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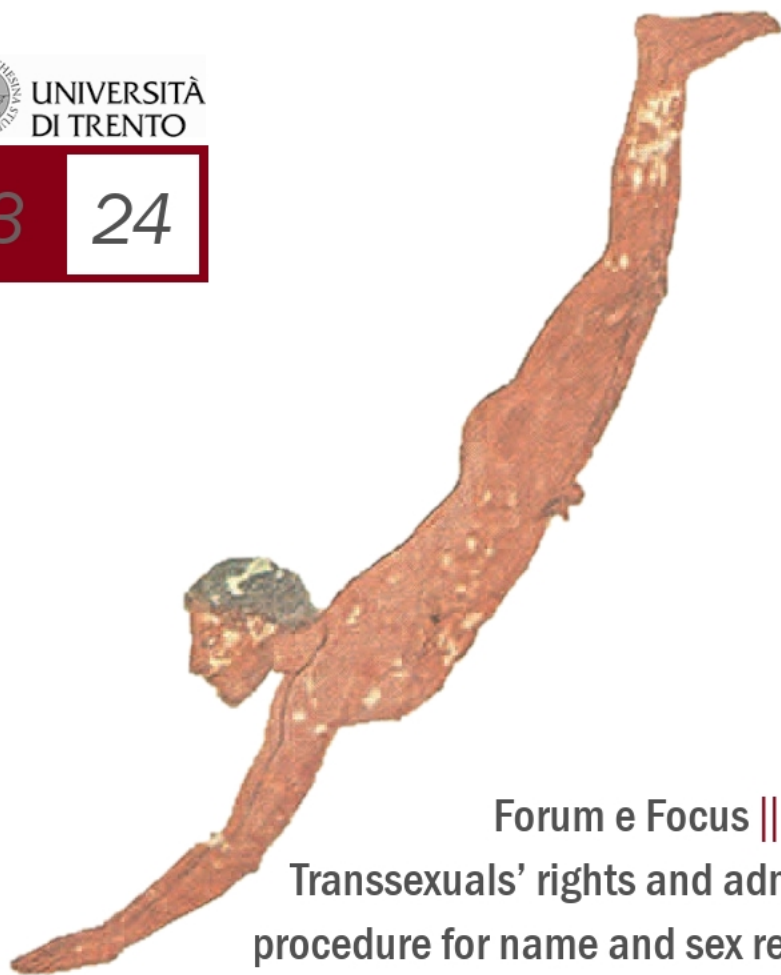
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Participation in algorithmic administrative decision-making

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ABSTRACT: The purpose of this essay is to assess whether participation in administrative proceedings remains guaranteed even when these proceedings are conducted using algorithms. Algorithmic proceedings tend to be notably streamlined and, as a result, are at a heightened risk of bypassing the legal guarantees of participation. Additionally, the essential function of the individual responsible for overseeing the procedure is scrutinized. By examining both traditional forms of participation and participation within algorithmic contexts, the essay highlights the challenges and opportunities presented by an administration that operates through digital tools.

KEYWORDS: Public administration; administrative proceedings; algorithms; digitalisation; participation

SUMMARY: 1. Introduction – 2. The algorithm: definitions and characteristics – 3. The legal nature of the algorithm – 4. Algorithms and power: algorithmic legality – 5. The knots of the algorithmic participation – 5.1. The notice of initiation and participation in algorithmic proceedings – 5.2. The person in charge of the procedure: *dominus* or *servus*? – 6. Conclusions

1. Introduction

The digital transformation, or rather “revolution”, affecting all facets of individuals’ daily lives has not spared public administration, which sovereigns the interactions with private parties. Besides facilitating decision-making by the administration in relation to citizens, these interactions occur within the framework of what is known as the administrative procedure. This transformation affects not only the structures and tools used by the administration but also extends to the broader concept of digital administration. Digital administration encompasses infrastructures, personnel, and regulations designed to incorporate digital technology. Considering the challenges posed by innovation, both the framework and the fundamental nature of administrative operations are evolving. Digital tools are no longer mere aids in decision-making; they become the decision itself.

As a result, the use of technology in administrative decision-making can only affect its main venue: the administrative proceeding. The shift from digital to algorithmic administration is not merely a change of terminology, but rather it serves to radically rethink the way the administration acts. In turn, the way administration operates has a strong impact on the principles and tools used to bring administrative action back within legality and legitimacy.

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The unfolding of the various stages of the proceeding entails adherence to several action-governing principles, including participation, transparency, impartiality, and sound administration. In order to comprehensively study algorithmic administration and its procedures, it is essential to start from the state of the art. In this paper, we will describe the nuances of private individual involvement in administrative procedures, starting with an explanation of algorithmic administration and the characteristics and challenges associated with technological tools, specifically algorithms. We will then move on to observe the implications of using such software in public administration's decision-making processes.

The key questions that arise spontaneously from a first in-depth study concern compliance with the principle of participation under current legislation. As a matter of fact, it is necessary to ask whether Italian legislation in general, and the Administrative Procedure Act,¹ in particular, are sufficient to address the phenomenon. It is necessary to ponder whether participatory guarantees can be observed even within an algorithmic proceeding or whether participation can be sacrificed to guarantee the requirements of speed and simplification. The condensed nature of algorithmic decision-making risks undermining the participatory guarantees provided by law, nullifying the essential role of the person in charge of the procedure, and making notice of initiation of administrative proceedings, which is preparatory to the exercise of participatory rights, irrelevant.

2. The algorithm: definitions and characteristics

Public administration has undergone a substantial digital transformation in recent years.² The phenomenon has a broad scope and has been described by some as the transition from the *internet of things* to the *internet of everything*.³ This describes the shift from the pervasive presence of digital

¹ L. no. 241, August 9, 1990.

² On the digitisation of public administration, see, among many others and without claiming to be exhaustive: A. MASUCCI, *L'atto amministrativo informatico. Primi lineamenti di una ricostruzione*, Napoli, 1993; A. NATALINI, *La semplificazione e la digitalizzazione*, in *Giornale di diritto amministrativo*, 8, 2005, 809-812; M. CLARICH, *Tempi degli uffici, digitalizzazione e trasparenza: la "chirurgia estetica" non scioglie tutti i nodi*, in *Guida al diritto*, 27, 2009, 20-21; E. CARLONI, *Tendenze recenti e nuovi principi della digitalizzazione pubblica*, in *Giornale di diritto amministrativo*, 2, 2015, 148-157; S. CIVITARESE MATTEUCCI, L. TORCHIA (ed.), *La tecnificazione*, Firenze, Firenze University Press, 2017; C. COGLIANESE, D. LEHR, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, in *Georgetown Law Journal*, 2017, no. 6, 1147-1223; E. CARLONI, *Algoritmi su carta. Politiche di digitalizzazione e trasformazione digitale delle amministrazioni*, in *Diritto pubblico*, 2, 2019, 363-391; L. CASINI, *Lo Stato nell'era di Google. Frontiere e sfide globali*, Segrate, 2020; R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, in *Diritto amministrativo*, 2, 2020, 305-328; R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, Torino, 2020; N. LUPO, *Il Parlamento e la sfida della digitalizzazione*, in *Rivista trimestrale di diritto pubblico*, 2, 2021, 501-511; L. CASINI, *Lo Stato (im)mortale. I pubblici poteri tra globalizzazione ed era digitale*, Milano, 2022; B. MARCHETTI, *L'amministrazione digitale*, in B.G. MATTARELLA, M. RAMAJOLI (directed by), *Enciclopedia del diritto, I tematici, Funzioni amministrative*, Milano, 2022, 75-109; J.-B. AUBY, G. DE MINICO, G. ORSONI (ed.), *L'amministrazione digitale. Quotidiana efficienza e intelligenza delle scelte*, Atti del Convegno 9-10 maggio 2022 (Federico II, Napoli), Napoli, 2023; G. SGUEO, *The Design of Digital Democracy*, Berlin, 2023; L. TORCHIA, *Lo Stato digitale. Una introduzione*, Bologna, 2023.

³ A. PAJNO, *Prefazione. La costruzione dell'infosfera e le conseguenze sul diritto*, in A. PAJNO, F. DONATI, A. PERRUCCI (ed.), *Intelligenza artificiale e diritto: una rivoluzione?*, in *Quaderni Astrid*, Bologna, 2022, 9.

technology objects and tools, which incessantly collect vast amounts of data, to the emergence of a network defined by the hyperconnectivity among people, processes, and data.

The revolution⁴ that is sweeping the public administration and bringing about its computerisation represents the natural extension of the so-called *Information and Communication Technologies* (ICT), whose application to the public sector enables the emerging of e-Government.⁵ The term e-Government no longer describes the so-called office automation as it used to. In the current time, it also encompasses the provision of online services to citizens and businesses,⁶ extending to the digital administration.

The long journey towards the digitalisation of public administration has experienced a significant acceleration due to the Covid-19 pandemic. In response to the pandemic crisis, the European Union (EU) introduced the Recovery Fund, known as *Next Generation EU*, which was proposed by the European Council on April 23, 2020, and approved by the Extraordinary European Council on July 21, 2020.⁷ To access the Recovery Fund's loans and grants, Italy—along with other Member States—was required to submit a National Recovery and Resilience Plan to the European Commission. This plan had to outline interventions, projects, and reforms to be implemented by 2026 in order to qualify for approximately €750 billion in funding.

According to the Plan, 21% of the total resources, amounting to € 40.29 billion, are allocated to digital transition as one of the six missions of the Italian NRP and are to be spent along the main axes of digital infrastructures and ultra-broadband connectivity, as well as on various projects within the other five missions.⁸

⁴ According to L. FLORIDI, *La quarta rivoluzione. Come l'infosfera sta trasformando il mondo*, Milano, 2017, with the development of ICT came the so-called Fourth Revolution.

⁵ The term e-Government leaves behind a meaning linked to the concept of government understood in its purely political sense, to expand to any form of administration exercised with technological tools. These are the words of C. NOTARMUZI, *La governance nell'e-Government: l'e-governance*, January 2005, in www.astrid-online.it/static/upload/protected/NOTA/NOTARMUZI-Governance-dell-e-governme.pdf, 2.

⁶ According to the European Commission Communication, *The Role of eGovernment for Europe's Future* of September 26th 2003: "eGovernment is defined here as the use of information and communication technologies in public administrations combined with organisational change and new skills in order to improve public services and democratic processes and strengthen support to public policies". On e-Government see also G. VESPERINI (ed.), *l'e-Government*, Milano, 2004; F. MERLONI, *Introduzione all'e-Government. Pubbliche amministrazioni e società dell'informazione*, Torino, 2005.

⁷ The Italian NRP was officially transmitted to the European Commission on April 30th, 2021, and was approved by the Council's implementing decision on July 13th, 2021. For more details, see F. FABBRINI, *Next Generation EU. Il futuro di Europa e Italia dopo la pandemia*, Bologna, 2022. For a comparison of the Italian NRPs of different countries, see: F. DI LASCIO, L. LORENZONI, *Obiettivi, struttura e "governance" dei piani di rilancio nei sistemi europei: un confronto fra cinque Paesi*, in *Istituzioni del Federalismo*, 2, 2022, 325-359; F. CIARLARIELLO ET AL., *Simposio: I Piani Nazionali di Ripresa e Resilienza a confronto. Obiettivi comuni e strategie*, in *Rivista Trimestrale di Diritto Pubblico*, 2, 2023, 577-625.

⁸ On the digitisation of public administration in the NRP see V. BONTEMPI (ed.), *Lo Stato digitale nel Piano Nazionale di Ripresa e Resilienza*, Roma, 2022.



The EU has also flanked the funding with copious regulatory activities aimed at regulating digital services⁹ and markets¹⁰, on the one hand, and artificial intelligence itself¹¹ on the other.

From a qualitative point of view, technology initially served to simplify in order to replace paper with digital media, which nevertheless left the human nature of the decision-maker untouched, as it has rightly been pointed out. We are currently experiencing the next phase of artificial intelligence, which gradually sees machine and technology taking over the human component.¹²

Public administration is similarly witnessing a substantial change in the way it understands and implements its decision-making processes, thanks above all to the use of a tool that is becoming increasingly important: the algorithm.¹³

The algorithm has been defined as “a calculation procedure, which deploys a sequence of simple operations intended to solve tasks in a finite time”.¹⁴ The assonance with what may be considered the notion of administrative proceeding is quite evident. Procedural administrative activity is “an activity ordered in sequences”.¹⁵ In both cases, therefore, we are dealing with acts that are placed in se-

⁹ The so-called *Digital Services Act*, Regulation (EU) 2022/2065 of the European Parliament and of the Council of October 19th, 2022, on a single market for digital services and amending Directive 2000/31/EC (digital services act).

¹⁰ The so-called *Digital Markets Act*, Regulation (EU) 2022/1925 of the European Parliament and of the Council of September 14th, 2022, on contestable and fair markets in the digital sector and amending Directives (UE) 2019/1937 e (UE) 2020/1828 (*Digital Markets Act*).

¹¹ 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 of April 21st, 2021.

¹² B. MARCHETTI, *L'amministrazione digitale*, in B.G. MATTARELLA, M. RAMAJOLI (directed by), *Enciclopedia del diritto*, cit., 77.

¹³ The expression “algorithm” derives, as precisely described by R. FERRARA, *Il giudice amministrativo e gli algoritmi. Note estemporanee a margine di un recente dibattito giurisprudenziale*, in *Diritto amministrativo*, 4, 2019, 773, from the transcription, from Persian to Latin, of the name of the scholar who first theorised “a certain procedure, on a mathematical basis, capable of organising and managing certain decision-making processes whose conclusive outcome would be in some way taken for granted or in any case calculable and predictable to some extent *ex ante*”: Al-Khwarimi, Middle Eastern scholar who lived in the 9th century A.D. On administrative decision-making and algorithms see: B. ROMANO, *Algoritmi al potere. Calcolo giudizio pensiero*, Torino, 2018; G. AVANZINI, *Decisioni amministrative e algoritmi informatici. Predeterminazione, analisi predittiva e nuove forme di intelligibilità*, Napoli, 2019; A. SIMONCINI, *Profili costituzionali della amministrazione algoritmica*, in *Rivista trimestrale di diritto pubblico*, 4, 2019, 1149-1188; S. SASSI, *Gli algoritmi nelle decisioni pubbliche tra trasparenza e responsabilità*, in *Analisi giuridica dell'economia*, 1, 2019, 109-128; E. CALZOLAIO, *La decisione nel prisma dell'intelligenza artificiale*, Padova, 2020; C. NAPOLI, *Algoritmi, intelligenza artificiale e formazione della volontà pubblica: la decisione amministrativa e quella giudiziaria*, in *Rivista AIC*, 3, 2020, 318-354; A. SCAFURI, *Intelligenza artificiale e trasparenza dell'azione amministrativa: l'effettiva conoscibilità degli algoritmi adottati dall'amministrazione*, in *GiustAmm.it*, 3, 2020, 1-8; N. MUCIACCIA, *Algoritmi e procedimento decisionale: alcuni recenti arresti della giustizia amministrativa*, in *federalismi.it*, 10, 2020, 344-368; G. CARULLO, *Decisione algoritmica e intelligenza artificiale*, in *Diritto dell'informazione e dell'informatica*, 3, 2021, 431-461; L. PREVITI, *La decisione amministrativa robotica*, Napoli, 2022; A. DI MARTINO, *Tecnica e potere nell'amministrazione per algoritmi*, Napoli, 2023; G. GALLONE, *Riserva di umanità e funzioni amministrative. Indagine sui limiti dell'automazione decisionale tra procedimento e processo*, Padova, 2023.

¹⁴ This quotation is a translation of the Italian definition of algorithm given by B. CAROTTI, *Algoritmi e poteri pubblici: un rapporto incendiario*, in *Giornale di diritto amministrativo*, 1, 2020, 5.

¹⁵ “Un'attività ordinata in sequenze”, as highlighted by B.G. MATTARELLA, *Il procedimento*, in S. CASSESE (ed.), *Istituzioni di diritto amministrativo*, Milano, 2012, 286. Studies on administrative procedures are many. Among



quence and that converge in a final decision within a given time. Despite the existence of this analogy, the differences between algorithm and proceeding remain clear and relevant, so much so that in several situations – as it will be fully analysed in the following paragraphs – the compatibility of the algorithm with the administrative decision-making has been questioned.

Algorithms have gone through an impressive evolution. From simple intelligent systems such as the deterministic, “model-based” algorithms we have progressed to the programming of more complex intelligent systems. The reference is to the ability of algorithms to self-learn. Machine learning algorithms, for example, process their output without strictly predefined steps, learning from the input data itself. Additionally, deep learning algorithms can learn from experience and develop their own logic to arrive at conclusions. While deterministic algorithms operate based on logical inference using “if/then” correlations, self-learning algorithms move beyond the programmer’s initial logic to develop and use their own. As a result, outcomes are predetermined in deterministic algorithms but become the result of an algorithmic “choice” in self-learning systems.¹⁶

The distinction between rule-based algorithms and machine learning develops on their fundamental components.¹⁷ The former are programmed to execute a certain command under certain conditions. The ability of these algorithms to “decide” is a direct consequence of how they are programmed and of the ruling man-made computer. As a consequence, the source code of the algorithm is perfectly intelligible to a human being familiar with its language. Machine learning systems, on the other hand, consist of two components: a source code, comprehensible as that of deterministic algorithms; and a model, namely a set of numerical parameters to be used in the execution phase and generated during the learning (training) phase. The second component is not readily comprehensible to humans. Hence, the learning phase of machine learning algorithms is crucial because it is during this period that representations — specifically, mathematical and numerical abstractions capable of forming a model — are developed for subsequent decision-making.

Besides addressing the fundamental issue of the legal status of algorithms, it is crucial to examine whether and to what extent algorithmic decisions adhere to the guiding principles of administrative proceedings. These principles include participation, transparency, impartiality, and effective administration, all of which play a pivotal role in this investigation.¹⁸ These interpretative doubts also stem from the Italian legislator’s lack of intervention. In fact, no regulation on the use of algorithms by the

the most relevant, see: A.M. SANDULLI, *Il procedimento amministrativo*, Milano, 1964; M.S. GIANNINI, *Diritto amministrativo*, vol. II, Milano, 1993, 91-218; A. SANDULLI, *Il procedimento*, in S. CASSESE (ed.), *Trattato di diritto amministrativo. Diritto amministrativo generale*, Tomo II, Milano, 2003, 1035- 1343.

¹⁶ L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 111-114.

¹⁷ For a detailed description of this distinction, G. CARULLO, *op. cit.*, 434-440.

¹⁸ The theme of balancing progressive and protective demands is not a new one. Among all, see the brilliant interpretation of the relationship between information technology and administration by S. CASSESE, *Prefazione*, in I. D’ELIA CIAMPI, *Diritto e nuove tecnologie dell’informazione. Repertorio sistematico della normativa statale (1951-1997) con testo integrale e note di coordinamento*, Napoli, 1997, XI, according to whom society found itself, as early as the 1970s, faced with an alternative: “whether the traditional, slow and byzantine procedures of the Italian administration should adapt to information technology, or whether the opposite should happen. Only today it is realised that there is no real alternative, since a reasonable compromise between the two needs, the guarantee of the procedure and the efficiency of information technology, must be reached”.

public administration can be found in our legal system, and the interpretation of the nature and application of algorithms has essentially been left – as we will see – to case law.¹⁹

The legal void is partially addressed by supranational regulations. Article 22 of the General Data Protection Regulation (GDPR), European legislation concerning the protection of personal data, establishes the right of individuals not to be subject to decisions based solely on automated processing, including profiling, which produce legal effects or similarly significant effects on them.²⁰ Upon closer examination, the range of scenarios allowing derogation from this prohibition²¹ is considerable, and the European response to the challenges posed by artificial intelligence is entirely inadequate.

3. The legal nature of algorithm

The integration of algorithms into the decision-making procedures of public administrations has prompted scholarly discourse and legal interpretation to question the legal status of these technological systems, especially concerning their classification as administrative acts.²² The debate on the legal framework of the algorithm can only start from the description of what administrative act means. This can be defined as an act aimed, directly (in the case of the final act) or indirectly (in the case of instrumental acts), at the care of an actual public interest.²³

The various theses elaborated by the legal scholarship relating to the legal nature of the algorithm end up in polar opposites: according to the first group of scholars, the software cannot be considered

¹⁹ The first organic text on technological innovation in public administration is represented by d. l. no. 82, March 7, 2005, containing the *Digital Administration Code* (CAD), in which, however, the algorithm is not regulated. An incentive for the use of new technologies can be found in art. 3 bis, l. no. 241/1990 – as last amended by d.l. no. 76/2020 – which states that to achieve greater efficiency in their activities, public administrations shall act by means of computerised and telematic tools, in their internal relations, between the different administrations and between these and private individuals.

²⁰ The GDPR states Regulation (EU) 2016/679 of the European Parliament and of the Council of April 27th, 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*).

²¹ Art. 22 goes on to indicate the cases in which the aforementioned provision does not apply: “the decision: a) is necessary for entering into, or performance of, a contract between the data subject and a data controller; b) is authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject’s rights, freedoms and legitimate interests; or c) is based on the data subject’s explicit consent”. Art. 23 permits a limitation of the prohibition, in any case in compliance with fundamental rights and freedoms and the principle of proportionality, in the event that it is a measure necessary to safeguard one of the various public interests listed.

²² On the evolution of the notion of administrative act and, therefore, of measure, see R. VILLATA, M. RAMAJOLI, *Il provvedimento amministrativo*, Torino, 2017, 12-35.

²³ M.S. GIANNINI, *Atto amministrativo*, in *Enciclopedia del diritto*, IV, Milano, 1959.

an administrative act;²⁴ according to opposing part, the algorithm falls to all intents and purposes within administrative acts.²⁵

According to the first thesis, algorithms should not be regarded as administrative acts because administrative acts are required to be drafted in understandable language, despite the general principle of flexibility in form for such acts. Therefore, opponents of categorising software as an administrative act²⁶ argue that algorithms are inherently incomprehensible due to being written in computer code, and thus cannot be classified as acts. From a subjective point of view, more criticism against algorithms used as acts concerns the mismatch between the decision maker and the programmer of the software.²⁷ Instead, algorithms should be considered as instruments of administrative action,²⁸ a somehow new public servant figure.²⁹

Supporters of the opposing viewpoints consider issues related to delegation of authority and the formalisation of acts to be trivial concerns. On the one hand, in fact, it is the l. no. 241/1990 itself that accepts a broad notion of administrative document, also including electromagnetic recordings.³⁰ On the other, the authorship of the electronic document can be attributed using any signal that allows the identification of the processor.³¹

Moreover, the use of the algorithm in the decision-making process of public administration would in any case represent a precise will of the same public administration, expressed through the adoption of a measure prepared with the aid of a software.

Additionally, scholars have proposed a syncretistic thesis, suggesting that the nature of the relationship between software and administrative acts should be considered, characterised as instrumental, consequential, or coincidental.³² According to this theory, the algorithm cannot be identified with the

²⁴ Specifically: A.G. OROFINO, *La patologia dell'atto amministrativo elettronico: sindacato giurisdizionale e strumenti di tutela*, in *Foro Amministrativo-C.d.S.*, 2002, no. 9, 2256-2281. Partially in agreement A. SIMONCINI, *Amministrazione digitale algoritmica. Il quadro costituzionale*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 22-26, who nevertheless hopes, should the fully automated decision be considered as a legal fact, that the legal system would guarantee enhanced protection of the rights of the persons involved.

²⁵ Among them: U. FANTIGROSSI, *Automazione e pubblica amministrazione. Profili giuridici*, Bologna, 1993, 51-62; A. MASUCCI, *op. cit.*, 56-60; A. CONTALDO, L. MAROTTA, *L'informatizzazione dell'atto amministrativo: cenni sulle problematiche in campo*, in *Il Diritto dell'informazione e dell'informatica*, 3, 2002, 571-601; I. FORGIONE, *Il caso dell'accesso al software MIUR per l'assegnazione dei docenti*, in *Giornale di diritto amministrativo*, 5, 2018, 647-662.

²⁶ A.G. OROFINO, *op. cit.*, 2273-2277. For the author, a further problem concerns the signing of the computer programme, a necessary condition for it to be considered an act, which is not always possible.

²⁷ A dualism that has repercussions on the liability and legitimacy control profiles of software. For a more in-depth examination of the problem, L. VIOLA, *L'intelligenza artificiale nel procedimento e nel processo amministrativo: lo stato dell'arte*, in *federalismi.it*, 21, 2018, 10-11.

²⁸ A.G. OROFINO, *op. cit.*, 2276.

²⁹ V. FROSINI, *L'informatica e la pubblica amministrazione*, in *Rivista trimestrale di diritto pubblico*, 2, 1983, 484.

³⁰ Pursuant to art. 22, par. 1, lett. d), l. no. 241/1990, an administrative document means any graphic, photographic, cinematographic, electromagnetic or any other kind of representation of the content of acts held by a public administration and concerning activities in the public interest, regardless of the public or private nature of their substantive regulation. This view is shared by U. FANTIGROSSI, *op. cit.*, 58-59 and also by A. CONTALDO, L. MAROTTA, *op. cit.*, 588-589.

³¹ U. FANTIGROSSI, *op. cit.*, 58-59.

³² M. TIMO, *Algoritmo e potere amministrativo*, in *Il diritto dell'economia*, 1, 2020, 783-784.



administrative act *a priori*, rather deriving its legal qualification from the type of use that the administration makes of computer tools on a case-by-case basis.³³ To begin with, there is the case of computers being used to replace manual or mechanical writing and, in this example, the software's identification as an administrative act should be excluded, since information technology plays a merely instrumental role in human activity. The second example concerns the computerised administrative act in the strict sense – drawn up in word processing and perfected in computerised form – where the software handles the task, and the administrative body oversees the procedural stages. The third example pertains to the electronic administrative act, where the content, rather than just the form as seen in computerised administrative acts, is generated by software (which could involve model-based or machine-learning algorithms). In these latter scenarios, there could be a notable assimilation between software and the exercise of public authority, resulting in a partial, albeit limited, resemblance between the act and the algorithm due to their comparable content.³⁴

The different theories, however, do not seem to be completely conclusive, despite the syncretistic thesis appearing to be the most correct. Viewing an algorithm as an administrative act is not an easy operation nor is it always useful.

Instead of labelling it as an act, the algorithm should more appropriately be described as a decision-making tool used by the public administration. The influence of the algorithm in the administration's decision-making process varies depending on its degree of "decisiveness". There is no doubt that using software to aid administrative activity differs significantly from delegating the entire decision to the algorithm. However, irrelevant of the function attributed to the algorithm, it cannot be considered anything other than a means used by the administration to its ultimate aim: the genuine pursuit of the public interest.³⁵ Administrative acts and algorithms, in other words, may share the same purpose of meeting the public interest, but are intrinsically different: if the former consist of expressions of will performed by a subject of the public administration in exercising administrative power,³⁶ the latter is comparable to instruments placed at the service of the same subjects.³⁷

How these means are defined is a different matter. Algorithms, behaving differently – as we said and as we will elaborate further – with respect to the public administration, represent "a functional and changing notion",³⁸ potentially taking on different faces according to the function they perform from time to time.

What really appears relevant – assuming that a decision adopted using an algorithm has the form of a final act³⁹ – is to understand whether the final act of a procedure can be deemed legitimate and, in any case, whether the use of algorithms can move within the discipline of l. no. 241/1990 *de iure condito* and respond to the inspiring principles of administrative activity.

³³ M. TIMO, *op. cit.*, 781-782.

³⁴ M. TIMO, *op. cit.*, 781-782.

³⁵ M.S. GIANNINI, *Atto amministrativo*, cit.

³⁶ G. ZANOBINI, *Corso di diritto amministrativo*, vol. I. Milano, 1958, 243.

³⁷ On the computer programme as a tool, also A.G. OROFINO, G. GALLONE, *L'intelligenza artificiale al servizio delle funzioni amministrative: profili problematici e spunti di riflessione*, in *Giurisprudenza italiana*, 7, 2020, 1743.

³⁸ Literally, "Nozione 'funzionale' e 'cangiante'". The administrative judge has expressed himself in these terms to describe the nature of public entities. In this regard, see Cons. Stato, sez. VI, decision no. 3043, July 11, 2016.

³⁹ In this sense, I.M. DELGADO, *La riforma dell'amministrazione digitale: un'opportunità per ripensare la pubblica amministrazione*, in S. CIVITARESE MATTEUCCI, L. TORCHIA (ed.), *La tecnificazione*, cit., 149-150.



Rather than a solely legal issue, there may be a question of coexistence between algorithms and administrative procedures, which should be examined within the framework of existing regulations and in accordance with the principles governing administrative procedural activities.

4. Algorithms and power: algorithmic legality

Based on these premises, it is possible to infer how the use of algorithms in public administration decision-making processes poses several problems.

To begin with, the use of software raises complex issues regarding its comprehension and definition. Once those issues are considered – albeit not definitively resolved – other dilemmas emerge. These pertain, firstly, to the challenge for non-experts in translating algorithmic rules into legal ones (as well as grasping the concept and functioning of algorithms). Secondly, there are uncertainties regarding the compatibility of algorithm use with administrative procedures.

As to the first profile, an attempt can be made here – without any claim to scientific accuracy – to describe the functioning of an algorithm within the procedural sequence.⁴⁰ At a preliminary stage, the algorithm needs to be “trained”. To make that happen, a source code is paramount in that it is the programming language to be transformed into machine language.

Once the fundamental data and instructions are selected by the administration, it is crucial that they are processed by the algorithm in a language that it understands. The first issues already emerge and stem primarily from the type of data used by the algorithm, as well as the complexity and function it performs.⁴¹ On one side, an immense amount of data is increasingly placed at the disposal of algorithms. This is known as big data, namely large quantities of data and information collected, processed, and managed by entities and companies with the purpose of drawing up statistical analyses, projections and predictions concerning every aspect of social life.⁴² Associated with this is the exponentially increasing capacity of algorithms to process these huge clumps of data and to create ever new and different correlations, which surpass the “if/then” logic of simpler algorithms and are out of the control of the very administration that uses them.

At this point, we must turn to the second issue concerning the compatibility of employing algorithms in public administration decision-making processes with the rules and principles governing administrative procedure. In this context, scholars debate the issues of transparency and predictability of algorithmic decisions. Lack of transparency stems from challenges in comprehending the language and operations of algorithms, their rapid and unregulated evolution, and extensive use of big data. Un-

⁴⁰ A description of the process is given by G. AVANZINI, *op. cit.*, 131-135.

⁴¹ It should always be borne in mind that algorithms also differ greatly in their degree of complexity (e.g. model-based and machine learning) and in the function they perform (mere tool, aid, decision-maker).

⁴² Data, in fact, are defined through the so-called four Vs: volume, velocity, variety, veracity. For this definition, see L. MAGLI ET AL., *Glossario*, in L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 185-186.

On big data, among many: V. MAYER-SCHÖNBERGER, K. CUKIER, *Big Data: A Revolution that Will Transform how We Live, Work and Think*, Paris, 2013; R. KITCHIN, *The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences*, Thousand Oaks, 2014; M. DELMASTRO, A. NICITA, *Big data. Come stanno cambiando il nostro mondo*, Bologna, 2019; G. AZZONE, F. CAIO, *In un mare di dati. Quali dati per le politiche, quali politiche per i dati*, Milano, 2020. For a critical view, C. O’NEIL, *Weapons of math destruction: how big data increases inequality and threatens democracy*, London, 2017.



predictability arises from the complexity of software operations and potential programming errors, which can impact the final outcome (known as bias).⁴³ These features contribute to defining algorithmic decisions as black boxes, whose intricate mechanism jeopardise the understanding of their logic.⁴⁴

These technical challenges coexist with equally complex legal considerations. Incorporating algorithms into public decision-making processes necessitates a reassessment of the entire framework of administrative activities within existing legal structures. This poses fundamental questions about the concept of “algorithmic legality” and how algorithmic decision-making is compatible with the traditional principles. Without excluding *a priori* (or automatically admitting) the compatibility of algorithms with the exercise of administrative authority, a progressive analysis will be pursued. In fact, we must first wonder whether the exercise of algorithmic power complies with the principle of legality,⁴⁵ which states administrative activity must be grounded in law. This principle dictates that public administrations may only exercise those powers indicated by law and in the manner that is prescribed by it. The solution, however, changes depending on the meaning attributed to algorithmic administrative decision-making. If the use of algorithms was to be considered as a mere change in the tools available to the administration, no problems of power attribution would arise. If, on the other hand, we were faced with the exercise of a new and unprecedented power, a regulatory authorisation would be required on a case-by-case basis.⁴⁶

The reasons why the use of algorithms plays an instrumental role in administrative action have already been outlined. It is necessary, however, to delve into the normative foundations supporting this position. The first norm can be found in the same law on proceedings, art. 3 bis, which provides

⁴³ For a detailed reconstruction of the problems associated with the use of algorithms, see G. AVANZINI, *op. cit.*, 16-19. See also S. DEL GATTO, *Potere algoritmico, “digital welfare state” e garanzie per gli amministrati. I nodi ancora da sciogliere*, in *Rivista Italiana di Diritto Pubblico Comunitario*, 6, 2020, 829-855. On algorithmic bias: J. KLEINBERG, J. LUDWIG, S. MULLAINTHAN, C.R. SUNSTAIN, *Discrimination in the age of algorithms*, in *Journal of legal analysis*, 10, 2018, 113-174; B. LEPRI, N. OLIVER, E. LETOUZÉ, A. PENTLAND, P. VINCK, *Fair, transparent and accountable algorithmic decision-making processes*, in *Philosophy & technology*, 31, 2018, 611-627.

⁴⁴ On the relationship between algorithms and transparency, on all, C. COGLIANESE, D. LEHR, *Transparency and Algorithmic Governance*, in *Administrative Law Review*, 71, 2019, 1-56.

Within more recent Italian literature, see: L. PREVITI, *op. cit.*, 199-254; A. DI MARTINO, *op. cit.*, 187-195.

⁴⁵ The principle of legality does not find a clear constitutional anchorage in the Italian legal system. An express reference can be found in art. 23 Cost., which prohibits the imposition of personal or pecuniary benefits except based on the law. The ordinary legislature, on the other hand, has provided in art. 1, par. 1, l. no. 241/1990, that administrative activity must pursue the ends determined by law. On the principle of legality, among many others: F. SATTA, *Principio di legalità e pubblica amministrazione nello Stato democratico*, Padova, 1969; S. FOIS, *Legalità (principio di)*, in *Enciclopedia del diritto*, vol. XXIII, Milano, 1973; N. BASSI, *Principio di legalità e poteri amministrativi impliciti*, Milano, 2001; S. CASSESE, *Le basi costituzionali*, in S. CASSESE (ed.), *Trattato di diritto amministrativo. Diritto amministrativo generale*, Tomo I, Milano, 2003, 213-222.

⁴⁶ For a detailed reconstruction, see L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 114-117. On the principle of legality and algorithmic decisions, see also: G. AVANZINI, *op. cit.*, 81-85; S. CIVITARESE MATTEUCCI, *“Umano troppo umano”. Decisioni amministrative automatizzate e principio di legalità*, in *Diritto pubblico*, 1, 2019, 5-41; E. CARLONI, *I principi della legalità algoritmica. Le decisioni automatizzate di fronte al giudice amministrativo*, in *Diritto amministrativo*, 2, 2020, 273-304; I.M. DELGADO, *Automazione, intelligenza artificiale e pubblica amministrazione: vecchie categorie concettuali per nuovi problemi?*, in *Istituzioni del federalismo*, 3, 2019, 643-662; B. MARCHETTI, *L’amministrazione digitale*, in B.G. MATTARELLA, M. RAMAJOLI (directed by), *Enciclopedia del diritto*, cit., 96-100.

for the generalised use of computerised and telematic tools used by public administrations to improve their efficiency. The second rule can be found in the CAD and is represented by art. 12, par. 1, prescribing that administrations must use ICT in the autonomous performance of their activities to achieve objectives of efficiency, effectiveness, cost-effectiveness, impartiality, transparency, simplification, and participation, in compliance with the principles of equality and non-discrimination. Additionally, it is important to regard art. 41, par. 1 of the CAD, which stipulates that public administrations must manage administrative procedures using ICT.

In the Italian legal system, therefore, public administrations have the possibility to generally use new technologies, qualified as an individual right, to which correspond – directly and without the need for case-by-case authorisation – obligations for the same administrations.⁴⁷

An argument against generalised legitimisation can be inferred from art. 22, GDPR, which establishes the data subject's right not to be subjected to a decision based solely on automated processing. Since the European regulation provides for a specific right for the individual not to be subjected to fully automated decisions, one could infer the lawfulness – and therefore the legitimacy – of algorithmic administrative procedures that are not fully entrusted to software.

As evidenced by the considerations made so far, there seems to be a tendency to consider the use of algorithms as an organisational module, mainly a choice of the administration, which does not presuppose a rule attributing power.⁴⁸

It is, therefore, necessary to verify whether the public use of algorithms in decision-making procedures maintains those guarantees envisaged to protect the interested parties' right to take part in the proceedings.

5. The knots of the algorithmic participation

“The administrative procedure is the form of administrative functions, meaning that the course of a function is a procedure as it is ordered by the evidence of interests”.⁴⁹ With this expression, Massimo Severo Giannini highlighted perhaps the most relevant aspect of administrative procedure. Indeed, a procedure is not merely a sequence of ordered acts aiming to produce a conclusive act. It is, rather, an ordered sequence of acts that functions as an actual connection of a plurality of interests. Looking at the latter, the interests of private individuals become relevant as they manifest tangibly in the possibility to actively participate in the exercise of the administrative function.

The provision of increasingly broader forms of citizen involvement in administrative activity⁵⁰ has implied deep mutation in the relationship between citizen and public authority, with a tendency towards participatory democracy.⁵¹ It is through participation that the state attracts “as much society

⁴⁷ L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 115.

⁴⁸ L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 117. Nello stesso senso, G. CARULLO, *op. cit.*, 456-458.

⁴⁹ M.S. GIANNINI, *Istituzioni di diritto amministrativo*, Milano, 2000, 271. Literally, “Il procedimento amministrativo [...] è la forma delle funzioni amministrative, per significare che l'arco di svolgimento di una funzione è procedimento, in quanto ordinato all'evidenza degli interessi”.

⁵⁰ For the definition of administrative activity, among others, see M.S. GIANNINI, *Attività amministrativa*, in *Enciclopedia del diritto*, III, Milano, 1958.

⁵¹ Over all, U. ALLEGRETTI, *Democrazia partecipativa*, in *Enciclopedia del diritto*, Annali IV, Milano, 2011, 295-335.



as possible”,⁵² taking due account of the interests involved and entrusting their management and defence to the holders of the interests themselves.⁵³

Participation of interested parties in the decision-making process of public administrations is a key moment in the procedural sequence.⁵⁴ Given the essential nature of the opportunity to participate in administrative decisions, one must ask whether and to what extent participation can find a place in algorithmic decision-making procedures.

Doubts in this respect relate to at least two fundamental issues. The first concerns the connotation of participation in an algorithmic procedure. Indeed, it is necessary to assess whether, in practice, there is room for interlocution with the private party in a “condensed” procedure such as the algorithmic one and, therefore, to consider whether the rules governing participation within l. no. 241/1990 can be applied.

The second question regards the relationship between the interested parties and the official. In fact, one must ponder whether the use of algorithms does not compress – to the point of eliminating, in some cases – the role of the person in charge of the procedure.⁵⁵

Considering the regulatory void about algorithmic decision-making and holding firm to the principles and rules set forth in the law on proceedings, it is necessary to examine the compatibility between the use of intelligent systems and the legislation in force to possibly attempt a resolution of these questions. In this sense, it is also useful to consider the supranational discipline and highlight the fundamental role of the administrative judge on the subject. As already pointed out, the Italian legislator has not regulated the use of algorithms by public administrations, and it is evident that l. no. 241/1990 came into force at a time when the scope of the current digital revolution was not even

⁵² “Più società possibile”, quoting the words of M. NIGRO, *Il nodo della partecipazione*, in *Rivista trimestrale di diritto e procedura civile*, 1, 1980, 1, 230.

⁵³ To quote F. BENVENUTI, *Disegno della amministrazione italiana. Linee positive e prospettive*, Padova, 1996, 52, administrative activity must no longer see citizens as mere recipients but as authentic co-administrators.

⁵⁴ In general, the literature on the topic is vast. See, among the most wide-ranging studies: S. CASSESE, *Il privato e il procedimento amministrativo. Una analisi della legislazione e della giurisprudenza*, Modena, 1971, 1-166; M.P. CHITI, *Partecipazione popolare e pubblica amministrazione*, Pisa, 1977; F. LEVI, *Partecipazione e organizzazione*, in *Rivista trimestrale di diritto pubblico*, 4, 1977, 1625-1647; R. VILLATA, *Riflessioni in tema di partecipazione al procedimento amministrativo*, in *Diritto processuale amministrativo*, 2, 1992, 171-205; S. CASSESE, *Il procedimento amministrativo tra modello partecipativo e modello “neoclassico”*, in L. TORCHIA (ed.), *Il procedimento amministrativo: profili comparati*, Padova, 1993, 1-6; A. ZITO, *Le pretese partecipative del privato nel procedimento amministrativo*, Milano, 1996; G. VIRGA, *La partecipazione al procedimento amministrativo*, Milano, 1998; T. DI NITTO, *La partecipazione al procedimento amministrativo*, in *Rivista trimestrale di diritto pubblico*, 3, 1999, 731-755; F. GIGLIONI, S. LARICIA, *Partecipazione dei cittadini all’attività amministrativa*, in *Enciclopedia del diritto*, update vol. IV, Milano, 2000; R. CARANTA e L. FERRARIS, *La partecipazione al procedimento amministrativo*, Milano, 2000; S. COGNETTI, “Quantità” e “qualità” della partecipazione, Milano, 2000; M.A. SANDULLI (ed.), *Il procedimento amministrativo tra semplificazione e partecipazione. Modelli europei a confronto*, Milano, 2000.

⁵⁵ On the figure of the person in charge of the procedure, among others, M.A. SANDULLI, Art. 6, in V. ITALIA, M. BASSANI (under the coordination of), *Procedimento amministrativo e diritto di accesso ai documenti (Legge 7 agosto 1990, n. 241)*, Milano, 1991, 73-102; G. CANAVESIO, *Il responsabile del procedimento*, in P. ALBERTI, G. AZZARITI, G. CANAVESIO, C.E. GALLO, M.A. QUAGLIA, *Lezioni sul procedimento amministrativo*, Torino, 1992, 31-52; M.A. IMPINNA, *Il responsabile del procedimento amministrativo*, in M. CLARICH, G. FONDERICO (ed.), *Procedimento amministrativo*, Milano, 2015, 116-159.

remotely conceivable. It clearly follows that the institutes and principles set forth in the proceeding law cannot be considerably referred to algorithmic administration, which struggles to find space in the meshes of the law.

In addition to the regulations referred to and included in the CAD, the supranational discipline, and particularly art. 22, GDPR, have provided partial assistance. On one side, paragraph 1 of art. 22 establishes the right of the data subject not to be subjected to a decision based solely on automated processing, including profiling, which produces legal effects concerning them,⁵⁶ or which significantly affects their person in a similar way.⁵⁷ On the other, paragraph 2 provides for exceptions. In fact, the provision does not apply if automated processing is necessary for the conclusion or performance of a contract between the data subject and the data controller, as authorized by European or Member State law,⁵⁸ or is based on the data subject's explicit consent. Amongst the rights to be guaranteed to the data subject, art. 22, par. 3, GDPR, however, declares that the right to request human intervention, assert his or her reasons, and challenge the decision are indisputable.⁵⁹ In other words, the data subject must be guaranteed the right to take part in the decision.

Arts. 13 e 14, GDPR, furthermore, establish the right of the data subject to know the relevant information on the logic employed by automated processing, as well as the significance and consequences that automated processing might have on the data subject. Pursuant to art. 15, GDPR, the data subject is entitled to be informed by the data controller that an automated decision-making process is being carried out with regards to them, as well as the right to access the data and information of their concern.

In Italy, administrative courts have been the most active on issues of algorithmic administrative decision-making, focusing on ruling public competitions in the education sector.⁶⁰

⁵⁶ In art. 4, par. 4, GDPR profiling is defined as any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

⁵⁷ In *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679 (wp251rev.01)*, it is defined what is to be understood by "decision producing legal effects" and "similarly significantly affects him or her". In the first case, a decision produces legal effects if it affects a person's rights, such as the freedom to associate, to vote, to sue. In the second case, a decision affects a person in a similarly significant way if it significantly affects the circumstances, behaviour or choices of the person concerned if it could have a lasting or permanent impact on the person concerned or even lead to the exclusion or discrimination of persons.

⁵⁸ However, the protection of the rights, freedoms and legitimate interests of the data subject is guaranteed.

⁵⁹ For exceptions relating to the conclusion of contracts or the consent of the data subject. On art. 22, GDPR: S. CIVITARESE MATTEUCCI, *"Umano troppo umano". Decisioni amministrative automatizzate e principio di legalità*, cit., 23-27; A. SOLA, *Utilizzo di big data nelle decisioni pubbliche tra innovazione e tutela della privacy*, in *Rivista di diritto dei media*, 3, 2020, 196-217. On the relationship between automated decisions and the GDPR, S. WACHTER, B. MITTELSTADT, L. FLORIDI, *Why a right to explanation of automated decision-making does not exist in the General Data Protection Regulation*, in *International data privacy law*, 2, 2017, 76-99.

⁶⁰ By way of example, the following appear relevant: T.A.R. Lazio, sez. III bis, nos. 9224-9230 decision, September 10, 2018; Cons. Stato, decision no. 2270/2019; Cons. Stato, sez. VI, decision no. 8472, December 13, 2019; T.A.R. Lazio, sez. III bis, decision no. 7526, July 1, 2020; Cons. Stato, sez. VI, decision no. 881, February 4, 2020. On administrative judges and algorithms see, among others: G.A. ESPOSITO, *Al confine tra algoritmo e*



In a first group set of judgments⁶¹ the administrative judge considered the absence of human involvement in administrative activity to be decisive, deeming an algorithm unable to ensure the protection of “procedural safeguards”.⁶² To argue otherwise would undermine the principles of transparency and procedural participation, so much as the duty to provide a justification for administrative decisions. The court, therefore, emphasised the importance of the role of the person in charge of the procedure, defined as the *dominus* of the procedure itself. Computerised procedures should be reserved an instrumental and merely auxiliary role and, in any case, never dominant or surrogate with respect to human activity.

In another decision,⁶³ the administrative judge praised the digitalisation of public administration, dwelling on the notion of e-Government and highlighting the advantages of automating the administration’s decision-making process. This aspect specifically applies to serial or standardised procedures, which involve the processing of large quantities of demands and display the acquisition of certain and objectively verifiable data with no discretion. In any case, the algorithm remains a rule that must be established in advance by human beings, since it must be regarded to all intents and purposes as a “computerised administrative act”, and its use cannot bypass the fundamental principles of administrative activity. It follows that the algorithm must be completely knowable and subject to the full cognisance of the administrative judge.

The same court ruled again⁶⁴ on a similar issue, holding that the absence of human intervention in an activity of mere automatic classification of numerous requests and the entrusting of such activity to a computer would comply with the efficiency and economy standards of administrative action. The use of such computerised methods, which can be classified as mere organisational tools, cannot, however, lead to the circumvention of the fundamental principles of administrative activity. The court takes this decision one step further, considering the application of such technologies not only to legally bound decisions, but also to discretionary ones. The algorithmic rule – to which l. no. 241/1990 is not

discrezionalità. Il pilota automatico tra procedimento e processo, in *Diritto e processo amministrativo*, 1, 2019, 39-68; R. FERRARA, *op. cit.*; G. MANCOSU, *Les algorithmes publics déterministes au prisme du cas italien de la mobilité des enseignants*, in *Diritto e processo amministrativo*, 3-4, 2019, 1035-1056; F. MANGANARO, *Evoluzione ed involuzione delle discipline normative sull'accesso a dati, informazioni ed atti delle pubbliche amministrazioni. Il giudice amministrativo e gli algoritmi. Note estemporanee a margine di un recente dibattito giurisprudenziale*, in *Diritto amministrativo*, 4, 2019, 743-771; E. CARLONI, *I principi della legalità algoritmica. Le decisioni automatizzate di fronte al giudice amministrativo*, *cit.*; B. RAGANELLI, *op. cit.*; A. MASCOLO, *Gli algoritmi amministrativi: la sfida della comprensibilità*, in *Giornale di diritto amministrativo*, 3, 2020, 366-375; F. COSTANTINO, *Algoritmi, intelligenza artificiale e giudice amministrativo*, in *Giurisprudenza italiana*, 6, 2022, 1527-1536.

⁶¹ These are the judgments of the T.A.R. Lazio nos. 9224-9230/2018 cited. See, on this point, D.-U. GALETTA, *Algoritmi, procedimento amministrativo e garanzie: brevi riflessioni, anche alla luce degli ultimi arresti giurisprudenziali in materia*, in *Rivista italiana di diritto pubblico comunitario*, 3, 2020, 510-516.

⁶² “Guarentigie procedurali”, to use the judge’s exact words.

⁶³ Cons. Stato, decision no. 2270/2019. For a comment: V. CANALINI, *L’algoritmo come “atto amministrativo informatico” e il sindacato del giudice*, in *Giornale di diritto amministrativo*, 6, 2019, 781-787; F. LAVIOLA, *Algoritmico, troppo algoritmico: decisioni amministrative automatizzate, protezione dei dati personali e tutela delle libertà dei cittadini alla luce della più recente giurisprudenza amministrativa*, in *BioLaw Journal*, 3, 2020, 389-440.

⁶⁴ Cons. Stato, decision no. 881/2020. For a comment, B. MARCHETTI, *La garanzia dello “human in the loop” alla prova della decisione amministrativa algoritmica*, in *BioLaw Journal*, 2, 2021, 367-385.

applicable – must, however, be subject to three fundamental principles: the principle of knowability, the principle of non-exclusivity of the algorithmic decision, and the principle of algorithmic non-discrimination. According to the first, a comprehensible explanation must always be provided as to the logical path followed by the algorithm to arrive at a given conclusion. The second principle dictates that the software cannot reach any useful result unless it interacts with a human being. The third and last principle relates to the need for the data controller to take organisational measures and, if necessary, to rectify the process-accessing data to prevent discriminatory effects between persons.⁶⁵

A jurisprudential development has evidently led to alternating visions displaying different openness towards using algorithms. Overall, however, a common theme can be found in the decisions of the Italian administrative courts: the importance of the principles governing administrative activity, the insufficiency and inadequacy of the provisions of the procedural law addressing the phenomenon, and the need for new principles to ensure that algorithmic decisions remain – or are brought back – within the perimeter of legitimacy.

5.1. The notice of initiation and participation in algorithmic proceedings

The notice of initiation of proceedings⁶⁶ serves to make administrative activity cognisable, which opens the possibility for interested private parties to exercise their participatory rights. There are various exceptions to the general rule requiring administration to notify the initiation of proceedings, being (I) requirements of celerity and precautionary proceedings (hypotheses in which the obligation is deferred); (II) proceedings aimed at the issuance of regulatory, general administrative, planning and programming acts; (III) the so-called “principle of functionality of forms”.

These exceptions, envisioned to streamline and simplify the administrative action, have a significant scope and constitute, *de facto*, a damage of the publicity and participation principles.⁶⁷ It is for this reason that some scholars have hypothesised the beneficial effects that the use of ICT in general and automated decisions.⁶⁸ On one hand, using new technologies could lead to simplifying the identification of any third parties involved. On the other, it could considerably reduce the time and costs asso-

⁶⁵ On racial, ethnic, political, religious, labour or other personal grounds.

⁶⁶ Art. 7, par. 1, l. no. 241/1990. On the notice to initiate proceedings, among many others: G. TERRACCIANO, *Sull'obbligo di comunicazione dell'avvio del procedimento*, in *Il Foro amministrativo*, 9, 1994, 2177-2179; F. SAITTA, *L'omessa comunicazione dell'avvio del procedimento: profili sostanziali e processuali*, in *Diritto amministrativo*, 3-4 2000, 449-504; M.A. SANDULLI, *La comunicazione di avvio del procedimento tra forma e sostanza (spunti dai recenti progetti di riforma)*, in *Foro amministrativo-T.A.R.*, 5, 2004, 1595-1608; S. CIVITARESE MATTEUCCI, *La comunicazione di avvio del procedimento dopo la l. n. 15 del 2005. Potenziata nel procedimento, dequotata nel processo*, in *Foro amministrativo-C.d.S.*, 6, 2005, 1963-1973; O. APPERTI, *Partecipazione procedimentale (artt. 7, 8, 9, 10, 10-bis e 13 Legge n. 241/1990)*, in M. CLARICH, G. FONDERICO (ed.), *op. cit.*, 170-185.

⁶⁷ L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., p. 127.

⁶⁸ D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 95-99; L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 126-129. On the importance that the notice of initiation of administrative proceedings has for participation in the ICT sphere, A. MASUCCI, *op. cit.*, 105-108.



ciated with the fulfilment of this task.⁶⁹ More specifically, the creation of archives and databases processing would become much more agile by means of automated data, while making the outreach to a larger number of recipients less time-consuming. This could favour the drive towards revising the qualification of failure to notify the initiation of proceedings – art. 21 octies, par. 2, l. no. 241/1990⁷⁰ – as a mere formal flaw,⁷¹ to the benefit of participation. The issues related to the notice of initiation of proceedings could, in fact, find an easier resolution with regard to the algorithmic procedure: this is because, on the one hand, it would be easier for the administration to identify the third parties concerned; on the other hand, because the use of digital tools could reduce the time and costs of these operations.⁷²

At any rate, the procedural initiative phase is probably the most digitised. Art. 41, CAD, mentioned above, provides for – in addition to the use of ICT for management of administrative procedures (par. 1) – the preparation of an electronic file containing the acts, documents, and data of the procedure (par. 2). The administration notifies the interested parties of the existence of the latter and of the right to access it precisely through the commencement notice of the proceedings (par. 2).

Once the notice is received, the interested parties must be given an actual opportunity to participate in the decision-making sequence so that the notice does not lose importance (at least as far as participatory rights are concerned). This operation, however, is not easily achievable with algorithm-

⁶⁹ In this sense, D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 97.

⁷⁰ This rule establishes the non-annullability of the decision for failure to notify the initiation of the procedure, if the administration proves that the content of the final act could not have been different from the adopted one. The so-called “principle of the functionality of forms” comprises of another provision in the same paragraph of art. 21 octies, according to which a legally bound measure adopted in breach of procedural or formal rules cannot be annulled where it is clear that its content could not have been different from the adopted one.

On par. 2, art. 21 octies, l. no. 241/1990 the literature is vast. See, among many others: S. CIVITARESE MATTEUCCI, *La forma presa sul serio. Formalismo pratico, azione amministrativa ed illegalità utile*, Torino, 2006; D. CORLETTI, *Vizi formali e poteri del giudice amministrativo*, in *Diritto processuale amministrativo*, 1, 2006, 33-79; F. SAITTA, *Nuove riflessioni sul trattamento processuale dell'omessa comunicazione di avvio del procedimento: gli artt. 8 ult. Comma e 21 octies, 2° comma, della legge 241 del 1990 a confronto*, in *Foro amministrativo-T.A.R.*, 6, 2006, 2295-2305; F. VOLPE, *La non annullabilità dei provvedimenti amministrativi illegittimi*, in *Diritto processuale amministrativo*, no. 2, 319-395; S. DEL GATTO, E. ROTOLO, *Il giudice e l'amministrazione*, in L. TORCHIA (ed.), *La dinamica del diritto amministrativo. Dieci lezioni*, Bologna, 2017, 264-267.

On the relationship between art. 21 octies, l. no. 241/1990 and digital administration, see, in particular: D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 95-99; F. NASSUATO, *Legalità algoritmica nell'azione amministrativa e regime dei vizi procedurali*, in *CERIDAP*, special issue 1, 2022, 150-202; L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 127-129.

On the flaws of the final act, *ex multis*: M.S. GIANNINI, *Illegittimità*, in *Enciclopedia del diritto*, XXII, Milano, 1972; D.-U. GALETTA, *Violazione di norme sul procedimento amministrativo e annullabilità del provvedimento*, Milano, 2003; B.G. MATTARELLA, *Il provvedimento*, in S. CASSESE (ed.), *Trattato di diritto amministrativo. Diritto amministrativo generale*, Tomo I, cit., 966-1021.

⁷¹ Of this opinion, L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 127.

⁷² See D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 95-99.



governed proceedings, which are condensed in space and time by automation.⁷³ When it comes to fully automated procedures, it is difficult to identify areas of the procedural investigation – entrusted to the algorithm – where interlocution with the private individual occurs. Additionally, it is objectively complicated for a *quisque de populo* to gain true knowledge and awareness, beyond the mere fact that the administration is making use of algorithms, of the result is being pursued, how the algorithm works, and the rules and logic to which it adheres.

Regarding the first aspect, it is necessary to envision forms of participation allowing the voice of the private party to be heard since the preliminary investigation cannot be reduced to an activity reserved to the self-referential public administration alone.⁷⁴ According to some scholars, the discipline on participation is so relevant to acquire the legitimising value of the same legislative provision of administrative procedure.⁷⁵ A method of legitimisation, therefore, could be to provide for forms of *notice and comment* for algorithmic proceedings.⁷⁶ The opening of the adversarial debate would follow the notice of the decisions adopted by the administration with the employment of algorithms. Correspondingly, even in the case of fully automated procedures, the necessary human interposition would be accorded.⁷⁷

According to another pool of scholars, this solution would be unfeasible, considering that the Italian legal system does not allow forms of prior participation in the absence of special rules. Indeed, a subsequent interlocution with the administration can be considered since there is no possibility of upstream participation or participation during the preliminary investigation (as it would be excessively compressed). However, this solution is not feasible either, in that there are no specific provisions to this effect and – even – the role of the person in charge of the procedure would be problematic, as it is totally absorbed in the fully automated decision.⁷⁸

Considerations on this latter issue will be made shortly. As to the rest, the private individual intending to participate in the algorithmic procedure seems to be faced with a seemingly opaque and constrained scenario within the meshes of a law, which appears no longer capable of containing the explosive scope of the digital phenomenon. Some scholars have theorised about the implementation of

⁷³ G. AVANZINI, *op. cit.*, 138.

⁷⁴ D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 108

⁷⁵ R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, cit., 320.

⁷⁶ These are forms of prior consultation, used as part of the regulatory activity of independent authorities, aimed at gathering input from interested parties through notice and comment mechanisms. The administration gives prior notice of the project in progress and receives any comments from interested parties. On this point, see: M. CLARICH, *Autorità indipendenti. Bilancio e prospettive di un modello*, Bologna, 2005, 167-171; F.G. ALBISINNI, K. PECCI, *Il giudice e la regolazione*, in L. TORCHIA (ed.), *La dinamica del diritto amministrativo. Dieci lezioni*, cit., 295-299.

The origin of this procedure is in the U.S. and is fully regulated in the Administrative Procedure Act, par. 553, lett. b), on rulemaking.

⁷⁷ R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, cit., 320.

⁷⁸ G. AVANZINI, *op. cit.*, 139.

the so-called ameliorative participation,⁷⁹ through the adoption of organisational models that foster the active role of citizens in understanding and implementing administrative tasks.⁸⁰ This model of participation is well suited to a digital environment, characterised specifically by the interaction between stakeholders and administration. Irrelevant of the interpretative paths one chooses to follow, the inability of the current legislation to extend to the point of being able to encapsulate algorithmic administration is evident. An intervention by the legislator would, therefore, be desirable.

At the moment, a fundamental role has been played by administrative courts. Some of their pronouncements make it possible to start from the first of the two above-mentioned aspects – the possibility of participation – to reach the second – the capacity to understand. As already pointed out, the same administrative courts have expressed strong perplexity about the indiscriminate applicability of the Italian law on administrative procedure to proceedings in which the administration makes use of algorithms.⁸¹ On several occasions, however, the same judge has highlighted the advantages of the application of such powerful information tools, deeming it in line with the canons of efficiency and cost-effectiveness of administrative action (at least in the case of standardised procedures with a reduced margin of discretion).⁸² In some cases, the administrative courts have supported the possibility of employing algorithms even in cases of discretionary activity, with the latter being able to benefit from algorithmic advantages and efficiency.⁸³ The aforementioned decisions of administrative courts converge, however, towards the same conclusion, expressing that the algorithm must be knowable for the procedural safeguards to be guaranteed, and for the participation right of the interested parties to be protected. In other words, the technical rule governing the software must be translated into a legal rule comprehensible to human beings.⁸⁴ The three principles developed by jurisprudence, which algorithmic decisions should abide by, include comprehensibility, non-exclusivity of the algorithmic decision and algorithmic non-discrimination.⁸⁵ Knowability, in particular, ought to be formulated not only as the mere possibility to make the interested party aware of the existence of an algorithmic decision affecting them, but also as comprehensibility of the logic used. The problem of participation results to be inseparably linked to that of transparency, as ensuring participation firstly requires to fill an information gap⁸⁶ that creates a strong asymmetry between the interested party and the administration.

5.2. The person in charge of the procedure: *dominus* or *servus*?

In order to make sure that an algorithm functions correctly and leads to the desired results, the entered data and the programme creation are of fundamental importance. These characteristics are

⁷⁹ On ameliorative participation and digital administration, G. CAMMAROTA, *Servizi pubblici on line e partecipazione migliorativa*, in S. CIVITARESE MATTEUCCI, L. TORCHIA (ed.), *La tecnificazione*, cit., 113-128; R. CAVALLO PERIN, *Ragionando come se la digitalizzazione fosse data*, cit., 320-321.

⁸⁰ S. CIVITARESE MATTEUCCI, L. TORCHIA, *La tecnificazione dell'amministrazione*, in S. CIVITARESE MATTEUCCI, L. TORCHIA (ed.), *La tecnificazione*, cit., 29.

⁸¹ Cons. Stato, decision no. 881/2020.

⁸² Cons. Stato, decision no. 2270/2019; Cons. Stato, decision no. 881/2020.

⁸³ Cons. Stato, decision no. 8472/2019.

⁸⁴ Cons. Stato, decision no. 8472/2019.

⁸⁵ Cons. Stato, decision no. 881/2020.

⁸⁶ G. AVANZINI, *op. cit.*, 140.

the result of human choices and of those very choices made by the person in charge of the procedure⁸⁷ and the software programmer respectively.⁸⁸ It follows that the guarantee of the human in the loop (HITL)⁸⁹ – that is, of the necessary interaction between human and machine – is paramount within the decisions taken by the public administration through algorithms. The principle is, in fact, established by art. 22, GDPR, itself, and has been affirmed on several occasions by administrative courts, which endorsed the principle of non-exclusivity of algorithmic decision-making.⁹⁰

There are at least two orders of issues regarding the administration, people and the machines: on the one hand, the guarantee of human control; on the other, the impossibility to impute the algorithmic decision. In either case, a distinction should be made between decision-making procedures using model-based algorithms and procedures using machine learning algorithms. As we will see, the different types of software used also modify the problematic degree of the questions posed.

Starting from the first of the two aspects, the results obtained by a model-based algorithm are clearly more easily verifiable than those acquired by a machine learning algorithm. Since the former is human-programmed and responds to an “if/then” type of logic, it acts as a powerful calculator and arrives at predictable conclusions. The administration can explain the criteria adopted by the algorithm assessing the correctness of the final determinations – to a certain extent predefined – that the algorithm reaches based on its correctional ability. The same argumentative path cannot be followed for machine learning algorithms, owing to their ability to create new correlations between the input data and autonomously select the relevant ones. Hence, the lack of a direct and predictable link between input and output, making it challenging for the person in charge of the procedure to understand and explain why and on which basis the algorithm has arrived at a certain result. This *modus operandi* has consequences, first and foremost, on the ability of the person in charge of the procedure to explain – since they do not understand it – the operating mechanism of the machine, and to correct any biases, as well as on the interested parties who see their right of defence compromised.⁹¹ Some scholars hold that the initial selection and data input phase is so crucial⁹² that it can be considered the core of decision-making.⁹³ If this can be confirmed for constrained procedures, in which model-based algorithms are employed, the same cannot simply be stated for machine learning procedures. However, it is undeniable that the instructions given to the machine must be precise and as error-free as possible if they are to lead to results that are consistent and in the public interest.

⁸⁷ On this point see, in particular, D.-U. GALETTA, *Digitalizzazione e diritto ad una buona amministrazione (il procedimento amministrativo, fra diritto Ue e tecnologie ICT)*, in R. CAVALLO PERIN, D.-U. GALETTA (ed.), *Il diritto dell'amministrazione pubblica digitale*, cit., 88-95.

⁸⁸ L. TORCHIA, *Lo Stato digitale. Una introduzione*, cit., 129-131.

⁸⁹ About the human in the loop: M. LETA JONES, *The right to a human in the loop: Political constructions of computer automation and personhood*, in *Social studies of science*, 2, 2017, 216-239; A. ODDENINO, *Decisioni algoritmiche e prospettive internazionali di valorizzazione dell'intervento umano*, in *DPCE online*, 1, 2020, 199-217, 211-217; B. MARCHETTI, *La garanzia dello Human in the loop alla prova della decisione amministrativa algoritmica*, cit.; E. MOSQUEIRA-REY, E. HERNÁNDEZ-PEREIRA, D. ALONSO-RÍOS, J. BOBES-BASCARÁN, A. FERNÁNDEZ-LEAL, *Human-in-the-loop machine learning: a state of the art*, in *Artificial intelligence review*, 56, 2023, 3005-3054.

⁹⁰ Cons. Stato, decision no. 8472/2019; Cons. Stato, decision no. 881/2020.

⁹¹ For an examination of the issues related to the human in the loop guarantee, B. MARCHETTI, *La garanzia dello Human in the loop alla prova della decisione amministrativa algoritmica*, cit., 378-382.

⁹² A.G. OROFINO, G. GALLONE, *op. cit.*, 1745-1746.

⁹³ G. AVANZINI, *op. cit.*, 137.



Nonetheless, this does not exempt the administration from midway and subsequent control.⁹⁴ This control should be carried out, firstly, by ensuring that the interested parties participate in the proceedings and, secondly, by letting the administration verify the outcome prior to adopting the final measure.

The administrative courts have also ruled on this point on several occasions. In some cases, the approach has been strongly in opposition to computerised procedures, considering them incapable of equating the cognitive activity of the public official and of guaranteeing observance of the participation principle. The courts declared that the person in charge of the procedure must continue to be the *dominus* of the same, in the sense that computerised procedures can only play a servant and instrumental role within the procedural sequence and never a dominant or surrogate role for the activity of the man.⁹⁵ From such a clear-cut stance, the courts then shifted towards more lenient approaches, asserting that a downstream verification of the decision's outcome is necessary on the human being's end in order for accountability.⁹⁶ From an approach seeking to rule out the employment of intelligent machines except for supportive roles in human activities, the administrative judge finally affirmed that the relevant criterion for the principle of the human in the loop to be respected relates to decision's chargeability to the human being.

The chargeability of the decision is, precisely, the second issue, relating to the presence of the human being within algorithmic processes. The fact that a decision taken using algorithms is imputable to the official carries several implications: it affects the assimilability of the decision itself to an administrative measure and, therefore, its reviewability; it impacts the official's supervision of the adherence to the public interests for which the power is exercised; and pertains to the responsibility for any damage caused to third parties.⁹⁷

Here again, the type of algorithm employed has a significant impact on the issues involved. For model-based algorithms, it is certainly irrelevant, for the chargeability of the software-made decision of the administration. It is, however, necessary for these purposes that the deciding body actively absorbs the content of the output provided by the machine. This is because this type of algorithm is employed in hypotheses in which the activity of the public administration is substantially constrained and, therefore, the solution of the actual case is somehow due. At the end of the procedural process, the official should only receive the output – predefined and due – generated by the algorithm. The opposite could be said for machine learning algorithms in that their operating rules are not predetermined by the administration but created by the machine itself in the learning phase. Moreover, these algorithms are normally employed in case of discretionary activities. Even if the logical process followed by the algorithm is not exactly knowable and even if the final decision is not restricted within the meshes of the constrained activity, there seems to be no doubt that the administration retains the possibility of controlling the kind of output generated by the algorithm. Therefore, when somebody in charge of the procedure verifies the results generated by the algorithm and takes responsibil-

⁹⁴ Of this opinion, N. PAOLANTONIO, *Il potere discrezionale della pubblica automazione. Sconcerto e stilemi. (Sul controllo giudiziario delle "decisioni algoritmiche")*, in *Diritto amministrativo*, 4, 2021, 824.

⁹⁵ T.A.R. Lazio, decision nos. 9224-9230/2018.

⁹⁶ Cons. Stato, decision no. 8472/2019.

⁹⁷ On these aspects, see B. MARCHETTI, *La garanzia dello "human in the loop" alla prova della decisione amministrativa algoritmica*, cit., 105-106.

ity for the choice, it is indisputable that the same choice unequivocally falls upon the administration.⁹⁸ Imagining, as it has been done, the algorithm as a tool in the hands of the administration, the imputability of a measure generated using a technological tool can only be attributed to the administration itself.⁹⁹

6. Conclusions

In this essay, we have focused on how the new algorithmic administration affects administrative procedure, from the peculiar point of view of the respect of participatory guarantees. Indeed, we raised the question as to whether participatory guarantees can be considered satisfied even within an algorithmic procedure.

In order to answer, we started from the study of the algorithm, outlining its definitions and characteristics and investigating its legal nature. We then raised the issues related to participation in algorithmic proceedings.

From what has been analysed so far, some conclusions can be drawn. The public servant, in general, and the person in charge of the procedure, in particular, is not to be considered *servus* of the algorithm. This rule should apply to both the simplest and the most complex algorithms. Although in the latter case the correlations and their intelligent functioning may partly escape human control, and even if the entire procedural sequence is entrusted to the machine, certain spaces of the procedure remain where a human decision-maker can operate. This is the example of the initial phase of the procedure, in which the algorithm is programmed and “instructed”. Additionally, it is the example of the final phase of the same, in which the official is tasked with checking the results reached by the algorithm, as well as – if necessary – of assimilating them, taking responsibility for the choice. The person in charge of the procedure bridges between the interested parties and the algorithm: the official must remain the referent of the interested parties, having to provide them with indications and explanations on the machine’s *modus operandi*, overseeing and possibly correcting the work of the algorithm.¹⁰⁰ We are faced, therefore, with a new declination of the role of the administration in algorithmic procedures, which cannot merely be constrained within the rigid boundaries of the law, nor can it be superficially banished.

L. no. 241/1990 is hardly susceptible to such an extensive interpretation to accommodate administrative activity governed by the use of algorithms, particularly regarding the necessary guarantee of the participation principles for interested parties. Regardless of whether one has an optimistic or a pessimistic view of the so-called algorithmic administration phenomenon, the tireless activity of

⁹⁸ Of this opinion, G. CARULLO, *op. cit.*, 442-444. On the imputability of the decision in any case to the human official, N. PAOLANTONIO, *op. cit.*, 824-827 e A.G. OROFINO, G. GALLONE, *op. cit.*, 1745-1748.

⁹⁹ According to I.M. DELGADO, *La riforma dell’amministrazione digitale: un’opportunità per ripensare la pubblica amministrazione*, in S. CIVITARESE MATTEUCCI, L. TORCHIA (ed.), *La tecnificazione*, cit., 148, since only the decision-making process automated – and not the body itself – algorithmic administrative activity is simply a different form of adopting measures, which does not alter the competence and has no consequences for the configuration of the body, integrated by physical persons, governed by its owner and assisted by digital means.

¹⁰⁰ D. MARONGIU, *Algoritmo e procedimento amministrativo: una ricostruzione*, in *Giurisprudenza italiana*, 6, 2022, 1515-1523.

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scholars and judges undoubtedly points to the need for intervention by the legislature. In any case, considering the advantages deriving from the use of algorithms in administrative decision-making, the choice of prohibiting the use of such software would seem unresponsive to the standards of efficiency, effectiveness and economy that administrative action should be inspired by. Similarly, *de iure condito*, the right of participation of the interested parties in algorithmic procedures becomes vulnerable. Therefore, urgent regulation of the algorithmic phenomenon is essential to guarantee that forms of participations for the interested parties are achievable in automated procedures. Correspondingly, the public officer in charge of the procedure should be reinterpreted in a way that allows the same figure to remain linking thread between the administration and the interested parties.