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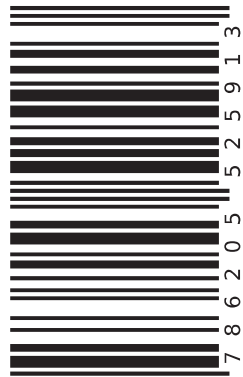Dumitrescu, Stefanescu, Radulescu

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Justice is conceptually configured as an institution, but can also be regarded as a specific process combining various principles and ideas from philosophy. The human community is the human society itself, expressed in collective associations, in social groups. Freedom is a natural or divine trait of the human being, a cardinal social value and a major aspiration of the individual and of human communities across history, a perennial theme of the human condition.

This volume gathers papers that have been presented during the works of the 2022 IVR World Congress, held at the Dimitrie Cantemir Christian University, Bucharest, Romania, July 3-8, 2022.

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JUSTICE, COMMUNITY AND FREEDOM

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THE (IN)ADEQUACY OF ARTIFICIAL INTELLIGENCE IN JUDICIAL DECISION MAKING

Cláudia Toledo[1096]

Abstract*: This paper presents some partial conclusions from ongoing research, in which the use of artificial intelligence (AI) as support or for effective judicial decision making is critically analyzed. There are unquestionable benefits in the deployment of AI systems by the Judiciary. However, the analytical study of the data collected so far has also led to the identification of some problems, such as the lack of transparency and the algorithmic biases engendered by the use of AI in judicial decisions. These problems are here discussed and, in the end, some proposals are presented, with the aim of contributing to their resolution. From the methodological point of view, the ongoing research is based on both bibliographic and empirical studies.*

Keywords*: Artificial Intelligence, Transparency, Bias, Judicial Decision*

Introduction

This paper presents some partial results and conclusions from ongoing research[1097], that aims to critically analyze the use of AI resources by the Judiciary, in order to verify its adequacy to the national and international normative order. It seeks, therefore, to identify both the advantages and the problems of the use of AI by this Public Power. In national law, AI must be in accordance with the Constitution, especially the principle of democracy and the fundamental rights, and, in the international sphere, with human rights.

The expansion of technology and the broadening of the application of AI to several areas of human life are irreversible processes, as well as the gain in celerity promoted by it. However, it is essential not only to develop AI in the sense of greater accuracy and speed to deliver results, but also that such results comply with the core human interests, needs and values, as set forth in the constitutional texts and in the Universal Declaration of Human Rights. To this end, the criteria used by AI to form the standards according to which it provides results, as well as the activities intended for AI by the Judiciary must be critically analyzed.

For this purpose, the tasks currently performed by IA in the Brazilian Judiciary were studied. This study resulted in the classification of the programs used by Brazilian courts as either automation or AI programs, as presented in the text.

Afterwards, the use of AI as an auxiliary or even as main resource for judicial decision making was investigated. This search led to the identification of some central problems, such as: (a) the lack of transparency in AI systems; (b) the structural incompatibility between the way data are processed by AI and the way law is applied; (c) the inability of AI to make value judgments and its consequent reproduction of the value judgments of its developers; (d) the intensification by AI programs of the cognitive biases that may be involved in the judicial decision.

The aforementioned problems were critically analyzed in the paper, and at the end, some proposals were presented in order to contribute to their solution.

Methodologically, the ongoing research is based on both bibliographic and empirical studies. The documentary source of the empirical research was especially the websites of Brazilian courts, where official information about the court's use of AI and its results was sought.

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1.   The use of ai by the brazililan judiciary

In the search for data on the national reality with regard to the use of AI by the Judiciary, an important contribution has been given by the *Conselho Nacional de Justiça* (CNJ) [National Council of Justice] - an agency that is part of the Brazilian Judiciary, that is responsible for the control and supervision of this branch - which has created a page on its website entirely dedicated to the Brazilian judicial use of AI. According to the CNJ, in the national context there are 41 projects in 32 courts (CNJ, 2020).

This data search highlighted the *lack of transparency* in relation to AI systems used by the Brazilian Judiciary, as well as the lack of openness for the review of possible *cognitive biases* in the judicial decisions with the use of AI. Both issues will be addressed in the next topic.

Regarding the activities currently performed by AI in the Brazilian Judiciary, the research identified the use of two kinds of programs by this public power: automation and AI. The distinction between these programs lies in the fact that *automation* algorithms are created to process data based on rules aimed at solving a problem or performing a *mechanical* or *repetitive* task, *without learning*. Thus automation programs always work with the same inputs, which permanently result in the same outputs. *AI programs*, on the other hand, present algorithms that, through training with the database (*machine learning*), can offer *different solutions* for similar inputs, based on the patterns found in the database. In summary, all AI "are automations, but not all automations are intelligent systems" (Costa-Abreu; Silva, 2020).

It was found that AI resources are employed especially in Brazilian higher courts - such as the *Supremo Tribunal Federal* (STF) [Supreme Federal Court] and the *Superior Tribunal de Justiça* (STJ) [Superior Court of Justice]. In the state courts (*Tribunais de Justiça* – TJ) [Courts of Justice], most of the algorithms used refer to automation programs. This conclusion may be drawn from the data exposed in the tables below.

Table 1 shows the activities performed by AI in the two main superior courts of the country, STF and STJ.

Table 1: Activities performed by AI at STF and STJ

ACTIVITIES	PROGRAMS	COURTS
1. Identification of general repercussion issues in cases	Victor	STF
2. Grouping of similar judgments to organize the case law database, and of cases with the same legal controversy to establish binding thesis	Athos	STJ
3. Grouping similar cases to identify precedents	Sócrates	STJ
4. Classification of legislative and case law references in judgments as *ratio decidendi* or *obiter dictum*	E-Juris	STJ

Source: Toledo; Alves, 2021b.

Table 2 shows the activities performed by AI in the state courts (TJ).

Table 2: Activities performed by AI in TJ

ACTIVITIES	PROGRAMS	COURTS
1. Facial Recognition	AMON	TJDF
2. Case grouping for identifying repetitive claims from petitions	TIA, Berna, LEIA Precedentes, Robô Larry, Sem nome definido, Radar	TJAP, TJGO, TJAC, JAM, TJMS,

		TJSP, TJPR, TJPI, TJMG
3. Increase case law research, with identification of "paradigm decision"	Increase of case law search mechanisms	TJSC
4. Prediction of the order to be rendered in tax executive proceedings	No name defined	TJRS
5. Chatbot	Judi	TJSP
6. Court Transcription	Scriba	TJRR

Source: Toledo; Alves, 2021b.

Finally, table 3 lists the activities performed by automation programs in many different courts in the country.

Table 3: Activities performed by automation in TJ

ACTIVITIES	PROGRAMS	COURTS
1. Determining the procedure	Natureza Conciliação	TJDF
2. Standardization of circumstantial terms sent by police agencies	Peticionamento Inteligente	TJRO
3. Classification of the petition to the correct class	Leia Peticionamento, Minuta Expressa	TJAL, TJAM, TJC, TJSP, TJPR
4. Classifying petitions for tax foreclosure	Hércules, Elis, Tax Foreclosure Petition Classifier	TJAL, TJPE, TJSC
5. Address adjustment for warrant fulfillment	ARTIU, Mandamus	TJDF, TJRR
6. Scanning physical files	Hórus	TJDF
7. Proceeding classification from the initial petition	MINERJUS	TJTO
8. Consultation, blocking and unblocking in BacenJud (Brazilian Central Bank)	Leia Online Pawn	TJSP, TJAM, TJRN
9. Automation of repetitive activities (text generator and identification of sections in decisions)	Sinapse	TJRO
10. Identification of the claimant (identity comparison with the application user)	Queixa-Cidadã	TJBA

Source: Toledo; Alves, 2021b.

2. Issues raised regarding the use of ai in judicial decision making

The study of the use of AI in judicial decisions (both nationally and internationally) has led to the identification of some questions, of which the following are especially pointed out.

2.1. The algorithmic opacity

In the Brazilian Judiciary, the *lack of transparency* is one of the first problems that scientific research comes across. There is huge difficulty in accessing information related to the use of AI by this branch. Official websites and court bulletins inform only sparsely if any AI is in use in decision

making or is being installed. To obtain this information, it is often necessary to contact the court directly, by sending an electronic message to its public service department.[1098]

The data on the CNJ website highlight that difficulty in accessing information. For example, only 22% of the Brazilian courts make their algorithms *publicly available*, which allows the *auditability* of only a quarter of the AI currently in use by the Judiciary. The situation is even more serious when these programs are developed by private companies that hold intellectual property and commercial confidentiality due to *patent rights* - this is the reality of almost a third of the programs adopted by the courts evaluated by the CNJ.

Algorithmic transparency requires everything from *access to the source code* to the duty of *information* that *AI resources were used* in the *judicial decision*, either to support it or even to make it. There must be the explanation in *natural and intelligible language* of the AI's *parameters* for processing information (Susskind; Susskind, 2019; Sousa; Câmara; Rodrigues, 2020), as well as the explication of the AI's *functionality* and *purpose*, and the *data* used (Martín, 2021; O'Neil, 2021).

Other aspects of transparency are the need for broad *public debate* on the use of AI in judicial decisions, its parameters, and the continuous and permanent performance of *audits* on AI (O'Neil, 2021; Dezan, 2020). However, in the AI market, opaque models - "inscrutable black boxes" - prevail, so that transparent models are rare exception (O'Neil, 2021).

However, in the Judiciary, if one does not know (i) the *data* provided to the AI, (ii) the *code* of the AI used in the judicial decision, and (iii) how the data provided to the machine were *organized*, then the information involved in the lawsuit is *unknown*, which directly affects basic *legal principles*, such as the *broad defense* (Bavitz, 2018) and the *adversarial* principles, since the parties do not know what to defend themselves against, nor what to contradict (Toledo, 2021).

Finally, the lack of transparency in the use of AI by the Judiciary is a clear affront to the principle of *publicity*, one of the guiding principles of the Democratic Legal State.

2.2. The structural incompatibility between the ai data processing and the application of law

Between the logics of AI and that of law there are not only differences, but even opposition, which generates structural incompatibility. AI operates with *generalizations*, *data groupings*, according to their *parameterization*, fitting each singular piece of data into *predetermined groups* or models according to the *formula* programmed into the system (*standardization*). These concepts are precisely the opposite of those of *individualization* and *singularity* with which law works when applying legal norms in judicial decisions.

In the judicial decision, the general and abstract legal norm is individualized in the concrete case, whose particular conditions confer singularity to the *sub judice* situation and to the subject. Therefore, the use of AI in the judicial decision precisely disregards or *eliminates* the *singular* factual and legal conditions of the *concrete* case, which *individualize* the situation in court, rendering it *unique*. However, the notions of singularity of the concrete case have essential relevance for law, presenting themselves even as *legal principles*, such as the principle of *individualization* of the penalty and the principle of *personal* responsibility, in criminal law, and the principle of *proportionality* in constitutional law.[1099]

[1098] In order to know if a specific AI was already in use at the Brazilian Constitutional Court (*Supremo Tribunal Federal* – STF) (STF, 2021), or if AI systems were employed in final decisions by a state court (*Tribunal de Justiça de Minas Gerais* – TJMG) (TJMG, 2020), it was necessary to send privately the aforementioned messages to the courts, since there was no information about it on their websites.

[1099] The principle of proportionality is an instrument for the solution of principle collisions, which requires as indispensable exactly the consideration of the *singular* facts and legal conditions of the *concrete* case.

Along with the limitations, it is necessary to know the *legal knowledge basis* used for the *representation* in algorithmic language, in order to assess whether there was a valid and acceptable *simplification*, or if there was a *reduction* that does not seem adequate. The information collected about the AI in development and/or operation in the Brazilian Judiciary does not allow this assessment.

Regarding the representation of knowledge in the AI sytems, it is not possible to know precisely which *data* were taken as *substitutes* for *values* and *beliefs* about a certain *legal institute*. The very viability of knowledge representation in computational language is questionable. At least nowadays, these difficulties seem insuperable.

2.3.   Ai's inability to make value judgments

Judicial decision-making implies not only *knowledge* of data, but their *assessment*, with the elaboration of *value judgments* about acts, facts, interests that make up reality. The assessment of something as *good* (value judgment) or as *due/correct* (duty judgment) should be an exclusively *human* activity, since the *determination* of life is up to the individual him/herself and to the society he/she belongs to, under penalty of alienating his/her capacity of self-determination, of *freedom*. The delegation of this decision-making competence to AI means *alienation* of freedom, which, as a fundamental right, is *inalienable* (Toledo, 2003).

Nevertheless, AI cannot (nowadays) make value judgments. It can *reproduce* them, if they are inserted subliminally in its code, but it does not elaborate value judgments autonomously. The algorithm is *programmed* to identify the data and their characteristics to then classify them according to its *mathematical code*, "labeling" such data, "boxing" them into the model alternatives that are *prefixed* as *possible outcomes*. This activity is not to be confused with a value judgment, but it is analogous to a *factual judgment*, which is based exactly on the *cognition* of reality (Bobbio, 1995). In contrast, value judgments do not deal with the cognition of reality, but with its *guidance* according to the *values* of Good (Moral) and Correctness (Law) (Alexy, 2003; Alexy, 2015).

Thus, algorithms do not have the ability to *evaluate* a piece of data as good or bad, just or unjust. Their code simply reproduces the evaluation made by the *developer* when associating particular data with a certain type of result model understood (by the developer) as good, positive, correct.

2.4.   Intensification of cognitive biases by ai softwares – algorithmic biases

Cognitive biases are tendencies, inclinations, *non-rational* or non-rationally justifiable factors that *influence* or *determine* the decision making. They manifest themselves as beliefs, emotions, preconceptions, biases, which act *intuitively* in decision making. They work as "shortcuts" to decisions, since they appear as the "easiest choice" or the "shortest path" to them, because they are *not reflexive*, not based on *foundation* in which the *correctness* of the decision is demonstrated *argumentatively*, through the consistent exposition of its *reasons*.

Such cognitive biases transmute into *algorithmic biases* in decisions in which AI programs are used as an auxiliary resource or even as the main tool for decision making. The transposition of human cognitive biases to AI systems occurs due to the formatting, settings, and commands (parameterizations) of the AI *learning procedure*, as well as to the *selection of data* to be used in machine learning (Peixoto; Silva, 2019).

In the case of the Judiciary, the *big data* formed by the digital files of *previous decisions*, representative of the entire *judicial culture* of the country, is undoubtedly permeated by existing *cognitive biases* that tend to be *naturalized* by the culture of each society. Once consigned in texts repeatedly, these biases will transmute into data for machine learning. They will then be assimilated as *patterns*, and as a result of their repeated reproduction there will be an *increase* in *cognitive*

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biases, a *reduction* in *interpretative possibilities*, and the growing impossibility of changing them due to their *naturalization*. The cognitive biases are then consolidated in a *vicious circle* (Pessoa, 2020; Pessoa, 2021).

A concrete example of this situation occurred in the U.S. Judiciary, with the use of the COMPAS AI to analyze the risk of recidivism of the defendant (by assigning scores), in order to support judicial decisions on parole and other benefits of criminal execution. A racist bias was identified, since black people received high risk scores. One of the reasons for that is the evaluative criteria, among which there were items such as the defendant's neighborhood, with the attribution of higher scores to neighborhoods where a higher number of crimes occurred. The point is that these neighborhoods were exactly where people with lower economic power lived and most of them were black people (Angwin; Larson, 2016). Actually, this is a criterion that generates not only racist bias, but also social bias, by which poverty is punished. Note that neither ethnicity nor social class are factors that depend on the individual's will or choice, which are indispensable requirements for the subject's accountability for any commissive or omissive act, according to any legal branch, both in public and private law.

In summary, AI does not evaluate reality, but works with the reality evaluated by its developers, because they are the ones who choose the data that will compose AI's database. What AI does is the "treatment" of these data, that is, AI crosses and combines them, attributes weights to them, establishes implication and inference relations among them, and from these operations, AI offers results. In lawsuits, these results are judicial decisions. If the developer's assessments are marked by cognitive biases, their automatic reproduction results in the *reinforcement* and potentiation of human biases, with the *exponential amplification* of social prejudices. In addition, from the reproduction of what is already established, the *status quo* is maintained, with the perpetuation of the values and parameters of the *past* for the resolution of demands in the *present*. That is, the present is regulated by (biased) parameters of the past.

Finally, add to this the fact that when AI systems with algorithmic biases are used by the Public Powers, that potentialization of human biases turns into the *institutionalization* of those prejudices, that is, the *officialization* of discriminatory treatment, in short, the *legalization of the illegal* (Toledo, 2021a).[1100]

3. Proposals for the use of ai in judicial decision making

The situations problematized above deserve more dedicated approaches, but they seem enough to show that the use of AI in judicial decision making must be critically assessed, due to the concrete risks of violation to human rights, to fundamental rights and to the values and principles that rule the Democratic Legal State.

An immediate measure towards the solution of those problems is the *regulation* of AI, establishing *principles* that guide its *development* and *use* according to parameters of transparency, certainty, accountability, traceability, impartiality, democratic values, human rights, and fundamental rights.

In this sense, Brazil is currently working on the elaboration of a *Regulatory Framework for Artificial Intelligence*. A commission of jurists (CJSUBIA) was established in February/2022, and meetings have already happened for the debate of three Bills related to AI (PLs. 5.051/2019, 21/2020, 872/2021), which have been in the Senate since 2019. The aim of this commission is the formulation of a single substitutive normative text, with principles, rules, guidelines and

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[1100] It should be pointed out that combating algorithmic biases requires, in any case, the knowledge of the data used. In the Brazilian Judiciary, for example, only 4% of these data are publicly available and can be reviewed. This lack of access to data prevents the correction of biases, leading not only to their permanence, but to their potentialization by the AI program used.

foundations to regulate the development and application of AI in Brazil. The bills under discussion have a strong foundation in international standards such as the Montreal Declaration (2018) and the European Charter on the Use of AI in the Judicial Systems and their Environment (2018).

Although proposals that contribute to the resolution of the highlighted issues related to the use of AI in judicial decision making are under investigation by the ongoing research, some suggestions can certainly be mentioned:

(a)   opening this discussion to the participation of representativeness of legal professional categories and of the organized civil society, allowing a wide public debate on the use of AI in judicial decisions;

(b)   carrying out external audits on the AI, facing the problems of lack of transparency and biases. For this purpose, it is essential to enable the access to AI information and results;

(c)   official information to the parties of the lawsuit about the use of AI in the data processing and in the decision;

(d)   providing information to the parties about the AI used in the lawsuit and opening the possibility for them to assess and say whether they agree or disagree with the activity. If a party does not consent, the procedure to be adopted may be, by analogy, the same applied to repetitive RE[1101] and special appeals (art. 1.037, §§ 8 to 13, of the Brazilian Civil Procedure Code). This article provides that the party informs the reasons for the distinction of his/her case in light of the classification operated by the machine, requesting that his/her case be detached for trial by humans (Pessoa, in press);

(e)   opening the possibility for the parties to file a request for nullity or review of the judicial decision made by AI, in the event of lack of prior knowledge and consent to the use of AI in it;[1102]

(f)   uniformization of the AI employed by Brazilian courts through the CNJ, in order to promote the identification and the resolution of problems in a more dynamic way than it would occur in the case of use of 27 different systems in the national Judiciary.

It should be noted that the propositions offered do not exhaust techniques, tools, and other possibilities for addressing the problems related to the use of AI in judicial decision making.

Concluding remarks

There are unquestionable advantages brought about by the computerization and the current implementation of AI in the judicial structure, such as the gain in *celerity* and *efficiency*. However, these parameters should not be taken isolatedly, nor should they be presented as ends in themselves. In truth, celerity and efficiency are qualities that should be part of the jurisdictional provision, which is presented as a *means* to achieve the *end* that guides the law: the realization of *justice*, value that is internationally normatized in *human rights*, and nationally in *fundamental rights*, whose full exercise only occurs under a *democratic regime*.

In view of the concrete risks of AI decisions - such as the *reproduction* of the *value judgments* of AI developers or the *intensification* of *cognitive biases* involved in the decision-making process - and the structural *incompatibility* between the way AI is processed and the way law is applied, it seems advisable, at least for the time being, not to delegate decision-making functions to AI in the judicial sphere. The study and improvement of AI for decision making should undoubtedly be

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[1101] *Recurso Extraordinário* [Extraordinary Appeal] is a procedural appeal brought before the Brazilian Constitucional Court (*Supremo Tribunal Federal*) for the decision on constitutional issues addressed in lower court decisions.

[1102] It is plausible that trials using AI already occur with a certain frequency in Brazil, since there are reports of the use of AI for the simultaneous decision of 280 cases, with no information on the court's website of whether the parties were notified (TJMG, 2018). The probability that the same behavior has been adopted by other Brazilian courts is high.

continued, but the risks and deficiencies mentioned above show that the current state of the art in the development of AI systems indicates its use only for performing the *bureaucratic* and *repetitive tasks* of *procedural progress* of lawsuits.

The critical considerations exposed herein aim at promoting the debate about the use of AI in judicial decision making, highlighting the need for improvement in the performance of this activity, just as the proposals presented intend to contribute to this improvement.

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