Chapter Six

Automated Decision-Making and Delegation

* Discussing Implications for EU Public Law

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Technological advances allow for an ever-greater autonomy of automated decision making (ADM) systems in public law. But how can these be held accountable? This paper looks at the question by reviewing some basic concepts of public law, especially legal concepts concerning the delegation of powers. The paper takes into account that ADM systems are software based, are often developed, and deployed with public-private cooperation and are based on large scale data collections. These characteristics need to be considered in developing models of accountability, looking at the relation between law and software (2), asking for procedural requirements for increasingly autonomous ADM (3), analyzing the role of private actors (4) and gives an outlook on cyber-delegation in the EU.

1. Background

The use of automated decision-making (ADM) technology is spreading in public administrations. This influences procedural rules and the possibility to comply with legal principles structuring procedures. changes individual decision-making procedures – both with respect to individual decision-making (adjudication) as well as concerning administrative rule making procedures. In fact, software underlying ADM systems may be considered in some situations as capable of fulfilling the same functions as administrative rule-making procedures. But when considering ADM systems in public law, it is also important to understand that they are often programmed in the context of specific data basis and usually address a certain phase of a procedure only. For example, ADM based searches of data sets may be used in order to select cases which call for the initiation of an investigation. They may also be used in support of the analysis of data during an ongoing administrative procedure. Such far reaching use of technology for decision making can be referred to as cyber-delegation, in the sense that ADM systems are granted ever more autonomy in decision making. In this sense, cyber-delegation could be described as the delegation of fully defined procedural phases or even entire decision-making procedures.

Cyber delegation under this definition seems like a rather distant possibility in that it is an issue for which very few real-life examples seem to currently exist in public law. The matter will maybe only become relevant in view of further technical advances allowing for automation of full decision-making procedures from initiation to implementation.

Upon closer inspection, however the trajectory is clear. One reason is that many automation processes in EU public law are linked to large data sets, jointly developed, and maintained by Member States and the EU, the analysis of which is automated. The conclusions of that analysis often pre-define the final decisions. In the EU, data bases of EU Member States, for example exist in the field of the Area of Freedom Security and Justice (AFSJ) in its Schengen Information System II. But ongoing automation of decision making also comes from a different angle in that the decision making in the implementation of EU policies is given to private parties. There is also a tendency to delegate public enforcement obligations to private parties, who can discharge their duties in a cost-effective way only by automation.[[2]](#footnote-2) Such delegation of public duties thus leads to additional issues of delegation and of control and supervision of powers.

Therefore, the issues of cyber-delegation in EU public law which is rising in prominence in EU public law and will sooner or later become very relevant in view of technical advances. The growing autonomy of automated decision-making systems would importantly indicate a transformation of ADM from being a ‘tool’ to becoming an ‘agent’. Such step would be reached when the outcomes of procedures predominantly relying on ADM are, in principle, binding. No meaningful human input would be necessary to adopt binding decisions. The reason for this status as having been referred to in the literature as cyber-delegation,[[3]](#footnote-3) is that both the enabling decision and the modes of control of ADM in public law will change in the context of further reaching autonomy of decision making. Any regulatory approaches, in general administrative law or specific policy-area related regulation should be oriented towards being capable of addressing ever more autonomous forms of decision-making. This paper argues, that much of the underlying conceptual work is to re-consider how general principles of public law function in the context of a world of more autonomous agents of automated decision making.[[4]](#footnote-4)

This paper outlines some key elements thereof in order to set out an agenda for further research considerations. It uses EU public law as the example area on the basis of which these questions are discussed. A comparative view will show that many of these considerations are also of a more general relevance applicable to other legal systems.

2. Limits to Delegation and the Notion of ‘Law’

Using a delegation-based framework to study modes of accountability of increasingly autonomous decision-making systems raises a series of questions. The possibilities of delegation and sub-delegation of powers are circumscribed by both by substantive and procedural limits.

a) Essential elements and human normative obligations

First, in EU constitutional law, limits to delegation of powers are for example formulated in Article 290 of the Treaty on the Functioning of the European Union (TFEU). This reserves certain elements of decision making to the legislature and does not allow the delegation thereof to the executive branch of power in so called delegated acts. The scope of non-delegable content includes the “objectives, content, scope and duration of the delegation”. Delegating these “essential elements of an area” is not permitted.

The latter term is linked to limits to delegation of powers to ADM technology where decisions concerning the exercise of fundamental rights are concerned. Article 52(1) of the EU’s Charter of Fundamental Rights (Charter) requires that any limitation on the exercise of the rights and freedoms to “be provided for by law” and, be defined therein.[[5]](#footnote-5) ‘Law’ in this sense is legal code derived from pre-defined decision-making procedures in conformity with legislative procedures.[[6]](#footnote-6) Any limitations of fundamental rights which might result from the application of computer-code based ADM-systems must therefore be pre-determined by in what is recognizable as law under Article 52(1) CFR.

The notion of ‘law’ is conceptually linked to its accessibility. Individuals must be able to discern from freely available and officially published texts which limitations to their rights and freedoms they might be asked to endure. This requirement raises fundamental questions as to the nature of law in relation to software codes in a computer programme.

Accordingly, although an ADM-system itself, identifying criteria for the implementation of a legislative act towards individual decision-making, might de-facto have the effect of executive rulemaking, it will not qualify as ‘law’ under Article 52(1) CFR. Computer code, well hidden in sometimes proprietary software, is interpretable, if at all, only to experts trained in specific specialist areas of computer science. Where the code contains machine learning technology even that may be difficult. After all, machine learning technology is made to experiment and to refine its own approach to suggesting decisional outcome from its calculations varying input. Machine learning technology, which may amend the criteria of decision-making in a dynamic fashion by adjusting future output to results of past calculations, will not necessarily be possible for an expert to deduct in a linear fashion from the code the potential output. Often programmers themselves do not fully understand how the system will reach its output, and possibly similar to the development of a medicine in medical research, resort to a certain degree of trial-and-error approach to finding the right ‘formula’ by which more often than not a good outcome is achieved.

This approach however does not comply with a traditional concept of legal programming by law, especially not when it concerns limitations of (broadly defined scopes of) fundamental rights. At least it might be concluded that such approach could not be considered to comply with the requirements of accessibility and intelligibility associated with the notion of law in Article 52(1) Charter. Accordingly, in the context of limitations of the right to the protection of privacy and personal data (Articles 7 and 8 Charter), the Court of Justice of the European Union (CJEU) has requested that

“the requirement that any limitation on the exercise of fundamental rights must be provided for by law implies that the legal basis which permits the interference with those rights must itself define the scope of the limitation on the exercise of the right concerned.[…] In order to satisfy that requirement, the legislation in question which entails the interference must lay down clear and precise rules governing the scope and application of the measure in question and imposing minimum safeguards…”[[7]](#footnote-7)

The CJEU in this context speaks explicitly of a legislative act to undertake the clear and predictable limitations of fundamental rights. The notion of ‘minimum safeguards’ refers to the realisation of procedural principles, the notion of the ‘scope of application’ refers to the degree and extent of ADM possibilities in data processing. The court continued in finding that the extent of the interference with fundamental rights by automated analyses of data,

“essentially depends on the pre-established models and criteria and on the databases on which that type of data processing is based.”[[8]](#footnote-8)

An additional requirement of a detailed legislative basis arises from Article 22 of the EU’s General Data Protection Regulation (GDPR).[[9]](#footnote-9) This requires that where a fully automated decision making will take place, which creates binding legal effects or significantly effects individual interests, that must be undertaken with a clear legal basis. Consent will not suffice as legal basis (although provided for in Article 22(2)c) GDPR) because where the data controller is a public body, recital 43 of the GDPR finds, it is “…unlikely that consent was freely given in all the circumstances of that specific situation.” Therefore, ADM will have to rely on Article 22(2)(b) GDPR, which requires a legal basis that “… lays down suitable measures to safeguard the data subject’s rights, freedoms and legitimate interests”. Where a matter is particularly sensitive to fundamental rights, delegation of decision-making to an ADM system and the processing of data necessary for this purpose will only be permissible for a “substantial public interest” and proportionality must be ensured by means of specific suitable measures provided for in the enabling legislation (Article 22(4) GDPR).

b) The relevance of pre-established models and criteria

The Court requests that such “pre-established models and criteria (…) should be specific and reliable.”[[10]](#footnote-10) That means that the normative legal programming of limitations must be represented in the computer programming code underlying ADM systems. Any machine-learning based systems must be able to demonstrate how they specifically and reliably comply with the pre-established models defined in the legal basis.[[11]](#footnote-11)

Problems arise with some machine-learning ADM technology, designed to find solutions rather than containing pre-designed steps to do so, since the latter are not always *ex ante* predictable in their output calculations. But the very idea of machine learning “to identify and, if necessary, automatically refine (or prompt refinement of) the system’s operations to attain a pre-specified goal”,[[12]](#footnote-12) needs to be carefully linked to normative programming.

Where, machine learning is based on advanced statistical methods to pick out patterns and correlations to infer from the data analyzed complex, nonlinear relationships that they were not specifically programmed to find, this must, in the context of the current approach to fundamental rights, take place in a normatively pre-defined framework of possible considerations.

But is the same true in areas which are not as individual rights sensitive as the protection of privacy and personal data? If one approaches the issue of regulatory limitations in the same way as the CJEU, the answer might be necessarily positive. For example, in the context of the protection of the right to an effective judicial remedy, the CJEU has held that regulatory limitations of individual freedoms are limitations of rights and freedoms in the context of Article 47 Charter. This was established by the CJEU in the development of a general defence right, protected as general principle of EU law giving “protection against arbitrary or disproportionate intervention by public authorities in the sphere of the private activities of any natural or legal person.”[[13]](#footnote-13) This fundamental right under EU law that can be limited only under the conditions restated for Charter rights in Article 52(1) Charter, i.e. on the basis of law, respecting the essence of the right and complying with the principle of proportionality.[[14]](#footnote-14)

In turn, this raises fundamental questions for a system developing with the help of machine learning tools or otherwise a genuine path to decision making. How to ensure that the approach will not be regarded as arbitrary or disproportionately limiting the right to freedom from regulatory intervention. The problem with discretion is that certain counter-factual considerations must be developed by a decision-maker. Especially when decision making must weigh various possible approaches to achieving a regulatory goal. Computer programming is to date not very advanced when it comes to documenting counter-factual considerations in a decision-making path.

3. Procedural Requirements for Autonomous ADM

Procedural limitations to delegation of powers are, as public policy studies on principle-agent theories have demonstrated, strongly related to information and information asymmetries. Legal principles in this respect include such requirements as compliance with the principle of transparency.

Transparency is a big topic and a key word in the regulation of technology. This is not surprising when thinking of ADM in terms of remedies and possibilities of independent judicial review. In this context, mainly the aspect of explainability is central to the debate.

a) Transparency and information

The notion of transparency has many facets including those relevant in the context of delegation of powers. With respect to ADM, one important element of transparency in this context is the requirement to make understandable the details of the pre-programming of decision-making procedures and considerations.[[15]](#footnote-15) This is relevant since in cases of ADM, computer programming works like internal administrative rule-making or inner-administrative guidelines. Transparency is thus not only a question of explainability of the basic functioning and functionalities of a computer programme used for ADM,[[16]](#footnote-16) it is also a question of making understandable how decision making about whether to submit a person to a measure which will limit fundamental rights including the far reaching right of being free of regulatory intervention.

But the nature of ADM programming to be often directly linked to data bases requires that transparency be ensured both with respect to the access and use of data as well as its processing in the ADM system. Factors necessary for transparency therefore include information related aspects. This covers the sources of input of information for decision making to be used by the ADM programme. It then also extends to the criteria used for weighting and balancing of such input taken into account in a decision-making procedure. The procedural steps and phases that the ADM programme is designed to assist or replace must illustrate the chosen criteria for decision-making. Therefore, transparency is necessary as to both the informational input, that is the selection of information going into a specific decision-making process. Transparency is then necessary as to the further processing of this information, the weight which is given to specific information points and the choices made as to their use.

b) Transparency and responsibility

There is another element to transparency in ADM systems: Transparency is also necessary regarding the responsibility of different actors. This is key not only in the specific EU context, in which databases used for ADM, for example in the field of immigration and security are multi-layered in that they exist both on the Member State and the EU levels and each feed into the system. It is also necessary for questions of the distribution of responsibility in joint or composite multi-jurisdictional decision-making procedures. Just like in purely human decision-making, transparency is thus a pre-requisite for allocation of responsibilities and thus of accountability mechanisms.

This form of upfront transparency can be supported by systemic quality checks through “conformity assessment procedures” - a requirement layed down for example in the Commission’s draft AI Act when putting a ‘high-risk’ AI system into service.[[17]](#footnote-17) Accordingly the European Law Institute has developed model rules in impact assessment of algorithmic decision-making systems used by public administration.[[18]](#footnote-18) On this basis, transparency requirements must also make continuous monitoring of the working of such programmes possible in order to take corrective actions where necessary.[[19]](#footnote-19)

Therefore, focus should be on both the *ex-ante* control and review anticipating potential issues as well as an *ex-post*, regular subsequent control as to how the ADM system is performing and whether there is any concern as to the necessary adjustments. This necessity of continuous control and review is well-anchored in public law. For example, generally applicable administrative law decisions, which have an effect similar to rulemaking must be subject to continuous and regular review and to periodic checks as a pre-condition for its continuous validity.[[20]](#footnote-20) The CJEU states that such checks are required whenever evidence gives rise to a doubt in that regard.[[21]](#footnote-21) This same approach should become applicable to the decisions to set up decision making procedures with the help of automated systems.

c) Oversight and accountability

The CJEU has developed this general request for continuous oversight of abstract-general decisions with an effect to the future specifically with respect to data intensive uses in the context of deploying an ADM system. This is in line with requests for continuous control in the context of delegation of powers. To illustrate this factor, it is good to go back to basics as discussed, for example, in *La Quadrature du Net.* There, the CJEU stated that in order to ensure that in practice ADM technology (in the form of “pre-established models and criteria”) and the “databases used” comply with the conditions under which fundamental rights may be limited (Article 52(1) CFR), “a regular re-examination should be undertaken to ensure that those pre-established models and criteria and the databases used are reliable and up to date.”[[22]](#footnote-22)

This is in line with the limitations to delegation which arise from the CJEU’s delegation doctrine based on principles listed and discussed in the seminal EU delegation case *Meroni –* a case concerning delegation of powers to a legal person created outside of EU law and establishing the basic cornerstones of the EU’s doctrine on delegation of powers.[[23]](#footnote-23)

In this context, for ADM technology to act within the limits set by law, must be programmed to ensure that delegation of powers is subject to criteria summarized in the *Meroni* doctrine. Chief amongst these criteria is that that it allows for independent judicial review (see Article 47(1) CFR). In *La Quadrature du Net* and without mentioning criteria of delegation, the CJEU built its approach on reviewability and held that

“it is essential that the decision authorising automated analysis be subject to effective review, either by a court or by an independent administrative body whose decision is binding, the aim of that review being to verify that a situation justifying that measure exists and that the conditions and safeguards that must be laid down are observed.”[[24]](#footnote-24)

Linking the requirements of pre- and post-deployment review and monitoring requirements with the demand of allowing for judicial review thereof does two things: First it imposes on the executive branch of powers using ADM systems to carefully select and supervise their use. Therefore, it is irrelevant whether the actual programming of such ADM systems takes place by private or public bodies. Second, the case law requires that there be not only a possibility of submitting the actual individual decision making based on ADM to judicial review but to incidentally also submit the criteria for such decision making and the procedure to judicial review. In the case of ADM based decision-making, this will be the context of the computer system.

4. Cyber-Delegation, the Role of Private Actors

The criteria arising from the seminal *Meroni* delegation case have particular weight when it comes to the review of fairly autonomous ADM systems – the situation of cyber delegation. A look at the original facts underlying *Meroni,* reveals that it was in fact concerned with an instance of sub-delegation of powers conferred on the public administration (in that case the European Coal and Steel Community’s so-called High Authority, the later EU Commission) to private parties.

*De facto,* ADM-systems are rarely fully developed and maintained by the public bodies using them. More often than not, they are either purchased ‘ready-made’ or are produced to order by a private company. In certain cases, a public-private-partnership model will be sought to either provide and maintain the software for the data basis. Alternatively, public and private cooperation will exist with respect to the provision of the data used to maintain decision-making. Accordingly, it should be studied whether the use of private proprietary software in ADM should be considered as a form of *de-facto* delegation of powers to external actors, requiring effective oversight and control of the details of programming. The use of private data collections equally raises many questions as to the quality of the data, the maintenance of the sources and their reliability for public decision making. The following considerations explore some of the factors relevant in the context of this public-private cooperation.

a) The concept of ‘delegation’ in cyber-delegation

EU law has established some basic limits to sub-delegation to private parties. These were developed in the early days of EU integration in the context of the European Commission (then under the name of the High Authority) had sub-delegated some regulatory powers conferred on it in the context of the Treaty establishing the European Coal and Steel Community (ECSC) to private parties. The standards of sub-delegation from a Union body to private parties developed in *Meroni[[25]](#footnote-25)* have remained applicable to date and need to be complied with irrespective whether the delegation of powers goes to a private body to undertake full scale decision-making or whether a private body develops and, in some instances, maintains a software for decision making.

Considering the role of delegation doctrines in EU law to understand the accountability of private parties involved in ADM system, requires going back to some basic considerations about the fact that delegation is a scalable approach, it is not an all-or-nothing approach. Scalability exists as to the extent of powers conferred. Therefore, in ADM as well as in human-based decision-making procedures, delegation can concern more or less well circumscribed duties and powers. It can provide for precise procedural steps to comply with or it can delegate a certain leeway to develop the approach to decision-making. Also, delegation can be precise about the source and the use of data input into decision-making or, alternatively, leave a lot of leeway to the recipient of the delegation about which data to use, where to sources these from and how to process the input-data in decision-making.

Generally, in public law, the doctrines referred to as ‘non-delegation’ doctrines are circumscribing under which conditions delegation of powers should be possible. This is certainly the case in the EU under the *Meroni-* doctrine concerning the delegation of rule-making and decision-making powers to private parties. Under this doctrine, delegation is generally possible, if certain basic pre-conditions are met.

Key to the Meroni doctrine is that delegation may not distort the ‘institutional balance’, i.e., the distribution and separation of powers to the institutions as defined in the EU’s basic constitutional documents in the Treaties.[[26]](#footnote-26) This includes that, for example, the delegator may not delegate powers it does not have. Only powers conferred on the Commission, may thus be further delegated to private parties or EU executive agencies.[[27]](#footnote-27) Other conditions recalled under the *Meroni* doctrine are equally unsurprising. Delegation may not endanger the possibilities of judicial review of decision-making (Article 47 Charter) and by delegation therefore the public body may not shirk responsibility and accountability. According to the *Meroni* doctrine no broad discretionary powers in the sense of ‘legislative’ discretion setting the basic decisions on balancing of values may be delegated. This notion of discretion in *Meroni* requires further exploration since it is not self-explanatory. In my view, in today’s fundamental rights-oriented legal system, the notion of discretion the Court had in mind in *Meroni* a case of the 1950ies coal and steel industry regulation, in today’s terms would be best understood as banning the right to undertake genuine decisions balancing rights and freedoms in the sense of Article 52(1) of the Charter. This is in today’s legal system a matter reserved to the legislature and may thus neither be delegated to the Commission, and by consequence also not sub-delegated to private bodies and decision-making procedures not directly regulated by EU law.

Finally, under the *Meroni* doctrine, the delegating public body must supervise the exercise of powers by the recipient of the delegation. This requirement is linked to the requirement of ensuring anticipatory impact assessments prior to the deployment of autonomous ADM systems and the obligation on the administration of subsequent review of the workings of such ADM systems.

Within the limits recognised by *Meroni,* the recognition of private rule making, with other words the delegation of powers to create binding rules, is quite frequent in EU law. Examples arise from very diverse policy fields - for instance from the implementation of EU legislation in the field of social policy,[[28]](#footnote-28) environment,[[29]](#footnote-29) as well as in data protection.[[30]](#footnote-30) Privately set standards in the forms of ‘codes of conduct’ also play an increasingly important role in commercial practices,[[31]](#footnote-31) and professional activities,[[32]](#footnote-32) as well as in corporate governance.[[33]](#footnote-33)

Privately set standards are further becoming part of EU institution’s decision-making procedure where data collections or data processing is undertaken with the help of software provided for by private actors. For this reason, the EU has established an agency for EU large scale data basis, eu-LISA, to ensure EU standards being applied in some of the most critical areas of EU data infrastructure.[[34]](#footnote-34)

b) Delegation and standardisation

In view of a lively practice in various EU policy areas to rely on privately set standards, this leads to the question whether procedural requirements for such standardisation and normatisation could serve as an example.

The issue is the essentially the following: If we accept the premise that delegation of powers in the context of applying ADM systems leads to ADM software being used as formulating a set of generally applicable rules preparing individual decision-making, then this should also make us search for examples in the legal system where similar situations exist. That allows us to study the legal system’s reply to challenges posed by the specific difficulties. Standardisation and normatisation appears to be such an example, where in EU law it is accepted that general rules of various nature set outside of the decision-making bodies created by EU law, will influence individual decision making.

Standards applied in the EU have result from international standardisation bodies, private or semi-private bodies and scientific bodies. Accordingly, their integration and use are their source and their use as well as their legality are a complex issue in EU law. There are various sources of standards applicable within the EU legal system. They are set by national and European standard setting bodies as well as a great diversity of ‘externally’ produced standards.[[35]](#footnote-35) On the spectrum of standards not directly produced by EU institutions are those arising from intergovernmental arrangements and cooperation (e.g. the Eurogroup Working Party discussed below) but also those arising from international organisations (such as the WHO, the ILO or others) as well as arising from private or semi-private standardisation bodies on the international (e.g. ISO), the European (e.g. CEN, CENELEC, ETSI) or the national levels (e.g. DIN). Standards may further arise from informal cooperation (e.g., the Basel Committee) or private research associations publishing their findings.

The great diversity of standards applied in EU law, and the different approaches to using them in EU decision making procedures, however, complicates the understanding of their effect in EU law and whether we could learn from the solutions found with respect to standardisation for the question of accountability of certain delegations of powers to ADM systems.

Both the potential integration of standards into the canon of sources of law within the EU, as well as the role ADM software plays in the notion of decision making in EU public law raises many questions. Especially, these include their possibility to normatively shape real-life situations as well as the conditions – procedural and substantive – for the recognition of decision-making produced in the context of their rules in EU law. Questions remain especially since standards are not part of the types of acts outlined in the Treaty on the Functioning of the European Union (TFEU), especially Article 288 TFEU. The plethora of organisations and procedural conditions within which the diverse types of standards arise, makes for a complex environment for understanding the legitimacy of such law.

The issue is of high political relevance. Questions arise as to who assesses the criteria of acceptable risk in society and according to which norms are highly political value choices – and this not only in the general sense that any administrative action that can go wrong, can become an issue for political oversight over administrative action and political responsibility for action. Yet, standards as well as ADM software-design are not always the result of well-established regulatory procedures, they can also arise from expertise forming best practices or private bodies and public-private cooperation. This has an effect also on barriers between public and private regulatory activity and with it the criteria for legitimacy of normative pronouncements.

This becomes quite important when looking at instances of private rulemaking, which can also be employed for implementing Union legislation. Examples exist in the fields of social policy[[36]](#footnote-36) or in the environment,[[37]](#footnote-37) as well as in data protection.[[38]](#footnote-38) Privately set codes of conduct play an increasingly important role in commercial practices, and professional activities,[[39]](#footnote-39) as well as in corporate governance.[[40]](#footnote-40) Equally, as this paper is discussing, privately set standards are also becoming part of EU institution’s decision making procedure where data collections or data processing is undertaken with the help of software provided for by private actors. For this reason, the EU has established an agency for EU large scale data basis, eu-LISA, in order to ensure EU standards being applied in some of the most critical areas of EU data infrastructure.[[41]](#footnote-41)

The matter of standard setting is only fully regulated where the use of standards by European standardisation bodies (ESO) is foreseen. For this, an EU regulation exists under the EU’s standardization regulation.[[42]](#footnote-42) That regulation sets out basic principles for the adoption of standardization procedures by the European Standardisation Organisations (ESOs)[[43]](#footnote-43) requiring for example the establishment and publication of work programmes (Articles 3, 8), rules on participation of stakeholders and national bodies in developing standards (Articles 5, 7), transparency and accessibility rules regarding the standards (Articles 4, 6) as well as the process of formal standardisation requests (Article 10). Although organized as private organizations, the ESOs are financed by public funds and exercise, when acting in the context of formal standardisation requests, public functions. Their action should arguably thus also be held to comply with general principles of EU administrative law such as the principles of good administration and the duty of care and the standardization process as regulated in EU law arguably must be interpreted in the context of compliance with these principles.

ESO standardization as circumscribed in the standards regulation appears aligned with criteria summarized in the *Meroni* principles.[[44]](#footnote-44) Applying, by analogy, the standards of the EU’s limitations of delegation of powers established by the *Meroni* doctrine to standardization suggested that entrusting functions to ESOs is possible only if the powers received are the result of an express delegation and are of a clearly defined executive nature. Moreover, the exercise of such powers must be subject to strict review and the same obligations which the delegating authority would have had to observe, had it adopted the measures itself.

Therefore, looking at these examples of private rulemaking which have an effect in EU law, the question arises how much could be learnt procedurally for delegation from quasi administrative rule-making powers. This lesson is to basked also specifically to the delegation of rule-making powers by delegation of powers to develop automated decision-making procedures. In the field of delegation of rule-making powers to standardization bodies, the standardization regulation is based on transparency in the process of the development of rules. Further legitimizing elements include participatory possibilities.

c) Limits to the ESO standardisation model – a broader look

Whether such approaches could be considered feasible in the development of private programming of ADM systems, however, is an open question. IP issues and limitations arising from proprietary software not allowing for transparency are to be taken seriously. However, at the end of the day, they are a matter of cost. How much does the private software developer charge if confronted with the requirement to allow for a certain transparency regarding the programme used and how much transparency will be allowed to ensure testing, monitoring and participation of stakeholders in such activities?

Drawing inspiration from the approach to regulation of standardization through ESOs also has other limits which lie in the nature of the ‘business’ of creating ADM systems. Software engineering for ADM systems will be undertaken by an array of private companies acting as contractors to supply or to supply and service certain systems. The diversity of actors is thus much larger than ESOs. Also, these actors are directly private companies and not semi-public organizations well acquainted with channeling diverse input. Finally, private companies engaging in (sub-)contracting will not have a network and a visibility sufficient enough to ensure that participation and review can be undertaken. In this sense, such procedural steps, if required, would have to be undertaken by the institution, body, or agency of the EU, which is in charge of developing or employing the ADM technology.

d) Private party norm-setting as pre-established models?

However, on a more general note, lessons to be learnt from the limits of delegation to privately standard setters illustrate some of the types of issues that might give reason for concerns. Where the Union institutions retreat and leave it to private and semi-private bodies to fill a legal void, the procedural legitimacy of such standard setting becomes an issue of public interest. The same is true for the encoding of criteria for decision making in computer systems. This might be all the more relevant in the case of standards created not within the EU under known but imperfect procedures, but by private software engineers and companies, not familiar with the legal requirements and intricacies in legislative steering of administrative behavior.

But questions arise how to enforce procedural standards such as transparency and reasoning? How to ensure that all relevant actors are present is not evident in typical administrative rule-making procedures, let alone in private standard setting and much less still in private computer programming activities?

In answering these questions, it was already discussed above that any limitation of individual rights must be provided by ‘law’ recognized as such under the standards set by EU law. Law must be recognizable as such in the sense that legal code is derived from pre-defined decision-making procedures in conformity with legislative procedures. In EU law, this comes in forms recognized under Article 288 TFEU. A computer-based code does not fulfil these requirements. Individuals will not be able to orient their behavior according to the code which is in a way inaccessible to make it a secret norm. These limitations are particularly relevant to what must be defined in human legal writing prior to the delegation of programming duties to create ADM systems. Also, it constitutes a limit to what a self-learning system may be allowed to achieve. The manipulation of criteria of decision making in a machine learning system is limited specifically by these criteria of law.

Here again, the notion of ‘law’ is at question. Standards are conceptually linked to accessibility. Individuals must be able to discern from freely available and officially published texts which limitations to their rights and freedoms they might be asked to endure. Not all standards are publicly accessible, and it is not clear whether all standards applied are existent at the time of decision-making. The Apple Ireland cases offer an ample discussion about this. There, the Commission had been accused of applying OCED tax guidelines retroactively to assess whether Ireland had granted state aid in the form of allowing specific calculations of profit and loss.

Accordingly, in a case of the use of foreign standards for the processing of air-passenger data arising from the EU, the CJEU has requested that

“the requirement that any limitation on the exercise of fundamental rights must be provided for by law implies that the legal basis which permits the interference with those rights must itself define the scope of the limitation on the exercise of the right concerned.[…] In order to satisfy that requirement, the legislation in question which entails the interference must lay down clear and precise rules governing the scope and application of the measure in question and imposing minimum safeguards…”.[[45]](#footnote-45)

The CJEU requests that such “pre-established models and criteria (…) should be specific and reliable.”[[46]](#footnote-46) That means that the normative legal programming of limitations must be represented in the standards applied. Increasingly this is becoming relevant with respect to computer assisted ADM procedures where standards might be contained in computer programming code.

In that context, also, it is important to recall basic understandings of delegation of powers. For example, with respect to the recognition of international standards, the most common way they may become sources of EU administrative law is through reference to such a measure in a Union legal act. This approach was well developed in various EU policy fields, which provide for this mechanism of incorporation of *initially* non-binding standards, by reference or explicit incorporation into EU legislation and thus give them binding nature.[[47]](#footnote-47) The latter bears upon legislative and non-legislative acts across various fields.[[48]](#footnote-48)

In the context of delegation of privately created software having regulatory effects in the EU by preparing decision-making in individual cases, also the CJEU has created a model for judicial review. In the context of the review of standards applied in EU law, the CJEU has held in *James Elliot* that standards, also privately set standards which form part of EU law because EU law explicitly or implicitly refers to them, may be subject to judicial review in the context of a preliminary reference procedure under Art 267 TFEU.[[49]](#footnote-49) The result could be an invalidation not only of the individual decision but also an invalidation of the decision-making method and the standards used to conduct such decision-making.

In the *James Elliot* case, the CJEU had held broadly, that review of such standards could be undertaken in the context of compliance with obligations under the standardisation regulation in their creation.[[50]](#footnote-50) According to this line of thought compliance of decision-making standards could also be reviewed against general principles of EU law and any other legislative requirements under EU law setting up procedural and substantive criteria for the legality of decision-making.

It thus falls to the Union legislator to frame the relationship between the Union interest and the participation of private actors, and to the Commission to supervise this relationship.

e) Delegation of regulatory tasks undertaken with ADM

A quite different consideration arising from the standardization experience concerns the transferal of regulatory tasks entirely to private parties. This means that the public then transfers to private parties the power to adopt, what is essentially regulatory decision making since the authorized private parties are granted the powers to take decisions having an impact on the balancing of individual rights. For example, private parties are expected to develop regulatory tools for supervision and enforcement of certain EU instructed objectives such as IP protection or the fight against certain illegal content online. The regulatory technology applied being in the hands of private entities, challenges arise concerning decision making balancing individual rights and establishing proper standards and possibilities of review.[[51]](#footnote-51)

The likelihood that a full-scale delegation of regulatory tasks to private parties would result in these tasks being undertaken with the help of automated decision-making using machine learning technology is quite high. The example of internet service providers being obliged by legislation to review uploaded material to discover such potential violations of IP rights is a telling example.[[52]](#footnote-52)

5. An Outlook on Cyber-Delegation   
in the EU Regulatory Reality

Cyber-delegation occurs where ADM gains autonomy especially in cases with reduced human input into decision-making or in cases where ADM takes over several decision-making phases. This is the moment where ADM evolves from a mere ‘tool’ supporting agency or institution in decision-making, to becoming more of an ‘actor’.[[53]](#footnote-53)

This chapter has discussed how the rising autonomy of ADM systems can be assessed from the point of view of EU delegation doctrines. CJEU case law has begun to specify these conditions but several factors complicate this process.

One is managing the various interfaces – i.e., between human and ADM technology. Additionally, in a multi-level system such as that of the EU, issues also arise from the integrated nature of administrative procedures spanning Member State and EU levels. The linkage between various levels often takes place by creating joint data bases on which automated administrative procedures are built upon. This requires careful design not just of the software for the automated decision-making but also of the information bases. ADM technology intervenes in various phases of decision-making procedures implementing EU law. ADM might be used to link various actors through granting access and processing data from large scale databases. Questions of accountability are often linked to the identification of responsibility,[[54]](#footnote-54) which then may define the steps of decision-making procedures, including which actor takes a decision.

A second factor is that of guaranteeing normative steering of decision-making processes - i.e., of ensuring that rights, principles, and values of EU public law are complied with also in procedures using ADM systems. Various values central to the legal system including questions of separation of powers are relevant here. It is also a question of the share of ‘law’ in the decision as to limitations of fundamental rights.

A third factor is inextricably linked to informational asymmetries, which make the control of sophisticated ADM systems very difficult, especially “if the logic underpinning a machine-generated decision is based on dynamic learning processes employed by various forms of machine learning algorithms.”[[55]](#footnote-55) The reason for the impediment of meaningful human oversight and intervention then results from the “major informational advantages” the machine has over a human operator.[[56]](#footnote-56) This is particularly relevant in the discussion of possibilities of human oversight and review.

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2. For example, see Article 17(4) of Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJ 2019 L 130/92 under which “online content-sharing service providers shall be liable for unauthorised acts of communication to the public, including making available to the public, of copyright-protected works”. Internet service providers facing such potential liability undertake searches for IP protected content by ADM systems, thereby potentially affecting artistic freedoms, freedom of expression and other individual rights. Questions about the legality of Article 17 are currently pending before the CJEU. [↑](#footnote-ref-2)
3. Garry Coglianese, David Lehr, Regulating by Robot: Administrative Decision Making in the Machine-Learning Era, 105 *The Georgetown Law Journal* (2017) 1179-83. [↑](#footnote-ref-3)
4. Tobias D. Kraft, Katharina A. Zweig, Pascal D. König, How to regulate algorithmic decision-making: A framework of regulatory requirements for different applications, (2020) *Regulation and Governance* (doi:10.1111/rego.12369), 14. [↑](#footnote-ref-4)
5. The notion of a limitation of a fundamental right is broad. It pertains to limitations of the exercise of rights due to public policy concerns but also due to balancing of various rights. It also pertains to rights and freedoms protected as general principles of EU law, to which, under the CJEU’s ERT case law, the same criteria of limitation arise as to fundamental rights. [↑](#footnote-ref-5)
6. In EU law, this comes in forms recognized under Article 288 TFEU. [↑](#footnote-ref-6)
7. Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, paras 139-141. [↑](#footnote-ref-7)
8. Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, para 172. [↑](#footnote-ref-8)
9. Regulation 2016/697 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 2016 L 119/1 – in force since May 2018. [↑](#footnote-ref-9)
10. Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, para 172. [↑](#footnote-ref-10)
11. These requirements exist irrespective of which legal basis a delegation is based on. After all, delegation of rule-making powers to the Commission must be based on Articles 290 or 291 TFEU, whereas the most common legal basis for delegation of rule-making powers to agencies is Article 114 TFEU allowing for the empowerment to adopt ‘measures’ for harmonisation of the single market. [↑](#footnote-ref-11)
12. Karen Yeung, *TLI think!* Paper 62/2017, 1 (SSRN abstract=2972505). [↑](#footnote-ref-12)
13. Joined cases C-245/19 and 246/19 *Etat Luxembourgeoise v B and others* ECLI:EU:C:2020:795, para 100; C-682/15 *Berlioz Investment Fund SA* ECLI:EU:C:2017:373, para 51; C‑121/04 P *Minoan Lines* v *Commission* ECLI:EU:C:2005:695, para 30; C‑94/00 *Roquette Frères* ECLI:EU:C:2002:603, para 27; Joined cases 46/87 and 227/88 *Roquette Frères* EU:C:1989:337, para 19. [↑](#footnote-ref-13)
14. C-59/17 *Chateau du Grand Bois* ECLI:EU:C:2018:641, para 30; Opinon of Advocate General Kokott of 2 July 2020, *Etat Luxembourgeoise v B and others*, in: joined cases C-245/19 and C-246/19, ECLI:EU:C:2020:516, paras 52-57. [↑](#footnote-ref-14)
15. Bruno Lepri, Fair, Transparent, and Accountable Algorithmic Decision-Making Processes (2018) 31 *Philosophy & Technology,* 611. [↑](#footnote-ref-15)
16. For an overview of the diverse approaches to the requirement of transparency in ADM see e.g. Deven R Desai, Joshua A Kroll, Trust but Verify: A Guide to Algorithms and the Law, 31 *Harvard Journal of Law & Technology* (2017), 1; Tobias D Krafft, Katharina A Zweig and Pascal D König, How to Regulate Algorithmic Decision-Making: A Framework of Regulatory Requirements for Different Applications, (2020) *Regulation & Governance,* 18. [↑](#footnote-ref-16)
17. Articles 19, 43 of European Commission, Proposal for a Regulation of the EP and the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) of 21.4.2021, COM(2021) 206 final, 2021/0106 (COD). [↑](#footnote-ref-17)
18. <https://www.europeanlawinstitute.eu/projects-publications/completed-projects-old/ai-and-public-administration/> [↑](#footnote-ref-18)
19. Article 21 of European Commission, Proposal for a Regulation of the EP and the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) of 21.4.2021, COM(2021) 206 final, 2021/0106 (COD). [↑](#footnote-ref-19)
20. See as to this obligation periodic review as pre-condition of validity and whether a decision once taken in the past is “still factually and legally justified”. See: C-362/14 *Schrems v DPC* ECLI:EU:C:2015:650, para 76. [↑](#footnote-ref-20)
21. C-362/14 *Schrems v DPC* ECLI:EU:C:2015:650, para 76. [↑](#footnote-ref-21)
22. C-511-520/18 *La Quadrature du Net* ECLI:EU:C:2020:791, para 182 with reference to Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, paras 173, 174. [↑](#footnote-ref-22)
23. Cases 9 & 10/56 *Meroni v ECSC High Authority* [1957/58] EU:C:1958:7. [↑](#footnote-ref-23)
24. C-511-520/18 *La Quadrature du Net* ECLI:EU:C:2020:79, para 179. [↑](#footnote-ref-24)
25. Cases 9 and 10/56 *Meroni v. High Authority* ECLI:EU:C:1958:7. [↑](#footnote-ref-25)
26. It has been disputed whether the *Meroni* doctrineshould be applied outside the framework of the previous ECSC Treaty at all. *Dehousse*, eg (Renaud Dehousse, Misfits: EU Law and the Transformation of European Governance in Christian Joerges and Renaud Dehousse (eds), *Good Governance in Europe’s Integrated Market* (Oxford: Oxford University Press, 2002) 207–31 at 221), argues that its general framework sufficiently distinguished the EC Treaty (now the TFEU) from the regime prevalent under the previous ECSC Treaty, in which the High Authority exercised important regulatory powers. In particular, in contrast to the enforcement of EU law by national authorities, Art 53 ECSC entrusted its application to the High Authority itself. On the other hand, the CJEU’s general reference to the principle of institutional balance makes it unlikely that the ruling ought to be limited to the specific context of the ECSC Treaty. [↑](#footnote-ref-26)
27. Under Regulation 58/2003. [↑](#footnote-ref-27)
28. See Article 153(3) TFEU, which allows Member States to entrust to management and labour the implementation of social policy directives. [↑](#footnote-ref-28)
29. See Article 17(3) of Directive 2002/96/EC of the European Parliament and the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE), OJ 2003 L 37/24, which provides that Member States may transpose certain provisions of the directive ‘by means of agreements between the competent authorities and the economic sectors concerned’. [↑](#footnote-ref-29)
30. See for example in Article 46 of the GDPR, which envisages the drawing up of codes of conduct and binding corporate agreements. [↑](#footnote-ref-30)
31. Dagmar Schiek, Private rule-making and European governance – issue of legitimacy, 32 *European Law Review* (2007), 443-466, 461-462. [↑](#footnote-ref-31)
32. Dagmar Schiek, Private rule-making and European governance – issue of legitimacy, 32 *European Law Review* (2007), 462-463. [↑](#footnote-ref-32)
33. Søren Friis Hansen, ‘Codes of Conduct’, in: Birgitte Egelund Olsen, Karsten Engsig Sørensen (eds.), *Regulation in the EU*, (Copenhagen, Thomson: 2006), Chapter 8. [↑](#footnote-ref-33)
34. Regulation (EU) 2018/1726 of the European Parliament and of the Council of 14 November 2018 on the European Agency for the operational management of large-scale IT systems in the [AFSJ], and amending Regulation (EC) No 1987/2006 and Council Decision 2007/533/JHA and repealing Regulation (EU) No 1077/2011, OJ 2018 L 295/99–137 [the ‘eu-LISA Regulation’]. [↑](#footnote-ref-34)
35. Mariolina Eliantonio, Caroline Cauffman, The Legitimacy of Standarsiation as a Regulatory Technique in the EU, in: Mariolina Eliantonio, Caroline Cauffman (eds.) The Legitimacy of Standarsiation as a Regulatory Technique in the EU (Cheltenham, Elgar Publishing: 2020), 1-19, at p. 5. [↑](#footnote-ref-35)
36. See Article 153(3) TFEU (amending Art. 137(3) EC by the reference to Art. 155 TFEU), which allows Member States to entrust to management and labour the implementation of social policy directives. [↑](#footnote-ref-36)
37. See Article 17(3) of Directive 2002/96/EC of the European Parliament and the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE), OJ 2003 L 37/24, which provides that Member States may transpose certain provisions of the directive ‘by means of agreements between the competent authorities and the economic sectors concerned’. [↑](#footnote-ref-37)
38. See for example in Article 46 of the GDPR, which envisages the drawing up of codes of conduct and binding corporate agreements. [↑](#footnote-ref-38)
39. Dagmar Schiek, Private rule-making and European governance – issue of legitimacy, 32 *European Law Review* (2007), 462-463. [↑](#footnote-ref-39)
40. Søren Friis Hansen, Codes of Conduct, in: Birgitte Egelund Olsen, Karsten Engsig Sørensen (eds.), *Regulation in the EU*, (Copenhagen, Thomson: 2006), Chapter 8. [↑](#footnote-ref-40)
41. Regulation (EU) 2018/1726 of the European Parliament and of the Council of 14 November 2018 on the European Agency for the operational management of large-scale IT systems in the [AFSJ], and amending Regulation (EC) No 1987/2006 and Council Decision 2007/533/JHA and repealing Regulation (EU) No 1077/2011, OJ 2018 L 295/99–137*.* [Hereafter, the ‘eu-LISA Regulation’]. With respect to the SIS specifically, eu-LISA’s tasks are listed under Chapter III of the SIS-recast, involving responsibilities of operational management (Article 15); security (Article 16); confidentiality (Article 17). [↑](#footnote-ref-41)
42. Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council Text with EEA relevance; OJ 2012 L 316/12; a consolidated version with changes was published in 2015: <http://data.europa.eu/eli/reg/2012/1025/2015-10-07>. [↑](#footnote-ref-42)
43. These are mainly CEN, CENELEC and ETSI as organisations under private law whose members are the national public, private or semi-private standardisation or normatisation bodies. [↑](#footnote-ref-43)
44. Cases 9 and 10/56 *Meroni v High Authority* [1957/58] ECR 133. [↑](#footnote-ref-44)
45. Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, paras 139-141. [↑](#footnote-ref-45)
46. Opinion 1/15 (*EU-Canada PNR Agreement*) of 26 July 2017, EU:C:2017:592, para 172. [↑](#footnote-ref-46)
47. See for an overview e.g. Andreas Follesdal, Rames A. Wessel, Jan Wouters (eds.), *Multilevel Regulation and the EU*, (Leiden-Boston, Marinus Nijhoff Publishers: 2008). [↑](#footnote-ref-47)
48. See e.g. for food standards Recital 15 and Articles 21, 22 of Regulation (EC) no 183/2005 of the EP and of the Council of 12 January 2005 laying down requirements for feed hygene, OJ 2005 L 35/1 referring to the WHO’s and the FAO’s Codex Alimentarius. For labour standards e.g. Article 31 of Regulation (EC) No 1995/2006 of the EP and the Council of 18 December 2006 establishing a financing instrument for development cooperation, OJ 2006 L 378/41, making reference to ILO labour standards for public procurement contracts. For data protection standards see e.g. references to Council of Europe Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data ETS No 108 of 1981, ratified by all EU Member States, in Article 27 of Regulation EU 2016/794 of the EP and of the Counciol of 11 May 2016 on the EU Agency for Law Enforcement Cooperation (Europol) and replacing and repealing Cocunil Decisions 2009/317/JHA, 2009/934/JHA, 2009/936/JHA and 2009/968/JHA, OJ 2016 L134/53. [↑](#footnote-ref-48)
49. Case C-613/14 *James Elliot Construction v Irish Asphalt* ECLI:EU:C:2016:821, paras 34-36, 41. [↑](#footnote-ref-49)
50. Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council Text with EEA relevance; OJ 2012 L 316/12; a consolidated version with changes was published in 2015: <http://data.europa.eu/eli/reg/2012/1025/2015-10-07>. [↑](#footnote-ref-50)
51. For example, see Article 17(4) of Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJ 2019 L 130/92 under which “online content-sharing service providers shall be liable for unauthorised acts of communication to the public, including making available to the public, of copyright-protected works”. Internet service providers facing such potential liability undertake searches for IP protected content by ADM systems, thereby potentially affecting artistic freedoms, freedom of expression and other individual rights. Questions about the legality of Article 17 are currently pending before the CJEU. [↑](#footnote-ref-51)
52. For example, see Article 17(4) of Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJ 2019 L 130/92 under which “online content-sharing service providers shall be liable for unauthorised acts of communication to the public, including making available to the public, of copyright-protected works”. Internet service providers facing such potential liability undertake searches for IP protected content by ADM systems, thereby potentially affecting artistic freedoms, freedom of expression and other individual rights. Questions about the legality of Article 17 are currently pending before the CJEU. [↑](#footnote-ref-52)
53. See also Simona Demková, The Decisional Value of Information in European Semi-Automated Decision Making, (2021) *Review of European Administrative Law,* 29-50. [↑](#footnote-ref-53)
54. Simona Demková, Teresa Quintel, Allocation of Responsibilities in Interoperable Information Exchanges: Effective Review Compromised? (2020) 1 *Cahiers Jean Monnet* 589. [↑](#footnote-ref-54)
55. Karen Yeung, ‘Why Worry about Decision-Making by Machine?’ in: Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford, Oxford University Press: 2019) 41

    ([https://www-oxfordscholarship-com.eui.idm.oclc.org/view/10.1093/oso/ 9780198838494.001.0001/oso-9780198838494-chapter-2](https://www-oxfordscholarship-com.eui.idm.oclc.org/view/10.1093/oso/%209780198838494.001.0001/oso-9780198838494-chapter-2)) 24; Emre Bayamlioglu, Contesting Automated Decisions: A View of Transparency Implications (2018) *European Data Protection Law Review,* 434. [↑](#footnote-ref-55)
56. Karen Yeung, ‘Why Worry about Decision-Making by Machine?’ in: Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford, Oxford University Press: 2019) 41 ([https://www-oxfordscholarship-com.eui.idm.oclc.org/view/10.10 93/oso/9780198838494.001.0001/oso-9780198838494-chapter-2](https://www-oxfordscholarship-com.eui.idm.oclc.org/view/10.10%2093/oso/9780198838494.001.0001/oso-9780198838494-chapter-2))

    24; Emre Bayamlioglu, Contesting Automated Decisions: A View of Transparency Implications (2018) *European Data Protection Law Review,* 434. [↑](#footnote-ref-56)