality Approach to the Identification of Discrimination Risk in Automated Decision Making Systems’ (2021) 38 *Government Information Quarterly* <<https://linkinghub.elsevier.com/retrieve/pii/S0740624X21000551>> accessed 14 January 2024. See below.

groups of persons on which the high-risk AI system is intended to be used. These characteristics of the data sets may be met at the level of individual data sets or a combination thereof.”⁵²

The third group of data-related legal challenges in the context of ADM consists of data processing, which must be in compliance with the GDPR or the EUDPR. Both these regulations⁵³ include a general prohibition to subject an individual solely to an automated decision-making. However, with regard to administrative decision-making, it foresees exception: Either the automated processing is explicitly approved by the data subject, or such automated processing of data is authorized by EU law or national law. In addition, the authorization must include safeguards to protect the rights and freedoms of individuals and legitimate interests. Therefore, whether it concerns national authorities acting within the scope of EU law or EU institutions, an individual cannot be affected by an administrative decision based on automated processing of data unless it is authorized by law and the authorizing measures provide for a sufficient level of protection of the individual's fundamental rights and legitimate interests in general. Where such automated processing is authorized by law, the data subject has the right to be informed of the existence of such automated decision making.⁵⁴ Furthermore, the data subject is protected by minimum safeguards: the right to human intervention, the right to express one's point of view and, finally, the right to contest the decision.⁵⁵

Where authorized automated data processing takes place in the context of administrative decision-making, the required protection of fundamental rights will include procedural rights guaranteed by the EU Charter, such as the right to good administration and the right to effective judicial protection, but also substantive rights, such as non-discrimination or the right to privacy. The protection of substantive rights may be particularly relevant when more advanced tools, or tools with AI elements, are used for automated data processing. With regard to the nature of these tools and the way they are constructed, individuals are affected not only by the automated processing of their own personal data, but also by the processing of aggregated data

⁵² Article 10(3) of the Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts from April 2021.

⁵³ Article 22 GDPR and Article 24 EUDPR.

⁵⁴ Articles 12, 13, and 14 GDPR, and in Articles 15, 16 and 17 EUDPR.

⁵⁵ Article 22(3) GDPR, and Article 24(3) EUDPR. More on these rights in, e.g., Filip Geburczyk, ‘Automated Administrative Decision-Making under the Influence of the GDPR – Early Reflections and Upcoming Challenges’ (2021) 41 Computer Law & Security Review 105538, 6–10.

about other individuals collected and used as training data for the AI system.⁵⁶ In addition to this, the requirement for the protection of fundamental procedural rights will become relevant, in particular with regard to the assessment of the output, when the final decision is subject to review by a court of law. It is therefore clear that the legal issues related to the processing of data are closely linked to the legal challenges at the other two levels: at the level of the ADM tool and its design, and at the level of the output and its reviewability.

3.2. The ADM tool and its design

A further set of legal challenges arise in relation to the programming of the specific software used as an ADM tool. The legal issues are relevant both to the creation of the ADM tool (*ex-ante* legal analysis) and to the evaluation of the functioning of such a tool (*ex-post* legal analysis).

While the commands and requirements used to program an algorithm may, at first glance, bear a resemblance to the rules and requirements of law, they are conceptually different.⁵⁷ Desirable human behaviour, or responses to undesirable behaviour, cannot simply be pre-programmed, while the computer performs the task according to the rules it has been given. When ADM tools are programmed, the process follows the logic of computation and algorithms. However, when the practical use of an ADM tool must comply with the law, the programming itself must carefully follow the legal requirements. Any computational algorithm is based on rules, but when an ADM tool is used in administrative decision-making, it must be based on legal rules. Therefore, ADM tools used within the scope of EU law must comply with EU legal requirements.⁵⁸ The nature of the legal rules themselves is particularly challenging, as they are susceptible to different interpretations and sometimes allow for discretionary decisions, which makes their inclusion in an ADM tool rather complicated. Legal rules incorporated into an ADM must therefore be precise, unambiguous and resistant to being interpreted in too many ways.⁵⁹

This is where the asymmetry between the computational system and the legal system comes to the fore. At the same time, the so-called epistemic asymmetry of the actors involved in the process must be highlighted.⁶⁰ Experts in programming and AI training have different epistemic

⁵⁶ Elif Biber Sümeyye, 'Between Human and Machines: Judicial Interpretation of the Automated Decision-Making', *University of Luxembourg Law Research Paper No. 19* (2023) 14 <<https://ssrn.com/abstract=4662152>>.

⁵⁷ Cf. Hofmann, 'An Introduction to Automated Decision Making (ADM) and Cyber- Delegation in the Scope of EU Public Law' (n 8) 4–5.

⁵⁸ Cf. Hofmann, 'Automated Decision-Making (ADM) in EU Public Law' (n 7) 33.

⁵⁹ Brkan (n 25) 95.

⁶⁰ Cf. Federica Russo, Eric Schliesser and Jean Wagemans, 'Connecting Ethics and Epistemology of AI' [2023] *AI & SOCIETY* 8–10.

equipment than specialists in a particular field of administration or lawyers in general. While the former may be blind to some aspects that are relevant from a legal perspective, the latter may not fully understand what an ADM tool or a computational aid can or cannot process or how exactly it works. The practical challenge is therefore how to bridge the computational and legal spheres, and how to create an ADM that does what the administration wants it to do and is compliant with the legal requirements.

An important aspect of this may already be the question of who will programme the tool and what relationship that person will have with the administrative body. There are several models of how an ADM tool can be set up for administrative purposes: an administrative body can purchase the tool from an external supplier, or it can employ external specialists to work alongside its own staff. Both models raise public procurement issues.⁶¹ It may also be problematic to allow external suppliers to access the databases maintained by the authorities,⁶² or there is a potential risk that the data or even the know-how acquired in creating an ADM tool for public use will be further used for commercial purposes. Another model is to use internal sources, where the authority's own staff programme and train the whole tool.⁶³ The main challenge here seems to be how to attract highly skilled AI experts who would be willing to work for a public authority.⁶⁴ It should be noted that different people involved in the programming process may have different visions, but also different interests.⁶⁵ In any case, no matter which model of cooperation is chosen by the public authority concerned, the principle of good administration will have to be respected. At the end of the day, the administrative authority will be responsible for the ADM tool and its outputs, so whether the tool is created or co-created by private actors or developed internally, the authority must be able to clearly communicate its needs for the intended outcome. It must also be able to assess whether the final tool fulfils the task for which it was created and whether the tool complies with legal requirements.

The Court of Justice has already tackled the legal aspects of programming ADM systems. It stated that “the pre-established models and criteria on which that type of data processing are

⁶¹ Cf. Merve Hickok, ‘Public Procurement of Artificial Intelligence Systems: New Risks and Future Proofing’ [2022] AI & SOCIETY; Keegan McBride and others, ‘Towards a Systematic Understanding on the Challenges of Procuring Artificial Intelligence in the Public Sector’ (SocArXiv 2021) preprint <<https://osf.io/un649>> accessed 12 December 2023.

⁶² Cf. Finck (n 2) 10.

⁶³ As in case of EUIPO and its AI based experiment, cf. Mir (n 6) 20.

⁶⁴ On the difficulties of public authorities in hiring AI experts in the US context, see Coglianese (n 18) 40.

⁶⁵ Cf. Mir (n 6) 14.

based should be, first, specific and reliable, making it possible to achieve [intended] results.”⁶⁶ This means that the design of an ADM tool and the way in which an algorithm is programmed are of a high relevance, and they have a normative nature, since they are capable of predetermining what the output of automated processing will be.⁶⁷

One of the most discussed legal risks of advanced ADM tools is that of a potentially biased tool. In particular, ADM tools that include machine learning components are susceptible to being biased, and therefore even discriminatory, due to the biased training data.⁶⁸ For example, Huq talks about sample bias, feature bias, and label bias⁶⁹ with regard to data, based on which the tool is trained: If the sample is not representative, the pattern found by the tool cannot be representative either; if certain data are given a wrong feature, the tool learns based on this mistake, and finally, a problem arises if a biased or wrong label is put on a characteristic contained in the data, which should not be decisive for the outcome.⁷⁰

Without going into the details of the programming itself, it must be emphasised that the choice, quality and classification of the training data are relevant from a legal point of view. In particular, the assignment of labels and features is a very sensitive task, which can be harmful if it is carried out without proper knowledge of the legal relevance of the training data and the type of bias that the data can lead to.⁷¹ If a tool is fed by discriminatory inputs, it will produce discriminatory results. In this respect, the CJEU has already stated that sensitive data as defined in Article 9 of the GDPR (racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, or data concerning health and sex life or sex preferences) cannot be used for automated analysis, otherwise such processing would be in breach of Articles 7, 8 and 21 of the EU Charter.⁷²

⁶⁶ CJEU, judgment of 6 October 2020, *La Quadrature du Net*, C-511/18 – C-520/18, EU:C:2020:791, paragraph 180, referring to Opinion of 26 July 2017, *EU-Canada PNR Agreement*, C-1/15, EU:C:2017:592, paragraph 172.

⁶⁷ Cf. *Mir* (n 6) 14–15.

⁶⁸ For the overview of biases in algorithms, see, e.g., Benjamin Van Giffen, Dennis Herhausen and Tobias Fahse, ‘Overcoming the Pitfalls and Perils of Algorithms: A Classification of Machine Learning Biases and Mitigation Methods’ (2022) 144 *Journal of Business Research* 93.

⁶⁹ Aziz Z Huq, ‘Constitutional Rights in the Machine Learning State’ (2020) 105 *Cornell Law Review* 1875, 1924–1925. Referring to Sam Corbett-Davies and others, ‘The Measure and Mismeasure of Fairness’ [2023] *Journal of Machine Learning Research* 1, 17–19.

⁷⁰ *Ibid.* See the examples described there, especially with regard to gender discrimination or racial discrimination. Cf. also Coglianese (n 18) 47–49.

⁷¹ Cf. Harini Suresh and John Guttag, ‘A Framework for Understanding Sources of Harm throughout the Machine Learning Life Cycle’, *Equity and Access in Algorithms, Mechanisms, and Optimization* (ACM 2021) <<https://dl.acm.org/doi/10.1145/3465416.3483305>> accessed 30 November 2023.

⁷² CJEU, judgment of 6 October 2020, *La Quadrature du Net*, C-511/18 – C-520/18, EU:C:2020:791, paragraph 165.

It follows that even the programming of the ADM tool must respect the fundamental rights protected by EU law, such as the right to privacy, the right to respect for private and family life, and non-discrimination. Those who build the algorithms and train the machine must be aware of the legal requirements and the legal relevance of the data used. In addition, the Court points to the need to regularly re-examine the programme and its results “to ensure that those pre-established models and criteria and the databases used are reliable and up to date.”⁷³ In other words, once a particular ADM tool has been trained and put into practice, it needs to be constantly monitored and evaluated in terms of its operation and output.

Another aspect related to the programming of ADM tools, which has already been discussed in the literature,⁷⁴ is the issue of impact assessments and public consultations in relation to the particular tools. The idea is that ADM tools can have a similarly significant impact as administrative regulation, which is subject to impact assessment, and that such assessment can serve as a precautionary measure to identify potentially harmful tools.⁷⁵ The European Law Institute (ELI) has even published a report suggesting what such an impact assessment of ADM instruments should look like.⁷⁶ According to these ELI Model Rules, the evaluation should not be limited to the pre-launch phase and the programming process itself, but should continue after the ADM tool has been put into practice.⁷⁷ This is in line with the above-mentioned requirement of the Court of Justice that the programme used for automated processing must be subject to regular re-examination to ensure its accuracy and reliability. In addition, there may be a problem with more advanced ADM tools that use AI elements that learn from the past, i.e., from the data describing events that have already occurred. Without adaptation, these tools are unable to take into account new circumstances and a broader context. By themselves, the tools or systems cannot decide to override a past decision if circumstances change.

The re-assessment of the tool may identify and correct errors in the algorithm itself, but it may also lead to an *ex officio* review of erroneous decisions taken using the previous version of the ADM tool.⁷⁸ Such a preventive assessment of ADM tools would make sense mostly in the case

⁷³ Ibid., paragraph 182; referring to Opinion of 26 July 2017, EU-Canada PNR Agreement, Opinion 1/15 EU:C:2017:592, paragraphs 173 and 174.

⁷⁴ Mir (n 6) 16-17 + literature quoted in fn 55. Cf. also Finck (n 2) 14-16.

⁷⁵ Cf. Herwig Hofmann, Oriol Mir and Jens-Peter Schneider, ‘Digital Administration. The ReNEUAL Model Rules on EU Administrative Procedure Revisited’ in Fromage Diane (ed), *Jacques Ziller, a European scholar* (European University Institute 2022) 94-95.

⁷⁶ ELI Model Rules 2022: Model Rules on Impact Assessment of Algorithmic Decision-Making Systems Used by Public Administration. <https://www.europeanlawinstitute.eu/>

⁷⁷ Ibid., Article 14.

⁷⁸ Mir (n 6) 18.

of those tools, which have a direct or at least strong impact on individual decision-making.⁷⁹ But it can also be useful in the case of ADM tools used for agenda setting and other more creative tasks. It can reveal potential flaws before policy choices based on the results of ADM tools are put into practice.

3.3. The output, its oversight and its reviewability

The evaluation of the output of ADM tools is not separate from the previous two aspects. In fact, the evaluation of the output includes the *ex-post* legal analysis of the ADM tool, its design and the way it has been programmed, since the technique of the tool influences the result, which it generates. At the same time, the *ex-post* evaluation must take into account the data used and processed in the stages leading to the output.

This is linked to one of the fundamental rights protected under EU law, namely the right to good administration. As defined in Article 41 of the EU Charter, this right includes a corresponding duty of care, which requires from administrative authorities acting under EU law “to examine carefully and impartially all the relevant aspects of the individual case”.⁸⁰ It follows that when an ADM tool is used, these procedural safeguards must be respected. First, the principle of procedural fairness requires that the individual be informed that the decision has been taken with the assistance of an ADM tool. Secondly, automated processing must not result in an assessment of the relevant facts that is less thorough than that carried out by human officials. This also requires human oversight of the accuracy of the output.⁸¹ As the Court of Justice has pointed out in the context of automated analyses of traffic and location data, ADM tools can make mistakes, therefore “any positive result obtained following automated processing must be subject to an individual re-examination by non-automated means before an individual measure adversely affecting the persons concerned is adopted.”⁸²

The principle of good administration in Article 41 also includes an important obligation for public authorities to give reasons for their decisions.⁸³ In addition, anyone whose rights and

⁷⁹ Cf. Hofmann, ‘An Introduction to Automated Decision Making (ADM) and Cyber- Delegation in the Scope of EU Public Law’ (n 8) 28.

⁸⁰ CJEU, judgment of 21 November 1991, Technische Universität München, C-269/90, EU:C:1991:438, paragraph 14.

⁸¹ Cf. Mir (n 6) 12.

⁸² CJEU, judgment of 6 October 2020, La Quadrature du Net, C-511/18 – C-520/18, EU:C:2020:791, paragraph 182.

⁸³ While this article refers to the principle of good administration to be applicable to EU institutions and bodies, the very same rule applies to national authorities when acting within the scope of EU law as a matter of the general principle of EU law (see, e.g., CJEU, judgment of 8 May 2019, PI v Landespolizeidirektion Tirol, C-230/18, EU:C:2019:383 , paragraphs 56–58.).

freedoms under EU law have been violated has the right to effective judicial protection under Article 47 of the EU Charter. The reasons on which a decision is based are important both for the individual concerned and for the court providing judicial review. A person affected by an administrative decision must be able to understand the reasons for it in order to know how to defend himself before a court and whether there is any chance of a successful challenge before a court. As the CJEU explains, the reasons must be “sufficiently specific and concrete to allow the person concerned to understand the grounds of the individual measure adversely affecting him,” therefore the duty to give reasons is “a corollary of the principle of respect for the rights of the defence, which is a general principle of EU law.”⁸⁴

In parallel, in order for a court to assess whether an administrative decision based on, or assisted by, an ADM tool has violated the rights of individuals, it must examine the reasons for such a decision. It recalls the basic condition for judicial review on the merits: an administrative decision must be based on reasons which are consequently subject to review. The absence of reasons or the objective inability of a court to identify and understand them are the simplest grounds for setting aside an administrative decision. As the CJEU constantly puts it, “the obligation to state reasons is an essential procedural requirement that must be distinguished from the question whether the reasoning is well founded, which is a matter of the substantive legality of the contested act.”⁸⁵ In other words, when a court has to assess the legality of an administrative decision, it must be able to reconstruct the reasoning that led to that decision, and only if the reasoning is comprehensible can the court provide a substantive review.

One of the most pertinent issues with advanced ADM tools is the so-called algorithmic opacity, which may consist in technical illiteracy, i.e. the epistemic limitations of non-experts to understand the algorithm, but also in the nature of machine learning itself, where even experts are unable to explain how the system works.⁸⁶ Opacity may also be intentional, where intellectual property rights prevent the disclosure of how the tool works.⁸⁷

⁸⁴ CJEU, judgments of 22 November 2012, *M.*, C-277/11, EU:C:2012:744, paragraph 88, and of 11 December 2014, *Boudjlida*, C-249/13, EU:C:2014:2431, paragraph 38.

⁸⁵ CJEU, judgments of 5 May 2022, *Commission v Missir Mamachi di Lusignano*, C-54/20 P, EU:C:2022:349, paragraph 69; of 10 March 2022, *Commission v Freistaat Bayern and Others*, C-167/19 P and C-171/19 P, EU:C:2022:176, paragraph 77; or of 30 November 2016, *Commission v France and Orange*, C-486/15 P, EU:C:2016:912, paragraph 79.

⁸⁶ For the explanation, see mainly Jenna Burrell, ‘How the Machine “Thinks”: Understanding Opacity in Machine Learning Algorithms’ (2016) 3 *Big Data & Society*.

⁸⁷ Finck and Fink (n 30) 383.

In general, opacity limits the principle of equality of arms, but it also limits the reviewability of the result as such. The more complex and sophisticated the instrument, the more difficult it is to assess the accuracy and even the legality of its output. As noted by the Court of Justice, “given the opacity which characterises the way in which artificial intelligence technology works, it might be impossible to understand the reason why a given program arrived at a positive match.”⁸⁸ Consequently, use of such AI technology “may deprive the data subjects also of their right to an effective judicial remedy enshrined in Article 47 of the Charter.”⁸⁹

The opacity of AI tools leads to their prohibition in certain contexts, such as in case of the data processing under the PNR Directive.⁹⁰ As the Court of Justice has already highlighted, the Directive explicitly allows the data processing solely based on “pre-determined” criteria, which means that it “precludes the use of artificial intelligence technology in self-learning systems (‘machine learning’), capable of modifying without human intervention or review the assessment process and, in particular, the assessment criteria on which the result of the application of that process is based as well as the weighting of those criteria.”⁹¹

Therefore, a true challenge for actors reviewing the outputs of ADM tools is to understand how the system processes the data, and how it generates the results, in order to assess whether the processing and the results are correct and in compliance with law. A concept, which is discussed in this context especially with regard to advanced ADM tools or AI assisted tools, is *explainability*. However, this concept can have several meanings. The European Commission works with its technical meaning and defines technical explainability as a requirement “that the decisions made by an AI system can be understood and traced by human beings.”⁹² Nonetheless, even technical explainability is not a definite and homogenous term, because there can be several types of explainability depending on the perspective. As Liga argues, explainability can be acquired (when provided by the source itself), intrinsic (as an intrinsic quality of the target), external (depending on the literacy and comprehension of the target), and contextual (depending on the context in which the explanation is required).⁹³

⁸⁸ CJEU, judgment of 21 June 2022, *Ligue des droits humains*, C-817/19, ECLI:EU:C:2022:491, paragraph 195.

⁸⁹ *Ibid.*

⁹⁰ Article 6(3)(b) of Directive (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime, OJ L 119, 4.5.2016, p. 132–149.

⁹¹ CJEU, judgment of 21 June 2022, *Ligue des droits humains*, C-817/19, ECLI:EU:C:2022:491, paragraph 194.

⁹² European Commission, Directorate-General for Communications Networks, Content and Technology, Ethics guidelines for trustworthy AI, Publications Office, 2019, <https://data.europa.eu/doi/10.2759/346720>

⁹³ Liga (n 28) 2.

In all these meanings, however, technical explainability refers to the ability of humans to understand how an ADM system works or to analyse individual steps within its processes.⁹⁴ It may therefore be understandable to IT or AI experts, but this does not ensure that the output itself will be understandable to administrative officials or lawyers assessing its legality. As Hildebrandt aptly observes, “an explanation is not the same as a justification.”⁹⁵ The technical explanation will not help a court when it is asked to review an administrative decision based on or supported by an ADM tool, but it is also of little importance to the individual affected by such a decision. For an individual who is not an IT or AI expert, knowing the logic of how the software works is not enough to understand how his or her situation has been assessed and the legal reasons behind the decision. The information about the algorithm, however detailed or meaningful it may be to an IT or AI expert, is not sufficient for an individual affected by an ADM-assisted decision to make a proper appeal against such a decision, nor for a court to conduct a judicial review.

Some authors therefore claim that in the context of ADM or AI-assisted administrative decision-making, the requirement of explainability should be understood in terms of “legal explanation”,⁹⁶ because the duty to give reasons and legal reasoning in general are conceptually different from algorithmic explanation.⁹⁷ ADM tools should be used in administrative decision-making in a way that mimics human decision-making. This means that the standard of justification provided with the aid of ADM or AI tools, and hence the standard of reviewability of the final administrative decision, should be the same as that required when a decision is taken without any algorithmic assistance. In other words, the desired standard should be the “human standard for explanation”.⁹⁸ Regardless of the tool itself, and the design behind it, its output must be legible, meaningful, and understandable to a human being who will assess its legality.

However, this should not mean that the technical or algorithmic explainability is without any legal relevance in terms of the reviewability of the final decision. Knowing how the tool works, what data is processed and why can still be an important part of understanding the final decision

⁹⁴ Methods how to ensure an explainable AI system described also by Liga in *ibid* 5–6. Cf. also Finck (n 2) 14–16.

⁹⁵ Mireille Hildebrandt, ‘Algorithmic Regulation and the Rule of Law’ (2018) 376 *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*.

⁹⁶ Henrik Palmer Olsen and others, ‘What’s in the Box? The Legal Requirement of Explainability in Computationally Aided Decision-Making in Public Administration’ in Hans-W Micklitz (ed), *Constitutional Challenges in the Algorithmic Society* (Cambridge University Press 2022) 222.

⁹⁷ Cf. Zsolt Zódi, ‘Algorithmic Explainability and Legal Reasoning’ (2022) 10 *The Theory and Practice of Legislation* 67.

⁹⁸ Olsen and others (n 96) 226.

and its reasoning.⁹⁹ This may even be important for an individual affected by the decision. Even the Court of Justice has stated that, in the context of decisions under the PNR Directive, an individual must be provided with relevant information on how the pre-determined criteria and programs applying those criteria work, so that “it is possible for that person to decide with full knowledge of the relevant facts whether or not to exercise his or her right to the judicial redress.”¹⁰⁰ What remains is that the mere explanation of the ADM tool is not enough for a proper legal assessment of the final decision.

Moreover, technical explainability and transparency of the algorithmic system in general¹⁰¹ remain highly relevant for the administration itself when it employs ADM tools in policy decision-making or when such a tool assists when opting for policy strategies. In such a context, ADM tools have no direct legal effect on individuals, their output is not subject to the obligation to give reasons and they are not intended to be subject to judicial review, but from the perspective of accountability and the principle of good administration, it is nevertheless important for the administration itself to check the quality of such ADM-supported outputs. Administrative authorities need to know what they are using, so not only do they need to be involved in the design and maintenance of the ADM tool, but they also need to be able to check the accuracy of the outputs.¹⁰²

4. Conclusion: Let us keep addressing legal challenges

From the perspective of EU administrative decision-making, ever-increasing computing power, new digital or algorithmic tools and the development of AI offer almost unimaginable opportunities to improve the quality of public administration, making it more objective, more consistent, faster and more efficient. At the same time, however, the use of digital tools and of automated data processing leads to an unprecedented range of potential problems and challenges. Automated processing can put individuals and their fundamental rights at risk. The automation, speeding up and delegation of administrative tasks to machines can also have a negative impact on the transparency and accountability of administrative action in general. Moreover, the devil may be in the detail, because even the supposed accuracy, efficiency and

⁹⁹ Cf. Finck (n 2) 15–16.

¹⁰⁰ CJEU, judgment of 21 June 2022, *Ligue des droits humains*, C-817/19, ECLI:EU:C:2022:491, paragraph 210.

¹⁰¹ Tobias D Krafft, Katharina A Zweig and Pascal D König, ‘How to Regulate Algorithmic Decision-making: A Framework of Regulatory Requirements for Different Applications’ (2022) 16 *Regulation & Governance* 119, 120–125.

¹⁰² Cf. Daly, Raso and Tomlinson (n 24) 256.

objectivity offered by digital tools may be illusory, as the outputs of such tools can be affected by various types of bias.

It is entirely understandable that public administrations and their officials, with the help of external experts, are experimenting with the possibilities offered by automation and algorithmic governance. However, the potential risks and challenges need to be constantly monitored. To the extent that these challenges are legal in nature, it is also a task for legal scholars to address them. The overview of some of the legal challenges associated with the three levels of use of ADM tools has shown that there are many aspects or even niche issues that require scrutiny and legal assessment. Whether it is data and its processing, ADM tools and their programming, or various types of algorithmic outputs and their further processing or review, there are legal requirements to be observed and therefore a large number of legal issues to be highlighted. Moreover, a more detailed and “zoomed in” analysis would reveal other sets of challenges or problems that deserve a closer look from a legal perspective. The sole phenomenon of the automation of administrative action thus poses a challenge to legal scholars to identify and analyse all potential legal issues.

In addition, the constant development and improvement of the various ADM tools, and the emerging or even experimental nature of automation of administrative action as such, mean that the associated legal issues are a moving target. As a result, any legal analysis or assessment of the tools and their impact is never conclusive. The real challenge for lawyers, including legal scholars, is therefore to keep abreast of technological developments and administrative experimentation, and to keep addressing any legal issues that may arise.