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*The Implementation of the Transparency Principle in the Development of Electronic Administration**

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ABSTRACT The massive use of electronic systems in the performance of the administrations' actions is giving rise to obvious problems of transparency, the solution to which is prodromal to a profitable use of information technology by the public administration.

1. *IT transparency: introductory profiles*

IT transparency has become a very important matter throughout the past few years, also following an intense debate on the matter, both at a national and supranational level, fuelled by the growing attention paid to it on the part of Italian and foreign courts.

The above-mentioned debate in fact dates back to the early twenty-first century, but as of today has been largely neglected, and at a case-law level has been limited to few, isolated decisions, which ultimately addressed the issue of ostensibility of documents disclosed on a magnetic support and of log files[1].

In the past five years, by contrast, the courts have been particularly interested in a new profile of IT transparency: namely the knowability of the software and of its very core, i.e. its source code.

The issue had already been discussed in some works published at the end of the past millennium[2] and has now drawn further attention to itself, in that there is an ever more pressing need to understand the operating modes of the programmes employed by public administrations in the performance of automated procedures, and as a consequence of the growing importance gained by processors and the consequent impact automated decisions have been having on the subjective legal situations of citizens.

Studies on the use of automation in the performance of public functions have been carried out for quite some time.

In Italy, as is well-known, already with the "Rapporto sui principali problemi dell'amministrazione dello Stato", submitted in 1979 by then Minister of Public Administration Massimo Severo Giannini[3], it was found that electronic processors, initially employed as "apparecchi di semplice registrazione di dati complessi, sono divenuti poi apparecchi di accertamento e verificazione, di calcolo, di partecipazione a fasi procedimentali di istruttoria, e infine di decisione", therefore "i sistemi informatici non servono più alle amministrazioni per fatti di gestione interna, ma servono proprio per amministrare, si proiettano cioè sempre più verso l'esterno"[4].

Since 1979, self-evidently, much has changed and the use of computers in the performance of administrative functions has become ever more substantial and invasive.

IT is not only used as a means to disclose provisions, or acts submitted by privates within proceedings carried out by public bodies: processors, instead, increasingly act as instruments which are delegated the task of carrying out certain functions (preliminary fact finding activities but also decision-making functions), as occurs in the hypotheses of automated correction of examinations of certain public competitions, meaning in the management of mobility proceedings on the part of large

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[1] See what will be said below in par. 7.

[2] A.G. Orofino, *Open source e pubblica amministrazione*, in *Diritto delle nuove tecnologie informatiche e dell'Internet*, G. Cassano (ed.), Milan, Ipsoa, 2002, 1317; F. Fracchia, *Open source e pubblica amministrazione*, in *Open source*, M. Bertani (ed.), Milan, Giuffré, 2005, 216; F. Macrez, R. Riviere, *Les logiciels libres, l'administration et les marchés publics. Des principes juridiques à la pratique (et inversement)*, in *Revue lamy droit de l'immatériel*, No. 16, 2006, 57; F. Bravo, *Software «open source» per la p.a. tra diritto d'autore, appalti pubblici e diritto dei contratti. La licenza pubblica dell'UE per i programmi a codice sorgente aperto*, in *Diritto dell'informazione e dell'informatica*, 2008, 865; C. Prebissy-Schnall, *Marchés publics et logiciel libre*, in *Contrats concurrence consommation*, 2011, comm. 265; D. Marongiu, *Organizzazione e diritto di internet*, Milan, Giuffré, 2013, 61; F. Costantino, *Lampi. Nuove frontiere delle decisioni amministrative tra open e big data*, in *Diritto amministrativo*, 2017, 719; M. Fernández Salmerón, *La reforma del régimen jurídico de las Administraciones Públicas y del procedimiento administrativo en España*, in *Diritto mercato e tecnología*, 2016, n. 2, 207 and especially 228; E. Mouriesse, *L'opacité des algorithmes et la transparence administrative*, in *Revue française de droit administratif*, 2019, 45.

[3] In *Foro italiano*, 1979, V, 289.

[4] See par. 3.7 of the document. On this matter see A. Predieri, *Gli elaboratori elettronici nell'amministrazione dello Stato*, Bologna, Il Mulino, 1971, 29.

central administrations[5].

Never before has a technical means employed by the administration been so influential and, at the same time, so crucial for the purposes of the performance of public functions, so much so that it leads to knowability needs referred to the instrument itself[6], along with the action carried out for its intermediary[7].

Hence the unusual situation whereby the need for transparency – hitherto solely referred to *activity* and *organisation* – is also extended to some *technical means* employed by public administrations.

This, as has already been stated, is a consequence of the conditioning nature gained by certain means with respect to the performance of administrative functions.

2. *The debated qualification of the software as an administrative act*

The above-described distinctiveness and novelties have undoubtedly characterised the matter and influenced the difficult and opposed qualification of the software.

Indeed, by valuing the circumstance whereby the public administration, already upon adopting the programme, makes decisions through which it diminishes its discretion, thereby limiting itself for an indefinite number of future scenarios, some authors have argued that the software used for the issuance of automated acts would be an administrative act[8], and qualified it as a general act[9], an internal act[10], a self-imposed act of constraint[11] or regulatory instrument[12].

The argument in favour of the software being an act in nature was upheld at a judicial level by those who, in order to guarantee the accessibility of the programmes adopted for the management of administrative procedures[13], judged these

[5] A.G. Orofino, *L'informatizzazione dell'attività amministrativa nella giurisprudenza e nella prassi*, in *Giornale di diritto amministrativo*, 2004, 1371.

[6] See F. Pasquale, *The Black Box Society*, Cambridge-London, Harvard University Press, 2015. On this matter see also C. Coglianese and D. Lehr, *Transparency and Algorithmic Governance*, in *Administrative Law Review*, vol. 71, 2019, 1, who, discussing democratic values, stated that "today, these values appear to face an emerging threat from technology. Specifically, advances in machine-learning technology—or artificial intelligence—portend a future in which many governmental decisions will no longer be made by people, but by computer-processed algorithms. What such a future will mean for liberty and democracy will depend to a significant degree on the extent to which these algorithms and their functioning can be made transparent to the public".

[7] G. Piperata, *Semplificazione e digitalizzazione nelle recenti politiche di riforma della Pubblica Amministrazione italiana*, in *L'amministrazione che cambia. Fonti, regole e percorsi di una nuova stagione di riforme*, F. Mastragostino, C. Tubertini, and G. Piperata (eds.), Bologna, Bononia University Press, 2016, 255; M. Almeida Cerreda and L. Miguez Macho, *Breve contextualización del estudio del nuevo régimen jurídico del funcionamiento por medios electrónicos del sector público y de la tramitación informática del procedimiento administrativo común*, in *La actualización de la Administración electrónica*, II ed., M. Almeida Cerreda and L. Miguez Macho (eds.), Santiago de Compostela, Andavira Editora, 2018, 17.

[8] Others who share this view are U. Fantigrossi, *Automazione e pubblica amministrazione. Profili giuridici*, Bologna, Il Mulino, 1993, 51; A. Masucci, *L'atto amministrativo informatico*, Naples, Jovene, 1993, 56; A. Usai, *Le prospettive di automazione delle decisioni amministrative in un sistema di teleamministrazione*, in *Diritto dell'informazione e dell'informatica*, 1993, 163 and especially 174; M. Mancarella, *Algoritmo e atto amministrativo informatico: le basi nel Cad*, in *Diritto di internet*, 2019, 467; I.A. Nicotra and V. Varone, *L'algoritmo, intelligente ma non troppo*, in *Rivista trimestrale dell'Associazione Italiana dei Costituzionalisti*, No. 4, 2019, 86.

[9] U. Fantigrossi, *Automazione e pubblica amministrazione*, 56 and 111, who even ascribes a provisional nature to the software.

[10] A. Usai, *Le prospettive di automazione*, 174.

[11] M. Martini and D. Nink, *Wenn Maschinen entscheiden … – vollautomatisierte Verwaltungsverfahren und der Persönlichkeitsschutz*, in *Neue Zeitschrift für Verwaltungsrecht – Extra*, vol. 36, 2017, 1 and especially 10, talk about it using the term "*Verwaltungsvorschriften*", i.e. circular letter suitable for generating a self-imposed act of constraint. On this matter, see also A. Guckelberger, *E-Government: Ein Paradigmenwechsel in Verwaltung und Verwaltungsrecht?*, in *Gleichheit, Vielfalt, technischer Wandel*, U. Sacksofsky (ed.), Berlin, De Gruyter, 2019, 236 and especially note 202.

[12] A. Boix-Palop, *Algorithms as Regulations: Considering Algorithms, When Used by the Public Administration for Decision-Making, as Legal Norms in Order to Guarantee the Proper Adoption of Administrative Decisions*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 75. On these matters see also M. Fernández Salmerón, *La potestad reglamentaria: el procedimiento de elaboración de los reglamentos*, in *Tratado de Procedimiento Administrativo Común y Régimen Jurídico Básico del Sector Público*, E. Gamero Casado (eds.), Valencia, Tirant lo Blanch, 2017, 2483.
For a critique against Boix-Palop's position see A. Huergo Lora, *Una aproximación a los algoritmos desde el derecho administrativo*, in *La regulación de los algoritmos*, A. Huergo Lora (ed.), Cizur Menor, Aranzadi, 2020, 23 and especially 64, who holds that "los algoritmos pueden cumplir distintas funciones jurídicas (en Derecho administrativo): a veces son simples medios auxiliares en la aplicación de la norma […] Otras veces son elementos complementarios de la norma habilitados por esta (aunque de momento es algo hipotético). También hay algoritmos que sirven para objetivar decisiones preliminares que son simples actos de tramite (como las de iniciación de un procedimiento administrativo)".

[13] See Tar Lazio, Roma, sec. III *bis*, 21 March 2017, No. 3742, which reads: "Il software assume una rilevanza essenziale nell'ambito del procedimento amministrativo finalizzato all'adozione di un atto a elaborazione informatica e la sua stessa qualificazione giuridica in termini di atto amministrativo informatico è importante a diversi fini e, primo tra tutti, proprio ai fini della verifica dell'ammissibilità dell'accesso di cui agli artt. 22 e ss. della legge n. 241/1990 al relativo programma informatico e, in definitiva, al suo c.d. linguaggio sorgente". The need to legally frame the programmes in order to verify the rules of ostensibility is also highlighted by A. Guckelberger, *Dritter Beratungsgegenstand. E-Government*, 269: "Deshalb will ich mich auf die Zugänglichkeit der Verwaltungs-algorithmen beschränken. Dafür ist deren Rechtsnatur von ausschlaggebender Bedeutung".

programmes as tantamount to actual provisions[14], in that they were ostensible in accordance with the provisions on access to documents. The "riconducibilità del software che gestisce l'algoritmo alla categoria del c.d. atto amministrativo informatico di cui alla lett. *d*), dell'art. 22 della legge n. 241 del 1990"[15] was therefore affirmed.

Actually, Art. 22, paragraph 1, lett. *d*) of the law on the procedure defines the administrative "document", for the purposes of its ostension which, in accordance with the provisions on the matter of access, is recognised for all types of documents identified in said rule. Art. 22, however, does not also outline the concept of "act" or "administrative provision"[16].

As will be explained in the following paragraphs, it is self-evident that the software must be an accessible document.

By contrast, the author does not agree with the argument whereby the programme can also be considered a fully-fledged administrative act.

Those who agreed with the hereby opposed argument did so by highlighting the precondition whereby it is with the software that the administration establishes, modifies or settles individual legal situations, while providing specific content and actual concreteness to the instructions received upon the planning of the implementation[17].

According to those in favour of the above-described position, therefore, the adoption of administrative acts written in machine language would be permitted, a language made of signs and characters which are intelligible neither by the addressee of the provision, nor by the authority issuing it.

One must therefore ask oneself whether it is possible to imagine the existence of an administrative act whose content can only be deciphered by a very limited number of IT programmers, and not also by the administrative bodies or by the citizens to whom these acts are addressed[18].

It is argued that the answer to this question must be negative, in that the production of prescriptive meanings, relevant in the realm of the law is permitted only when the forms of legal language and communication are employed[19]: for the provision to come into existence, the decision of the agent is disclosed, so as to be received by the addressees[20].

This is one of the most basic implementations of the administrative transparency principle: allowing citizens to know the content of the decisions made by the authority and the reasons supporting them, based on the rule outlined by Art. 3 of Law No. 241/1990.

Moreover, in the Italian legal system, although – as has already been stated – there is no general rule dictating the use of the written form for the adoption of the administrative acts, this is undoubtedly the normal disclosure mode which they must adopt[21].

And every time these acts must be drawn up in writing, they must also be written in Italian.

Indeed, Italian is the official language of public acts and public proceedings, and its use is imperative, save where there are express legal exemptions.

What has been stated thus far is also confirmed by the principles of *ius commune* inferable from Art. 122 of the Italian Code of Civil Procedure[22].

The need for the provisions to be disclosed

[14] Cons. Stato, sec. VI, 8 April 2019, No. 2270, in *www.giustizia-amministrativa.it*, which reads: "L'algoritmo, ossia il software, deve essere considerato a tutti gli effetti come un 'atto amministrativo informatico'". A different opinion, by contrast, is to be found in Cons. Stato, sec. VI, 13 December 2019, No. 8472, *ibid*.

[15] The sentences between inverted commas are taken from Tar Lazio, Roma, sec. III, 22 March 2017, No. 3769, in *www.giustizia-amministrativa.it.*

[16] G. Corso, in *L'attività amministrativa*, Turin, Giappichelli, 1999, 134, notes that, although there are various rules (also constitutional such as Art. 113 of the Italian Constitution) which refer to the administrative act, unlike other countries, Italy lacks a normative definition of this legal category.

[17] Tar Lazio, Roma, sec. III, 22 March 2017, No. 3769.

[18] G. Sartor, *I linguaggi (e i sistemi) informatici: un vincolo per il giurista?*, in *Rivista del notariato*, 1998, 825.

[19] L. Ferrajoli, *Principia iuris. Teoria del diritto e della democrazia*. *Vol. 1. Teoria del diritto*, II ed., Rome-Bari, Laterza, 2012, 489; S. Perongini, *Teoria e dogmatica del provvedimento amministrativo*, Turin, Giappichelli, 2016, 216.

[20] P. Virga, *Il provvedimento amministrativo*, IV ed., Milan, Giuffrè, 1972, 3.

[21] R. Villata and M. Ramajoli, *Il provvedimento amministrativo*, Turin, Giappichelli, 2006, 230.

[22] Tar Lazio, Roma, sec. II, 13 March 2001, No. 1853, in *www.giustizia-amministrativa.it.*
It is worth noting that Art. 15, 1st paragraph of Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas, provides for that: "La lengua de los procedimientos tramitados por la Administración General del Estado será el castellano. No obstante lo anterior, los interesados que se dirijan a los órganos de la Administración General del Estado con sede en el territorio de una Comunidad Autónoma podrán utilizar también la lengua que sea cooficial en ella". On this matter see A. Nogueira López, *Derecho de los ciudadanos al uso de las lenguas oficiales en el procedimiento, en especial ante la Administración General del Estado*, in *Tratado de Procedimiento Administrativo Común y Régimen Jurídico Básico del sector público*, E. Gamero Casado (ed.), 425.
Also Art. L. 111-1 of the French Code des relations entre le public et l'administration, provides for that: "L'usage de la langue française est prescrit dans les échanges entre le public et l'administration, conformément aux dispositions de la loi n° 94-665 du 4 août 1994 relative à l'emploi de la langue française".
Finally, also par. 23 of the German law on the administrative procedure (the *Verwaltungsverfahrensgesetz*) provides for that "die Amtssprache ist deutsch". On this matter see V. von Braun, *Die Amtssprache ist Deutsch. Fair Communication in Administrative Proceedings*, in *Review of European Administrative Law*, vol. 10, No. 2, 2017, 27.

with an intelligible language for the addressee is, moreover, affirmed by the provisions requiring bilingualism, i.e. the provisions requiring the translation, in an intelligible language for the addressee, when the provisions are adopted with respect to a foreigner.

And therefore the software, as it is made up of a series of signs and expressions not manifested according to the normal rules of linguistic communication, cannot be considered an administrative act but rather, at best, it can constitute the *object* of an administrative will: the will of making one's own, upon performing the functions, the decisions made by the machine[23].

Besides, if the administrative acts are "declarations" implemented by an authority[24], then the declaration, in order to be such, must be disclosed in a manner which enables the receivers to understand its meaning.

This confirms the need to employ a communication instrument of common use and easily intelligible.

Therefore, the software cannot be considered an administrative act.

The electronic processor (which includes the programme) must, by contrast, be considered an *instrument* of administrative action[25].

A different position would also overlook the difficulties related to the signing of computer programmes, given that the electronic signing of a software is not always possible[26].

Furthermore, if the programme were an act, – when detrimental – judicial protection ought to be granted against it (irrespective of it being immediate, or delayed to the conclusion of the procedure), in accordance with the rule outlined by Art. 113 of the Italian Constitution.

And when protection goes through the annulment of the administrative act, the claimant will be required to put forward complaints which follow the principle of specificity of the reasons for appeal (Art. 40 of the Italian Code of the Administrative Process), and the judging body will be required to verify, also unofficially, such compliance.

It is difficult to imagine that a lawyer and some judges would be able to guarantee the observance of the principle of specificity of the complaints put forward against a programme, whose content they are unable to comprehend.

Claiming, as has been indeed done, that for the purposes of comprehending the software "il privato destinatario dell'atto [...] può, comunque, legittimamente avvalersi dell'attività professionale di un informatico competente in materia"[27] does not seem convincing, not only owing to the above-mentioned reasons, but also owing to the clear costs to be borne by the parties at trial and the judge him or herself, who are called upon to resort to an IT technician to comprehend the meaning of the instructions imparted to the processor: the possibility of interpreting the acts undergoing judicial review being exercised through the mediation of IT technicians is indeed an excessive burden[28].

The matter then becomes more complex when expert systems are employed which, through machine learning techniques, acquire ever greater levels of autonomy compared to when the software is programmed, thus the programming process becomes ever less relevant for the purposes of the prognosis on the decisions the computer can make.

If one adopted the argument whereby the programme was considered an administrative act, also when one resorts to machines equipped with

[23] G. Gallone, *Public Administration and the Challenge of Contractual Automation. Notes on Smart Contracts*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 179.

[24] According to the well-known definition given by G. Zanobini, *Corso di diritto amministrativo*, vol. I, VIII ed., Milan, Giuffrè, 1958, 243, an administrative act is "qualunque dichiarazione di volontà, di desiderio, di conoscenza, di giudizio, compiuta da un soggetto della pubblica amministrazione nell'esercizio di una potestà amministrativa". The author focuses on the need for the administrative act to consolidate itself into a declaration, and therefore excludes all purely technical or material activities put in place by a public administration from the concept of administrative act. The definition provided by Zanobini has been made his own by R. Villata, *Attività, atti e provvedimenti amministrativi*, in *Diritto amministrativo*, II ed., VV.AA. (eds.), Bologna, Monduzzi, 1998, 1390.

[25] In this respect see A.G. Orofino, *La patologia dell'atto amministrativo elettronico: sindacato giurisdizionale e strumenti di tutela*, in *Foro amministrativo – C.d.S.*, 2002, 2256; F. Saitta, *Le patologie dell'atto amministrativo elettronico e il sindacato del giudice amministrativo*, in *Diritto dell'economia*, 2003, 615; S. Puddu, *Contributo ad uno studio sull'anormalità dell'atto amministrativo informatico*, Naples, Jovene, 2006, 179; I. Martín Delgado, *Naturaleza, concepto y régimen jurídico de la actuación administrativa automatizada*, in *Revista de Administración Pública*, No. 180, 2009, 353 and especially 361. In the same terms, see also Cons. Stato, sec. VI, 13 December 2019, No. 8472, which reads: "Il ricorso all'algoritmo va correttamente inquadrato in termini di modulo organizzativo, di strumento procedimentale ed istruttorio, soggetto alle verifiche tipiche di ogni procedimento amministrativo, il quale resta il *modus operandi* della scelta autoritativa, da svolgersi sulla scorta delle legislazione attributiva del potere e delle finalità dalla stessa attribuite all'organo pubblico, titolare del potere".

[26] A.G. Orofino, *La patologia dell'atto amministrativo elettronico*, 2276.

[27] Tar Lazio, Roma, sec. III, 22 March 2017, No. 3769.

[28] It is worth recalling that on different occasions the Constitutional court has deemed contrasting with Art. 24 of the Constitution the provisions which made excessively onerous the exercise of the right to action: A. Police, *Commento all'art. 24 Cost*., in *Commentario alla Costituzione*, vol. I, R. Bifulco, A. Celotto and M. Olivetti (eds.), Turin, Utet, 2006, 501. On this matter, see also M. Martini, *Algorithmen als Herausforderung für die Rechtsordnung*, in *Juristen Zeitung*, vol. 21, 2017, 1017, who notes: "Eine intransparente und dadurch für Betroffene nicht nachvollziehbare Entscheidungsfindung birgt Gefahren für gesellschaftliche Grundwerte".

neural networks, one would conclude that such programme is an "incomplete" or "evolving" act, meaning with an incomplete content, but which will become richer in time, at the end of the various self-learning processes put in place by the software.

This appears to clash with the widely accepted idea of administrative act, i.e. a "complete" expression of will.

This is not meant to deny the key importance of guaranteeing adequate instruments for the protection of citizens also with respect to the automated activity: however, the qualification of the programme in terms of administrative act, as has been shown above, winds up making this protection more onerous and less effective.

It is therefore better to imagine it as an instrument which is entrusted with tasks of a *virtual official*[29]: just like a human official, it is called upon to prepare a provision draft to submit to its director, who remains the true person responsible for the decision made and, most importantly, for the proper functioning of the entire apparatus: owing to this responsibility he or she is required, when requested to, to verify the work of the processor[30].

3. *The source code and its ostensibility*

The circumstance whereby the programme is not an administrative act must not deter from guaranteeing accessibility, which must above all be extended to the listing or source code, i.e. the heart of the operating system, upon which the functioning of the programme itself depends.

It has already been noted that the software exerts an undeniable influence on the performance of the automated functions, therefore comprehending the logic underlying its functioning entails the protection of the citizen who protects himself or herself against automated decisions[31].

And, albeit not a provision, it is undeniable that the programme, when employed for the carrying out of proceedings or the performance of other public functions, must be viewed as an "administrative document"[32], in accordance with the broad definition in Art. 22, paragraph 1, lett. *d*), of Law No. 241/1990[33], without the manifestation on electronic support of this document being eligible to influence the regime of accessibility[34].

The legal framework in France in Art. L. 300-2 of the «Code des relations entre le public et l'administration» is completely consistent with the above-described idea: at the end of the modification applied by Art. 2 of the «loi pour une République numérique of 7 October 2016», it also expressly lists the listings of programmes used by the administrations among the accessible administrative documents[35].

The 2016 reform had indeed been preceded by interventions of the Commission d'accès aux documents administratifs, which already with a decision in 2015[36] (whose stance was then confirmed in subsequent occasions[37]), concluded that the source code of an algorithm was to be considered an ostensible document.

Also the Tribunal administratif de Paris, upon reaching a verdict on the same case analysed by the CADA on 8 January, 2015, after noting that the listing is not included in the list of documents for which the French lawmaker has excluded accessibility, concluded that "chaque version du code source d'un même programme informatique revêt le caractère de document administratif

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

[30] A.G. Orofino and R.G. Orofino, *L'automazione amministrativa: imputazione e responsabilità*, in *Giornale di diritto amministrativo*, 2005, 1300 and especially 1311; M.C. Cavallaro and G. Smorto, *Decisione pubblica e responsabilità dell'amministrazione nella società dell'algoritmo*, in *Federalismi*, 2019, No. 16, 2.

[31] Cons. Stato, sec. VI, 13 December 2019, No. 8472.

[32] Tar Lazio, Roma, sec. III, 30 June 2020, No. 7370, in *www.giustizia-amministrativa.it*: "Con riferimento ai codici sorgente, pertanto, la questione che si pone è se gli stessi possano essere qualificati alla stregua di un documento amministrativo o, comunque, di una sua rappresentazione informatica".

[33] Art. 22, paragraph 1, lett. *d*) of the law on the procedure reads as follows: "1. Ai fini del presente capo si intende: […] *d*) per 'documento amministrativo', ogni rappresentazione grafica, fotocinematografica, elettromagnetica o di qualunque altra specie del contenuto di atti, anche interni o non relativi ad uno specifico procedimento, detenuti da una pubblica amministrazione e concernenti attività di pubblico interesse, indipendentemente dalla natura pubblicistica o privatistica della loro disciplina sostanziale".

[34] Tar Lazio, Roma, sec. III, 6 June 2019, No. 7333, in *www.giustizia-amministrativa.it*: "Il carattere informatico del file e del relativo algoritmo non fa venire meno la pretesa di parte ricorrente, con la conseguenza che la relativa richiesta deve trovare accoglimento".

[35] On these matters see L. Cluzel-Métayer, *The Judicial Review of the Automated Administrative Act*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 101. References to the French legal system can also be found in S. Tranquilli, *Rapporto pubblico-privato nell'adozione e nel controllo della decisione amministrativa "robotica"*, in *Società e diritto*, 2020, 281.

[36] See the *Avis* of the CADA No. 20144578 of 8 January 2015, which reads as follows: "Le code source d'un logiciel est un ensemble de fichiers informatiques qui contient les instructions devant être exécutées par un micro-processeur. Elle estime que les fichiers informatiques constituant le code source sollicité, produits par la direction générale des finances publiques dans le cadre de sa mission de service public, revêtent le caractère de documents administratifs, au sens de l'article 1er de la loi du 17 juillet 1978". It can be useful to highlight that Art. 1 of Law No. 78-753 of 17 July 1978 was subsequently repealed and the legal theory of accessibility to IT documents is today contained in the CRPA, discussed below.

[37] See the *Avis* of the CADA No. 20161990 of 23 June 2016, No. 20172598 of 14 September 2017, No. 20180276 of 19 April 2018, No. 0182093 of 6 September 2018, and No. 20182193 of 15 September 2018.

achevé et peut être communiqué"[38].

Also the comparison with the French legal framework, therefore, supports the argument in favour of the ostensibility of the listing.

But there is more: the extremely important role played by the machine makes the adoption of a broader interpretation of transparency necessary, which does not stop at the formal level related to the acquisition of the code of the algorithm employed, but leads to ensuring a knowability of the IT dynamics which enables, from a technical point of view, every investigation in terms of functioning of the system, so as to ensure a complete verification: *a*) with regard to the adequacy of the employed instrument; *b*) with regard to the proper functioning of the processor; *c*) with regard to the matching of the design information of the algorithm, with respect to the instructions contained in the provisions with which the administration has indicated the implementation rules of the software: it is indeed not unlikely that those who translate the instructions received from the administration into programming language make mistakes[39].

The processor often acts as an interface through which the citizen is must interact with the administration by entering, through electronic forms, the necessary data to access a procedure or request the adoption of a provision: this can happen during selective examinations of various types of competitions[40], for the submission of funding and incentive requests[41], for the participation in procurement procedures[42] and personnel mobility procedures[43], for the election of the federal governing council of the Italian Gymnastics Federation[44], or for the submission of applications to a competition for the recruitment of teaching staff[45].

The list could continue, but it risks becoming sterile and overabundant: the above-mentioned examples already clearly demonstrate what can be the importance taken on by computers (it should be noted that this is not referred to the importance of the software alone, but also to the importance of the hardware), on the occasion of the performance of proceedings conducted with the help of processors.

This importance has also been highlighted recently by the Tar Lazio, upon judging the ostension request submitted by some participants to a selection procedure for the hiring of school directors, concluded that they had the right to the release of the listing, because through the IT system employed by the administration: *a*) the candidates viewed the preloaded questions on the system; *b*) the same candidates answered the questions shown to them through a video; *c*) the computer saved and encrypted the answers, before their subsequent placing to the disposal of

[38] See TA Paris, sec. V, 2e chambre, 10 March 2016, M.A., No. 1508951, and in particular paragraphs 6 ff. of this decision, which can be interesting to read in the original version: "6. Considérant qu'il ne résulte pas des dispositions susrappelées que le législateur ait entendu exclure la possibilité pour un administré d'accéder au code source d'un programme informatique, qui ne figure pas au nombre des documents énumérés dans la liste des documents non communicables ; 7. Considérant, d'une part, que pour refuser la communication par ses services du code source du programme calculant l'impôt sur le revenu des personnes physiques, le ministre des finances et des comptes publics fait valoir que cette communication serait contraire au droit de l'union européenne, et notamment à la directive 2003/98/CE modifiée par la directive 2013/37/CE ; que, notamment le considérant 9 du préambule de la directive 2003/98/CE prévoit que : ' *La définition du terme 'document' ne couvre pas les programmes informatiques. La présente directive s'appuie sur les règles d'accès en vigueur dans les États membres et ne modifie pas les règles nationales en matière d'accès aux documents* ' ; que, toutefois, il ne résulte pas de ces directives, qui portent sur la réutilisation des données et laissent inchangées les dispositions du droit national relatives à l'accès aux documents administratifs, que les programmes informatiques devraient être systématiquement exclus du droit d'accès aux documents administratifs organisé par la loi du 17 juillet 1978 ; 8. Considérant, d'autre part, que pour refuser la communication par ses services du code source du programme calculant l'impôt sur le revenu des personnes physiques, le ministre des finances et des comptes publics fait valoir que le caractère inachevé des logiciels, lesquels sont en perpétuelle évolution, empêche leur communication aux administrés conformément aux dispositions de l'article 2 précité de la loi du 17 juillet 1978 ; que, toutefois, le caractère évolutif d'un programme informatique ne saurait exclure tout droit à communication de ce programme sauf à priver le justiciable d'un droit effectif à la communication des documents administratifs ; que si les programmes informatiques ont vocation à évoluer au gré des mises à jours, chaque version du code source d'un même programme informatique revêt le caractère de document administratif achevé et peut être communiqué dans cet état ; que, par suite, en l'absence de dispositions législatives ou réglementaires interdisant l'accès aux codes sources des programmes informatiques, le ministre des finances et des comptes publics ne pouvait légalement refuser de communiquer le document demandé mentionné au point 4 ". On this matter see also what has been more recently stated by the CE, 12 June 2019, Université des Antilles, nn. 427916 et 427919, and TA Guadeloupe, 4 February 2019, Union Nationale des Étudiants de France No. 1801094.

[39] W. Werner, *Schutz durch das Grundgesetz im Zeitalter der Digitalisierung*, in *Neue Juristische Online-Zeitschrift*, 2019, 1041: "Mit der Verwendung von Algorithmen sind dabei insbesondere folgende Aspekte rechtlich problematisch: die Intransparenz der Speicherung und der Verwendung umfangreicher Datenbestände sowie die Fehleranfälligkeit solcher Programme".

[40] Tar Campania, Napoli, sec. V, 3 March 2020, No. 1002, in *www.giustizia-amministrativa.it*.

[41] Cons. Stato, sec. VI, 7 November 2017, No. 5136, in *www.giustizia-amministrativa.it*.

[42] Tar Lazio, Roma, sec. II, 6 August 2020, No. 9044, in *www.giustizia-amministrativa.it*.

[43] Tar Lazio, Roma, sec. III *bis*, 28 May 2019, No. 6688, in *www.giustizia-amministrativa.it*.

[44] Tar Lazio, Roma sec. III *quater*, 10 August 2015, No. 10771, in *www.giustizia-amministrativa.it*.

[45] Tar Puglia, Bari, sec. I, 27 June 2016, No. 806, in *www.giustizia-amministrativa.it*.

the evaluation committees[46].

As has been noted by the Tar Lazio, in the above-mentioned case "l'elaboratore ha svolto compiti di acquisizione, di custodia e di condivisione di dati, comportandosi come un 'recettore-intermediario', veicolando e raccogliendo quesiti e risposte"[47]. Therefore, the Roman judge compares the activity carried out by the computer (the Tar uses the term software, but reference should rather be made to the entire IT system performing the procedure) with the tasks which – in a matter which unraveled with analogical instruments – would be carried out by auxiliary personnel, and states that the various processes the machine oversaw "si risolvono in attività serventi rispetto alla gestione delle prove concorsuali"[48].

The arrangement activity of electronic spreadsheets through which candidates are called upon to carry out selective examinations, or their saving and subsequent encryption to guarantee the non-modifiability of the acquired data and anonymity protection certainly have a serving function: these are all tasks which, in the public competitions carried out in the traditional ways, are certainly managed by personnel with auxiliary functions, who are called upon to handle the distribution of the sheets (authenticated by the committee) on which to write the answers, of the subsequent gathering of the tests, and of their being enclosed in sealed envelopes[49].

Moreover, in the procedures carried out ordinarily, the transparency and integrity guarantee are pursued by means of some adjustments aimed at guaranteeing, in different ways, the authenticity of the results.

Moving to the electronic management of the procedures may in no way be detrimental to the guarantees which must oversee the performance of selection matters, in that the discretional decision of the public administration of managing a public selection with electronic means constitutes an organisational facilitation for the administration, which cannot weaken the knowability requirements of the administrative action cultivated by the citizens who come into contact with the administration.

Therefore, following a logic of equal distribution of the advantages and disadvantages related to the adoption of processors for the management of the competition examinations, the advantages gained by the public administration upon simplifying the activity, must be balanced with the need of ensuring the due transparency[50], which cannot be undermined by forbidding the ostension of the source code.

4. *Between accessibility and intelligibility: the new needs of algorithmic transparency*

In light of what has been thus far said, the decision of talking about a "principle of knowability" with regard to the algorithm is deemed appropriate, which is complemented and combined with that of "intelligibility"[51]. The simple ostension of the string of programming and of the acts in which it is formalised should be complemented by significant information on the logic employed[52], provided in a way which is easily intelligible for the citizen[53].

It is worth stressing again that the French «Code des relations entre le public et l'administration» enshrines a stronger right to knowledge[54], by reason of which, when a decision is made based on an algorithmic treatment, the code and the rules defining the treatment and the characteristics of its implementation need to be communicated in an intelligible way to the interested party who requests them[55], therefore "le responsable du

[46] Tar Lazio, Roma, sec. III *bis*, 30 June 2020, No. 7370.
[47] Tar Lazio, Roma, sec. III *bis*, 30 June 2020, No. 7370.
[48] Transcribed from Tar Lazio, Roma, sec. III *bis*, 30 June 2020, No. 7370. The words of the Regional Administrative Court show a clear reference to the idea of virtual official suggested by V. Frosini, *L'informatica e la pubblica amministrazione*, 484.
[49] On this matter see again Tar Lazio, Roma, sec. III *bis*, 30 June 2020, No. 7370.
[50] Tar Lazio, Roma, sec. III *bis*, 30 June 2020, No. 7370.
[51] Cons. Stato, sec. VI, 13 December 2019, No. 8472.
[52] B. Barraud, *L'algorithmisation de l'administration*, in *Revue Lamy droit de l'immatériel*, n. 150, 2018, 42, who notes that "un autre problème que l'algorithmisation de l'administration pose est celui de la transparence des algorithmes, c'est-à-dire de la possibilité pour les administrés de savoir quand des algorithmes sont utilisés et de demander des explications quant à leur fonctionnement". Likewise, A. Cerrillo i Martínez, *How can we open the black box of public administration? Transparency and accountability in the use of algorithms*, in *Revista Catalana de Dret Públic*, n. 58, 2019, 13 and especially 18: "Transparency is a principle of public administration and, as such, it should underpin government use of algorithms".
[53] M. Martini, *Algorithmen als Herausforderung für die Rechtsordnung*, 1018: "Seine in Programm code transformierten Entscheidungsmaßstäbe bleiben für den Nutzer einer Softwareanwendung aber ein Mysterium: Wie sie zu ihren Arbeitsergebnissen gelangt, liegt im Verborgenen. […] Eine intransparente und dadurch für Betroffene nicht nachvollziehbare Entscheidungsfindung birgt Gefahren für gesellschaftliche Grundwerte".
[54] On this matter see P. Cossalter, *La trasparenza del software e la sua accessibilità*, report realised in occasion of the conference *Intelligenza artificiale e funzioni amministrative. Sindacato e tutela rispetto alle decisioni automatizzate*, organised by Jean Monnet LUM University on 19 June 2020, and uploaded on YouTube: https://www.youtube.com/watch?v=RsPBV3jBSB8&t=21518s.
[55] L. 311-3-1 reads as follows: "Sous réserve de l'application du 2° de l'article L. 311-5, une décision individuelle prise sur le fondement d'un traitement algorithmique comporte une mention explicite en informant l'intéressé. Les règles définissant ce traitement ainsi que les principales caractéristiques de sa mise en œuvre sont communiquées par l'administration à l'intéressé s'il en fait la demande". The following Art. R. 311-3-1-2 provides for

traitement doit s'assurer de la maîtrise du traitement algorithmique et de ses évolutions afin de pouvoir expliquer, en détail et sous une forme intelligible, à la personne concernée la manière dont le traitement a été mis en œuvre à son égard"[56].

Also a recent communication of the European Commission identified algorithmic intelligibility as one of the fundamental requirements which must be possessed by the modern AI systems, and therefore "explainability of the algorithmic decision-making process, adapted to the persons involved, should be provided to the extent possible"[57].

It must, however, be stressed that the knowledge of the source code (which must at any rate be guaranteed) is not in of itself sufficient to ensure transparency, also by reason of the little propensity of citizens to comprehend the language employed by the machine[58].

This is compounded by the fact that this knowledge can be of little use for the purposes of the correct intelligence and understanding of the operations performed by the processor every time the administrations employ machine learning systems in which the solutions are influenced by what is "learned" autonomously by the programme, to a larger degree than how they are influenced by the instructions the software receives upon the implementation[59]: this does not, of course, diminish the above-mentioned problem of knowability, in fact it exacerbates it and proves the need for careful interdisciplinary analyses on the matter, so as to guarantee decision making transparency also in the cases (which are expected to become increasingly frequent in the future) where neural networks are used[60].

As of today, the difficulties in clarifying and motivating the reasons that inspired the provision adopted on the basis of self-learning algorithms has led some foreign courts to heavily limit its potential uses in the performance regulatory functions.

Such actions have been carried out by the French Conseil Constitutionnel[61], and by the Dutch State Council[62].

Also more recently, the district Court of the Hague, with its decision of the 2 February, 2020, ruled illegitimate the use of a programme to fight tax evasion (SyRI), whose operating modes were not transparent[63] in that they could not be promptly explained by the subjects who used it[64].

This issue will be further discussed below when discussing the motivation of automated acts: it is however worth highlighting that also the Italian Supreme Court, when analysing the text of Art. 3 of Legislative Decree No. 39/1993 (which, as it is well-known, included rules on administrative automation), stated that complete

that : "L'administration communique à la personne faisant l'objet d'une décision individuelle prise sur le fondement d'un traitement algorithmique, à la demande de celle-ci, sous une forme intelligible et sous réserve de ne pas porter atteinte à des secrets protégés par la loi, les informations suivantes : 1° Le degré et le mode de contribution du traitement algorithmique à la prise de décision ; 2° Les données traitées et leurs sources ; 3° Les paramètres de traitement et, le cas échéant, leur pondération, appliqués à la situation de l'intéressé ; 4° Les opérations effectuées par le traitement". On this matter see also Art. L. 312-1-3 of CRPA, which reads: "Sous réserve des secrets protégés en application du 2° de l'article L. 311-5, les administrations mentionnées au premier alinéa de l'article L. 300-2, à l'exception des personnes morales dont le nombre d'agents ou de salariés est inférieur à un seuil fixé par décret, publient en ligne les règles définissant les principaux traitements algorithmiques utilisés dans l'accomplissement de leurs missions lorsqu'ils fondent des décisions individuelles", therefore, in accordance with the above-mentioned Art. L. 312-1-3 "les règles de fonctionnement des algorithmes ne sont pas seulement quérables : elles doivent être diffusées spontanément", as noted by E. Mouriesse, *L'opacité des algorithmes*, 47.

[56] Cons. const., 12 June 2018, No. 2018-765 DC, par. 71.

[57] See point IV of par. 2.2 of the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 8 April 2019 COM(2019) 168 final, titled "Building Trust in Human-Centric Artificial Intelligence". On this matter see also White Paper on Artificial Intelligence: a European approach to excellence and trust COM(2020) 65 final of 19 February 2020.

[58] J.-B. Auby, *Contrôle de la puissance publique et gouvernance par algorithme*, in *Das öffentliche Recht vor den Herausforderungen der Informations- und Kommunikationstechnologien jenseits des Datenschutzes*, D.-U. Galetta and Jacques Ziller (eds.), Baden Baden, Nomos, 2018, 155 significantly notes that : "Faut-il être conscient de ce que la compréhension d'un code source d'algorithme est hors de portée d'une grande majorité de citoyens. En d'autres termes, avancer un algorithme comme motivation d'un acte administratif, c'est un peu comme en rédiger la motivation dans une langue étrangère". Likewise, E. Mouriesse, *L'opacité des algorithmes*, 48, who sensibly notes that the listings are "sont particulièrement difficiles à déchiffrer pour un non-savant".

[59] S.J. Russell and P. Norvig, *Artificial Intelligence: a Modern Approach*, Global Edition, III ed., Upper Saddle River, Prentice Hall, 2009, 93; A. Sée, *La régulation des algorithmes : un nouveau modèle de globalisation ?*, in *Revue française de droit administratif*, 2019, 830.

[60] M. Finck, *Automated Decision-Making and Administrative Law*, in course of publication, in *Oxford Handbook of Comparative Administrative Law*, VV.AA. (eds.) Oxford, Oxford University Press, 2020.

[61] Cons. const. 12 June 2018, No. 2018-765 DC, par. 71: "Ne peuvent être utilisés, comme fondement exclusif d'une décision administrative individuelle, des algorithmes susceptibles de réviser eux-mêmes les règles qu'ils appliquent, sans le contrôle et la validation du responsable du traitement".

[62] Afdeling Bestuursrechtspraak van de Raad van State, 17 May 2017, ECLI:NL:RVS:2017:1259.

[63] Critical on this position is R. Cavallo Perin, *Ragionando come se la digitalizzazione fosse data*, in *Diritto amministrativo*, 2020, 305 and especially 317.

[64] Rechtbank Den Haag, 5 February 2020, ECLI:NL:RBDHA:2020:865, here see comment by A. Meuwese, *Regulating algorithmic decision-making one case at the time: a note on the Dutch 'SyRI' judgment*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 209.

computerisation can help simplify and expedite solely the issuance of serial administrative acts, provided that their adoption does not require a specific motivation, and are therefore liable to a complete electronic processing. According to the Court of the regulatory competence, instead, the use of robotics cannot be applied with respect to administrative provisions, which normally entail different evaluations and motivations with respect to the distinct features of each case: with respect to them, the electronic instrument may only be used as a means of documentation and support for the activity of the public administration bodies[65].

A further profile, which will only be briefly mentioned in the present work, in that it is in some respects irrelevant to the object of the research, is related to the matter of personal data treatment, understood as the limit to the use of administrative automation.

This is a different matter compared to that of IT transparency, nevertheless it is related to it because in some respects it is "complementary" to transparency, in that knowability is often weakened and conditioned by the need of guaranteeing the protection of confidentiality.

Interferences between processing and protection of personal data are frequent[66], so much so that some European courts have come to identify limits to administrative automation in the need of guaranteeing a careful use of the data of the parties affected by the computerised provisions[67].

According to some reconstructions, to which the Italian State Council also adhered[68], limits to complete administrative automation can be found in Art. 22 of the General Data Protection Regulation No. 2016/679, or GDPR.

For the activity performed by public subjects pursuing institutional purposes, however, what is provided for by the combined provisions of Articles 6, par. 1, lett. *e*), 9, par. 2, lett. *g*), and 22 par. 2, lett. *b*), and par. 4, of the European Regulation seems to be more fitting, which outlines a specific regime with respect to the necessary for the performance of a task of public interest or connected to the exercise of public functions with which the data controller is invested[69].

5. *Between proprietary software and open source software: the choice of the programme as a moment of transparency*

The knowledge (and consequent ostensibility) of the source code, albeit necessary to guarantee adequate transparency, is however possible if the administration is already in possession of this code: this is not always the case, and every time this does not happen, it is clear that a potential

[65] The Cass., sec. I, 28 December 2000, No. 16204, in *Giustizia civile*, 2001, I, 928. More recently, in the same terms, see Id., sec. trib., 17 May 2017, No. 12302 in *Dvd Juris Data*, Milan, where, judging the legitimacy of a tax measure adopted by a municipal administration, it is stated that: "in materia di formazione degli atti amministrativi informatici, le disposizioni di cui all'art. 3 del d.lgs. n. 39 del 1993 sono applicabili a tutti i provvedimenti nei quali sia configurabile una formazione con tecniche informatiche automatizzate, ossia quando il tenore del provvedimento dipende da precisi presupposti di fatto e non sussistono le condizioni per l'esercizio di un potere discrezionale". On the use of automation to inflict administrative sanctions see Id., Sec. I, 6 March 1999, No. 1923, in *Consiglio di Stato*, 1999, II, 1299; Id., sec. I, 14 September 2006, No. 19780, in *Dvd Juris data*, Milan; Id., sec. VI, 13 May 2015, No. 9815, *ibid.* On this matter see what will be said below in par. 8 on the obligation of motivation of automated acts.

[66] On this matter a classic reading is S. Rodotà, *Elaboratori elettronici e controllo sociale*, Bologna, Il Mulino, 1973. The matter of threat to confidentiality deriving from the development of IT is also analysed in the 1975 "Rapport Tricot", published in the volume titled *Rapport de la Commission Informatique et libertés*, Paris, La Documentation Française, 1975.

[67] On the treatment of license plate numbers for the purposes of police checks, and on the need for this treatment to be carried out in compliance with the principle of proportionality in the use of personal data and, therefore, within the boundaries of what is strictly necessary, the German Constitutional judge has expressly ruled: Bundesverfassungsgericht, Beschluss des Ersten Senats, 18 December 2018 - 1 BvR 142/15. On these matters see W. Werner, *Schutz durch das Grundgesetz im Zeitalter der Digitalisierung*, in *Neue Juristische Online-Zeitschrift*, 2019, 1041; T. Rademacher, *Artificial Intelligence and Law Enforcement*, in *Regulating Artificial Intelligence*, T. Wischmeyer and T. Redemacher (eds.), Cham, Springer, 2020, 225 and especially 233.

[68] Cons. Stato, sec. VI, 13 December 2019, No. 8472.

[69] On this matter see G. Finocchiaro, *Intelligenza artificiale e protezione dei dati personali*, in *Giurisprudenza italiana*, 2019, 1670 and especially 1674, which states as follows "grandemente sopravvalutato è quanto disposto dal Regolamento con riguardo alle decisioni automatizzate". Similar perplexities are shared by S. Wachter, B. Mittelstadt, and 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*, Vol. 7, Issue 2, 2917, 73, who stress that the European provision, rather than setting, in the negative, a prohibition ("a prohibition, meaning that data controllers would be obligated not to engage in automated decision-making prior to showing that a condition in Article 22 is met") would require in the positive "a right to object to automated decision-making, which will not apply if one of the requirements in Article are met". In the same terms, M. Martini, *DS-GVO Art. 22 Automatisierte Entscheidungen im Einzelfall einschließlich Profiling*, in *Datenschutz-Grundverordnung*, B.P. Paal, and D.A. Pauly (eds.), Munich, C.H. Beck, 2017, 4. Finally on this matter see J.-B. Auby, *Algorithmes et Smart Cities: Données Juridiques*, in *Revue générale du droit*, 2018; D-U. Galetta and J.G. Corvalan, *Intelligenza Artificiale per una Pubblica Amministrazione 4.0? Potenzialità, rischi e sfide della rivoluzione tecnologica in atto*, in *Federalismi*, No. 3, 2019; V. Brigante, *Evolving pathways of administrative decisions. Cognitive activity and data, measures and algorithms in the changing administration*, Naples, Editoriale Scientifica, 2019, 154.
From a domestic point of view see Art. 2 *sexies* of Legislative Decree No. 196/2003, which sets particular rules on the treatment of personal data carried out for reasons of substantial public interest.

request for knowledge of the privates wanting to verify the operating modes of the programme may be frustrated.

What has been said is true in two respects.

Firstly, because it is by no means easy to imagine the activation of legal remedies to oblige the software manufacturer to disclose the listing of its programmes, especially when the manufacturer is not based in Italy and, perhaps, is an international corporation: if, for instance, a programme works in a Windows environment, it will be very difficult for an Italian court to oblige Microsoft to disclose the source codes of its programme.

Above all, however, a judicial decision ordering Microsoft to disclose its listings seems to collide with the provisions protecting copyright.

The need of safeguarding the rights of software owners has led the Consejo de Transparencia y Buen Gobierno to deny access to the programme, as it is a work of the intellect[70].

A different opinion (in a different legal context) was voiced by the Lazio Regional Administrative Court (Tar Lazio), which decided to value the circumstance whereby, in accordance with Art. 24 of Law No. 241/1990, access for defense purposes is permitted also when the object are documents protected by the provisions protecting intellectual property.

The opinions of the Tar Lazio clearly show a reference to the jurisprudence by reason of which the nature of work of the intellect of the documents requested in ostension is not a cause of exclusion from access, given that the legal framework dictated to protect copyright serves to guarantee the economic interests of the owner of the intellectual work, while the regulation on access serves to guarantee another type of interests: those of the subjects interacting with the public administrations, intending to acquire information and documents useful for the protection of their subjective situations affected by the actions of public powers. Therefore, when motivated by defense intentions, access to documents must be granted, provided that the subject exerting it uses the information obtained in an appropriate manner, without being able to use the data obtained for purposes other than those permitted by the law on the administrative procedure[71].

The above-described argument is, self-evidently, referable only to document access, given that for civic access the rules protecting copyright would form an insurmountable obstacle, in accordance with Art. 5 *bis*, par. 2, lett. *c*), of Legislative Decree No. 33/2013.

This is certainly a fascinating argument, with respect to which adopting a definitive position is not simple.

One must however ask oneself whether these arguments can be valid when the source code is not owned by the administration, which is only provided with the "closed" version of the programme.

In this case – based on the classic rules dictated by Law No. 241/1990 – the ostensive request can also be activated towards private subjects, when they are called upon to perform functions of public interest[72], and can also be addressed both to those who formed the act, and to those who stably own it[73].

If the access were exercised directly with respect to the administration which does not own the listing, rejecting this request would be possible by claiming the unavailability of the code, which was never communicated by the private provider.

At that point, the request would be sent to the software manufacturer[74], who may be obliged to communicate what has been requested where the activity (of providing the programme) put in place by him or her is subject to the application of Articles 22 ff. of Law No. 241/1990, in so far as it is instrumentally connected to the procedural activity performed by the administration[75].

[70] CTBG, 19 February 2019, resolution No. 701/2018, in *www.consejodetransparencia.es*, reads as follows: "El software ha sido extraordinariamente difícil de clasificar como materia específica de propiedad intelectual debido a que su doble naturaleza plantea problemas particulares para quienes tratan de establecer analogías con las categorías jurídicas existentes. Esta es la razón por la que ha habido intentos de clasificarlo como objeto de derechos de autor, de patentes o de secretos comerciales, e incluso como un derecho sui géneris de software. Puesto que el código fuente se expresa de forma escrita, resulta lógico pensar que el software puede ser protegido por el derecho de autor como obra literaria".

[71] Cons. Stato, sec. IV, ordinance 6 March 2017, No. 1013, *www.giustizia-amministrativa.it.*

[72] See Art. 23 of Law No. 241/1990, and also Cons. Stato, Adunanza Plenaria, 5 September 2005, No. 5 in *www.giustizia-amministrativa.it*.

[73] Art. 25, paragraph 2, of Law No. 241/1990.

[74] Which instead is qualified as tantamount to the other party ("controinteressato" in Italian) by Cons. Stato, sec. VI, 2 January 2020, No. 30, in *www.giustizia-amministrativa.it.* It must be stressed that this qualification certainly seems agreeable when the request is directly submitted to the administration, which is already in possession of the source code. *Vice versa*, when the public administration is not in possession of the code, which has remained available to the provider, qualifying the latter as the other party ("controinteressato") seems inadequate to ascribe to him or her an ostensive obligation given that, in accordance with the law, it is not the other party who must respond to the access requests.

[75] Tar Lazio, Roma, sec. I, 27 April 2020, No. 4212, in *www.giustizia-amministrativa.it*, notes that the right to access administrative documents can be exercised not only towards the activities of administrative law, but also towards the activity of private law put in place by subjects managing public services who, although they do not directly constitute the management of the service itself, is

At the end of the above-described investigations, even if one comes to the conclusion (corresponding with the decision by the Tar Lazio) of the ostensibility of the code, the problem of the great commercial sacrifice imposed to the company, which is called upon to reveal the "operating heart" of its system remains: it is a secret whose knowability can, in some cases, be crucial for the purposes of the position in the market of reference of the economic player.

As another example, let us take the commercial importance of the code through which many Windows and Macintosh programmes (and operating systems themselves) work and the sacrifices Microsoft and Apple would have to make, should an Italian judge, intending to verify how some applications operating in one of the two computer environments interact with the operating systems, order the disclosure of the codes of these systems.

Apart from the (already mentioned) difficulties correlated to the performance of such an order, the incalculable damage it would cause to the manufacturing companies Windows and Macintosh is clear.

Indeed, although those who request access should not, upon the result of the ostension, commercially exploit the acquired listings, it is certainly possible (and likely) that they will violate the prohibition, using parts of programmes to design other software, without this violation being detectable, especially when the code of the copied software is marked as classified and made inaccessible by the new opportunistic and dishonest developer.

This injustice would be exacerbated by the circumstance whereby the subject who provided the programme to the administration did so based on rules (and a price) which did not entail giving up the listing, safe then seeing the terms of the provision relation being modified by order of a judge, with a new regulation which – where known *ex ante* – it is not unlikely that he or she would discourage the provider from reaching a contractual relation with the administration[76].

The problems are, as can be clearly seen, quite severe[77].

To avoid them it is certainly preferable to imagine that the administrations must always possess the code of the programmes used for the automation of their procedures, as is recommended in Art. 41, paragraph 2, of the Spanish Ley 40/2015, de 1 octubre, de Régimen Jurídico del Sector Público.[78]

The Italian regulation does not include any obligation, it merely provides for that the administrations owning solutions and computer programmes made following specific instructions of the public client are obliged to make available the source code to other administrations, save there are sensible reasons concerning public security, national defense or the authenticity of elections[79], and that in the terms of the acts with which one proceeds with the acquisition of the software on the part of the public administrations, it must be expressly provided for that the client administration is always the owner of all rights of exploitation, save the same body proves that this is overly onerous from a technical and economic point of view[80].

Although the above-mentioned regulation seems to present a preference for open source solutions[81], resorting to proprietary software by means of the simple acquisition of the license of use remains one of the viable options, albeit after the comparative evaluation of the different solutions available[82].

The issue of free software then becomes increasingly relevant in further – and perhaps more significant – profiles, centred on the autonomy of the administrations from the manufacturers and on the awareness of how the software work and, therefore, on their transparency.

Those who do not access the source code do not truly know how a programme works, so as to not exclude that it may, together with the clear operations performed, perform other hidden operations, such as the misappropriation of data[83], or the opening of backdoors which enable malicious third parties to access information

instrumentally related to it.

[76] A critical position against the Tar Lazio comes from E. Prosperetti, *Accesso al software e al relativo algoritmo nei procedimenti amministrativi e giudiziali. Un'analisi a partire da due pronunce del Tar Lazio*, in *Diritto dell'informazione e dell'informatica*, 2019, 979.

[77] On these matters see F. Bravo, *Access to Source Code of Proprietary Software Used by Public Administrations for Automated Decision-Making. What Proportional Balancing of Interests?*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 157.

[78] See also Art. 16, paragraph 2, of the Real Decreto 4/2010, de 8 de enero, por el que se regula el Esquema Nacional de Interoperabilidad en el ámbito de la Administración Electrónica.

[79] See Art. 69, paragraph 1, of Legislative Decree No. 82 of 7 March 2005, bearing the Code of the digital administration.

[80] See Art. 69, paragraph 2 of the CAD (Italian Code of Digital Administration).

[81] See the "*Linee guida su acquisizione e riuso di software per le pubbliche amministrazioni*" published on 9 May 2019 by the Digital Italy Agency.

[82] See Art. 68, paragraphs 1 and 1 *bis* of the CAD (Italian Code of Digital Administration).

[83] C. Sarmento e Castro, *Direito da Informática, Privacidade e Dados Pessoais*, Coimbra, Almedina, 2015, 251, in addition to, Id., *O direito à autodeterminação informativa e os novos desafios gerados pelo direito à liberdade e à segurança nos pós 11 de Setembro*, in *Estudos em Homenagem ao Conselheiro José Manuel Cardoso da Costa*, vol. II, VV. AA. (eds.), Coimbra, Almedina, 2005, 65 and especially 75.

contained in the machine in which the programme is installed and operates.

Moreover, the unavailability of the listing results in the impossibility of the administration of autonomously modifying the software, and if adjustments or updates of the IT architecture, the administration will be forced to resort once again to the manufacturer, upon which it will become dependent.

If the manufacturer is unable to carry out the requested modifications, the administration will have to give up on obtaining the requested updates, and may be forced to resort to another provider to prepare a new structure able to meet the needs which have emerged, which all entails money spending, time expenditure and organisational efforts[84].

The above-described arguments have driven countries such as France to implement a policy promoting the use and development, on the part of the public bodies, of programmes with an open and accessible source code[85].

Software development strategies with an open source code are also promoted by the European Union[86], which has approved the European Public Union License[87].

6. *The definition of programming rules*

The matter of IT transparency today also entails further issues compared to those, albeit of key importance, related to the accessibility and intelligibility of the source codes.

A first important profile is related to the indication of the rules on the basis of which, in the case of automated activity, the software must be programmed.

A second profile to consider concerns the responsibility of the entering of the data based on which the automated decisions are made: this issue will be discussed in the following paragraph.

The two above-mentioned phases are crucial with respect to the correct performance of the IT procedures, compared to which the decision-making phase becomes secondary, given that the issuance of the provision is heavily influenced above all by the instructions received during the programming phase and, therefore, by the data entered in the machine.

The electronic decision, in fact, will be adopted by "crossing" the rules indicated by those who realise the software (or autonomously acquired by the programme, if self-learning systems are employed) and the data later entered in the processor[88].

The role of the owner of the competent body in the exercise of the functions is, therefore, almost secondary, and only occasionally becomes relevant, in the event that there is a need (with a spontaneous intervention or following a request by the citizens) to proceed with the correction of possible errors by the processor[89]. For this very reason, the responsibilities upon him are mostly omissive and organisation-related, rather than commissive[90].

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[84] A.G. Orofino, *Open source e pubblica amministrazione*, 1317; F. Bravo, *Software «Open Source» e Pubblica Amministrazione. L'esperienza europea e quella italiana tra diritto d'autore, appalti pubblici e diritto dei contratti. La EUPL*, Bologna, 2009, 5; F. Martini, *Open source, pubblica amministrazione e libero mercato concorrenziale*, in *Diritto dell'economia*, 2009, 677.

[85] Art. 16 of Law No. 2016-1321 of 7 October 2016 pour une République numérique reads as follows: "Les administrations mentionnées au premier alinéa de l'article L. 300-2 du code des relations entre le public et l'administration veillent à préserver la maîtrise, la pérennité et l'indépendance de leurs systèmes d'information. Elles encouragent l'utilisation des logiciels libres et des formats ouverts lors du développement, de l'achat ou de l'utilisation, de tout ou partie, de ces systèmes d'information. Elles encouragent la migration de l'ensemble des composants de ces systèmes d'information vers le protocole IPV6, sous réserve de leur compatibilité, à compter du 1er janvier 2018". On this matter see also Decree No. 2017-638 of 27 April 2017 relatif aux licences de réutilisation à titre gratuit des informations publiques et aux modalités de leur homologation, with which many articles of chapter III, of Title II, of Book III of the Code des relations entre le public et l'administration were modified. For indications regarding French policies on the matter of free software see: https://www.numeri¬que.gouv.-fr/publications/politique-logiciel-libre.

[86] Further information can be found on the following page: https://ec.europa.eu/info/departments/informatics/open-so-urce-software-strategy_en.

[87] See the following webpage: web: https://ec.europa.eu-/info/node/2820.

[88] A.G. Orofino and R.G. Orofino, *L'automazione amministrativa*, 1309; D. Keats Citron, *Technological Due Process*, in *Washington University Law Review*, vol. 85, Issue 6, 2008, 1249 and especially 1260; G. Marongiu, *L'attività amministrativa automatizzata. Profili giuridici*, Sant'Arcangelo di Romagna, Maggioli, 2005, 161.

[89] It must be highlighted that, according to a minority jurisprudential orientation, in the case of algorithmic procedures, there is no need for the responsible of the procedure to verify whether the preliminary fact finding activities are accurate, given that the rule ascribing this obligation to the administration "è palesemente riferita al caso di procedimento amministrativo che si snoda secondo cadenze normali e si basa su istruttoria del tipo tradizionale. Essa appare, quindi, inapplicabile al caso in cui […] l'amministrazione ha ritenuto di autovincolare la propria azione predeterminando i criteri ai quali attenersi nell'esame delle domande e scegliendo uno strumento operativo (lettura ottica) che si presenta come l'unico in grado di soddisfare tempestivamente e in maniera imparziale la mole delle domande di agevolazione. Non sembrano quindi predicabili nei riguardi di tale procedura le regole dettate dalla legge n. 241/1990" (transcribed from Cons. Stato, sec. VI, 3 November 1998, No. 1517, in *Foro amministrativo*, 1998, 3163). A different opinion was voiced, by contrast, by the majority of the jurisprudence, according to which the correction of the errors committed by the computer was an obligation (Tar Lazio, Roma, sec. III *bis*, 23 December 2003, No. 12736, in *www.giustizia-amministrativa.it*; TRGA Trento, 15 April 2015, No. 149, *ibid.*).

[90] A.G. Orofino and R.G. Orofino, *L'automazione amministrativa*, 1310; A.G. Orofino and G. Gallone,

What is certainly of greater importance is the role played by those who proceed to set the rules of programming and, therefore, of those who handle the data entry.

With regard to the first profile, one must stress the importance of the clear formalisation in a provision of the criteria based on which the software must be set up: this formalisation is certainly necessary both for the purposes of the intelligibility of the decisions adopted by the programme, and for the purposes of the imputability of the responsibilities related to such decisions. This, except in the rare scenarios of a completely bound administrative activity, in which the absence of room for discretion makes the specification of the programming criteria superfluous[91].

It has already been stressed that the need for full intelligibility of the ways of functioning of the algorithm has been recently affirmed by the jurisprudence which dealt with the matter[92].

It has also been stressed that this intelligibility also implies – apart from the accessibility of the source code – also the enunciation of instructions on the logic of the functioning of the software[93]: this enunciation, in turn, has as a necessary precondition the preventive indication and, therefore, verifiability of the criteria on the basis of which the algorithmic rule has been tailored.

The setting of preventive criteria, besides, is indispensable also in order to allow (the citizen, and likewise the judge) for the examination of the compliance of the preconditions and of the results of the automated procedure with respect to the requirements and the objectives set by the law and the administration itself.

The need for knowability of the setting parameters of the software has been clearly manifested by the French and Spanish lawmaker.

The latter in the above-mentioned Art. 41, paragraph 2, of Ley 40/2015[94] provides for that, in the scenario of procedural automation, there must be a prior selection of the bodies called upon to define the programming and verification criteria of the functioning of the computer system[95].

Likewise, the Code des relations entre le public et l'administration, in Art. L. 312-1-3, provides for that the administrations «publient en ligne les règles définissant les principaux traitements algorithmiques utilisés dans l'accomplissement de leurs missions lorsqu'ils fondent des décisions individuelles». As has already been highlighted above, the CRPA provides for that the citizen requesting the rules must receive a communication of the rules by reason of which the algorithmic treatment is defined[96].

The explainability (and contestability) of the software, therefore, also implies the adoption of an act containing the programming instructions.

These instructions, having almost the importance of previous deed, must necessarily be formalised in a provision[97], according to the typical rules of the administrative action, by reason of which there can derive no self-imposed act of constraint to the discretional action[98] in the absence of an act which traces the coordinates the public administration will have to follow in the performance of its action[99].

A similar opinion was voiced, albeit with some clarifications, an early judicial decision, by virtue of which it was deemed legitimate that the commission of a public competition procedure adopted – provided that there was an expressed provision (as is expressly highlighted by the Italian State Council) – previously elaborated evaluation criteria (in electronic form) by subjects outside[100] the administration[101].

L'intelligenza artificiale al servizio delle funzioni amministrative, 1745. In the jurisprudence see TRGA Trento, 15 April 2015, No. 149, according to which the responses given by the electronic system are objectively imputable to the administration, as a complex, and therefore to the people who have this responsibility, thus, if the electronic instrument leads to abnormal situations, there is first of all a responsibility on the part of those who put in place its functioning, but there is also the omissive responsibility of he or she who, promptly informed, failed to carry out, in accordance with the principles legality and impartiality, all those activities aimed at correcting the error.

[91] A.G. Orofino and R.G. Orofino, *L'automazione amministrativa*, 1308.

[92] See above, paragraphs 3 and 4.

[93] See above, paragraph 4.

[94] Which, according to A. Huergo Lora, *Una aproximación a los algoritmos desde el derecho administrativo*, 71, is to be applied only to the entirely automated decisions, and not also those in which the computer is limited to carrying out auxiliary functions compared to a civil servant.

[95] The full text of Art. 41, paragraph 2 reads as follows: "En caso de actuación administrativa automatizada deberá establecerse previamente el órgano u órganos competentes, según los casos, para la definición de las especificaciones, programación, mantenimiento, supervisión y control de calidad y, en su caso, auditoría del sistema de información y de su código fuente". More incisively, Art. 45, paragraph 4, of the no longer in force Ley 30/1992, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y del Procedimiento Administrativo Común, provided for that: "Los programas y aplicaciones electrónicos, informáticos y telemáticos que vayan a ser utilizados por las Administraciones Públicas para el ejercicio de sus potestades, habrán de ser previamente aprobados por el órgano competente, quien deberá difundir públicamente sus características".

[96] See what was said in paragraph 4.

[97] A. Police, *Prevedibilità delle scelte e certezza dell'azione amministrativa*, in *Diritto amministrativo*, 1996, 697.

[98] P.M. Vipiana, *L'autolimite della pubblica amministrazione. L'attività amministrativa fra coerenza e flessibilità*, Milan, Giuffré, 1990.

[99] A. Huergo Lora, *Una aproximación a los algoritmos desde el derecho administrativo*, 69.

[100] As D. Keats Citron notes in *Technological Due Process*, 1260, when the administrations resort to automation "private vendors typically build these systems, often with the help of government information technology personnel".

This position has been discussed by stating that the possible uncritical attitude in the implementation of the criteria set by others, and the understanding itself of these criteria on the part of the administrative bodies, would constitute a mere psychological state which would not impact the legitimacy of the criteria themselves, whose validity must be verified through the direct comparison of the regulatory data and the parameters, processed by the private company, which have been taken over by the administration.

Therefore – reduced to a mere psychological state – the awareness of the administration with respect to the content of the rules on the basis of which the programme was set up may be missing altogether, since it would be irrelevant and would not explain any influence on the legitimacy of these rules and, consequently, on the legitimacy of the provision which implements them[102].

It is an opinion which one cannot subscribe to.

The formal reception, deemed necessary also by the administrative judge, cannot be an uncritical and misinformed reception: the administration must always know what it is intervening on with its own provisions, and what is their regulatory content.

Relegating the awareness every administrative authority must have with regard to the factual and legal preconditions underlying the action which leads to something tantamount to a mere "psychological state", indifferent to the purposes of the legitimacy of the act, means diminishing the importance of the cognitive moment in the performance of the administrative action[103].

In the arguments of those who deemed possible an uncritical approval of the programming criteria formulated by private companies one can clearly see the reference (albeit implicit) to the debate with respect to will, as a possible essential element of the provisions.

It is well-known that a part of the public law legal doctrine – by drawing a different path from the one trodden by the theorists of the legal transaction – has concluded that will is not a constitutive trait of the acts of the administration[104]. Those who adhere to this legal theory, although not denying that the provision always constitutes an expression of will, or judgment or representation[105], argue that for the acts of public power the psychic process leading to their issuance is not very important, given that no legal norm attaches importance to it. By contrast, positive law seems to consider always and only the act itself in its effective consistence, therefore "per individuare gli elementi essenziali dell'atto amministrativo occorre considerarlo come entità oggettiva e formale (distaccata ed estraniata dal suo agente) e non come entità psichica (propria dell'agente, anche se imputata all'ente pubblico)"[106].

The above-mentioned position is opposed by those who believe that also will must be qualified as an essential element of the administrative provision, because also in public law there is the fundamental principle whereby an act can be considered referable to the subject who established it, only if it was intentionally wanted by him or her[107].

An argument in between, instead, states that the provision is necessarily a voluntary act – therefore the conscious intention of adopting it cannot be lacking – but it distinguishes between will to put in place the act and that referred to its content. Among those who agreed to this latter argument there were some who – building on a distinction previously made by Mortati[108] – valued the importance to attach to the element of will in relation to the provisional content and the type of various provisions[109], and those who, instead, have stated that will always has a hypostatic and objectified value in the administrative procedure, in that the will enshrined in the final act must be understood as the result of various wills of all subjects (also

[101] Cons. Stato, sec. VI, 24 October 1994, No. 1561, in *Foro amministrativo*, 1994, 2438, which on the matter voices an opposite opinion to the opinion in the appealed sentence by Tar Lazio, Roma, sec. II, 16 September 1992, No. 1809, *Dvd Juris data*, Milan, Giuffrè.

[102] Cons. Stato, sec. VI, 24 October 1994, No. 1561; in the same terms see also Id., sec. VI, 11 July 2000, No. 3885, in *Foro amministrativo*, 2000, 2710; Id., sec. VI, 24 October 2000, No. 5682, in *www.giustizia-amministrativa.it*.

[103] By contrast, J.A. Kroll, J. Huey, S. Barocas, E.W. Felten, J.R. Reidenberg, D.G. Robinson, and H. Yu, *Accountable Algorithms*, in *University of Pennsylvania Law Review*, vol. 165, 2017, 633 and especially 656 note that "the first goal in any plan to govern automated decision-making should be to enable the people overseeing the process—whether they are government officials, corporate executives, or members of the public—to know how a computer system makes decisions".

[104] For a careful synthesis of the various opinions voiced on the matter see S. Perongini, *Teoria e dogmatica del provvedimento amministrativo*, 192.

[105] See A.M. Sandulli, *Manuale di diritto amministrativo*, XV ed., Naples, Jovene, 1989, 664.

[106] A.M. Sandulli, *Manuale di diritto amministrativo*, 665. Likewise see M.R. Spasiano, *Commento all'art. 21* septies, in *La pubblica amministrazione e la sua azione*, N. Paolantonio, A. Police, and A. Zito (eds.), Turin, Giappichelli, 2005, 551; S. Perongini, *Teoria e dogmatica*, 194.

[107] P. Virga, *Il provvedimento amministrativo*, 164. See also G. Zanobini, *Corso di diritto amministrativo*, 246; G. Miele, *Principi di diritto amministrativo*, Padua, Cedam, 1966, 136.

[108] C. Mortati, *Istituzioni di diritto pubblico*, volume I, IX ed., Padua, Cedam, 1975, 244. Of the same author see, Id., *La volontà e la causa nell'atto amministrativo e nella legge*, Officina Tipografica Roberto De Luca, Rome, 1935.

[109] G. Falcon, *Lezioni di diritto amministrativo. L'attività*, III ed., Padua, Cedam, 2013, 123.

private) who participate in the procedure[110].

The possible adhesion to any of the above-described positions is, however, completely indifferent for the purposes of the solution to the problem analyzed in the present work.

Even if it were held that will does not integrate an essential element of the administrative provision, it is undoubtedly true that the possible inadequate assessment (and qualification) of the relevant preconditions for the purposes of the adoption of a provision[111] result in its illegitimacy, in that it either entails a violation of the law or misuse of power[112], witnessable in the lack of preliminary fact finding activities, distortion of the facts or manifest error[113].

The subsistence of these vices prescinds from the psychological attitude of the agent, therefore it is not necessary to establish whether the error about the facts is an intentional error (deliberate) or unintentional: what it detects is that the error is proven in its objective and actual consistency.

The same is true for the other figures of misuse of power: the lack of logic and the lack of preliminary fact-finding activities must be proven in their concrete subsistence, without detecting the will of the body which (intentionally or unintentionally, regardless) adopted an unreasonable provision, or it omitted preliminary fact-finding activities[114].

Besides, also those who downplay the importance of the element of will in the performance of public functions at any rate do not deny the importance that the decree made with the provision is not misled by an inaccurate representation of reality and by the lack of the necessary consequentiality between preconditions (both factual and legal) and conclusions[115].

Furthermore, the administration must certainly perform an adequate fact finding activity, which enables the public body to adequately know the factual reality which will be affected by the decisions to be made[116]: this is one of the examples of administrative impartiality, which postulates the careful and pondered comparison of all relevant facts for the purposes of the decision-making process, and the examination of all interests affected by the provision to be adopted[117].

One must also consider the fact that the public administrations are not only required to *know*, but also to *prove* they have gained proper awareness, through an adequate motivation of the adopted provisions[118], which according to the rule found in Art. 3 of Law No. 241/1990, it must be present in all administrative provisions (including those concerning administrative organisation, the carrying out of public competitions and personnel, and with the relevant exception of regulatory acts and of those of general content), and must indicate the preconditions and the legal reasons which led to the decision of the administration, in relation to the results of the preliminary fact finding activities.

Therefore, as there cannot be an undue delegation of administrative functions or powers, the possible uncritical adhesion to criteria established elsewhere, it appears to be legitimate only as long as those who set them has the

[110] M.S. Giannini, *Lezioni di diritto amministrativo*, vol. I, Città di Castello, Leonardo da Vinci, 1950, 350: "Dicendo che nei provvedimenti la volontà è sempre una ipostasi, si vuole significare che, nel mondo naturale, a ciò che noi chiamiamo volontà del provvedimento corrisponde una sommatoria dei punti comuni fra le volizioni di più persone fisiche". Likewise see Id., *Atto amministrativo*, in *Enciclopedia del diritto*, vol. IV, Milan, Giuffré, 1959, 157 and especially 174, which reads: "La volontà nel provvedimento amministrativo, non è una volontà psicologica, né personale: il provvedimento normalmente passa per più uffici, e quindi è frutto del concorso di un numero piuttosto elevato di persone fisiche. Storicamente, in esso la volontà si presenta come un'astrazione, e, giuridicamente, come un'ipostasi". Likewise see S. Cassese, *Le basi del diritto amministrativo*, VI ed., Milan, Garzanti, 2000, 342; B.G. Mattarella, *Il provvedimento*, in *Trattato di diritto amministrativo. Diritto amministrativo generale*, vol. I, II ed., S. Cassese (ed.), Milan, Giuffrè, 2003, and especially 841. For a critique against this argument see R. Villata, M. Ramajoli, *Il provvedimento amministrativo*, Turin, Giappichelli, 2006, 207.

[111] F. Follieri, *Logica del sindacato di legittimità sul provvedimento amministrativo. Ragionamento giuridico e modalità di sindacato*, Padua, Cedam, 2017, 418 and passim.

[112] Already in S. Romano, *Corso di diritto amministrativo. Principi generali*, III ed., Padua, Cedam, 1937, 270, it is noted that a regulatory will characterized by an erroneous representation of the factual preconditions incurs into misuse of power whereas, if the error falls under the legal requirements, there is a violation of the law.

[113] See S. Perongini, *Teoria e dogmatica del provvedimento amministrativo*, 408, also for further references.

[114] S. Romano, *Corso di diritto amministrativo*, 270.

[115] A.M. Sandulli, *Manuale di diritto amministrativo*, 665.

[116] F. Levi, *L'attività conoscitiva della pubblica amministrazione*, Turin, Giappichelli, 1967, 139 and *passim*.

[117] U. Allegretti, *L'imparzialità amministrativa*, Padua, Cedam, 1965; A.M. Sandulli, *Manuale*, 587. On this matter see also P. Lazzara, *L'azione amministrativa ed il procedimento in cinquant'anni di giurisprudenza costituzionale*, in *Diritto amministrativo e Corte costituzionale*, G. della Cananea and M. Dugato (eds.), Naples, Edizioni Scientifiche Italiane, 2006, 387.

[118] G. Miele, in *L'obbligo di motivazione degli atti amministrativi* (1941), now in Id., *Scritti giuridici*, vol. I, Giuffrè, Milan, 1987, 329, notes that the administration not only must make legitimate use of the power it is conferred, but must "anche renderlo plausibile a coloro cui l'atto s'indirizza". In the same terms I.M. Marino, *Giudice amministrativo, motivazione degli atti e «potere» dell'amministrazione* (2003), now in A. Barone (ed.), *I.M. Marino. Scritti giuridici*, vol. II, Naples, Edizioni Scientifiche Italiane, 2015, 1019. On the "amministrazione come immagine del dover amministrare" see G. Berti, *La responsabilità pubblica (Costituzione e Amministrazione)*, Padua, Cedam, 357.

powers to proceed with the codification of the rules concerning the carrying out of the automated procedures, and does not go beyond his or her competences: this does not however occur when the adoption is entrusted to technicians outside the administration or, at any rate, not invested with powers related to the activated procedure.

Consequently, the administration needs to expressly implement, and make them its own, criteria it shows it *understands* and, as a consequence, *shares*.

7. *The responsibility of data entry and access to log files*

Another important profile for the purposes of the transparent and responsible management of computerised procedures concerns the entry of useful data necessary for the performance of automated evaluations[119].

As has already been mentioned, the outcome of the automated decisions is entirely determined both by guidelines acquired upon programming (or, for the computers equipped with self-learning tools, by the instructions autonomously learned by the system) and by the data later offered to the processor.

The latter are, indeed, crucial for the purposes of the acquisition of the factual elements on the basis of which the IT act will be adopted.

The importance of the moment of the data entry has been highlighted by a series of regulatory provisions which followed one another through time, through which it has been provided for that IT systems employed by the public administrations would have to leave traces both of identification data of those who had access to public computer archives, and of the operations performed by them[120].

The exposed concerns are to be taken seriously: it has often happened that civil servants illegally modified information stored in computers in order to gain undue advantages for themselves or others.

An example of this is the official who worked at the DPC (Data processing centre) of one of the offices of INPS (the Italian National Institute for Social Security) who was accused of having modified the electronic archives of the Institute, in order to assign to some beneficiaries contribution periods they did not earn, or to build in their favour a completely undue insurance position[121], or the illegal operation carried out by those who, by using their own working position as employees at the Italian Revenue Agency, carried out an undue tax relief in favour of a taxpayer[122].

It is not by chance that the jurisprudence has stated that the computerised archive of a public administration must be considered equal to a register kept by an administration, and consequently the conduct of the public official who, upon exercising his or her functions and employing technological support pertaining to the public administration, creates a false electronic document bound to remain in the memory of the processor, constitutes a forgery of public document[123].

Likewise, log files allowing for the verification of who had access to a system[124], what operations he or she carried out and therefore who must bear certain responsibilities, also constitute administrative documents.

It is important to highlight that resorting to logs has been useful in proving the administrative responsibility of a public employee who, during work hours, used the computer to acquire information and access non-institutional websites and, therefore, not useful for the purposes of the performance of his or her working duties[125].

The documental nature of electronic archives of a public administration cannot be questioned, both specifically referring to log files[126], and to

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[119] See J.A. Kroll, J. Huey, S. Barocas, E.W. Felten, J.R. Reidenberg, D.G. Robinson, and H. Yu, *Accountable Algorithms*, 657: "Transparency has often been suggested as a remedy to accountability issues for computerized systems. However, transparency alone is not sufficient to provide accountability in all cases".

[120] Without going into detail, it can simply be noted that for this profile provisions contained in some rules which today are no longer in force were reserved, such as Art. 3, paragraph 2, of Legislative Decree No. 39/1993, Art. 9, paragraph 2, of Decree of the President of the Republic No. 445/2000, and Art. 22, paragraph 2, of the CDA in the text in force at the time of its enactment.
Dedicated to the issue today are Articles 40 and 41 of the CDA and, above all, chapter III or the technical rules adopted with Prime Ministerial Decree 13 November 2014.

[121] The incident is recounted in the motivation behind the decision of the Tribunale di Napoli, 2 May 2002, published in full in the volume by F. Buffa, *Il pubblico impiego privatizzato nella giurisprudenza*, Piacenza, Celt, 2004, 949. A similar incident was stigmatised by Cass. Pen., sec. V, 19 February 2003, in *Cassazione penale*, 2004, 1265; Cass. Pen., 18 April 2003, in *Cassazione penale*, 2004, 3226; Cass. Pen., sec. V, 12 May 2003, in *Dvd Juris data*, Milan, Giuffrè.

[122] See Corte conti, sez. giur. Sic., 2 March 2005, No. 390, in *Diritto di internet*, 487.

[123] Cass. Pen., sec. V, 18 June 2001, in *Dvd Juris data*, Milan, Giuffrè; Cass. Pen., sec. V, 12 May 2003; Cass. Pen., sec.V, 27 January 2005, No. 11930, in *Cassazione penale*, 2006, 1446.

[124] On the acquisition and conservation of log files, see Tribunale di Chieti, 30 May 2006, in *Diritto di internet*, 2006, 572.

[125] Corte conti sez. giur. Piem., 13 November 2003, No. 1856, in *Dvd Juris data*, Milan, Giuffré.

[126] Cons. giust. amm. reg. sic, 8 October 2007, No. 927, in *www.giustizia-amministrativa.it*: "Il sistema informatico utilizza, anch'esso, come noto, una sorta di firma, costituita dalle così dette 'registrazioni di log' che individuano il soggetto che si è inserito nel sistema, il giorno, l'ora ed il contenuto della nuova registrazione, attribuita, tramite la password, ad un determinato funzionario. Tali registrazioni

data entered in the electronic system and used by the administrations for the carrying out of its automated action[127], given that these data and registers are used throughout the procedures which impact the positions of the citizens.

It has been stated that the answers to the questions provided by devices, which materially appear on the screen, correspond, conceptually, to the pages of the paper registers and of the sheets once used and stored in folders or binders; therefore, just like the paper document is the result of an act of knowledge or will of the official or clerk who materially formed it and inserted it in the "dossier", in the same way the information read on the video are the result of an information entry operation, comparable to book entry on a register or filling in a document, at the source of which, however, there is always an act of knowledge or will of an official or clerk, whose activity must be knowable and verifiable through rigorous procedures which only allow expressly authorised subjects to enter or modify data, so as to prevent "la volatilità apparente delle registrazioni informatiche, e soprattutto la loro non apprensione ai sensi comuni della vista e del tatto, [apra] ampi spazi di illegittimità ed arbitrio", where "il cittadino ha diritto a conoscere quale sia il funzionario che ha apposto una determinata dicitura sul suo profilo informatico, le ragioni e le norme di legge che sono state applicate"[128].

The adequate keeping of electronic archives of the public administrations, and their consequent ostensibility in accordance with the rules on the access to the acts, constitute clear limbs of administrative transparency, therefore there is an obligation to guarantee a suitable tracking of all operations performed by the system, and to leave subsequent evidence thereof[129], given that the computerisation of the procedures cannot lead to the obliteration of the verification of the acts in the possession of the public administration[130].

8. *The motivation of the automated acts*

One of the further branches of IT transparency is the one emphasized with respect to the motivation of automated acts[131], with regard to which one must ask oneself whether the explicitation of the reasons underlying their adoption is necessary, as is the case with the provisions adopted according to traditional methods.

The issue has led to an earlier debate, both related to the jurisprudence and to legal doctrine.

Among scholars, there have been some who deemed motivation necessary even for automated provisions, based on the preconditions that the need for understanding of the preconditions which inspired the administrative decision is even more so relevant for the acts whose content is defined by a computer, – the sensation of obscurity potentially created by the use of algorithms[132].

The (limited) jurisprudence which initially dealt with the issue has, instead, not been very consistent.

Those who have held that the mechanisation of the functions justified the omission of motivation[133] have been opposed by those who, with an in-between position, have deemed the motivation of every single automated act not demandable, provided that it is adopted in compliance with the previously set overall criteria and directives[134].

Finally, an attitude of closure has been shown by the jurisprudence according to which the use of automation for provisions requiring

e tali risultanze sono documenti ed atti". Likewise Id., 1 June 2010, No. 780, *ibid*; Tar Calabria, Reggio Calabria, sec. I, 20 June 2014, No. 272, *ibid*.

[127] Tar Lazio, sec. III *bis*, 30 June 2020, No. 7370, where a distinction is drawn between knowledge of the source code, i.e. of the "mero testo di un algoritmo di calcolo di un programma scritto in linguaggio di programmazione che definisce il flusso di esecuzione del programma stesso" and content (data, documents, provisions,...) processed through the computer programme, whose "autenticità, integrità, affidabilità, leggibilità, reperibilità" must be ensured by the administration through the system electronic record keeping referred to in the Art. 44 of the Code of Digital Administration. On this matter see also Cons. Stato, sec. VI, 20 February 2008, No. 590, in *www.giustizia-amministrativa.it.*

[128] Both sentences are transcribed from Cons. giust. amm. reg. sic., 8 October 2007, No. 927.

[129] See Tar Lazio, Roma, sec. III *bis*, 20 July 2016, No. 8312, in *www.giustizia-amministrativa.it*, which judged undue the cancellation of the instructions regarding a participation application which, after being accepted by the computerised system, was subsequently eliminated by the same system, as the result of some modifications carried out on the application of the candidate: when judging the incident, the Tar Lazio states that the public bodies have the responsibility of keeping the electronic documents (just like analogical documents) so as to allow for the subsequent verifiability of the operations performed by the processor. In the same terms see Tar Lombardia, Milano, sec. III, 27 June 2017, No. 1449, *ibid*.

[130] Tar Veneto, sec. I, 9 February 2017, No. 144, in *www.giustizia-amministrativa.it.*

[131] On the motivation see, finally, A. Cassatella, *Il dovere di motivazione nell'attività amministrativa*, Padua, Cedam, 2013, in addition G. Tropea, *Motivazione del provvedimento e giudizio sul rapporto: derive e approdi*, in *Diritto processuale amministrativo*, 2017, 1235.

[132] A. Usai, *Le prospettive di automazione*, 178; D. Marongiu, *L'attività amministrativa automatizzata*, 124.

[133] Cons. Stato, sec. IV, 18 October 2002, No. 5758, in *Foro amministrativo - C.d.S.*, 2002, 2384, where, when judging a provision of a call to military service, it is stated that "la mancanza di motivazione della cartolina-precetto trova giustificazione nella meccanizzazione del servizio essendo sempre e solo possibile il riscontro tra il contenuto del 'precetto' ed i c.d. tabulati d'ufficio, a disposizione degli interessati, presso i Distretti di Leva".

[134] Cons. Stato, sec. IV, ord. 29 September 1998, No. 1537, in *Giustizia civile*, 1999, I, 1215.

motivation is certainly necessary, but would be impeded by the processor being unable to make discretional decisions by specifying the reasons for its choice, and this would inhibit resorting to the computer for the adoption of discretional acts[135].

As has been seen, this last position has been embraced in many foreign courts[136], but also in some Italian judicial bodies.

In particular the central Regional Administrative Court, with a series of decisions given rise to by a mobility procedure launched by the Ministry of Education and managed through electronic methods, stated that resorting to automation cannot lead to a mitigation of the procedural guarantees recognized by Law No. 241/1990, including the one concerning the provision of a motivation suitable for illustrating the reasons behind the decision made. These guarantees, according to the Tar Lazio, cannot be ensured by a computer, therefore the computer's activity will never supplant, thus completely replacing, the cognitive, acquisitive and judgmental activity that only preliminary fact-finding activities entrusted to a human official would be able to perform[137].

By making this decision, the Tar Lazio seems to offer a partially different opinion compared to the one shown in a previous sentence, in which it claimed that the admissibility of the automated processing of the administrative act is not related to the discretional or bound nature of the function, but rather to the possibility (which however *is scientific* and not legal), of recreating the logical process on the basis of which the act itself can be issued through automated procedures[138].

The latter seems to be the preferable option.

The strong interdisciplinarity of the matter[139] seems to suggest quite some caution in making statements on the possibilities of the processing of the computer and on its functioning methods: they are rather statements which should come from those who have the necessary competences, above all technical competences, to evaluate such an aspect, which cannot be resolved by legal experts[140].

The opposite rule is also true: technicians, in order to best meet the needs of the administrations, must communicate with those who are familiar with the world of institutions[141], thus enriching the dialogue between bearers of different experiences and knowledge[142].

It would be a bold claim to try to assess today how much a processor will be able to "manage"[143] and whether, as has been claimed, it can only do so in the field of public services[144] and of performing merely certifying activities[145], or also of the authoritative activity, possibly discretional, or in the field of public procurement[146].

What is certainly clear is that the IT decision-making systems show great potential[147], they

[135] Cass., sec. I, 28 December 2000, No. 16204.

[136] See below paragraph 4.

[137] Tar Lazio, Roma, sec. III *bis*, 10 September 2018, No. 9227, in *www.giustizia-amministrativa.it.* In the same terms see M. Martini, D. Nink, *Subsumtionsautomaten ante portas? – Zu den Grenzen der Automatisierung in verwaltungsrechtlichen (Rechtsbehelfs-) Verfahren*, in *Deutsches Verwaltungsblatt*, 2018, 1128: "Um alle rechtlichen und tatsächlichen Aspekte des Sachverhalts adäquat einschätzen und ihre Spezifika zu erkennen, ist juristische Auslegung auf eine sachadäquate Rekonstruktion der sozialen Wirklichkeit angewiesen. Computer-systemen fehlt aber ein Bild der Welt; einen ‚common sense' haben sie nicht".

[138] Tar Lazio, Roma, sec. III *bis*, 21 March 2017, No. 3742.

[139] See B.W. Wirtz, J.C. Weyerer, and C. Geyer, *Artificial Intelligence and the Public Sector. Applications and Challenges*, in *International Journal of Public Administration*, vol. 42, 2018, 596, who note: "Artificial intelligence (AI) is an interdisciplinary research field".

[140] A.G. Orofino, *La patologia dell'atto amministrativo elettronico*, 2268.

[141] As noted by T.J. Barth, and E. Arnold, *Artificial intelligence and administrative discretion. Implications for public administration*, in *American Review of Public Administration*, vol. 29, 1999, 332 and especially 349: "The real danger of AI in government is represented by researchers who are divorced from the world of public administration scholars and practitioners and are engaged in discussions and making technological decisions without understanding the implications for governance of the administrative state". On these issues see also D. Marongiu, *L'attività amministrativa automatizzata*, 60; J.B. Duclercq, *Le droit public à l'ère des algorithmes*, in *Revue du droit public*, 2017, 1401; D. Marongiu, *Inteligencia artificial y administración pública*, in *4ª Revolución industrial: impacto de la automatización y la inteligencia artificial en la sociedad y la economía digital*, C. García Novo and D. Santiago Iglesias (eds.), Cizur Menor, 2018, 395.

[142] A. Predieri, *Gli elaboratori elettronici nell'amministrazione dello Stato*, 51 talks about "interdisciplinarietà o di superdisciplinarietà fecondatrice".

[143] For some experiences regarding the US legal system see C. Coglianese and D. Lehr, *Transparency and Algorithmic Governance*, 6.

[144] D. Marongiu, *Inteligencia artificial y administración pública*, 397, in addition M. Martini, D. Nink, *Subsumtionsautomaten ante portas?*, 1129, argues that, given the current state of technological evolution, the use of intelligent programmes can be more beneficial in the performance of public services than in the performance of an activity aimed at the adoption of actual provisions.

[145] J. Valero Torrijos, *El régimen jurídico de la e-Administración: el uso de medios informáticos y telemáticos en el procedimiento administrativo*, II ed., Granada, Comares, 2007, 73.

[146] G. Gallone, *Blockchain, procedimenti amministrativi e prevenzione della corruzione*, in *Diritto dell'economia*, No. 3, 2019, 187; G.M. Racca, *La modellazione digitale per l'integrità, l'efficienza e l'innovazione nei contratti pubblici*, in *Istituzioni del federalismo*, 2019, 739; G. Gallone, *Public Administration and the Challenge of Contractual Automation*, *passim*.

[147] M. Fernández Salmerón, *De la reutilización de sentencias al «big data» judicial. Aproximación a la metamorfosis experimentada por los modelos de uso de la información en el marco de la actividad jurisdiccional*, in *Modernización digital e innovación en la administración de justicia*, M.F. Gómez Manresa and M. Fernández Salmerón

must be adequately studied by means of a close synergy involving legal experts, IT experts and administration science experts, away from ideological prejudice which today surrounds the subject[148].

Although a group within the Digital Italy Agency was formed, which also arranged for the preparation of a White Paper[149], currently the efforts made do not appear to be sufficient, as is also shown by the little attention paid to the matter within the three-year Plan for computerisation 2019-2022.

Instead, more frequent investigations and experimentations aimed at the broadening of opportunities offered by cognitive computer science in the various sectors of administrative action, such as the release of building licenses, urban assessments, managing public procurements[150], and the other fields where it can be successfully employed[151].

What is undoubted, however, is that – as has been highlighted several times by the legal theory[152] – but also by the jurisprudence[153] – the use of new means to perform public functions cannot be at the expense of the legal guarantees offered to citizens whose positions are affected by the administrative action.

Until technical instruments capable of offering certainties with respect to how the computer has made its decisions are put in place, it would be recommended to be cautious in proceeding with the computerisation.

One of these forms of caution consists in the "parameterization" of the decisions[154], i.e. in the predetermination of the decision-making criteria which would completely eliminate or significantly reduce discretion[155], as is done with the public competition procedures, in which the setting of assessment rules leads to a prior use of the discretionary power: therefore there is no need for a subsequent motivation of the acts, (totally or partially) bound to the extent to which they find the justifying reason for the decision made with "gradual formation" in the provision[156].

It is worth stressing that what has just been noted is the solution put forward in Germany[157] where, in light of a provision of the law on the administrative procedure which strongly limits resorting to automation in the presence of discretional acts[158], it is deemed legitimate to automate the functions when discretion has been used "at the beginning" of the administration, with a self-imposed act of constraint[159].

9. *Final remarks*

The remarks presented thus far have offered an overview of the problems entailed in the use of administrative automation, also regarding the specific issue of transparency.

These problems certainly impact the entire world of public law, and the solution to this problems will likely be consequential for the purposes of the evolution of this part of the law.

The law of administrations is, indeed, closely related to the unfolding of scientific discoveries, by which it is conditioned, but which it can also resort to meet old needs which, owing to the

(eds.), Cizur Menor, Aranzadi, 2019, 63.

148 M. Boyd and N. Wilson, *Rapid Developments in Artificial Intelligence how might the New Zealand government respond?*, in *Policy Quarterly*, vol. 13, No. 4, 2017, 36 and especially 42; J-B. Auby, *Contrôle de la puissance publique et gouvernance par algorithme*, 155.

149 Accessible at the following address: https://ia.italia.it.

150 I. Gallego Córcoles, *Contratación pública e innovación tecnológica*, in *Revista Española de Derecho Administrativo*, vol. 184, 2017, 193; Id., *Contratación pública y catálogos electrónicos: Una oportunidad para la innovación*, in *Transparencia, innovación y buen gobierno en la contratación pública*, M. Fernández Salmerón and R. Martínez Gutiérrez (eds.), Valencia, Tirant Lo Blanch, 2019, 135.

151 For some practical experiences see the early, but nevertheless interesting, volume by P. Mercatali, G. Soda, and D. Tiscornia (eds.), *Progetti di intelligenza artificiale per la pubblica amministrazione*, Milan, Editore Franco Angeli, 1996.

152 J. Valero Torrijos, *The Legal Guarantees of Artificial Intelligence in Administrative Activity: reflections and contributions from the viewpoint of Spanish Administrative Law and Good Administration Requirements*, in *European Review of Digital Administration & Law*, vol. 1, 2020, 55.

153 Finally see Cons. Stato, sec. VI, 13 December 2019, No. 8472.

154 D. Marongiu, *L'attività amministrativa automatizzata*, 69.

155 P.M. Vipiana, *L'autolimite della pubblica amministrazione*, *passim*.

156 A. Police, *Trasparenza e formazione graduale delle decisioni amministrative*, 229.

157 C. Fraenkel-Haeberle, *Fully digitalized administrative procedures in the German legal system*, in *European Review of Digital Administration & Law*, Volume 1, Issue 1-2, 2020, 105; E. Buoso, *Fully automated administrative acts in the German legal system*, *ibid*, 113.

158 In this respect see what is provided for by paragraph 35.a of the Verwaltungsverfahrensgesetz (VwVfG), which reads as follows: "Vollständig automatisierter Erlass eines Verwaltungsaktes", which expressly provides for that: "Ein Verwaltungsakt kann vollständig durch automatische Einrichtungen erlassen werden, sofern dies durch Rechtsvorschrift zugelassen ist und weder ein Ermessen noch ein Beurteilungsspielraum besteht". On this matter see A. Berger, *Der automatisierte Verwaltungsakt. Zu den Anforderungen an eine automatisierte Verwaltungsentscheidung am Beispiel des par. 35a VwVfG*, in *Neue Zeitschrift für Verwaltungsrecht*, 2018, 1260. Prior to it see also the volume by R.-M. Polomski, *Der automatisierte Verwaltungsakt Die Verwaltung an der Schwelle von der Automation zur Informations- und Kommunikationstechnik*, Berlin, Duncker & Humblot, 1993.

159 M. Martini, D. Nink, *Subsumtionsautomaten ante portas?*, 1130: "Einen Grenzfall zulässiger Voll-automatisierung i. S. d. § 35a VwVfG markieren ermessenslenkende Verwaltungsvorschriften. Wenn sie den grundsätzlich bestehenden behördlichen Ermessens-spielraum im Wege der Selbstbindung (Art. 3 Abs. 1 GG) auf Null verengen, belassen sie einer Software im Ergebnis faktisch keine Wertungsaufgaben mehr".

evolution of communication systems, find new forms of fulfillment[160].

It is nothing new that the evolution of technique – on par with economic and social evolution – affects the evolution of the law: fitting examples are the industrialization process and the changes it engendered also in the field of public law[161].

However, with the exception of some institutes[162], administrative law has mostly been affected *indirectly* by the advances of scientific knowledge, which have impacted first of all social structures, and, only *indirectly*, the structures of the law and of administrations. An example to take into examination is urban planning: urbanization has led to changes in society and in the economy, less and less tied to the agricultural world; these changes have therefore brought about innovations also in the world of public law.

The size of the impact of the digital revolution is, by contrast, particularly significant and, above all, *direct* in that it is directly reflected in all public law sectors, therefore the modifications are perhaps even more impactful than what occurred in the past, and cross-cutting, given that they concern all the fields of administrative law, both general and special.

This, together with the clear speed of the above-described evolutionary process, makes possible solutions necessarily temporary since, although they may be plausible today, they may become outdated in the future (also in the short term) owing to the obsolescence of the computer systems based on which these solutions are designed[163].

The above-described rule also concerns the matter of IT transparency, with respect to which, despite the persistent needs to meet (correlated first of all to the guarantee of citizens and to the compliance with the principle of good administration), the answers provided can vary over time[164].

All that remains, therefore, is to offer temporary remarks, and to remain ready to review and adjust them to the new opportunities offered by the machines, also with respect to the matter analyzed in the present work and, in particular, to the justifiability of algorithmic decisions[165].

[160] G. Pascuzzi, *Il diritto dell'era digitale. Tecnologie informatiche e regole privatistiche*, Bologna, Il Mulino, 2002.

[161] V. Ottaviano, *Appunti in tema di amministrazione e cittadino nello Stato democratico* (1988), now in Id., *Scritti giuridici*, vol. II, Milan, Giuffré, 1993, 53.

[162] Like those connected to cognitive measures, self-evidently revolutionised by the invention of the printing press.

[163] C. Coglianese, D. Lehr, *Transparency and Algorithmic Governance*, 8: "With the advancement of machine-learning techniques and the proliferation of supporting back-end data infrastructures, the role for algorithms in government is likely to expand".

[164] On the risks and opportunities of an algorithmic administration see, also for further references, C. Coglianese and D. Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, in *The Georgetown Law Journal*, vol. 105, 2017, 1147.

[165] S.C. Morse in *When Robots Make Legal Mistakes*, in *Oklahoma Law Review*, Vol. 72, 2019, 213 and especially 218 notes that "the function of explainability—or not—in the development of the law created by robots still deserves further study".