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Judging in the Age of Cyborg Justice

Symbolic Foundations of Judicial Authority against Faceless Adjudication in Brazil

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ABSTRACT

Brazil is among the global leaders in the digital transformation of the judiciary, particularly through the *Justiça 4.0* program, which has driven the adoption of artificial intelligence (AI) in courts. Mapping these initiatives reveals the growing use of large language models (LLMs), including in adjudication-related activities. Against this backdrop, this research examined the limits of AI in judicial decision-making and the viability of adopting robot judges in the future of Justice 4.0. The study concludes that a highly automated model is incompatible with the principles of due process and the natural judge, as developed by the Inter-American Court of Human Rights in cases on judicial anonymity, whose reflections on accountability and liability remain relevant to the current debate. Furthermore, robot judges lack the symbolic legitimacy inherent to the jurisdictional function. Drawing on Dworkin and Bourdieu, it is argued that judicial decisions involve a complex, contextualized, and humanized hermeneutic process whose authority depends on social recognition. While Greek heroic archetypes help illuminate this legitimacy, analogies with indigenous and Afro-Brazilian figures are proposed as more adequate reflections of Latin America's sociopolitical complexities.

Key-words¹: Artificial intelligence; Judicial decision-making; Robot judges; Due process; Natural judge; Judicial legitimacy; Justice 4.0; legal hermeneutics

RESUMO

O Brasil desponta entre as lideranças globais em transformação digital do Judiciário, especialmente com o programa Justiça 4.0, que impulsionou a adoção de inteligência artificial (IA) nas cortes. O mapeamento dessas iniciativas demonstra a crescente utilização de grandes modelos de linguagem (LLMs), inclusive em atividades relacionadas à adjudicação. Diante desse cenário, esta pesquisa investigou os limites da IA na tomada de decisão judicial e a

¹ Key-words were made with Claude (LLM) assistance.

viabilidade da adoção de juízes robôs no futuro da Justiça 4.0. Conclui-se que um modelo de elevada automação é incompatível com os princípios do devido processo legal e do juiz natural, conforme desenvolvidos pela Corte Interamericana de Direitos Humanos em casos sobre anonimato judicial, cujas reflexões sobre accountability e liability permanecem relevantes para o debate atual. Além disso, juízes robôs carecem da legitimidade simbólica inerente à função jurisdicional. À luz de Dworkin e Bourdieu, sustenta-se que a decisão judicial envolve um processo hermenêutico complexo, contextualizado e humanizado, cuja autoridade depende de reconhecimento social. Embora arquétipos heróicos gregos auxiliem na compreensão dessa legitimidade, propõem-se analogias com figuras indígenas e afro-brasileiras, por refletirem de forma mais adequada às complexidades sociopolíticas da América Latina.

Palavras-chave: Inteligência artificial; Decisão judicial; Juízes-robô; Devido processo legal; Juiz natural; Legitimidade judicial; Justiça 4.0; hermenêutica

KOKKUVÕTE

Brasiilia on kohtusüsteemi digitaalse ümberkujundamise globaalsete liidrite hulgas, eelkõige tänu programmile Justiça 4.0, mis on edendanud tehisintellekti (TI) kasutuselevõttu kohtutes. Nende algatuste kaardistamine näitab suurte keelemudelite (LLM-ide) kasvavat kasutamist, sealhulgas kohtuotsustega seotud tegevustes. Sellel taustal uuris käesolev töö TI piiranguid kohtulike otsuste tegemisel ning robotkohtunike kasutuselevõtu teostatavust Justiça 4.0 tulevikus. Järeldatakse, et kõrge automatiseeritusega mudel on vastuolus õiglase menetluse ja loomuliku kohtuniku põhimõtetega, nagu need on välja kujundatud Ameerika inimõiguste kohtus kohtunike anonüümsust käsitlevates asjades, mille arutelud vastutuse ja kohustuste üle jäävad praeguses debatis asjakohaseks. Lisaks puudub robotkohtunikel jurisdiktsioonifunktsioonile omane sümboolne legitiimsus. Dworkini ja Bourdieu käsitlustele

tuginedes väidetakse, et kohtuotsused hõlmavad keerukat, kontekstualiseeritud ja humaniseeritud hermeneutilist protsessi, mille autoriteet sõltub sotsiaalsest tunnustusest. Kuigi Kreeka kangelastegelased aitavad seda legitiimsust mõista, pakutakse analoogiatena välja põlisrahvaste ja afroBrasiilia kujusid, mis peegeldavad Ladina-Ameerika sotsiaalseid ja poliitilisi keerukusi paremini.

Märksõnad: Tehisintellekt; Kohtulik otsustamine; Robotkohtunikud; Õiglane kohtumenetlus; Seaduslik kohtunik (ka: loomulik kohtunik); Kohtuvõimu legitiimsus; Justiits 4.0; õiguslik hermeneutika

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ACRONYMS

ACHPR - African Commission on Human and Peoples' Rights

AgR ARE - Interlocutory Appeal (Internal Panel Review) in an Extraordinary Appeal with Interlocutory Appeal

AI - Artificial Intelligence

API - Application Programming Interface

CNJ - National Council of Justice (Brazil)

COP - Conference of the Parties (United Nations Climate Change Conference)

CRFB - Constitution of the Federative Republic of Brazil

EU - European Union

FGV - Getulio Vargas Foundation

GPT - Generative Pre-trained Transformer

HAI - Stanford Institute for Human-Centered Artificial Intelligence

HC - Habeas Corpus

HRC - Human Rights Court

IACtHR - Inter-American Court of Human Rights

ICCPR - International Covenant on Civil and Political Rights

LGPD - General Law for Personal Data Protection (Brazil)

LLM - Large Language Models

MGI - Ministry of Management and Innovation in Public Services

MOTH - More-Than-Human Life

OAS - Organization of American States

OITJ - Oxford Institute of Technology and Justice

OSCE - Organization for Security and Co-operation in Europe

SP - São Paulo

UDHR - Universal Declaration of Human Rights

UN - United Nations

UNDP - United Nations Development Programme

Ser é ser além do humano. Ser homem não dá certo, ser homem tem sido um constrangimento. O desconhecido nos aguarda, mas sinto que esse desconhecido é uma totalização e será a verdadeira humanização pela qual ansiamos. Estou falando da morte? Não, da vida. Não é um estado de felicidade, é um estado de contato. (Clarice Lispector, 2009, p. 172) — ***Original (Português BR)***

To be is to be beyond the human. Being a man does not work, being a man has been an embarrassment. The unknown awaits us, but I feel that this unknown is a totalization and will be the true humanization for which we long. Am I speaking of death? No, of life. It is not a state of happiness, it is a state of contact. (Clarice Lispector, 2009, p. 172) — ***English Translation***

Olla tähendab olla enamat kui inimene. Inimeseks olemine ei toimi; inimeseks olemine on muutunud ahistuseks. Tundmatu ootab meid, kuid ma tunnen, et see tundmatu on terviklikkus ning sellest saab tõeline inimeseks saamine, mille järele me igatseme. Kas ma räägin surmast? Ei, elust. See ei ole õnne seisund, vaid kokkupuute seisund. (Clarice Lispector, 2009, p. 172, vaba tõlge) — ***Eestikeelne tõlge***

INTRODUCTION. On The Rise In AI Usage By The Judiciary

The 2026 AI Index Report published by the Stanford Institute for Human-Centered Artificial Intelligence [HAI] highlighted the growth of AI capability, which seems to be reaching more people than ever before (HAI, 2026, p. 9), especially in workplace contexts of emerging countries. According to the index, “in 2025, 58% of employees globally reported using AI at work on a semiregular or regular basis, but in India, China, Nigeria, the United Arab Emirates, and Saudi Arabia, the share exceeded 80%” (HAI, 2026, p. 362).

Only last year (2025), we witnessed a global boost in industrial production of frontier models of over 90% that surpass human capabilities, including PhD-level science questions, multimodal reasoning, and competition mathematics. Correspondingly, coding performance rose from 60% to 100% in a single year, and 88% of the organizations now adopt AI into their work. (HAI, 2026, p. 9) In legal practice, these international percentages reverberate in different spheres, both regionally, such as the Interamerican System of Human Rights, and nationally, like the case of Brazil, which will be further explored in this dissertation.

In terms of the regional system of human rights defense, for instance, studies have shown that the deployment of AI by Human Rights Courts (HRCs) are incontrovertible, and “the question is not *if* HRCs will use and deploy AI in their daily operations rather the question is *when*(and by extension *how*) HRCs will do it.” (Llorens, 2025) The Interamerican Court of Human Rights itself has already introduced its own AI platform Themis AI, for systematic organization and automated search of the court’s jurisprudence. (Llorens, 2025)

At domestic legal systems, the AI implementation is usually either formally established through institutional frameworks, or through informal approaches, empirically driven though legal practice. (Llorens, 2025) In Brazil, there seems to be a combination of both. A recent study by the Getulio Vargas Foundation found that nearly half of the judges (49,4%) declare deploying AI tools into their daily tasks in the court (*Fundação Getulio*

Vargas [FGV], 2025, p. 145). Among those, 43,0% indicated rare use of AI at work, 35,3% suggested eventual deployment, 15,2% declared frequent use, and only 6,6% stated constant use of AI. (FGV, 2025, p. 146) This shows an upward trend that, if compared with past indicators, may reveal a constant, progressive, and even natural tendency of adoption of AI systems into daily tasks by the courts, judges and their assistants. This is further propelled by the emergence of institutional projects led by official governance bodies, such as the National Council of Justice's *Justiça 4.0* Program (Justice 4.0), indicating a growing tendency to institutionalize good practices in information technology in the Judiciary. We will explore more of this program and its major assets in the first chapter of this research paper.

There seems to be an upsurge on the reliance on LLMs for judicial work, precisely interceding the judges' routine. A recent survey by Northwestern University (2026) found that over 50% of the responding judges use at least one AI tool in their judicial work, while more than 60% reported using at least one LLM tool in their judicial work:

Researchers found that judges use AI tools mostly for conducting legal research (30%) and reviewing documents (15.5%). When it comes to others in their chambers, judges reported that those individuals also use AI tools mostly for conducting legal research (39.8%) and reviewing documents (16.7%). [...] Approximately 20% of judges formally prohibit AI use, 17.6% discourage but do not formally prohibit AI use and 24.1% of judges have no official policy on AI use. (Northwestern University, 2026)

Evidently, it is now an understatement to say that AI tools guarantee effectiveness to judicial practice and beyond. Considering such timely refinement of these technologies, it wouldn't be unreasonable to suggest the rise of robot judges in the near future — should the legislation allow —, given the progressive implementation of AI tools in the Judiciary and the upward trend of automation of judicial lawsuits. In fact, a similar project already exists in China, in the form of avatar judges, “a human-like virtual avatar that interacts with litigants

and is responsible for receiving cases, answering questions, and collecting information” (Xinhua News Agency, 2019, as cited by Graciano, 2026, p. 287-288). This subject will be explored in the present study in light of the doctrine regarding principles of the natural judge, the fair trial, and the symbolic legitimacy of the judge as a human authority.

On the other hand, despite the huge success in the implementation of new technologies into our daily lives, the concerns about the responsible use of AI rose just as fast as its adoption. Nonetheless, the Stanford HAI Institute stresses that responsibility is not keeping pace with AI’s capability level: “Documented AI incidents rose to 362, up from 233 in 2024. Adding to the challenge, recent research found that improving one responsible AI dimension, such as safety, can degrade another, such as accuracy”. (HAI, 2026, p. 9)

Additionally, the over-reliance on automation processes comes at a price, especially for fundamentally moral legal matters and the symbolic role of judicial agents in today’s society — precisely in terms of the protection of fundamental rights. A responsible management and adoption of AI may require caution to balance its efficiency with the risks that such technology may pose to human rights, precisely when dealing with generative AI. (Llorens, 2025) In other words, AI usage is now nearly inevitable, but this reality instigates questions of ethics and governance for a just and efficient application of such mechanisms, especially in the field of law and human rights.

In this dissertation we argue that the use of AI in the judiciary is not merely a technical or efficiency-related issue, but an ontological question about what it means to judge, and therefore about what makes the protection of human rights possible. Human rights often deal with philosophical questions that are core to the humanity within us: what does it mean to be free, equal and have dignity as a human person? Can a non-human entity ever measure and assess this dimension in a lawsuit, for instance?

In spite of such complex computational questions — like the prospects of its evolving power of discernment —, and anticipating the discussion of whether AI/robots could ever be able to perform sensitive judicial tasks such as sentencing, we defend that the symbolic legitimacy of the human judge is what is actually at stake. This leads to a prior understanding of the fundament behind adjudication processes, especially in a post-colonial context like Brazil and the Americas. Finally, we contend that the human judge should remain as the main actor for rendering judgements in litigations, safekeeping the rule of law and human rights in modern democracies.

Over-delegating crucial sentencing tasks to robots or even human assistants is, in this vein, a failure to safeguard the legitimacy of the judicial system itself, impacting the access to justice, human dignity, and the principle of fair trial, for the reasons that will be discussed in the present study.

Precisely, all of this analysis will be elaborated in the context of Brazil, one of the largest and most developed digital infrastructures in the world. Yet, given the colonial imagery that still influences geopolitics until the present day, it is not rare to face situations where foreign professionals lack interest/knowledge of what is being developed in the Global South.

A few examples of Brazil's digital leadership are: the approval of the Digital Statute on Children and Adolescents, which “places Brazil at the forefront of regulations protecting minors in the digital environment, setting standards that could influence similar legislation in other countries” (Silva Neto, Massa, & Silva, 2025, free translation); the PIX — an instant paying system created by the Central Bank, which consolidated Brazil's global leadership in digital payments and financial innovation (BBC News Brasil, 2026); and the judiciary's project Justice 4.0 (*Justiça 4.0*), object of analysis of the present study.

Justice 4.0 is the gateway towards cyborg justice — a terminology that will be dissected in the first chapter. As an unprecedented digital project with robust governance applied to courts all around the country, the project is centered in digital innovation and implementation of new technologies into the routine work of judges and courts' staff in general. The project introduces a series of innovations and tools that are currently being deployed in various ways, and the following chapters will list, analyze, and assess such processes in the judicial system in Brazil.

Ultimately, taking into account that this research is being developed in an European Master's Program whose curriculum is mostly oriented by the local legal context in human rights, this dissertation aims to spread more knowledge on Brazil's digital infrastructure outside the Americas. In fact, at an institutional level, the European Union already seems to recognize the potential and power of Brazilian digital infrastructure: despite the nearly 2 decades of dialogues, only recently (12th of June, 2026), a Digital Partnership Brazil-EU was formalized, establishing a strategic agreement that includes Brazil into a very restricted group of advanced technology partners, composed by the EU, South Korea, Japan, Singapore, and Canada. (Ministry of Management and Innovation in Public Services [MGI], 2026) Hence, the importance of bringing more knowledge into Europe about its brand new digital partner, Brazil.

According to the MGI (2026), Brazil and Europe had already established a joint agenda in 2025 focused on AI, regulation, corporative technology, digital public services, expansion of the networks and future sixth-generation mobile connectivity technologies. Now, with the reciprocity in data protection guidelines, there is a rise in legal certainty regarding international data transference between both stakeholders, facilitating the exchange of regulatory experiences. One of the main pillars highlighted by the MGI is the cooperation around public digital infrastructure, an area in which Brazil stands out globally for its

leadership and significant progress. According to the Executive Vice-President of the European Commission, Henna Virkkunen:

“Brazil is a key partner of the European Union. As one of the world's largest digital ecosystems and an increasingly influential voice in global technology debates, the country plays an important role in shaping the digital future. This partnership will enable practical cooperation in artificial intelligence, data governance, digital infrastructure, cybersecurity, the protection of our children, and other areas.” (MGI, 2026, free translation)

The Brazilian case-study provides a valuable opportunity to examine the limits of AI use by public authorities, particularly in adjudication. Therefore, in short, this study analyzes the possibility of implementing robot judges within one of the most ambitious digital transformation projects currently underway in the judiciary worldwide: Brazil’s Justice 4.0.

The findings may also contribute to ongoing discussions at the regional level within the European Union, where this research is being conducted, especially in light of the growing cooperation between the EU and Brazil in the field of advanced digital technologies. In this sense, the study seeks to enhance understanding of developments taking place on the other side of the Atlantic, in Latin America's largest economy.

Research Method

This dissertation follows the method of qualitative research of a legal-descriptive and critical nature. The investigation starts with a descriptive documental research on the implementation of various AI tools into the Brazilian judicial system, precisely under the project Justice 4.0, culminating in a map of the main uses of AI for assistantship. Then, it applies an analytical/critical literature review of the risks in deploying generative AI for adjudication. Afterwards, we present a case study, based on the jurisdiction of the

Interamerican Court of Human Rights: under the aegis of conventionality control, we will establish an analogy between faceless judges ruled by the Court and robot judges. Consequently, we anticipate understanding the role of judicial authority for the guarantee of a fair trial in light of the principle of the natural judge. Finally, the study unfolds the importance of hermeneutics in contexts such as Brazil by tracing possible role models for cyborg judges rooted in Greek, Afro-Brazilian, and Indigenous entities. These imagery comparisons will demonstrate that the symbolic legitimacy of judicial authority remains inherently human, but inserted in a more complex ecosystem when dealing with technologically mediated forms of adjudication.

This dissertation's chapters may reveal themselves as links in a chain, interconnected. Within this logic, the introduction starts with an analysis of the growing application of AI across jurisdictions, which brings light to ethical and philosophical questions that are worth attention in legal practice.

The chapter 1 deepens this reality by allocating it into a specific case-study: a scenario of highly advanced implementation of new technologies in the judiciary, under the auspices of Brazil's Justice 4.0 project. We will map the AI tools that are being implemented, show examples of the extension of their potential and how they provoke the notion of hybridity between humans and machines in what we call *cyborg justice*.

This then leads to chapter 2, where we examine the implications of such technologies in the context of cyborg justice, with careful considerations regarding the overreliance on generative AI for adjudication by judges.

Chapter 3 goes even further to answer the question of what happens if we cross the borderline and reach fully automated adjudication through robot judges. Could Brazil — considering the scenario mapped in chapter 1 — ever target this objective to introduce robot judges into its Justice 4.0 program? To sustain the answer, we analyze how avatar judges are

being carefully implemented in China, and draw a parallel with Latin America's experience with "faceless judges" — anonymous human judges used in past terrorism cases —, arguing that robot judges raise similar legitimacy concerns.

Finally, chapter 4 will explore this so-called legitimacy of the judicial authority, drawing on classic legal theories of Pierre Bourdieu and Ronald Dworkin to raise possible ideas of what an ideal, symbolically legitimate judge would look like. As opposed to Dworkin's classical fiction of the *Hercules judge*, combined with its derivations (Hermes, Jupiter and Jason models of judges), we suggest other revolutionary, decolonial entities that could be used in future research to investigate the role of post-humanistic judges: Curupira, an Indigenous entity who protects the forest, and Exu, an Afro-Brazilian entity who connects the human world with the spiritual dimension.

The concluding remarks close the study by bringing all of the previous ideas together, but suggesting, as an innovation, new pathways for rethinking the practice of hermeneutics and human rights. It reflects on the future of cyborg justice, proposing pathways for improvement to collaborate with a responsible adoption of new technologies into the legal system, concluding in favor of the evolution of cyborg justice under the apex of society's democratic will.

CHAPTER 1. Context: Cyborg Justice in Light of Brazil's Justice 4.0

1.1. The 4.0 Revolution in Brazil

According to the Oxford Institute of Technology and Justice [OITJ] (2025), Brazil is a global leader in AI adoption in criminal justice, with vast coverage of various institutions, from courts to prosecutors, including law enforcement mechanisms and a broad variety of AI systems being either developed or implemented. A few examples are given in the Oxford AI atlas as follows:

Police use platforms like Detecta and satellite-based monitoring, while cities expand facial recognition and integrated surveillance (such as Smart Sampa). Prosecutors rely on systems such as LuminarIA, Jarvis, and video-analysis AI to manage cases and evidence efficiently. Courts deploy over 140 AI tools for case management, legal research, and predictive analysis, including APOIA, ASSIS, and VICTOR. Public Defenders are considering piloting AI for drafting and case review. Judges receive mandatory training on AI use, risks, and biases. (OITJ, 2025)

The Judiciary in Brazil has an extensive and advanced digital infrastructure that culminates in the object of this thesis: the progressive fusion between new technologies and jurists, under a coordinated ecosystem oriented by AI automation through data portability and interoperability, which is giving space for a state-of-the-art vanguard for Latin America.

One of the highlights of the Brazilian AI implementation into the judicial system, as a case-study, is the Program *Justiça 4.0* (Justice 4.0), envisioned by the Brazilian National Council of Justice (CNJ), in collaboration with the UN Development Program (UNDP). The program is an unprecedented umbrella that encompasses 6 main features, spotlighted by FGV (2025, p. 30) as follows:

(i) the 100% Digital Judiciary (Juízo 100% Digital), which enables the fully remote and **exclusively digital processing of cases;** **(ii) the Virtual Service Desk** (Balcão

Virtual), which ensures direct and immediate **assistance** to users of court clerk offices **through videoconferencing**; (iii) **the Digital Platform of the Judiciary** (Plataforma Digital do Poder Judiciário – PDPJ-Br), **which integrates systems**, modules, and microservices with an emphasis on innovation and technological sharing among courts; (iv) the management and public availability of the **Judiciary’s Procedural Data Base (DataJud)**, which is the **official repository of national procedural information**; (v) the implementation of **Codex, a tool for extracting and standardizing procedural data**; and (vi) the development and dissemination of **Sinapses, a cooperative AI platform** used within the Judiciary. (emphasis added, free translation)

The project also displays and interrelates to a series of legal frameworks of the CNJ in the matter of AI and technology. The main rules applicable are the Resolutions CNJ 332/2020 and 615/2025 (also known as *the new milestone for AI in the Judiciary*), CNJ Ordinance No. 270/2025, and the General Data Protection Law (LGPD – Law 13,709/2018). Additionally, one can mention the AI Bill 2338/2023 — known as the Legal Framework for AI — which although is still pending, under a vote at the Congress by the date of this dissertation (June 2026), is the main bill aimed at regulating AI usage in the country. Yet, despite the lack of a general law via the legislature, and by virtue of CNJ’s administrative ruling, the above mentioned *Resolution No. 332/2020* embeds a series of important guidelines on the development and use of AI in the judiciary.

One noticeable feature that seems to be very particular to the Brazilian system in this subject is its influence under the American case of *Loomis v Wisconsin [2016] 881 N.W.2d 749 (Wisconsin Supreme Court)*, which led to the discouragement of the application of predictive AI models in criminal litigations, with very few exceptions. This line of inquiry regarding Brazil’s reservations made for criminal cases reveal an interesting indicator of its

ethical concerns, and the direct impact that such technologies may cause in the life of defendants, distinctively in criminal matters.

This reservation was kept even in spite of the *Resolution No. 615/2025*, responsible for updating and revoking the previous ruling to acknowledge AI's potential role in supporting decision-making. Deliberately, Brazilian Federal Judges seem to choose not to deploy AI tools in the criminal sphere, with safeguards covering areas peripheral to adjudication, and as long as it ultimately favors defendants (OITJ, 2025) — in accordance with the principle *In Dubio Pro Reo*², as well as the jurisprudence of the Superior Court of Justice, in the form of the case of *HABEAS CORPUS (HC)* nº 1059475/SP (2025/0487202-0) of December 2025, single issue n. 0487202-19.2025.3.00.0000³. This decision (STJ's HC n. 1059475/SP) will be further analyzed later in this dissertation.

As for now, the task falls to the analysis of the extension of CNJ's jurisdiction, the evolution of the digitalization/automation process of the Brazilian Judiciary, and the assets and prospects of the Program Justice 4.0.

In a previous study conducted by the author of the present dissertation (Oliveira, 2025), a dataset of international judicial AI programs was investigated and compared with Brazilian *Justiça 4.0*. The study found that there seems to be a lack of scholarly literature that uses a comparative method to examine different countries' projects to tackle AI implementation as part of the Industry 4.0 strategy. Additionally, the study praised *Justiça 4.0* Program for its uniqueness, and underlined the lack of corresponding projects in dimensional aspects:

Overall, while conducting the bibliographic survey and literature review, we observed a clear pattern: **no projects of a similar scale** to the Justice 4.0 Program were found

² This principle suggests that any uncertainty, such as the veracity/accuracy of an AI-produced content, for instance, must be interpreted always in favor of the defendant, precisely in criminal cases.

³ In April 2026, the Superior Court decided on the validity of AI-produced reports, and concluded that such documents cannot be admitted by the court as valid proof in criminal lawsuits.

in the legal field, **due to its multiple overlapping facets and advanced strategic vision**, involving the development, storage, sharing, and implementation of AI tools **within a coordinated network of courts, under a digital governance framework** that is yielding very promising results. (Oliveira, 2026, p. 326, free translation, emphasis added)

Thus, it is uncontroversial that Brazil stands as an especially compelling case study for examining the ongoing, soaring and increasingly promising relationship between legal actors (in this context, judges) and new technologies.

Despite its recent success, the incorporation of technology in the Brazilian Judiciary is, nonetheless, a historical process that started decades ago. According to FGV (2025, p. 23-25), the process of technological implementation in the Brazilian legal system can be divided into three major phases: the digitalization of case records, the virtualization of procedures, and the current phase of automation and use of artificial intelligence.

Since the year of 1970, the Brazilian Judiciary had already started to deploy technology into judicial procedures, though with some limitations, mostly justified by institutional resistance. A year later (1971), one of the main projects of that epoch was designated as “a ‘machine’s relationship with the decision-making process,’ analogous to the role of a court clerk who takes dictation from a judge”. (FGV, 2025, p. 25, free translation)

In time, the legal institutions underwent a great cultural shift and overcame such resistances, witnessing the arrival of an institutional articulation that facilitated software development to perform standardized procedures — hence, marking the automation phase (FGV, 2025, p. 25-26). Along the same line, the Justice 4.0 Program itself has as its main upside the institutional articulation centered on the figure of the CNJ, that evolved from such coordinated policies. This perfectly illustrates the process of automation described in the FGV

report as a development that “affects the political and administrative foundations of the system”, amplifying the access to justice. (FGV, 2025, p. 26-27).

Later, yet twenty years ago, in 2006, Law No. 11,419 formalized the digitization of the judicial process and established the *Diário da Justiça eletrônico* (Electronic Judicial Gazette), which became the official means of publishing judicial decisions, judgments, and court summonses. In 2021, the Resolution No. 420, of September 29, established the framework for the 100% Digital Judiciary, requiring the digitization of the entire body of court case records by no later than December 31, 2025, leading us to the reality we experience today, of a fully digitized legal system in Brazil.

The digitalization and virtualization of the procedures and documentation has brought immeasurable gains: in addition to increased efficiency in judges’ daily work, the broad transparency of electronic proceedings propelled the access to information. Now, proceedings are directly accessible via the internet — including through the Access to Information Law (Lei de Acesso à Informação — LAI — Law No. 12.527/2011)⁴ —, which has contributed to the production of statistical data for public policy based on reliable and verifiable procedural records.

In summary, amounting to what has been mentioned, a few programs and strategies driven by initiatives such as CNJ’s Justice 4.0 deserve the spotlight, and can be listed as follows: (i) PJe (*Processo Judicial Eletrônico* — Electronic Judicial Process System): central system for the digital processing of cases; (ii) PD PJ-Br (*Plataforma Digital do Poder Judiciário* — Digital Platform of the Judiciary): integrates and standardizes court systems; (iii) DataJud (National Judicial Data Base): nationwide database containing procedural data;

⁴ The Access to Information Law (Law No. 12.527/2011) regulates the constitutional right of access to public information in Brazil, based on the legal foundation of the principle of openness and transparency and the LAI. This is overall reinforced by articles 7 and 8: article 7, II of the LAI grants citizens the right to obtain information contained in records or documents produced or accumulated by government agencies or entities, whether or not they are held in public archives; Meanwhile, Article 8 establishes the duty of public agencies to promote, regardless of requests, the disclosure in an easily accessible location, within the scope of their authority, of information of collective or general interest produced or held by them.

(iv) Codex: extracts and standardizes data to feed DataJud and support AI training; (v) Juízo 100% Digital (*100% Digital Judiciary*): fully online proceedings with no physical presence required; (vi) Balcão Virtual (*Virtual Service Desk*): provides assistance through videoconferencing with courts; (vii) Sinapses: shared AI platform across courts; (viii) Tools such as Sisbajud, Renajud, Serasajud, etc.: support tasks such as asset freezing, asset tracing, and enforcement of judicial decisions; (ix) Cálculo Rápido Trabalhista (*Labor Quick Calculation Tool*): supports calculations in labor claims; (x) Interoperability standards (*e-PING* — Brazilian e-Government Interoperability Standards): enable systems to “communicate” with one another; and (xi) Digital certification (*ICP-Brasil* — Brazilian Public Key Infrastructure): ensures legal validity.

1.2. Map of AI Use by the Judiciary in Brazil

Considering the coordinated and proactive action of the Brazilian Judiciary, several technological projects aimed at AI and automation are indeed being developed and/or implemented into the judicial system. According to a recent report conducted by the CNJ in Brazil, there are around 157 AI projects and initiatives in 43 Brazilian courts (Conselho Nacional de Justiça, 2025, p. 18), which can be listed as follows (2025, p. 2):

Table 1: Percentage of AI projects among Brazilian courts

Courts with AI projects	43
Projects in production/regular use	92 (58,6% of all projects)
Projects in the testing/pilot phase	38 (24,2%)
Projects under development	23 (14,7%)
Projects launched in 2024–2025	157 (81,5%)

120 of the 150 projects were aimed at judges, accounting for almost all of the projects identified. (2025, p. 9) Most of the projects are state-level (74,52%) (2025, p. 3), and involve generative AI destined for creating content such as texts, summaries and drafts (82 projects). Other types include predictive/analytic AI for pattern analysis, classification, and forecasting (57 projects), systems that combine generative and predictive functions (17 projects), and other types not specified (13 projects). (2025, p. 5)

Among the main goals of the projects reported by CNJ, speeding up the lawsuit stood apart, with 105 projects declaring this intent, followed by optimizing resources management (60 projects) and automation of repetitive tasks (61 projects). Other minor scopes were highlighted as follows: congestion reduction (55 projects); quality improvement in decisions (51 projects); improvement in citizen services (31 projects); facilitating access to justice (26 projects); and case law standardizing (16 projects). (2025, p. 7)

Moreover, the Council identified specific tasks and problems that the AI solutions are intended to address, classifying them as follows: text or document summarization (leading with 69 projects); classification of documents or cases (59 projects); text generation such as drafts, orders, judgments, etc. (56 projects); conversational assistant or chatbots (45 projects); semantic search (37 projects); named entity recognition (27 projects); OCR — Optical Character Recognition (26 projects); grouping of cases by similarity (24 projects); data analysis and legal metrics (23 projects); and case screening and distribution (19 projects). (2025, p. 7)

Finally, the report organizes the main projects into six categories, illustrating the primary purposes for which the Brazilian judiciary is currently developing and deploying AI:

Group 1 – Administrative and support activities: Solutions focused on resource management (financial, human, and material), administrative management, public service, institutional communication, plain language translation, and support functions.

Group 2 – Procedural workflow automation: Tools for automating case processing and supporting court clerks, including screening, grouping, classification of filings, transcription of hearings, and identification of predatory litigation.

Group 3 – Direct support to judicial activity: Solutions that assist decision-making, such as drafting opinions, analyzing legal filings, summarization, defining disputed issues, headnotes, and legislative research.

Group 4 – Support for consensual dispute resolution methods: Tools for conciliation, mediation, and other consensual mechanisms, including automated negotiation platforms and chatbots for assisted mediation.

Group 5 – Precedent management: Solutions for harmonizing case law, staying related cases, and identifying cases linked to precedents.

Group 6 – Enforcement support: Solutions for enforcement proceedings — judicial, extrajudicial, and tax-related — including automation of asset seizure and asset searches. (2025, p. 8, emphasis added, free translation)

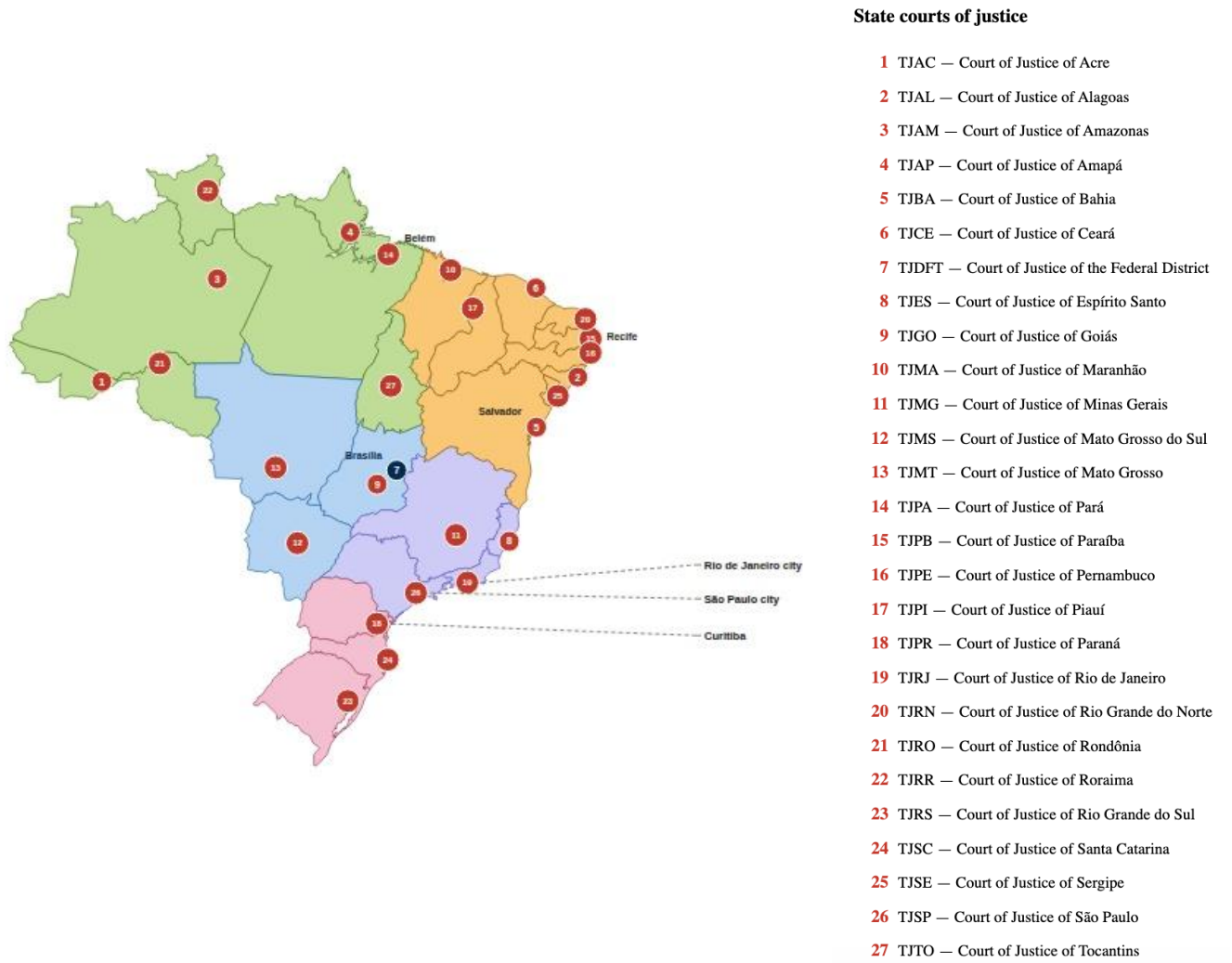
Complementing the data from the CNJ, a study by FGV identified some of the main AI systems currently used in Brazilian courts that employ generative AI. FGV found 66 projects concentrating AI solutions aimed at lawsuits automation and executive support to judges. Additionally, 45 projects were designated for drafting decisions and sentencing, 22 gathered tools that target administrative activities, and 8 projects were created for conciliation, mostly in the Labor Justice. (FGV, 2025, p. 93)

In qualitative terms⁵, we can mention 14 systems currently implemented at Supreme Federal Court (STF), Superior Court of Justice (STJ), Superior Council of Labor Justice (CSJT), Regional Labor Court of the 4th Region (TRT-4), Federal Regional Court of the 2nd Region (TRF-2), Court of Justice of the State of Minas Gerais (TJMG), Court of Justice of the State of Rio de Janeiro (TJRJ), and the Court of Justice of the State of Rio Grande do Sul

⁵ More projects are listed on *Appendix 4*.

(TJRS). (2025, p. 155) For elucidating this system⁶, see below two pictures with the division of judicial powers across Brazilian states⁷:

Figure 1: Map of State Courts of Justice



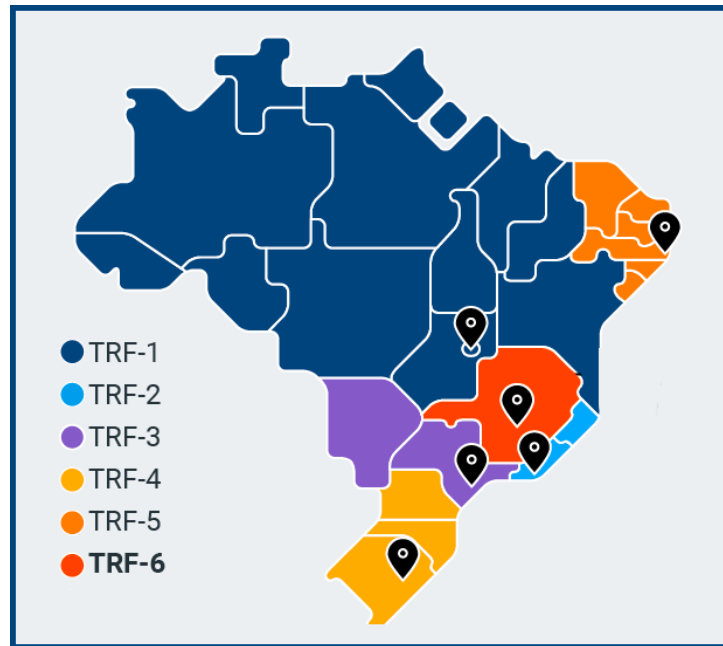
Developed by the author through Claude AI-assisted generation.

Figure 2: Map of Federal Regional Courts — *Tribunais Regionais Federais, TRFs*⁸

⁶ For more explanation of the Brazilian System, see picture on *Appendix 2* of this dissertation.

⁷ Brazil has 27 federative units, composed of 26 states and the Federal District, each with its own court and jurisdiction, all subject to the jurisdictional umbrella of the National Council of Justice, but with different budgets and, inevitably, influenced by different cultures.

⁸ “The Federal Regional Tribunals review appeals of lower court cases and have first instance jurisdiction over cases of national interest. There are six judicial regions: Brasília (1st Region), Rio de Janeiro (2nd Region), São



Federal Judicial Center, n.d.

As we know, most current projects within the judiciary involve generative AI (Conselho Nacional de Justiça, 2025, p. 5), which justifies an analysis of the impact of this type of project on the judge's decision-making process, particularly. Based on FGV's collected data (2025, p. 142–195), the table provided in *Appendix 1* of this dissertation seeks to summarize the main points of attention of these tools at different jurisdictional levels and across different states of the federation.

1.3. The Era of Cyborg Judges

Brazil elucidates a global phenomenon: the post-humanistic era that is now challenging the very traditional pillars of our institutions. We might have become true cyborgs ourselves, given our near inseparability from the technologies that now permeate our daily lives: cell phones, computers, the internet, AI, and so on — as stated by Bostrom:

What we are is not a function solely of our DNA but also of our technological and social context. Human nature in this broader sense is dynamic, partially human-made, and improvable. Our current extended phenotypes (and the lives that we lead) are

Paulo (3rd Region), Porto Alegre (4th Region), Recife (5th Region) and Belo Horizonte (6th Region)". (Federal Judicial Center, n.d.)

markedly different from those of our hunter-gatherer ancestors. We read and write; we wear clothes; we live in cities; we earn money and buy food from the supermarket; we call people on the telephone, watch television, read newspapers, drive cars, file taxes, vote in national elections; women give birth in hospitals; life-expectancy is three times longer than in the Pleistocene... In the eyes of a hunter-gatherer, we might already appear “posthuman”. (Bostrom 2005, p. 203)

Bostrom's comparison with the so-called "hunter-gatherer ancestor" is highly colonial and prejudiced, since he assumes that this type of lifestyle belongs to a distant, less civilized past when set against the modern life of a person who "drives cars" and "files taxes," thereby disregarding the validity of traditional communities and their distinct cosmovisions. Nevertheless, despite this problematic framing, his theory successfully captures the shift toward our cyborg-like existence in urban societies.

It is not the goal of this thesis to explore decolonial theories behind the post-colonial approach to human development. However, it is worth touching briefly on countercurrent theories like the *more-than-human* vision developed by the MOTH⁹ initiative at New York University. Likewise, we will be dissecting Donna Haraway's Cyborg Manifesto, applied to the reality of cyborg justice defended herein — defined by Crootof (2019, p. 235) as a “hybrid human–AI judicial systems that would attempt to marry the best of human and machine decisionmaking and minimize the drawbacks of both”.¹⁰

David Abram (2024, p. 314) describes *more-than-human* ecosystems as:

a realm that manifestly includes human culture, with all our creativity, our arts, and our technology, but which also (necessarily) *exceeds* human culture. [...] the realm of

⁹ More-than-human life program. For more information: <https://mothlife.org/>

¹⁰ The definition is further described by the author as: “‘hybrid human– AI judicial systems.’ They can be conceptualized generally as augmented decisionmaking systems, in which an AI assists a human judge as a kind of career law clerk, [...] or as a tiered system, in which AIs address low-level complaints and cases, which can then be appealed to a human reviewer [...] Of course, these structures could be combined: An AI could make an initial assessment, which could then be appealed to an AI-assisted human decisionmaker.” (Crootof, 2019, p. 235, fn. 14)

humankind (with our culture and technology) is a subset within a larger set—that the *human world* is necessarily embedded within, permeated by, and indeed dependent upon the *more-than-human world* that exceeds it.

Note that, according to this theory, one may argue that new technologies could be included as part of what exceeds human culture, becoming part of a broader, integrated ecosystem of life. This integration is what post-humanist studies portray, as they seek to decentralize the understanding of the world as a system opposed to anthropocentrism. Based on different standards to measure the values within this system, human identity, ethics, and the moral compass expand to encompass other non-human lives/phenomena.

Now, with the advent of new technologies, specialists that envisioned the MOTH movement, such as Rodríguez-Garavito, stress that the interception between us and new technologies is inviting humans to better understand our own kind, focusing on what makes us distinctly human on the edge of higher cognition benchmarks. (Rodríguez-Garavito, 2024, p. 46-47)

Communication is one of the key aspects of this equation, either through human, animal, spiritual or artificial language formats. Studies show that, historically, language — alongside intelligence, sentience, and consciousness — has occupied the center of our reasoning behind rights as a human faculty, exclusively revealing our advantage in the hierarchy of the ecosystem (including more-than-human beings). (2024, p. 31)

it was widely supposed that having language was the mark of reason and therefore the ground for having rights, and whether or not a creature used language was regarded as an obvious fact. (Gualinga Montalvo & Baquero Díaz, 2024, p. 98)

Currently, AI and new technologies introduce a different type of language and communication, in the form of binary codes, processed by advanced mathematical and statistical models (such as the LLMs, behind mainstream chatbots in today's society — i.e.

ChatGPT, Claude, Gemini, etc). As humans become cyborgs, we begin to either interact with, learn about, and even master this different type of language; likewise, as judges implement technology into their work, they face such models and communicate with various chatbots on a daily basis.

Therefore, aren't human beings more than ready to expand towards a more organic, interconnected ecosystem of information, lives and more-than-human phenomena through communication? This is consistent with Rodríguez-Garavito's (2024, p. 32) position, who states that our notion of intelligence depends on the different branches of theory that study this phenomenon, raising the challenge against the oversimplification behind binary/dualistic approaches.

Hence, one could question if we are becoming more-than-human ourselves, in the form of our cyborg condition, defying traditional concepts of intelligence and communication that society had taken for granted before the Technology Revolution.

Donna Haraway seems to defend that humans are, indeed, cyborgs, but with safeguards caveats from a feminist perspective, assuming that this condition is necessarily political and can be manipulated for either the common wealth or to dastardly reinforce injustices and gender inequalities¹¹. Similar to the *more-than-human* theory, she explains how humans can fuse with other animals and machines to go beyond the western logos of the “man”. (Haraway, 2013, p. 81). Even language, as mentioned before in the theories of Rodríguez-Garavito, is similarly understood by Donna Haraway as a political fight and the cyborg's technology (in terms of writing) against the informatics of domination, as well as the translation of a unique code into the perfect communication or form. (2013, p. 88 & 98)

¹¹ Since it falls outside the scope of this thesis, the theme of feminism within cyborg justice should be further investigated in future researches, including their scope — Haraway stresses the urgency in developing a socialist-feminist politics driven towards science, and how feminist stories about cyborgs have the purpose of recodifying communication/intelligence against traditional power and control (2013, p. 81 & 87).

According to Haraway (2013, p. 102, footnote 5) the post-modernism theory can be understood in light of the lessons of Fredric Jameson, who defined this phenomenon in 1984 as a fatal cultural category. Within this era, humans transgress to the cyborg form, a cyber, hybrid (incl. the sum animal + human) and social-fictional organism that lives within natural and fabricated worlds, simultaneously. (2013, p. 36) This emerges as attached to the high-tech culture, which contests dualisms, creating a gray area between body and mind, human and machine, biology and coding/communication systems, organic and technical — and these coexist against any ontology of separation (2013, p. 91)

Cyborgs can be, nevertheless, problematic, especially taking into account the major role of big techs in permeating our lives through their products and services, among broader virtual social networks and the oversharing of data via API (Application Programming Interface), for instance. These companies' biotechnologies/communication technologies subject our condition — since it is now intrinsically hybrid, merged with technology — to private utility and commercial interests that instrumentalize our vision over our body, imposing new social relations and planetary control (2013, p. 46, 64 & 74).

In like manner, Crotoft (2019, 246) argues that this political question can also be applied to justice, when systems replicate the private idea behind the practice of law, replacing the “law of the state” for the industrial “law of the firm”, as companies replace state actors through technology.

On the other hand, it can also offer the opportunity to build socio-somatic realities where humans, animals and machines establish tight relationships, forming contradictory and partial identities permanently. Both visions are equally valid and coexist, allowing for political transformations (Haraway, 2013, p. 46)

If the machines are now a somatic aspect of human kind (2013, p. 96-97), how can a legal system be designed to optimize the complementary strengths of human and machine

intelligence while accounting for the risks of privatizing adjudicative processes and distorting the legitimate legal mechanisms through which society is governed? Crootoof (2019, p. 242-243) answers this question by stating the role of cyborg justice, precisely:

A legal system designed to take advantage of the strengths of both human beings and algorithms to efficiently increase access to justice with a base level of consistency, while preserving the flexibility to address unusual and extenuating circumstances. [...] And human-machine teaming has enabled “centaur” chess teams to perform better than human or machine players alone. Similarly, teaming human judges with AI assistants may free human judges to be more thoughtful, just, and humane.

However, we cannot mistake AI for human intelligence: although both may be merged together in the form of a cyborg, there are fundamental differences that still compose a heterogeneous system that can be distinguished in computational terms of intelligence, scalability and judicial activity. Instead of replicating human reasoning in its full biocomplexity, today's AI tools operate on the basis of patterns identified in data, following pre-determined rules and the knowledge embedded by human developers — that is, their output remains tied to, and constrained by, this human-originated input. (Crootoof, 2019, p. 237-238)

It is true, nonetheless, that some AI features may be already questioning this previous statement, given its ability to self-improve and the emergence of synthetic data (created artificially by the AI system to train itself). However, such mechanisms are still incipient and, even so, the cyborg system remains heterogeneous and the human element is still distinct — take emotional response and the interpretation of sensitive sociocultural nuances as an example, which will be further discussed in this dissertation to argue against the overreliance on AI for sentencing and interpretation.

Similarly to the paradox and political ambiguity introduced by Donna Haraway, Crotoft (2019, 233-244) argues that our hybrid condition maximizes our strengths as much as it magnifies our drawbacks. As humans collaborate with machines, especially in the field of law, trust is put in jeopardy. As an example, if there is overtrust in AI systems, humans may “endorse the algorithm’s conclusion in the face of contradictory evidence or an obviously unfair result, the human in the loop isn’t performing their needed role”. (2019, 243-244)

In this regard and, again, touching on the centrality of language in this discussion, there must be some calibration of trust by the interface and by design, taking into account the imperfections behind translating the communication between humans and machines. (2019, 244) Such key questions hereby presented will be further dissected in the following chapters of the present work.

CHAPTER 2. The Implications of Deploying AI Tools in Judicial Decision-Making

2.1. The Gap Between Statistical Patterns and Contextual Justice

Before exploring the legal and ethical questions of the adoption of such technological mechanisms into legal practice, we need to understand what AI is and how it works in this field. We will focus on generative AI and LLMs, given its prevalence in the work of Brazilian courts, as demonstrated in the previous chapter.

“LLMs are sophisticated, multi-layer artificial neural networks with billions of connections whose weights are trained on hundreds of billions of words from various texts, including natural language conversations between humans.” (Aru & Shine, 2023, p. 1008) This type of AI usually works through a network of algorithms¹², fed by binary codes and highly abstract information that lack robust contact with the non-digital world. (Aru & Shine, 2023, p. 1010) They use *deep learning* and *machine learning* — the first uses deep neural networks for self-improvement of the machine (Sarker, 2021, as cited by Anderson Junior & Soares, 2025, p. 3), and the second learns and adapts to data inputs without specific programming to accomplish specific tasks (Mahesh, 2020, as cited by Anderson Junior & Soares, 2025, p. 3).

Given its artificial nature, this promising yet limited program may not reflect the complexity of the human experience in the natural world. Aru & Shine (2023) follow this direction, stating that AI would not experience human-like consciousness until it is possible to develop complex computations, beyond the architectural impasses that we already seem to decipher in today's science.

¹² Defined by Müller (2025, p. 45) as: “a mechanical step-by-step procedure that will lead to a result once carried out completely”

Furthermore, there seems to be a mismatch between such technologies and our phenomenological perception/experience of the world around us. But if this is true, on what basis could a robot justify that such limitations do not interfere with its reading of the social world when making decisions before human-centered dilemmas? It remains questionable whether this would be feasible in the first place. Part of the answer may lie in how AI systems fail to relate to the world they operate in, a tension that becomes clearer through the distinction between syntax and semantics in computational systems.

According to Müller (2025, p. 50), after studying the Chinese Experiment by John Searle (“Minds, Brains and Programs”) and using this scientist’s terminology, “a computer has *only syntax* and *no semantics*; the symbols in a computer lack the intentionality (directedness) that human language use has.” The lack of a causal connection between the word and the world is what could be at stake (Müller, 2025, p. 49), and we argue ahead that this liaison process can be done properly by a human judge through hermeneutics, as a symbolic and legitimate representative of a democratic society’s will.

Furthermore, the debate of AI sentencing also leans towards principles of accountability and liability. In this vein, Müller (2025, p. 55) is categorical when analyzing AI moral status and agency:

The upshot of this debate is that the function of a notion of free will for agency in AI or humans is to allow personal *responsibility*, not to determine *causation*. The real question is: What are the conditions such that an agent is *responsible* for their actions and *deserves* being praised or blamed for them.

The author states an absence of responsibility in AI agents, which show gaps that should guide the level of power attribution that humans deploy to such systems for making particular decisions on their behalf.

Within this framework, AI should be perceived as a *tool* with *instrumental intelligence*, whose goals and objectives should be provided by humans. Such goals have an intrinsic relation to a subjectivity dimension of human beings, and become a requirement for choice and responsibility. Therefore, considering that AI lacks the reflection capacity and depend on human efforts to be fed with those respective goals, “AI systems would not be moral agents and there could be no ‘machine ethics’ that deserves the name”. (Müller, 2025, p. 58)

Moreover, as stated by Tõnu Viik (2020) on the origin of the terminology *robot* itself, it is “Derived from the old Slavonic word *rabota* — work, labor, a robot is a self-moving entity that is made for working.” Thus, he defends the idea that such technology’s original scope, starting with the design, points to the fulfilment of instrumental labor activities through their embodied performance.

However, as well-established by Thay Graciano (2026, p. 284), even when conceived as a mere labor tool for the legal practice, the use of such technologies should follow a clear *principle of functional differentiation*, through which the jurists can adapt tech solutions to the local context, in accordance with local constitutional provisions (2026, p. 303-304). In this regard, Graciano stresses the cruciality in preserving the human judge as the last final authority, preserving the possibility of human accountability. Hence, the urge for transparency, interpretability, and a robust technical governance. She rejects robot judges and criminal sentencing algorithms, in order to make space for litigation supervision systems and restrict constitutional risk assessment. (Graciano, 2016, p. 304)

Still on the importance of abiding to constitutional provisions, Salmoria & Junior (2025, p. 197) highlight that a rigid algorithmic approach to the observation of the norms result in a decontextualized application of the law, misaligned with core constitutional principles such as equity, dignity and justice. The authors defend the existence of a

psychology of prediction, implying the failure of the algorithms to critically analyze a given situation for a genuine legal, flexible and contextualized response — a response that could be, using Graciano’s terminology above, better localized under the principle of *functional differentiation*.

If otherwise, this may lead to what Vargas & Salomão (2022) define as an automated judicial conservatism, when law can’t keep up with social innovations and the mutant character of the legal apparatus itself — since AI systems tend to prioritize the dominant data in their training sets, carrying risks of misinformation, and forming a thin line between hallucination and innovation.

Thereupon, legislation should be conceived as dynamic and historically situated, and its interpretation requires *differentiation*, combined with *historicity* — the latter being a concept defended by Vilas Boas Filho (2010). The author stresses that dogmatics is tied to an amalgam of historical factors, which attributes a polysemic character to the interpretation of the norm — that is, there is a condensation of semantics that points to different meanings. This relates to the theory of Müller (2025), showing the withstanding character of human intentionality, going beyond the word to connect the meaning to the world.

Here arises the need for a historically localized and polysemic approach by the judge: “to indicate that a historical approach is indispensable in order to adequately delimit a concept that is often hypostatized as a given and not as something historically constructed” (Villas Boas Filho, 2010, p. 28, free translation).

Unlike human judges, LLMs are nothing more than systems trained from the processing of large amounts of data, which results in translating concepts in a logical and, not rarely, biased manner, increasing the possibility of hypostatizing these more complex concepts that should be historically localized. The continuity of concepts is a central factor in

controlling decidability to accompany the evolutionary and plural social reality (Oliveira, 2023, p. 42).

The innovation of law, in this sense, is made possible by decidability oriented by the historical continuity of concepts through a complex process of calibration, whose nuances are socially sensitive and require careful analysis, especially in cases of human rights where subjective and originally philosophical concepts play a central role in legal protection. The decisions of the human judge, therefore, serve a purpose of calibration based on a “generalization” that stems from dogmatics, which merely represents what is legally possible (da Silva e Costa, 2010).

As dogmatics evolves, old concepts undergo radical changes in content (Villas Bôas Filho, 2010, p. 48). The analytic doctrine appears to support innovations in concept when applying law through interpretation, yet with certain jurisprudential limitations, which highlights the important role of history-oriented approaches by the judge through both hermeneutics and the social function of dogmatics in human rights cases. (Oliveira, 2023, p. 43)

In short, this topic explains how LLMs operate through broad, limited, and often biased databases, reproducing patterns extracted from previous textual material. However, legal norms are not ends in themselves, but generalized instruments oriented toward a social function within a concrete reality. For this reason, judicial activity cannot be reduced to the mere reproduction of preexisting textual standards, since the human judge interprets, through semantics, a historically localized chain of meanings in order to promote justice in concrete cases. In this sense, the decision-making process necessarily involves a degree of innovation and adaptation, calibrated by fundamental and constitutional provisions that change according to social, political, and historical transformations. This dynamic successively reinforces the

need for a functional differentiation capable of contextualizing legal dogmatics within a specific society and its particular circumstances and constitutional provisions.

2.2. Risks and Limitations of AI in Legal Decision-Making

Notwithstanding, in terms of functional differentiation, Noberto Bobbio (2007, p. 53) defends that there seems to be, by tradition, a preference in the theory of law for structuralistic approaches over functionalism. We propose that this legal heritage may have led to the dilemmas we are facing today with AI and digital rights¹³, where jurists and general legal theorists focus more on unveiling how law is/could be made instead of what ends could be accomplished through law as a societal instrument for transformation. Thus, through the prism of functionalism:

The function of law in society is no longer to serve a specific end (where the functionalist approach to law is reduced to identifying what the specific end of law is), but rather to be a useful instrument for achieving the most varied ends. Kelsen never tires of repeating that law is not an end, but a means. Precisely as a means, it has its function: to allow the attainment of those ends that cannot be achieved through other forms of social control. What these ends ultimately are is something that varies from one society to another (Noberto Bobbio, 2007, p. 57)

Taking Bobbio's theory into account, we ought to think of law as a useful instrument for achieving varied ends. In this sense, it should adapt to different contexts and different societies, reflecting localized historicities for a plural approach to the dogmatic, but also aiming for the future.

Specialists show, however and by contrast, that AI goes in the opposite direction: it homogenizes the output, and may narrow down these ends. A recent study published by the National Academy of Sciences in partnership with Oxford University Press (via PNAS

¹³ Rights applied to the internet and technology.

Nexus) tested individual originality through creativity evaluations with a random sample from the Prolific platform¹⁴. The research found that “LLM responses mirror other LL responses far more than humans do other humans, even after controlling for key confounding variables” (Wenger & Kenett, 2026, *abstract*).

Human creativity — “the ability to generate ideas that are both novel and useful” (Wenger & Kenett, 2026) — is also potentially related to our originality, and outsourcing human creativity to AI could undermine our creative potential, leading to unintended consequences that demand further scrutiny (Wenger & Kenett, 2026):

Doshi and Hauser (39) found that writers who used GPT-4 as a creativity support tool produced more creative stories than humans working alone, but that the stories from writers who collaborated with GPT-4 were more similar to each other than were stories from human writers, thus more homogeneous. Similarly, Moon et al. (40) compared college essays written by humans and GPT models and found that LLM-authored essays contributed fewer new ideas and were more homogeneous than human-authored essays. This phenomenon of LLM-driven content homogenization appears across domains—in research idea generation (41), essay writing (40), survey responses (42), creative ideation (43), and art (44)—although recent work argues such homogenization may be context-dependent (45). (Wenger & Kenett, 2026)

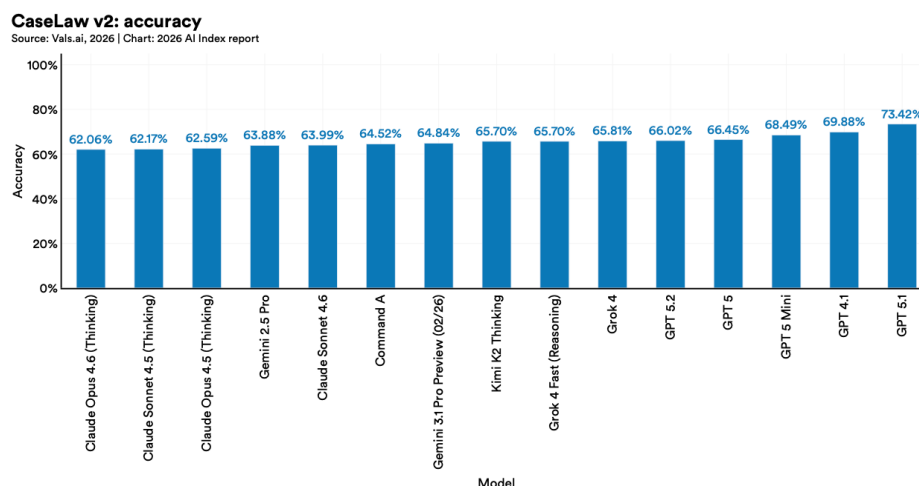
Applied to the context of the courts, we can infer that overreliance on AI for sentencing by either a human or a robot judge may lead to the replication of the same decision patterns despite its disregard to the social/contextual nuances of different cases.

In the legal context, a study from Vals AI (2026) partnering with Jurisage analyzed recent Canadian court decisions by testing reasoning capabilities of AI tools, precisely when they are asked to perform tasks based on legal documentation. The researchers highlight that

¹⁴ More details and the test questions can be found in the study’s supplementary information: <https://academic.oup.com/pnasnexus/article/5/3/pgag042/8529001#supplementary-data>

the analysis of legal documents offer specific challenges for AI chatbots as a result of the complexity of the language adopted in legal cases, requiring precise and sophisticated interpretation from the models. Although LLM models performed generally well on the first CaseLaw benchmark conducted by the Vals AI, CaseLaw v2 differed and showed accuracy below 80%. (Vals AI, 2026) Stanford HAI specialists explain that this happens since LLMs “tend to lean on general knowledge, rather than grounding their answers in the supplied documents, even when explicitly instructed to do so.” (HAI, 2026, p. 110) Out of all the chatbots analyzed, the top 17 models fall between 62% and 66% of accuracy (GPT-5.1 and GPT 4.1 excluded) — as illustrated below. (2026, p. 110)

Figure 3: Graph of LLMs accuracy



HAI, 2026, p. 110

In this same regard, Graciano (2026, p. 303) stresses that the ambiguity between mechanical judicial activities and other contextual ones, which deal with greater case-specific nuances, reveals that the core of the problem is not merely about ensuring the efficiency of the judicial apparatus, but about the very nature of judicial authority and analysis itself. And, as a ripple effect, it puts fundamental rights at stake, since questions of freedom, justice, and social impact cannot be undermined nor reduced to formulas for AI processing (Graciano, 2026, p. 301-303).

It is not presumed that human judges are inherently more empathetic or less biased than machines, but they are institutionally accountable in ways that algorithms are not: a judge who disregards the law or social norms can be reviewed, appealed, or disciplined through established mechanisms. Moreover, judges remain better positioned to adapt decisions to evolving social priorities in domains where legal rules intersect with contested social values. (Graciano, 2026, p. 302)

The risks of replacing this institutional accountability with algorithmic processing become evident in practice when we look at AI hallucination incidents reported lately, which appear to be increasing in number. According to the AI Hallucination Cases Database (Charlotin, n.d.), the United States leads the number of litigation cases involving AI hallucinations worldwide (468 cases), far surpassing the second-highest country, Canada, with 50 cases. In Latin America, Brazil leads with 9 cases. These numbers illustrate, in practical terms, the very tension highlighted by Graciano: unlike a human judge, whose errors can be reviewed, appealed, or disciplined, AI hallucinations expose a structural absence of comparable accountability/liability mechanisms, raising pressing questions about AI's moral status and responsibility in light of its propensity to err.

Additionally, the lack of transparency for the difficulty in guaranteeing explicability of the decision-making process is also one of the main concerns. Combined with that are the risks of hallucination, misinterpretation of data, or what Myers (2026) describes as “delusional spirals”, when AI amplifies the users’ distorted beliefs and motivations. This is mostly given our lack of knowledge and misperceptions regarding the output, mistaking it for sentience, predominantly due to AI’s affectionate interpersonal language. Such spirals of communication result from the training: AI chatbots are trained to align with our ideas and interests, to serve as good assistants. “AI has been programmed to please and to validate.

When combined with AI's well-known tendency to hallucinate, it adds up to a potentially toxic formula.” (Myers, 2026)

Given the likelihood that hallucinations may contribute to violations, coupled with the absence of adequate liability regimes in much of the world, it is important to promote mechanisms that forbid retroactivity effects that would cause the perpetuation of human rights violations, under the idea of a *ratchet effect*. This terminology implies what Vargas & Salomão (2022) explain as the prohibition of any regressions on the protection of fundamental rights, even (and more particularly) in the context of automation and the pursuit of quantitative efficiency through the deployment of artificial intelligence in the works of judicial actors:

The unchecked pursuit of automation and quantitative efficiency through artificial intelligence, with adjudication at an industrial scale and the use of conclusions derived from secret algorithms as the basis for judicial reasoning, may give rise to the so-called “ratchet effect”. **There is a risk of backsliding in the current status of adversarial proceedings, with a return to a stage in which the parties were merely recipients of the judicial decision.** (emphasis added)

As illustrated in the excerpt emphasized in the epigraph, over-automated decision may backslide to an unfair modality where defendants become mere recipients, posing risks to transparency and the principle of a fair trial — as enshrined in Article 10 of the 1948 Universal Declaration of Human Rights (UDHR) (1948).

That does not mean, however, that AI should not be used by the legal authorities for sentencing. There is enough evidence of its efficiency, especially in contexts of an overloaded judicial system, under an exponential suing trend in today's society¹⁵. AI mechanisms can, demonstrably, increase efficiency despite the risks, a point developed further below.

¹⁵ According to Toranzo (2025), judicialization continues to rise in Brazil, with 35 million new lawsuits registered only in 2023.

Various studies have proven how AI can be consistent, cheaper, faster, scalable, and somewhat more impartial than human workforce — disconsidering cases of bias, evidently —, which could potentially lead to a fair trial and better access to justice (Crootof, 2019, p. 237). We contend, therefore, that such tools should be applied to the practice of justice, if combined with the purview of the human judge and their legitimate authority, as well as clear human rights dispositions, for reasons that will be further explored in the next chapters.

In fact, an FGV survey also highlights similar conclusions based on the judges' motivation in adopting AI automation systems for their judicial toil. According to the institution (FGV, 2025, p. 94), efficiency and agility are the top motivation factors, which proves the successful capability of this technology in terms of optimizing time and expediting proceedings. The following factors under the spotlight praise the consistency and precision over repetitive tasks, promoting modernization and improving the services offered by the court, consequently.

This study was conducted in Brazilian courts, and additional data shows that, unlike the interpretative, accountability and creativity concerns formerly mentioned, the main challenges found in the Brazilian Judiciary are rather technical and infrastructural, followed by the quality and availability of data. However, among many other concerns listed by CNJ, explicability of AI decisions is still listed (CNJ, 2025, p. 16), reinforcing the need for ethical and regulatory approaches to the integration of digital assistantship into the judiciary.

In terms of this explicability in cyborg justice, Crootof (2019, p. 241-242) stresses how challenging the activity of tracking an algorithm's reasoning can be, depending on its architecture, obstructing any attempts to locate the exact point where errors may have occurred. And if AI solutions can be highly scalable, so too can be their eventual errors.

Advanced AI programs can be even more complex and challenging, especially taking into account examples of highly complex features of new technologies that escape human

future predictability: i.e. the advent of synthetic data; the emergence of agentic AI systems capable of autonomously chaining decisions across multiple tasks without human supervision at each step; and the growing use of large multimodal models that simultaneously process text, images, audio, and structured data in ways that produce outputs whose internal logic remains opaque even to their own developers.

There may be solutions to the lack of explainability such as the verification of purpose specification or testing the system to assess how input affects outputs. However, commercial barriers may pose an extra mountain to climb in order to achieve explicability, like lack of transparency to protect trade secrets and lack of regulation (or misregulation) that contributes to monopolization and concealment of information by big tech companies. (Crootoof, 2019, p. 241-242)

Hence the need to establish more rigorous guidelines regarding the limits of interaction between AI and certain judicial decisions, distinguishing those that may be automated from those that require the indispensable and irreplaceable presence of human judgment. This approach should also take into account the particularities of legal reasoning, which entails specific and largely non-negotiable demands, including complex balancing exercises, context-sensitive legal interpretation, and, above all, the protection of human rights (Salmoria & Junior, 2025, p. 200).

2.3. Critical Areas

Beyond judicial rulings, AI can also be harmful in critical legal contexts, such as when it is used by Supreme Court justices in cases of general significance, with broad impact on social, political or economic rights for the society or peoples. Such cases may reveal critical areas where decisions and adjudication may be centered in the figure of the judge, orbiting legal reasoning functions that should not be delegated to automated systems, for various

reasons — but, most and fundamentally, due to the symbolic legitimacy of the judicial authority with broader impacts to society/human life. Among various themes of relevant social importance, we suggest 6 main institutes in Brazilian law (*inter alia*), listed below as an example of the complexities of judicial activity in certain decision-making contexts:

1. *Repercussão geral* (general repercussion / “general impact” requirement for Supreme Court review): A procedure that allows for the filtering by the Supreme Court of the appeals, to underline those that touch on relevant constitutional aspects with broad social/political impact in the society. It demands ultimate legitimacy of the decision, and human perception of themes that surpass the subjective interests of the dispute.
2. *Dosimetria* (sentence assessment/sentencing dosage): Reserved for the judge by law, demands balancing the dogmatics as enacted in the legal apparatus with social nuances of sensitive real-world contexts, leading to the final sentence result, with unmeasurable impact on a defendant’s freedom.
3. Appeal: Right to defense and fair hearing may impose more strict requirements that may be intertwined with a human analysis of the request, with consequences for impartiality. Certain types of appeals are also directed towards failures of the legal reasoning of the human judges themselves (i.e. motions for clarification), presuming legitimacy of the judicial authority in the first place.
4. *Suspeição e impedimento* (judicial bias and disqualification/refusal and mandatory disqualification): these institutes apply to withdraw judges from the litigation as a result of conflict of interests, to guarantee the judge’s impartiality. Beyond the difficulty of assessing and validating the reliability, biases, and reasoning processes of large language models, decisions regarding a judge’s own recusal or disqualification involve inherently judicial evaluations that bear directly on the legitimacy of the adjudicative process.

5. Hermeneutics: The inviolable core of the judicial function, involves abstract human reasoning, and interpretation of subjective concepts and social/cultural nuances.
6. *Medida Cautelar*: An analysis that is fundamentally centered on the judge's own assessment and conducted on an urgent basis, requiring the demonstration of a strong legal foundation for the request, with direct implications for core human rights such as individual liberty. In the words of the National Council of the Public Prosecutor's Office:

It is a precautionary measure. It is a request to anticipate the effects of a decision before the case is finally adjudicated. It is granted when a delay in the decision would cause harm (*periculum in mora*). When examining the injunction, the reporting justice also evaluates whether the request is supported by acceptable legal grounds (*fumus boni iuris*). (Conselho Nacional do Ministério Público, n.d., free translation)

Despite these complexities, Brazilian Courts seem to be welcoming, yet with adequate caution, the use of machine learning for decisions or other critical phases of the procedure (i.e. evidentiary phase or pre-trial diligences). However, there seems to be some rise in concerns regarding outsourcing this type of technology.

AI specific tools like those listed in chapter 1 and correlated appendices, with direct or indirect influence in the decision-making process for, ultimately, adjudicative purposes, may pose risks and uncertainties regarding fairness and the legitimacy of the legal reasoning. Such phenomenon reveals how, even in contexts without full automation of the legal process — as opposed to the case for robot judges —, AI can have considerable impact on the future of defendants.

As a matter of fact, the Brazilian Superior Court of Justice (STJ) already decided that reports produced by generative AI without the supervision of human reasoning cannot be used as proof in criminal proceedings. This understanding was established on the judgement of a *habeas corpus* (HC number 1059475/STJ, judge Reynaldo Soares da Fonseca), where the

document produced entirely by AI was mandatorily extracted/deleted from the official case files. This was the Superior Court's first stance regarding the use of generative AI and its limits, establishing a new precedent for future disputes regarding automatized adjudication. The speaker, Judge Reynaldo da Fonseca, argued that generative AI has limitations, since the systems operate based on statistics and probability, susceptible to replicate false or incorrect information as truthful outputs. He argued that the legal system requires not only legality, but also trustworthiness of the content found in legal documents. (Superior Tribunal de Justiça, 2026)

This reinforces how the criminal field in Brazil is still very careful in implementing AI for adjudication, as previously mentioned in this research. In this regard:

The use of AI in criminal proceedings must be consistent with procedural guarantees and fundamental rights included in the *Brazilian Constitution*, including due process, equality before the law, the right to a fair trial and to privacy. Fair trial and privacy guarantees under regional and international human rights treaties to which Brazil is a party, such as articles 8 and 11 of the *Inter-American Human Rights Convention*, articles 14 and 17 of the *International Covenant on Civil and Political Rights* or articles 16 and 40 of the *Convention on the Rights of the Child*, may also be relevant. (Oxford Institute of Technology and Justice, 2025)

Additionally, sociocultural sensitivity, here, poses a paradigmatic difficulty in performing the decision-making role of a judge, particularly in Constitutional Courts such as the Federal Supreme Court, which is primarily responsible, under Article 102 of the 1988 Constitution of the Federative Republic of Brazil (Brazil, 1988), for safeguarding the Constitution¹⁶. This may explain why criminal cases are so critical in terms of implementing

¹⁶ Moreover, the Supreme Court in Brazil holds the power to approve *sumulas* — statements that represent the consolidated view of the court's understanding of a particular matter, that must be followed by lower courts and public administration — with binding effect, in accordance with the Constitutional Amendment number 45/2004, and article 103-A of the Constitution (Brasil, 1988; Supremo Tribunal Federal, n.d.)

AI in Brazil for adjudication, given the historical unbalance between classes, races, and sexes, typical of baleful post-colonial contexts.

As a result, the Brazilian Constitution epitomizes a humanistic social ethos for a dignified protection of fundamental rights and the rule of law, delegating a distinct importance to judges and legal practitioners, who must uphold the normative apparatus properly for a just application of its provisions under strict material equality benchmarks.

In this vein, according to Tozo & Solon (2010, p. 307), legal dogmatics is nothing more than a legal thought that determines what is, in fact, legally possible, establishing conditions that guide the decision-making of agents — which, in the present dissertation, refers to judges. Hence, the importance of judges in hermeneutical terms, for applying the dogmatics in practice through calibration and decision making, seeking the least harmful path for an already hurt society after centuries of colonial exploitation and inequality.

In this context, does cyborg justice leave space for zetetic innovations in contexts like Brazil? How far could AI go without deepening society's inherent imbalances and social contingencies? Does AI judging favor social justice at all?

CHAPTER 3. On the Possibility of Conceiving Robot Judges in Brazil

3.1. What Are Robot Judges

Previously, the theme of cyborg judges was developed in light of Brazil's Justice 4.0, suggesting an upward trend in the implementation of AI tools into judicial activity, mutating legal authority into this hybrid-like entity within a more-than-human system of knowledge. Nonetheless, would Brazilian judges ever evolve to become enhanced cyborgs? Could they be fully replaced by robots? What could be the next step in the evolution of justice, conceiving the judges' role, activity, and scope in society? Moving towards a possible answer to these questions, we ought to understand the differences between humans and robots — or even go beyond, as we did in *Appendix 3*, to enter the realm of transhumanist judges. Such differentiation will be covered in this chapter, conveying legal associations and precedents that could offer a glimpse into the future of cyborg justice.

According to Coelho (2025), robot and cyborg judges compose a duality: the first being fully independent from human beings, in the form of algorithms, while the second embodies a symbiosis through which human capabilities are boosted by technology, complementarily. This very complementary mutuality corroborates to the principle of *Human in Loop* — *HITL*, which conserves human discernment and ethical sensibility by designating the adjudication process to humans, and the prediction and processing of data to AI automation systems.

Regarding robot judges, it is important to highlight that these are not necessarily embodied robots. Rather, they may consist of AI systems that assume full responsibility for the adjudication process. China provides one of the most prominent examples of this model, being the closest existing AI plan to admitting robot or avatar judges into a local legal system. In fact, the country is the pioneer in the implementation of AI technologies to this dimension,

and has ambitions to fully integrate AI into the judicial process by 2030 (Oxford Institute of Technology and Justice, 2025).

It is worth highlighting that it is not the goal of the present dissertation to analyze in depth the legislation nor the governance behind the implementation of AI in China. This chapter touches on the Chinese example in order to strategically offer a good picture of the closest humanity has ever got to robot judges and more advanced forms of automation. In spite of such advancements, Chinese judges still follow guidelines from the Supreme Court that stress the importance of guaranteeing that decisions are always made by a human judge, despite the use of AI tools for sentence drafting or argumentation, as stated in the Oxford AI Atlas (2025).

Since 2006, Chinese courts have experimented with AI-assisted sentencing systems. In 2015, the country started its modernization of the judiciary and created the *smart courts* system. The following year, the Chinese government created the 13th Five-Year National Informatization Plan (Liang, 2025, p. 144–145). The *smart courts* encompass features spanning digitization of the lawsuits, monitoring, and AI implementation for complex data analysis and adjudication support. (Stern et. al, 2021, p. 524-527) In 2022, the SPC — Supreme People’s Court, declared that AI should not fully replace judges in the adjudication process and should be limited to assistance tasks. (Liang, 2025, p. 149–150)

One of the earliest initiatives was introduced by the Zichuan District People’s Court in Zibo, Shandong Province. This project became an important milestone in the development of similar systems across China, particularly in smaller courts, where AI was used to assist the courts¹⁷ by recommending decisions based on the analysis of patterns derived from previous cases. One example is *Little Judge Bao*, developed by the Qingyuan Qincheng District Procuratorate in Guangdong Province. This sentence-prediction system analyzes legal

¹⁷ “It is important to note that, in China, prosecutors—not judges—are responsible for preparing the initial sentencing recommendations” (Graciano, 2026, p. 286–287).

interpretations, statutory provisions, and judicial precedents to recommend decisions and penalties in criminal cases (Oxford Institute of Technology and Justice, 2025).

Another example of the same type of technology is China's *206 System*, also known as the Intelligent Auxiliary System of Criminal Case Handling, responsible for the automated recommendation of case outcomes to judges and reviewing court decisions for consistency with prior cases in criminal proceedings. Launched in 2017, this project combines efforts from Shanghai Court and iFlyTek to develop state-of-the-art AI softwares for the judicial system, using a vast database to assist with adjudication. (Stern et. al, 2021, p. 540) Many judges adhere to this AI system as a means to deviate from accountability for controversial decisions, given that judges in China can face penalties for rulings overturned on appeal or deemed incorrect by superiors (2021, p. 528-529). This suggests active application of the AI-generated decision/recommendations and a fierce belief in its neutrality. In fact, The Chinese Supreme Court demands the judges to explain reasons that led them to reject a recommendation provided by an AI assistant, registering their response for future audits. (Chen, 2022; Wodecki, 2022, as cited by Graciano, 2026, p. 286)

In 2024, the Suzhou Central Court promoted the Future Judge Assistant, an AI solution capable of performing its continuous self-learning, reaching autonomy in its own development. (Liang, 2025, p. 149) This shows how the country has been advancing just recently the AI agenda in the judiciary. The agenda that accommodates the "Internet Courts" is now broadly implemented in different jurisdictions.

As explained by Graciano (2026, p. 287-288), similarly to Brazil's 100% Digital Judiciary (explained before, in the first chapter of the present study), China's *internet courts* allow citizens to participate on the hearings through video calls since 2017, and promotes accountability through a blockchain evidence-checking system with centralized data (Shin et al. 2021, as cited by Graciano, 2026, p. 287-288). And it is in the context of this program that

emerges the first glimpse of avatar judges, which are being implemented to assist judges in some of these hearings. In this regard, Pan, Lu & Hu (n.d., p. 316) confirm that Chinese courts may use bots for legal Q&As, as an integrating part of the smart courts program.

However, besides the robots, human judges are responsible for monitoring the prosecution and adjudicating in the end. In the meantime, the lawsuit's defendants and parties are guided by the avatar judges in the online litigation platform, answering the robot's questions for data collection. (France24, 2019; Peng & Xiang, 2019, as cited by Graciano, 2026, p. 287-288)

Apart from this, Zhabina (2023) also lists 24/7 "one-stop" automation machines in legal service stations that replace human beings to facilitate checking and filing legal cases, as well as documents generation and automatic calculation of fees. Moreover, correspondingly to the avatar judges, Zhabina describes an AI system in the Suzhou Court responsible for examining evidence and drafting the final verdict, which is then reanalyzed by a human judge before publishing.

In terms of responsibility, the borders between human reasoning and machine learning seem to play a crucial role in defining the legitimate figure who will be liable for the decisions made. Therefore, robot and transhumanist judges share similar concerns with regards to this liability void: a black box or obscure space where most of the results are obtained as a consequence of the intervention of a machine, causing the humanity behind decisions to fade away, and triggering questions of trust in the adjudication process.

Liang (2025) describes the ambiguity behind AI integration into our judicial systems, which shakes the very basis of responsibility and leverages mistrust in the judicial authority. We suggest that this is mostly due to the fact that an entity that is either entirely or partially engined by AI functions as a black box of decisions that cannot track the responsibility,

splitting the ownership of a mistake into different agents when AI cannot explain itself (2025, 148-149) — i.e. developers, human judges who abused the AI tools, etc.

We argue that this, combined with the theories of Stern et al. (2021), lead to what we could understand as a faceless judge: a non-labile judge who lacks identity and whose reasoning can no longer be tracked or fully explained by another human being.

If Liang (2025) defends a direct problem of responsibility, Stern et al. (2021) defend responsibility as an insidious incentive, when judges apply AI to, in fact, escape liability — a tactic seen previously in the Chinese legal system, where judges can be highly accountable or even punished for unlawful decisions under a discretionary, verticalized consideration. Here, AI/robots are consciously used as a shield by the human judges. In this scenario, there is not enough space for proper identification of the adjudicating authority, making it difficult to hold someone formally responsible for errors in the outputs, propelling public mistrust and unclarity behind a lawsuit result.

Thus, the avatar judge ceases to function as a mere visual metaphor to judges, and become a “faceless entity” that cannot be identified or held accountable, facilitating a diffuse system that fragments and distributes liability among humans, machines, AI, robot developers, and the companies responsible for commercializing such devices. Consequently, the overreliance on artificial answers to judicial problems as a means to deviate from the following repercussions of the adjudicatory process in practice, fuels the debate over the use of robot judges. Could robots be, then, an institutional strategy for erasing human responsibility through the introduction of a faceless, identityless artificial entity? This raises fundamental concerns about opacity in decision-making, concerns that become even more acute when the interface mediating our relations in the justice system is no longer human.

3.2 Faceless Judges: The Latin American Case

This chapter is dedicated to the discussion of a case at the Interamerican Court of Human Rights, for elucidating the role of the judge for a fair trial and interpretation according to human rights practice in this regional system. Likewise, the topic of *faceless judges* will discuss precedents in the Americas that are related to the discussion of transparency and adjudication. Through analogies¹⁸ between the results of the cases with today's new challenges posed by AI, we will discuss the role of judges and the importance of their personal identity — which could be defied or overshadowed by transhumanist solutions, such as robot judges — to guarantee integrity and legitimacy in judicial decision-making.

This analysis matters to the context of the Brazilian legal system, since Brazil has integrated the Interamerican System of Human Rights since 1992, after its ratification of the American Convention on Human Rights (Pact of San José), and its later recognition of the jurisdiction of the Interamerican Court as mandatory under Article 62(1) of the Convention (Organization of American States [OAS], 1969), as implemented domestically by Decree No. 4,463/2002 (Brazil, 2002). (Aras, 2020, p. 837)

Furthermore, as we know, the Interamerican Court of Human Rights (IACtHR) has a great influence in the OAS (Organization of the American States) Member States' legal order. Its *imperium* influences the region through sentencing and consultative opinions (articles 61-63 and 64 of the Convention) which, consequently, instigates national judges to “comply, in their decisions, with the Court's interpretations of the human rights treaties that apply to the continent”. (Aras, 2020, p. 825) This is additionally done through *conventionality control*, a compatibility analysis with the internal legal apparatus in light of the international norms and

¹⁸ The analogy is needed since the jurisprudence of the Interamerican Court of Human Rights, as of early 2026, has not yet encompassed any consistent contentious cases involving robot judges or AI-based violations of human rights. However, there are consistent cases involving the figure of the judge, related to human rights such as the right to a fair trial, and procedural rights such as the principle of the natural judge. Moreover, in terms of AI in the Interamerican System, it seems that the court has been somehow active in integrating this discussion through hearings, advisory opinions, and IT development — culminating in the development of its own AI tool, for instance, Themis.

interpretation. The expression was used for the first time by Judge García Ramírez in his separate opinion in the case of *Myrna Mack Chang v. Guatemala* at the IACtHR. (Carvalho Ramos, n.d, p. 6 and 8)

Now that we have discussed the implications of the international interpretation for OAS countries such as Brazil, presenting the responsibility of equalizing the local approach to international human rights interpretation through conventionality control, it is clear the rationale behind analyzing the impact of this Court's case law on the topic discussed in this dissertation for Brazil, particularly with regard to the symbolic role of judges when adjudicating human rights cases — or any cases that impact human life, whatsoever. As discussed before — and will be further developed in light of the doctrine, in the next chapter —, the judge's role is not limited to the mere application of the norm, but fundamentally involves interpreting, contextualizing, and even innovating upon it according to the concrete case. Therefore, if interpretation is one of the main functions behind the legitimacy of judicial decisions in society, it also becomes indispensable to discuss conventionality control and the interpretative standards established within the Interamerican system, especially the way in which this Court itself interprets the law for the purposes of this thesis.

Unlike the European System, the American System of Human Rights is often recognized for its extremely strong normative and interpretive role, as well as its political importance and engagement with civil society. The court developed a broad and protective interpretation of human rights aimed at ensuring effective protection for historically vulnerable groups living in the Americas, with a humanistic importance for the promotion of transformation and structural reforms in the countries under its jurisdiction. This happens due to the fact that the Interamerican Court was found on the basis of its potential as “an intervening force with a mission to protect individuals from national authorities in a region roiled by fundamental rights violations”. (Sanchez, 2023, p. 1260)

The IACtHR's founding **judges were committed to intervening in ongoing human rights abuses, even if doing so required creative interpretations** of the legitimate boundaries of the Court's jurisdiction. One example of this is the Court's effort to end summary executions carried out by the Guatemalan government in the early 1980s, when Guatemala had not yet acceded to the IACtHR. (Sanchez, 2023, p. 1257, emphasis added)

This reveals the particularity of the Americas, where a series of similar historical violations hunt the present of the region's politics until the present day, with impunity and nefarious social implications many times. This leads to the discussion of the legitimacy of sentencing, the protection of judges, and the prospects of human rights guarantees through a more robust framework with its apex at the diffuse hermeneutical procedure, that departs from the American Court to reach the local contexts of each Member State through conventionality control.

In terms of such common context, many countries in Latin America faced a time of authoritarianism, *guerrillas*¹⁹, and terrorism conducted by local armed groups that threatened the safety of the citizens and the judicial system itself. Among those countries, many still deal with similar challenges, mainly as a result of drug trafficking disputes and its correlated mafias in the present day. As a result, the advent of the faceless judge emerged, defined by Luiz Flávio Gomes as:

the non-disclosure of the judge's civil identity. A faceless judge is a judge whose name is not disclosed, whose face is unknown, and whose technical qualifications are ignored. Nothing is known about the faceless judge, except that they are said to be a judge. (Gomes, 2012)

¹⁹ Described by the Brazilian Museum of Portuguese Language (n.d., free translation) as "armed conflict undertaken by a revolutionary movement".

Unlike the European Union, faceless judges became a more relevant phenomenon in the Americas and was typically and more precisely tackled by the IACtHR, which corroborated to the lack of a robust precedent in this regard in the European System²⁰. The jurisprudential discussion around this phenomenon was substantially propelled by regimes found in Peru and Colombia, in the decade of 1990, and has recently been brought back into the spotlight in Brazil and Mexico, as we will discuss further.

3.2.1. Peru: behind the robust IACtHR jurisprudence on faceless judges

With regards to Peru, there is a broader discussion that led to a series of judgements before the Interamerican Court of Human Rights, consolidating the jurisprudence that we have today. Faceless judges became broadly adopted as a military strategy during the government of Alberto Fujimori in the 90s, when the country faced constant threats from terrorist groups. Created by the Decrees n. 25.475/1992 (terrorism) and 25.659/1992 (treason), with special attention to article 13 of the first decree, the government transferred the competence over such crimes to a Special Military Tribunal, composed by a “specialized room” where judges secretly deliberated, expressly precluding the recusal of judges and court staff. (Rosa & Conolly, 2012, p. 12-13)

The special trials, nevertheless, were anything but fair, and were responsible for the arbitrary sentencing of innocent people (França, 2021). After a series of judgements under the interamerican system of human rights, the IACtHR considered this to be incompatible with the American Convention, most precisely due to a breach of article 8.1, which addresses judicial guarantees and the principle of the natural judge, establishing the right to be heard with due guarantees under a reasonable timeframe by a competent, independent, and impartial

²⁰ In the 1990s, Italy proposed the implementation of a mechanism similar to that of faceless judges to address mafia-related cases, as well as cases involving corruption and drug trafficking. However, Europe does not offer significant examples of this legal phenomenon, nor has it experienced the widespread and escalating phenomenon discussed before the region’s human rights court. (França, 2021)

judge or tribunal (Organization of American States, 1969, art. 8.1; Inter-American Court of Human Rights, 1999, paras. 128–130).

The cases in Peru led to the largest wave of jurisprudence on this topic in the Inter-American Court. The most important precedent, in this dimension, is the case of Castillo Petruzzi and others vs. Peru, 1999 — C n° 52 (Inter-American Court of Human Rights, 1999).

The Peruvian case of Castillo Petruzzi is likely the most important among a series of judgments on the merits of correlated cases before the Interamerican Court. The case involves the detention of 4 Chilean citizens in 1993, in Peru, followed by condemnation of life imprisonment in 1994, as a result of a police operation conducted by the DINCOTE — the National Direction Against Terrorism. The victims were all prosecuted by the military under the pretext of terrorism and treason, as enshrined in the Decree-Law number 25.659. The military judges had their identities concealed under absolute secrecy throughout the process by means of a summary procedure applicable to the “theater of operations,” as provided for in the Code of Military Justice.

The institute of faceless judges occupied the core of the discussions in the case. Sentences that did not include the signature of the judges, combined with judgements held in military facilities, did not allow for any transparency or access by the public. As a result, the interamerican court highlighted a series of violations of human rights related to due process, derived from the impossibility to verify the competences of decision-makers, as well as the judge’s independence and impartiality. The court also seemed to touch on conflict of interests, since the army had jurisdictional functions that could be compromised by their defense interests against the targeted groups.

This led to the invalidation of the entire prosecution that led to the imprisonment of the victims, recognizing that the anonymity and secrecy of the judges’ identity violated the principle of a fair trial. The court demanded for the conduction of new trials, adopting

ordinary, non-military proceedings that would respect the guidelines of fairness according to the American Convention, as well as the re-edition of the norms applied under the regime of counter-terrorism, stating that such norms (such as the Decree-Law mentioned) were not compatible with the Convention.

On the merits, the court applied articles 1.1, 2, 5, 7.5, 7.6, 8.1, 8.2.b, 8.2.c, 8.2.d, 8.2.f, 8.2.h, 8.5, 9, 20, 25 and 27 of the Convention. For the purpose of the current discussion in this dissertation, it is worth highlighting: articles 8.1 — violation of the principle of impartiality and independence of the natural judge and the competent tribunal, given the military faceless justice; 8.2.h — violation of the right to appeal to a higher court, given its similar characteristic of anonymity and militarization; 8.5 — violation of the principle of publicity; and articles 1.1 and 2 — violation of the obligation to adapt the local law apparatus to the Convention. The Court also invoked several international interpretive standards on this matter, including the Basic Principles on the Independence of the Judiciary (United Nations, 1985), the case law of the European Court of Human Rights (Brogan and Others; Barberà, Messegué and Jabardo; Bönsch)²¹; and its own Advisory Opinions — OC-4/84, OC-6/86, OC-8/87, OC-9/87, OC-14/94.

Other similar cases among this series of precedents with regards to faceless judges can be listed as follows — all of which involved a series of violations of human rights, such as torture, being kept incommunicado, and degrading treatment:

- Loayza Tamayo vs. Peru, 1997 — C n° 33 (Inter-American Court of Human Rights, 1997)

This case involved the arrest of a Peruvian professor in 1993 by DINCOTE. Similarly, she was convicted of the crimes of treason by the same military faceless judges as the Castillo

²¹ Since the European System has not yet addressed the issue of faceless judges, these precedents are unrelated to this matter. They primarily concern due process and the right to a fair trial, covering subjects such as the unlawful detention of terrorism suspects without prompt judicial oversight, the presumption of innocence, judicial impartiality, and equality of arms.

case above. After being released from prison, she was convicted again by a civil court, which was also composed of faceless judges, under the same allegations of the previous Prosecutor, where she was condemned to 20 years in prison. In response, the Court declared the violation of arts. 7, 5, 8.1 and 8.2 — judicial guarantees like impartiality, due process, and the judgement by a competent, natural judge —, and 8.4, all in relation to art. 1.1 of the Convention.

- Cantoral Benavides vs. Peru, 2000 — C n° 69 (Inter-American Court of Human Rights, 2000)

The victim was arrested instead of the original target of the DINCOTE — the victim's brother —, without judicial warrant, leading to his conviction before the military tribunal in 1993. He then got released and condemned for a second time before the regular court, by faceless judges and for the crime of terrorism. The Interamerican Court judged in his favor, confirming the allegations of violations of articles 5.1, 5.2, 7.1–7.6, 8.1, 8.2, 8.3, 8.4, 8.5, 9, 25.1, 1.1 e 2 of the American Convention on Human Rights, as well as the Interamerican Convention to Prevent and Punish Torture (arts. 2, 6 e 8). Here, the court unraveled the understanding that was introduced by the judgement of Castillo v. Peru, underlining that the hardship in accessing a judge's identity leads to the obstruction of the assessment of the judges' competence and integrity, leaving no grounds for recusal. It was reconfirmed the breach of the principles of impartiality and independence of the judge in the context of its anonymity.

- De la Cruz Flores vs. Peru, 2004 — C n° 115 (Inter-American Court of Human Rights, 2004)

The *De La Cruz Flores* case involved a physician who was convicted in Peru for providing medical assistance to alleged terrorists. Her sentence was based on a police report produced by DINCOTE, leading to her detention in degrading conditions and tried before a

court composed of faceless judges. The victim was convicted on the basis of contradictory statements from informants and deprived of her liberty for over eight years, being held incommunicado, isolated, and denied adequate medical care.

The Interamerican Court concluded that the case constituted yet another violation of due process and of articles 9, 7, 8, and 5 of the American Convention on Human Rights, in connection with its article 1.1. Following the judgment, Legislative Decree No. 926 was enacted, annulling sentences issued during the authoritarian period and ordering new trials.

- *García Asto and Ramírez Rojas vs. Peru*, 2005 — C n° 137 (Inter-American Court of Human Rights, 2005)

This case involved not only faceless judges, but also faceless prosecutors. Two men were condemned in 94 and 96 as part of the antiterrorist program in Peru — one was detained under inhumane conditions, while the other was retried after the first trial was overturned. The court applied articles 5, 7, 8.1, 8.2, 9 e 25 of the Convention c/c art. 1.1., with special attention to art. 8.1 for the faceless judges, reiterating the previous decision on the case of Castillo Petruzzi. The previous convictions were then overturned, and new trials were ordered, along with the appropriate related reparations.

- *Pollo Rivera and others vs. Peru*, 2016 — C n° 319 (Inter-American Court of Human Rights, 2016)

Lastly, this was a case of a doctor who was similarly detained by DINCOTE in 1992, leading to his trial before faceless judges. Although he was acquitted in 1999, he had to face a second trial in 2003, in Peru, which resulted in his condemnation for crimes of terrorism for 10 years, for similar reasons as De La Cruz — medical care offered to terrorists, enemies of the State.

The Interamerican Court reinforced its previous understanding with regards to the fair trial and the institute of faceless judges, applying articles 5, 7, 8.1, 8.2, 9 e 25 of the Human

Rights Convention c/c arts. 1.1 and 2, combined with arts. 1, 6 and 8 of the Convention to Prevent and Punish Torture.

Thus, the court's final ruling on this matter was established and is concretely consolidated, as reflected — above all and in an objective manner — in the sentence of the case of Castillo Petruzzi vs. Peru (1999):

The use of “faceless” courts has denied defendants the right to be tried by an independent and impartial tribunal, the right to a defense, and the right to due process. This type of trial makes it impossible for the defendant to determine whether the judge is competent and impartial. (Interamerican Court of Human Rights, 1999, free translation)

3.2.2. Mexico, Colombia, Ecuador and Brazil

In Mexico, a recent ruling introduced by the Constitutional Reform to the Judiciary Power in 2024 incorporated faceless judges into the system as a measure of safety to protect their integrity against threats stemming from organized crime. This measure is seen as a menace to principles of transparency, impartiality and fundamental procedural rights. (Morin Herrera, 2025) The President of the Senate in Mexico, Javier Corral, stressed the importance of applying the international commitments before the American Convention of Human Rights and according to the sentences from the Interamerican Commission. (Cirel, 2026)

In Colombia, faceless judges were implemented in 1991 as part of its judicial reform — Article 158 of the Decree n. 2700, from 1991 (Colombia, 1991, art. 158) —, intending to judge drug trafficking and terrorism organizations without putting the judges at risk. The decree was a strategy to deviate the constant threats received by the judges from the drug dealers under the command of Pablo Escobar. In 8 years, over 100 judges were killed in Colombia, including the President of the Supreme Court and the Council of the State, in 1985. (França, 2021) As a response to such menace, judges started using screens to ask questions to

defendants while hiding their identity, but their strategy failed to accomplish its own original scope, being derogated in 2001 by the Constitutional Court. (Ramírez et. al, 2025, p. 487)

A study conducted by Ramírez et al. (2025) highlighted the same phenomenon taking place in Ecuador only recently, in 2024, not by the force of a specific statutorily enacted law, but rather regulated by the *Ley Orgánica Reformatoria al Código Orgánico de la Función Judicial (2020)*²². According to the authors, “the identity of the judges remains concealed, and a screen may be used when questioning the defendant.” (Ramírez et. al, 2025, p. 487, free translation)

Brazil is an example of an innovative approach to this strategy of anonymity, without necessarily compromising the legitimate, physical figure of the judge, implying the possibility of responsibility and balancing extreme cases of exception/emergency with the fair trial principle.

Article 1. **In proceedings or procedures concerning crimes committed by criminal organizations, the judge may decide to form a collegiate panel for the performance of any procedural act**, especially: [...] III – the rendering of judgment; [...] § 6. The decisions of the collegiate panel, duly reasoned and signed, without exception, by all of its members, shall be **published without any reference to a dissenting vote by any member**. (Brazil, 2012, emphasis added, free translation)

The article in epigraph was conceived by Brazilian Law No. 12.694/2012, which sought to protect judges’ security without concealing their identity in judicial proceedings through the formation of collegiate judicial panels. These are non-anonymous judges who nevertheless render decisions collectively, that is, they jointly issue rulings through secret voting, without publicly identifying or individualizing the particular decision of each member of the adjudicatory body. Such an arrangement enables responsibility and accountability for the magistrate’s acts, while at the same time preserving the commitment to the symbolic

²² In English, Organic Reform Law of the Organic Code of the Judicial Function (free translation).

legitimacy attributed to the figure of the judge and reaffirmed through decidability, as will be further developed below in the analysis of Dworkin's theories in the next chapter of this dissertation.

On the other hand, Brazil is not an exception to the historical context that underlies the adoption of faceless judges in Latin America²³. A study held in Ecuador pointed out that the country was the last to adopt this system of faceless judges, in 2019, against drug trafficking. (Ramírez et. al, 2025, p. 479) However, Ramirez most likely referred to a group work that was created in 2019 at the Lower House of the Congress²⁴. Additionally, the original Law No. 12.694/2012 underwent a revision process that began with Bill No. 10.372/2018, proposed before the Congress for voting. This culminated in 2019 with Law No. 13.964 which, following the failure of the previous year's Bill, inserted Article 1-A into the original law, thereby turning the installation of a college of judges into an optional mechanism restricted to infractions committed by organized criminal groups. (Luersen, 2026, footnote 5)

Likewise, there were administrative acts at state level in different Brazilian Federative Units ($\equiv$ states/districts) that aimed at implementing a similar system to that of faceless judges. 2 examples can be highlighted in the State Court of Rio de Janeiro²⁵ and the State Court of Santa Catarina²⁶.

²³ In 2003, there was an attempt to introduce in Brazil a project similar to those adopted in neighboring countries, aimed at providing a legal basis for the anonymity of faceless judges. In this regard, a Bill was introduced in the Federal Senate (Bill No. 87/2003) seeking to create the institution of the "Anonymous Judge" in response to proceedings involving criminal organizations, whereby judicial decisions would simply be authenticated with the seal of the competent court, while preserving the identity of the presiding judge. The bill was ultimately rejected by the National Congress, primarily due to its violations of constitutional rights. (França, 2021)

²⁴ This is a working group that reviews proposals for changes to criminal law. The proposal for faceless judges was submitted by a panel of legal experts led by Federal Supreme Court (STF) Justice Alexandre de Moraes and reported on by Representative Capitão Augusto (PL-SP). (Palma, 2019)

²⁵ In 2019, the court adopted an administrative strategy through which the identity of the judges would be preserved during the procedures of organized crime in Rio. The judges would form a college of 3 members and their identity would be announced only in the end, in the form of their signatures in the final sentence. (Platonow, 2019)

²⁶ In May 2025, the State Court of Justice of Santa Catarina established the State Court for Criminal Organizations through Resolutions 7/2025 and 23/2025, establishing a model for collegial decision-making and anonymizing the identities of the judges, replacing their names with the institutional designation of the court and the position held. (Luersen, 2026)

Despite the intention of protecting judicial integrity through the use of collegial panels, a study conducted by the CNJ in 2017 found that, as in Colombia, this mechanism has proven insufficient in cases involving organized crime. The study reported that 110 judges required protection from security authorities despite the existence of the collegial system, as they continued to face intimidation, threats, and even assassination attempts. The persistence of such coercive pressures indicates that the collegiate mechanism was unable to fully neutralize external influences affecting judicial decision-making. According to the study, 45% of the judges relied on reinforced institutional security. Other — perhaps more effective — means of protecting judges besides anonymity or the collegiate system were mapped as follows: full escort protection (35%) or partial escort protection (29%), armored vehicles (31%), ballistic vests (15%), and reassignment to another jurisdiction (4%). (DPJ/CNJ, 2017, as cited in França, 2021) This data can be incremented by a recent research conducted by the General Inspectorate of the Federal Judiciary (Corregedoria-Geral da Justiça Federal — CG), in 2025, according to which 70% of federal judges have already received threats due to their judicial decisions, and only 20% of judges feel safe. (Rodrigo, 2025)

Other alternatives are pointed out by Isabela M. Costa Chaves (2016, as cited in França, 2021) according to the provisions provided in the law for collegiate judges previously mentioned, such as: security measures for the buildings where judicial activities are carried out, special license plates for vehicles, authorization to carry firearms, and protection extended to family members, court staff, or members of the Public Prosecutor's Office.

3.2.3. Overview: the roots of the problem

In short, analyzing the precedents of the court listed above, there seems to have a common ground in the interamerican jurisprudence with regards to anonymity (in the form of faceless judges) and the role of judges in guaranteeing a fair trial through active participation in sentencing proceedings. Among the cases, the Court highlighted the lack of transparency

that may foster external interference, contributing to an unfair decision, and violating the judges independence and neutrality. Additionally, it harms the right to defense, since anonymous judges — and the lack of transparency in the decision proceeding — pose barriers to defendants, restraining them from seeking the judge’s disqualification on grounds of conflict of interest or bias.

Taking the Peruvian case of Castillo Petruzzi as an example, the Court invalidated the sentences, after concluding that faceless/anonymous judges cannot be considered to be a natural judge (Rosa & Conolly, 2012, p. 15), violating judicial guarantees/due process and the publicity principle (as per article 8.1 and 8.5 of the Interamerican Convention of Human Rights). (2012, p. 24-25)

Such rights and guarantees highlighted by the Court can also be found in Article X of the Universal Declaration of Human Rights, and on article 14 of the International Covenant on Civil and Political Rights (ICCPR), according to which:

1. All persons shall be equal before the courts and tribunals. [...] everyone shall be entitled to a fair and public hearing by a competent, independent and impartial tribunal established by law. [...] any judgement rendered in a criminal case or in a suit at law shall be made public [...].

In this regard, The United Nations Human Rights Committee (HR Committee), in its General Comment No. 32 on Article 14 of the ICCPR, adopted on August 23, 2007 (UN symbol: CCPR/C/GC/32), addressed the issue of faceless judges and established that courts composed of faceless judges “do not satisfy basic standards of fair trial and, in particular, the requirement that the tribunal must be independent and impartial”, underscoring its commitment to the protection of the fair trial principle. The decision itself further defines, with greater accuracy, what the issue entails, what faceless judges are, and what the

immediate implications of this practice are for the protection of human rights, as highlighted below, on the item 23rd of the alluded document:

23. Some countries have resorted to special tribunals of “faceless judges” composed of anonymous judges, e.g. within measures taken to fight terrorist activities. Such courts, even if the identity and status of such judges has been verified by an independent authority, often suffer not only from the fact that the identity and status of the judges is not made known to the accused persons but also from irregularities such as exclusion of the public or even the accused or their representatives from the proceedings; restrictions of the right to a lawyer of their own choice; severe restrictions or denial of the right to communicate with their lawyers, particularly when held incommunicado; threats to the lawyers; inadequate time for preparation of the case; or severe restrictions or denial of the right to summon and examine or have examined witnesses, including prohibitions on cross-examining certain categories of witnesses, e.g. police officers responsible for the arrest and interrogation of the defendant. (Human Rights Committee, 2007, p. 7)

However, according to the discussions held on the United Nations expert panel monitoring worldwide implementation of the International Covenant on Civil and Political Rights, disclosed by the News and Media Division of the Committee’s Department of Public Information (United Nations, 2006), the decision was not categoric: despite its proved incompatibility with article 14, there seems to have space for application of the “institute” of faceless judges in extreme cases of threats, emergency, and terrorist acts, when the casuistry may require judicial anonymity:

One expert said that such faceless tribunals should only be enacted in “states of emergency”, perhaps they could be used to deal with specific “terrorist acts”, rather than “terrorism”, while another added that States must make sure that such courts

were not permanent. Another speaker reminded the Committee, however, that, in some cases, judges might be present in the room, but would adjudicate from behind darkened screens. (United Nations, 2006)

Thus, the final version of the UN commentary incorporated greater nuances regarding localized contexts, replacing the initial tendency to establish a categorical prohibition and, therefore, condemning the system only when it is accompanied by other procedural violations.

In Brazil, the implementation of faceless judges, as previously seen in Peru and Colombia, would violate the principles of the natural judge and publicity, as established in article 5, items LIII and LX, and article 93, item IX, of the Federal Constitution (CRFB) — which imply respect for judges' tenure, irremovability, judicial and political independence, and protection against salary reduction (Chimenti, 2010, as cited in Rosa & Conelly, 2012). These principles are also connected to the guarantee of due process of law through article 5, item LIV, of the CRFB/88, and, within the context analyzed here, relate to article 399, §2, of the Brazilian Code of Criminal Procedure, which incorporates the principle of the physical identity of the judge, as well as to the constitutional prohibition of anonymity derived from the right to freedom of expression established in article 5, item IV, of the CRFB (Rosa & Conelly, 2012).

Thus, it becomes evident that the threats are independent of anonymity (as in Colombia and Mexico) or the collegiate system (as in Brazil), since such protections prove ineffective when compared to more incisive and traditional security measures (as may be inferred from the CNJ survey in Brazil). This means that, far beyond attacks against the individual and physical figure of the judge, the threats posed by criminal groups are directed at the organization of the State and the Rule of Law — that is, attacks against judges constitute, therefore, an attack against the institution they represent; they are attacks against

the symbolic legitimacy embodied by the judge, who adjudicates crimes and, consequently, restricts the criminal economic activities of offenders. It is this symbolic legitimacy that is addressed in the present dissertation.

3.3. Robot Judges: A Faceless Phenomenon

Now that we have discussed the phenomenon of faceless judges, we can trace a parallel to robot judges. Examine the definition below:

“[...] is characterized by the non-disclosure of the judge’s civil identity. [...] it is the judge whose name is not disclosed, whose face is unknown, whose technical qualifications are ignored. [...] nothing is known, except that they claim to be a judge. [...] It is, therefore, a system in which the defendant does not have the right to identify the person responsible for the prosecution and adjudication of their case, resulting in an anonymous judgment” (Gomes, 2012, as cited in Rosa & Conolly, 2012, p. 9–10, free translation).

The excerpt presented in the epigraph deliberately omits the name of the concept to which the author refers — whether faceless judges or robot judges. Which of the two concepts would more appropriately fill this omission? The ambiguity appears intentional, as the description seems equally applicable to both.

Although the author argues about faceless judges instead, we argue that robot judges pose equal challenges to the fair trial, without necessarily identifying the person behind the decision nor allowing for accountability — as in the case of motions for clarification, which is directed towards the judge for correction of a mistake in their sentence, for instance. This is mostly a result of the algorithmic opacity, given the fact that these tools may function as “black boxes” in their decisions.

In fact, this issue is pointed by specialists as only one among many issues of generative AI: Toledo & Pessoa (2023) stress the lack of transparency and cognitive bias in

judicial decisions uttered through the use of AI, as well as the “structural incompatibility between the manner in which AI processes data and the manner in which law is applied”.

Toledo & Pessoa (2023) underscore the fact that the judicial system in Brazil operates as bubbles of data or an “eco chamber”, with higher opacity where the AI tool operates within the confines of the “past” it learned from, transforming complex and nuanced information in data for computational processing based on the patterns and data correlation. (Toledo & Pessoa, 2023)

The robot judge, or purely transhumanist judge, however, is categorically incompatible with the logic of access to justice and access to information, from which arises the requirement that algorithmic transparency extend from the source code to the final information provided to the parties, who must be informed not only of the use of AI in their cases, but also of the manner in which it was effectively employed (Toledo & Pessoa, 2023). This remains the case unless a plausible future solution is developed, capable of ensuring full transparency and preserving the parties’ freedom to decide whether to submit to a judgment rendered by a machine.

This is not the reality of AI-based adjudication today. Studies indicate that such systems become true “inscrutable black boxes,” since neither “(i) the data provided to the AI, (ii) the code of the AI employed in the judicial decision, nor (iii) the manner in which the data directed to the machine are organized” (Toledo & Pessoa, 2023, free translation) are known. Consequently, the information involved in the judicial process remains inaccessible, directly affecting both the right to a full defense and the adversarial principle, as the parties are unable to know what they must defend themselves against or what they are expected to challenge (Toledo & Pessoa, 2023).

Some may argue that human subjectivity also constitutes this “black box”, implying that human judges may function similar to machines in their decision process. However,

unlike artificial systems, we are capable of accessing the contents of this black box in humans — albeit never in their entirety — through processes of translation and the construction of narratives by means of language. In this sense, human beings produce abstract meaning, which is ultimately the hermeneutic task of the judge: to identify the zetetic meaning underlying dogmatic application. This idea — accessing the box of human subjectivity and producing meaning through communication — is introduced by the Estonian author Tõnu Viik (2020) when discussing the (in)capacity of a robot to experience more ethereal or philosophical human emotions, such as love, based on the conception of an internal sphere of consciousness and sentience that is indispensable for relationships of such a dimension (2020, p. 56-58).

Additionally, Crotoft (2019, p. 238-239) advocates for the same difference between human and artificial “black boxes”, arguing that humans have internalized social norms that underpins their decisions and reasoning, inevitably. This may strengthen social norms in both positive and negative ways, but also contribute to the duty of justifying a given decision through the reasoning process that generated it.

Thus, the Chinese avatar judge, as previously mentioned in this dissertation, is not — or should not — be an expectation for the Brazilian Judicial System, even as CNJ’s Justice 4.0 evolves. Similarly to the faceless judges, such a mechanism, if adopted as the main sentencing procedure without human supervision — or at least if not combined with a human judge’s decision-making —, may cause serious violations of the due process, judicial independence and impartiality. Both faceless judges and robot/avatar judges promote anonymity, since both conceal the actual origin of the uttered decision, while expressly precluding the recusal of judges and court staff, mining the possibility to hold judges accountable.

In this sense, Thay Graciano (2026, p. 297-298) highlights the main factors that decisively discourage the implantation of robot judges in contexts like Brazil:

First, it cannot be presumed that litigants in these proceedings are necessarily more technologically literate and therefore less resistant to the use of avatars. Second, normative concerns arise regarding what it means for the public to interact with the legal system through a digital persona, particularly at a time when public trust in the judiciary remains fragile. Although several Brazilian courts have already implemented chatbots to provide basic legal information, the introduction of avatars represents a qualitatively different step. This risks further dehumanizing the judicial process and raises questions concerning legitimacy and authority. Third, the practical challenges of implementation are significant. In China, avatar judges are supported by voice-recognition systems that enable them to respond to litigants. Brazil, however, presents even greater challenges: its regional diversity in accents, colloquialisms, and modes of expression already creates barriers to accessibility, and these factors would likely undermine the effectiveness of such tools if transposed into the Brazilian context. (free translation)

This ultimately demonstrates, as argued throughout this dissertation and under the framework of Dworkin's ideal judge and the symbolic legitimacy of the human, physical, and accountable judge — which will be explained subsequently —, that the risks to judicial legitimacy and accessibility cannot be adequately balanced or mitigated so as to justify the implementation of proposals that are incompatible with the Brazilian context. Despite their potential efficiency, such models are not suited to the particularities and diversity that require human interaction in order to ensure public trust in democratic institutions.

From this point emerges the argument advanced in this dissertation: namely, that measures should be adopted to mitigate the harms caused by the abusive use of new

technologies in the legal sphere, always taking fundamental and human rights as the primary legal basis guiding subsequent technological acts. In this sense, the principle of differentiation is proposed: not everything that functions in a particular region of the world can be replicated elsewhere, and any technological tool should be implemented in a manner adapted to the constitutional, historical, and cultural context of the country, provided that it remains subject to supervision by a human authority responsible for its decisions.

In this topic, Crootoof (2019, p. 238) confirms that human contextualization such as geographic, cultural and temporal specificities of a certain people/region is hardly incorporated in its integrity by AI systems when the algorithmic rule is applied. Even when the developers incorporate that into the design or training phases, the systems lack the capability to step out of the original instructions to adapt to the context without hallucinating.

Similarly, Piñar Guzmán (2022, p. 78) explains how human cognitive faculties cannot yet be comprehended and, as a direct consequence, replicated artificially: syneresis, phronesis, deduction, induction, abduction, analogy, heuristics, epikeia, synthesis. Without such abilities, an automated judge would most likely lose not only context perspectives, but also economic and subjective inferences from consequentialist reasoning and behavioral law, respectively. The author further argues that the Council of Europe's Working Party on the Quality of Justice reached the same conclusion in 2018, as per the European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment (European Commission for the Efficiency of Justice [CEPEJ], 2018): that modeling judicial reasoning on a computer is just as impossible as modeling a complete positive legal system, given that judicial reasoning is fundamentally a matter of assessment and interpretation of facts, applicable legal rules whose meaning remains indeterminate, and the subjective application of concepts such as equity. (Piñar Guzmán, 2022, p. 79)

AI tools therefore become new forms of assistance, but they should never fully replace the work of judges. In this regard, Graciano (2026, p. 303–304) discusses the principle referenced here (differentiation), arguing that it must also be guided by: (i) the constitutional limitation of algorithms; (ii) adherence to the principles of transparency, interpretability, and auditability (cf. CNJ Resolution No. 332/2020); (iii) the guarantee of human accountability through a physical authority whose decisions remain reviewable, appealable, and institutionally accountable; (iv) and the adoption of procedural systems of supervision and risk assessment for AI tools, constitutionally restricted in scope.

In addition, Brazil’s international commitments and the international interpretation of human rights previously discussed must also be taken into account, particularly within the context analyzed here of fair trial rights and identifiable judges legitimately entrusted with the decision-making process with integrity. Special attention must be given to the judicial guarantees established in the American Convention on Human Rights, especially article 8, as well as the interpretative provisions contained in article 29 and the widely referenced article 8(1) of the American Convention. These provisions served as the basis for the rulings concerning faceless judges in Peru and may, by analogy and through expansive interpretation, also guide cases involving digital adjudication in which algorithmic opacity undermines the judge’s symbolic legitimacy, the principle of the natural judge, and the right to a fair trial, or otherwise promotes anonymity.

Likewise, the use of AI in cases involving threats against magistrates — such as proceedings related to *guerrilla* groups, organized crime, or drug trafficking in Latin America — cannot serve as a substitute for the institution of faceless judges. Although such strategies may appear efficient in responding to these forms of violence and intimidation, resorting to AI lacks logical foundation: as previously demonstrated, it proves inefficient to stop threats that are ultimately targeted at the rule of law and the democratic institutions — the judges

being only a targeted symbol that represents the State. Using AI for cases of organized crimes will not protect the judges, but rather perpetuate the same violations associated with anonymous judges, particularly in light of algorithmic opacity and the absence of identifiable authorship, while still facing threats directed at the judicial authorities.

In reality, this represents a step beyond the faceless judge model itself, insofar as robot judges are not truly judges at all, given that they are not *embodied in a human person* who is accountable and phenomenologically capable of adjudicating decisions involving high degrees of geopolitical and social complexity.

In this regard, Anderson Junior & Soares (2025) comment on the principle of the physical identity of the judge, a due process principle that was once enshrined in Brazilian Law. The Brazilian legal system formerly adhered to the principle of the physical identity of the judge, based on Article 132 of the 1973 Code of Civil Procedure (Brazil, 1973). However, these provisions were repealed in 2015 with the enactment of the new Code of Civil Procedure (Colnago, 2017, p. 9, as cited in Anderson Junior & Soares, 2025, p. 8).

Today, however, it may be argued that there is a tendency to interpret Article 399, § 2, of the Code of Criminal Procedure (Brazil, 1941) — which provides that “the judge who presided over the evidentiary phase shall render the judgment” —, broadly, treating the principle of the physical identity of the judge as a factual consequence of this provision, a position endorsed by the Brazilian Federal Supreme Court (STF) in AgR ARE 839680 SC (Santa Catarina No. 0015161-56.2013.8.24.0000). (Anderson Junior & Soares, 2025, p. 8)

Thus, for Anderson Junior & Soares (2025, abstract), this theory supports the initial hypothesis that hybridization between humans and technology in law is indeed possible, but it can only be validated in light of the principle of the judge’s identity, ensuring human oversight and social acceptance. This may be intertwined with the symbolic legitimacy of the human, embodied judge, which will be explored in the following chapter.

CHAPTER 4. Symbolic Legitimacy Of The Judge

4.1. The Symbolic Legal Force

Taking into consideration the discussions of the previous chapters, can robots take on the role of judges after all? This chapter aims to provide a final answer: robot judges alone are not attainable in our society and should not be a goal to any judicial system, because their decisions are not legitimate in the first place.

That is not to say that robots, automation, and AI cannot be integrated into the legal system — in fact, as proven before with previous data from various surveys, cyborg justice is here to stay and judges already integrate automation tools into their daily tasks, inevitably. We are not fighting against cyborg judges: we are embracing this future with caution, considering that an entirely automated decision or lawsuit, conducted by an avatar judge in sensitive contexts of historical/social inequality like Brazil, cannot symbolically represent the society's will and effectively guarantee efficacy of law.

Pierre Bourdieu (2003, p. 11-15), for instance, develops a theory in which symbolic power operates throughout society, establishing relations of legitimate domination in a transfigured and often imperceptible manner through symbolic violence. This process relies on the recognition of an authority figure to whom individuals are subordinated and whose decisions are symbolically validated. It is precisely this seemingly reasonable logic of recognizing the decision-making authority that, through a cascading effect, confers institutional legitimacy upon both the decision-maker and the effectiveness of the decision itself, whose observance depends directly on this process of symbolic transfiguration of power.

In this sense, the French philosopher argues that law enables this political system of hierarchical divisions and subordination through its classifications of what appears as a legitimate legal authority (p. 14). Institutions thus become vested with the legitimate power to

intervene in social reality, and a politically irreducible social function derives from their symbolic authority:

Symbols are the instruments par excellence of ‘social integration’: as instruments of knowledge and communication (cf. the Durkheimian analysis of festivals), they make possible a consensus regarding the meaning of the social world that contributes fundamentally to the reproduction of the social order; ‘logical’ integration is the condition of ‘moral’ integration. (2003, p. 10, free translation)

The symbolic power inherent to the judicial function is not merely an institutional formality, but the very condition of possibility for the social efficacy of law. Thus, the symbolic power produces concrete effects in the world through recognition of the judicial authority of a human judge. It transforms relations of power into relations of meaning without the use of force. When a judicial decision is recognized as legitimate, it mobilizes social conduct without expenditure of coercive energy, consolidating the rule of law as a shared normative order rather than an imposed one. (2003, p. 14)

Furthermore, institutions and the individuals who comprise them embody an objectified history that imposes itself upon the relationship between the individual and the social world in which they are situated. This chain of historicity does not represent a mere cause-and-effect relationship — that would be far too simplistic. Rather, it points to our intimate relationship with the institutions we inhabit. In other words, it reflects the symbolic dynamic of affecting and being affected between the individual and the social world. The **judge and the court**, the priest and the church, the manager and the corporation, and the teacher and the school are examples that illuminate this direct relationship between persons and institutions. Consequently, they reveal the invisible foundations of legitimacy that emerge through *habitus*, and what Bourdieu calls an *ontological complicity* between social agents and the institutional structures they occupy (2003, p. 83).

Thus, the figure of the judge is invested in institutional legitimacy and social recognition. However, should this figure be replaced by a robot in the decision process, there could be an erosion of the judge's important role in society.

Such a displacement of decision-making authority—even when mediated by human oversight—produces a dissociative effect between the formal authorship of a judicial decision and its actual production, whether by assistants or by algorithms. As Zaffaroni (1995) warned, this dissociation gives rise to a “fiction of power,” in which the symbolic responsibility of the judge is preserved while the substantive exercise of jurisdiction is transferred to other agents, whether human or non-human (Salmoria & Junior, 2025, p. 199, free translation).

Therefore, to discuss sentencing today is necessarily to engage in a socio-philosophical inquiry into its essential social function, and into the extent to which this symbolic function of legitimate authority may serve as a normative limit on the increasing automation of judicial adjudication — particularly where such decisions carry significant consequences for human agency, rights, and lived experiences.

4.2. Legitimate Interpretation

Salmoria & Junior (2025, p.196) defend that “Judging involves not only perception and discursive analysis grounded in argumentative logic, but also encompasses the historical and local context”. To judge, according to the authors, is fundamentally a humanizing and dialogical act (Salmoria & Junior, 2025, p. 200), which implies that social and more subjective layers have to necessarily intercede with the daily legal *praxis* of jurists. In contrast, when discussing the robot judge, Salmoria & Junior (2025, p. 191) would argue that this prospect is nothing but a myth:

One of the most sensitive points in this debate is the emergence of what is called the “myth of the robot judge”. This expression condenses social concerns about the

replacement of human judgment by automated decisions and, consequently, the erosion of the ethical and symbolic value of justice as a practice sensitive to the plurality and complexity of life.

In short, it all goes down to interpretation: the terror of positivist scholars, who dream of the robot judge. Positivism without casuistry calibration leads to serious misapplications of law to the pragmatics of the ever-evolving social dynamic. The mere application of rules without bearing the nuanced complexity of the human world can be “troublingly indeterminate” (Crotoft, 2019, p. 239-240), according to an experiment conducted by Lisa A. Shay et al (2016).

In the field of human rights, this is even more evident. According to Professor Carvalho Ramos (n.d, p. 2-4), human rights cannot be reduced to a hermetic dogmatic system made of an abstract and universal truth. Rather, the field is a bundle of conciliated interests that works on behalf of human dignity in a given historic and social context, justifying its constant interpretation insofar as they are actually experienced in society.

For this reason, the interpretation of rights also entails the participation of affected stakeholders and consideration of the diverse facts and consequences that a given norm may have on the lives of real people, requiring judges to adopt an open model for the interpretation of fundamental rights throughout the decision-making process. (Carvalho Ramos, n.d, p. 2-4)

Hence, the interpretation of law does not convey the exclusivity of either a robot judge or a human judge, but rather provides an adequate combination of different means that lead to an optimized intellectual activity to solve disputes, without harming the symbolic legitimacy nor public participation through the decision process. Such process is detailed by Carvalho Ramos (n.d, p. 2-4) with different mandatory phases: “(1) the selection of relevant legal texts; (2) the **attribution of meaning to those texts**; and (3) the resolution of the legal issue in light of the chosen interpretive parameters.” (free translation, emphasis added) He also gives

examples of the openness in the meaning of rules, whose concepts are still undetermined like “intimacy”, “due process”, and “reasonable length of proceedings”. Additionally, other concepts can be interdependent or even clash with one another, like freedom of information and privacy, for instance. Note how the attribution of meaning, as explored before in light of the lessons of Tõnu Viik, plays an important role as a fundamentally human task for interpretation.

For this reason, a creative and zetetic interpretation, attentive to details and to the philosophy that attributes semantic meaning, and capable of understanding emotional and social context, becomes fundamental for dealing with these contradictions, challenges, and the considerable openness involved in the application of law. It is fundamental for navigating the various possible outcomes in matters involving contrasting moral values; and it is fundamental for ensuring the “reservation of conscience” — which implies that the interpretation should be:

(1) transparent and candid, avoiding the adoption of a predetermined decision and the use of the rhetoric of ‘human dignity’ as a mere justification for a decision already reached; (2) comprehensive and pluralistic, excluding neither empirical evidence nor non-legal forms of knowledge, thereby making the participation of third parties, such as *amici curiae*, valuable; (3) consistent in the strict sense, demonstrating that the practical outcomes of the decision are compatible with both the empirical evidence considered and the original normative text; and (4) coherent, such that it can be applied to other similar issues, avoiding the contradictions that lead to legal uncertainty. (Carvalho Ramos, n.d., p. 2–4, free translation)

It is precisely this interpretive process that, as demonstrated throughout this section, plays a central role in the proper application of rights to a socially and historically situated reality. Ultimately, this responsibility rests in the hands of the human judge. It is the judge

who employs this interpretive tool to give effect to the law and who, in a manner analogous to Bourdieu's notion of *habitus*, contributes to the legitimation of the interpretive process through a successive relationship between institution, judges, and interpretation. This relationship operates within the symbolic dimension of judicial activity and, in turn, legitimizes the final link in the chain: the citizens, who ultimately recognize and confirm the legitimacy of both the decision and the broader system of domination from which it derives.

Finally, when it comes to this symbolic dimension where interpretation is key for legitimacy, Ronald Dworkin (1986, preface, p. vii) elaborates on the fact that the judicial reasoning is originally an activity of constructive interpretation that demands for the coherent justification of the legal practices — defined as follows:

constructive interpretation is a matter of imposing purpose on an object or practice in order to make of it the best possible example of the form or genre to which it is taken to belong. (Dworkin, 1986, p. 52)

4.3. The Ideal Judge

Dworkin devoted considerable effort to defining the ideal judge through the figure of Hercules, the Greek hero. Yet, this dissertation argues that there may be different types of judges, and that efficiency does not necessarily coincide with judicial ideality.

In *Law's Empire*, Dworkin (1986, p. 187-188) argues that principles of integrity — grounded in the neighborhood of fraternity — should permeate our political society, grounding the legitimacy of the political-legal system on a coherent framework of principles that confirm the moral authority for coercion. Thus, the author defends integrity as a political virtue, apart from equity and justice, and legitimacy-based, which can be directly associated with efficiency, self-governance, impartiality, and transparency as opposed to corruption. (1986, p. 188-189) Those ideals play an important role in successful adjudication of complex cases.

Once again, in an effort to justify coercion and the exercise of legitimate force, the distinction between the legitimacy of the State and the political obligation of those subject to the law to obey it is invoked. Although distinct, these two questions are closely related, since coercion generally presupposes the existence of an obligation, making both central from a normative perspective (1986, p. 191). Why should one accept and follow a political decision? Why do we recognize such decisions as something worthy, legitimate, and coercive?

This concerns the relationship between authority and community. The judge serves as a representative of the State's legitimacy not merely before the parties to a proceeding, but before the broader social community, where obligations are themselves communal and associative, attributed to individuals by virtue of social practice (1986, p. 196). According to Dworkin (1986, p. 199–201), these obligations are fraternal obligations, which introduce a dimension of personal responsibility, even within a collective group, assigning responsibility on the basis of a general and egalitarian concern for the common good. In this regard, fraternity and the associative community linked to it become the core of the legitimacy of power (1986, p. 206) — in this case, the legal authority vested in the judge or in the institution that operates through the judge (in dialogue with Bourdieu's insights regarding the relationship between *habitus* and *habitat*).

In this sense, Dworkin (1986, p. 214) argues that a genuine community of principle acquires moral authority and can claim legitimate coercive power as legitimate by committing to choose, develop, and interpret law in an overall principled way. Through this commitment, collective decisions become matters of genuine obligation that are claimed in the name of fraternity.

We may conclude that the moral claims of members of society become legitimate through validation grounded in belonging, and collective decisions that comply with the laws of the State by virtue of association are taken precisely in the name of the community, with

the aim of promoting the common good for all. Therefore, legitimate authority does not compel an association of dominated individuals to follow its discretionary commands. Rather, it represents or articulates the order that society, through fraternity, has chosen to follow.

Thus, it should be noted that this is a far more complex relationship, one that grounds the social contract and transcends a mere vertical relation of decision-making imposition through acquired power. Instead, it is an organic relationship in which imposition is accepted through association and participation, thereby legitimizing the power that acts coercively upon the group, deriving from collectively accepted principles that constitute the group and, consequently, the society itself.

This relationship between authorities and people is what is behind the recognition of the application of the law through adjudication by a judge. Naturally, through the lenses of adjudicative integrity, judges are expected to recognize law as a coherent bundle of fundamental principles (1986, 217-219). Adjudication within integrity leads, then, to a dynamic system of interpretation, reinforcing the judges' mission/role in creating meaning, ultimately guaranteeing the coherence of this principles-based system (1986, p. 220).

Integrity demands that the public standards of the community be both made and seen, so far as this is possible, to express a single, coherent scheme of justice and fairness in the right relation. An institution that accepts that ideal will sometimes, for that reason, depart from a narrow line of past decisions in search of fidelity to principles conceived as more fundamental to the scheme as a whole. (1986, p. 219)

This elucidates why full automation can be harmful to the principle of integrity. As discussed in previous chapters of this dissertation, when touching on the main concerns and issues related to automation of legal procedures, AI decisions can often lack transparency, explicability, and can replicate previous results based on pattern recognition. However, the task of a decision-maker, according to Dworkin's understanding in the epigraph, may lean

toward breaking away from the pattern of previous decisions to reach a creative dimension where justice and equity harmonize with integrity, coherently expressing public standards. This challenges the current limits of AI capabilities and preserves the space for wide-ranging human adjudication, where sensitivity to context and a commitment with transparency play a fundamental role.

In this sense, Dworkin (1986, 225) argues that law, understood as integrity, goes in a different direction to that of pragmatism and conventionalism, since the legal practice encompasses either prospective and retrospective elements into interpretation, as a political narrative that's being unfolded. In terms of legitimacy, the adjudicative principle of integrity also presupposes the interpretation of rights and duties as though they had been created by a single author — the personified, associative community — expressing a coherent conception of justice and fairness. Legal propositions are true if they figure in or follow from the principles of justice, fairness, and due process that provide the best constructive interpretation of the community's legal practice (1986, p. 225–226).

Finally, although organic and non-vertical, integrity demands horizontal consistency, attentive to history insofar as it justifies a range of legal standards confirmed by the community, identifying principles from the past that can sustain an *honorable future*. (1986, 227-228) — hence, justifying the ideals adopted by the constituent power for law-making. In other words, we may benefit from Dworkin's theory by linking his concept of integrity with what's been previously mentioned in this thesis, with regards to the concept of historicity, introduced by the Brazilian Professor Orlando Boas-Filho (2010). Thus, integrity deals with historicity and, consequently, adopts polysemic semantics, showcasing the complexity of language beyond Large Language Models — on the basis of the fact that historicity is, necessarily, political, and semantics are context located, horizontally.

In brief, decisions made by human judges have more compliance for being more broadly accepted by the community, which instigates their higher level of legitimacy in comparison to that of algorithmic judges. (Crotoft, 2019, 238-239)

4.3.1. Hercules

To illustrate his theory, Dworkin (1986) develops the fictional character of an ideal judge: judge Hercules. The ideal judge applies law as integrity, centered in hermeneutics, and opposed to pragmatism and conventionalism. By doing so, this type of authority grounds political obligation in associative/fraternal obligations, rather than in contract, natural duty, or fair play.

Dworkin's imaginary judge, not coincidentally, resembles the Greek hero, Zeus' son. Half God and half human, Hercules possessed an extraordinary strength and concentrated the power of the gods in a mere human body (Sibila, 2020). In *Law's Empire* (Dworkin, 1986, p. 239), his strength is rather intellectual, combining superhuman cognitive abilities with infinite patience, and upholding the law with integrity. His commitment to justice and fairness serves as a beacon for constructive interpretation, prioritizing local concerns (1986, p. 250–251), and committed to political morality as a whole (1986, p. 263).

Hercules is a judge with a perfect and comprehensive approach to litigation in order to find harmony between solutions and principles of justice, dignity and equality. This judge, therefore, judges without necessarily consulting the people or other sources that differ from their own reasoning and technical background. (Lewandowski, 2009, as cited by Parchen & Alberto 2024/2025, p. 24)

By virtue of intelligence, this judge is able to navigate the contradictions of the law, even those involving legal principles. They distinguish between the competition among principles and contradictions in legal principles, weighing them and establishing a system of organic and contextual priority, free from arbitrariness. (p. 268–271).

4.3.2. Jason

Is Hercules the best fit for Brazil? Some Brazilian judges may disagree. Parchen & Alberto (2024/2025, p. 23), for instance, reflect on what they call the *Jason judge* instead, to argue that Dworkin's Hercules fiction is no longer enough to encompass today's demand in Brazilian society, in spite of his infinite knowledge, time and principles.

According to them, the judge is no longer the core figure of the adjudication process, and therefore lacks the power to solve conflicts without combining accessory sciences, as well as personal, technical, and pragmatic assistance. Hence, the cyborg justice in its best form: when judges recognize the cruciality in combining external tech tools for adjudication — “Otherwise, [they] will be addressing 21st-century issues with technical tools from past centuries” (2024/2025, p. 23, free translation)

In other words, the Jason judge has a holistic approach through an open pragmatic process, revealing more comprehensive outputs to well-informed decisions that combine different technologies. (2024/2025, p. 21) Thus, the importance of hermeneutics, reiteratedly, against “sterile decisions” (expression used by Tomaz, 2017, p. 55), founded on precedents without contextualization. Accordingly, decisions that do not follow Jason's polysemic approach and apply pure robotic responses to the litigations can be understood as:

raw, insensitive, as if they had not been uttered by a human being (the homo humanus who is the object of the law) and were not intended for them. All of this takes place under the guise of a positivist façade where the idea of reducing the law to written legal norms still prevails (Tomaz, 2017, p. 55, as cited by Parchen & Alberto 2024/2025, p. 24, free translation).

Thus, the importance of integration among different sectors of public services and sciences to jointly and pragmatically find solutions for complex issues. Jason, therefore, is not limited to interpretation by principles as Hercules. The last may, to some extent, perpetuate

the status quo by harmonizing interpretative solutions that keep the original coherence of the system of principles that compose law. Nonetheless, Jason goes beyond to connect theory with practice, seeking to solve enigmas through his ability and cleverness supported by other dozens of actors — the argonauts²⁷, as in the Greek mythology —, attained to the context of the community to which he belongs. (Parchen & Alberto 2024/2025, p. 24-25)

Unlike Hercules and Hermes, who held many roles and faced numerous labors — earning them many epithets — Jason has one specific, determined, and necessary mission: the quest for the Golden Fleece, the condition imposed upon him to reclaim his father's usurped throne. Our judge Jason knows that seeking the right answer is both possible and necessary. He makes it his mission. But unlike Hercules and Hermes, Jason knows he cannot obtain the Golden Fleece alone. The undertaking is arduous, and he does not possess their personal attributes. This limitation confronted him with the need to gather those who, by virtue of their specific qualifications and functions, could collaborate in the mission. The goal was only achieved with the help of the fifty Argonauts — but not before undertaking a journey filled with hardships, during which the Argonauts had to exercise their skills, mediated by Jason, who earned the epithet of "curator." (Tomaz, 2017, p.62, as cited by Parchen & Alberto 2024/2025, p. 25, free translation).

Jasson judges integrate the community and could be one of the best bets for a true cyborg judge who mediates different interests by integrating different means of knowledge and instances of public power. However, as Parchen & Alberto highlight (2024/2025, p. 26), a good judge not only incorporates Jason's qualities and abilities, but also combines them with Hercules' wisdom and interpretation, attained to principles for a just and efficient decision.

²⁷ The Argonauts were the sailors who, in Greek mythology, accompanied the hero Jason on his journey to Colchis (present-day Georgia) to retrieve the Golden Fleece. [...] The myth reached its most complete form in the *Argonautica*, a work by Apollonius of Rhodes written in the third century BCE. (Portilho, 2017, free translation)

4.3.3. Jupiter and Hermes

The Jupiter judge — also called *the Kelsian Judge* and the mouthpiece of the law — uses deductive reasoning with the ultimate goal to simply and strictly fulfill the law, reinforcing Kelsen's pure theory. (Sá, 2024) For François Ost (1993, p. 169-170), the Jupiter judge represents the classical perspective we deal with when studying legal sciences: law as a codified, hierarchical and pyramidal system, moving always in a vertical dynamic, that is, top-down. According to him, this type of judge is characterized by legal-political monism, guided by the centralization of power in light of the principle of State sovereignty and oriented toward legal certainty.

Consequently, general rules prevail, providing guidance to the rest of the legal order within a Kelsenian hierarchy that effectively reconciles the conception of a basic norm (*Grundnorm*) in a logical sense. (1993, p. 174-175) This does not entail that Jupiter does not include other sources for dispute resolution: he may, structurally, combine alternative instruments such as cooperation and the Judiciary's Intelligence Centers. (Sá, 2024)

On the other hand, according to Ost (1993, p. 169), the post-modern judge is better represented by the archetype of Hermes, despite the multimodality/plurality of models for judges. For Sá (2024), Hermes is a mediator, a pacifier, who considers the law field as a network of different actors who may collaborate to find a consensual solution for a given legal dispute. He represents the decentralization of the judicial system, taking judges off their pedestal to insert them in a correlated network of engines, managing different tools for the effectiveness of the administration of justice.

Symbolic legitimacy, in Hermes, therefore resides in procedural legitimacy, based on his structuralist reading of law. This happens insofar as he would conceive the legal sciences as primarily characterized by “a procedure of reasonable public discussion” (1993, p. 190,

free translation), articulated with fundamental rights through the aforementioned networked interaction with other actors (1993, p. 191).

Hermes may be a good depiction of today's cyborg judge who overcomes the apparent opposition between Hercules and Jupiter:

We propose representing this model through the figure of Hermes, the messenger of the gods. Constantly in motion, Hermes exists simultaneously in the heavens, on earth, and in the underworld. He deliberately occupies the space between things, ensuring passage from one to another. As the god of merchants, he presides over exchanges; as a psychopomp, he connects the living and the dead; as the god of sailors and travelers, he guides journeys across unknown passages. Hermes is the universal mediator, the great communicator. He acknowledges no law other than the circulation of discourses, through which he arbitrates games that are perpetually begun anew. (Ost, 1993, p. 171, free translation)

What is particularly intriguing is the way in which Ost (1993, p. 171–172, note 3) defines Hermes as a “database,” in terms of a networked connectivity of interrelated legal information that links different sources of principles, doctrine, and case law through interpretation. It would be an understatement to say that this definition closely resonates with the reality of a cyborg judge, who relies on data and emerging technologies to connect different sources of information and filter results in the adjudication of cases. Yet Ost developed this analysis in 1993, at a time when cyborg justice was neither an implemented reality nor even a confirmed future prospect. That future, however, arrived rapidly, less than three decades later. In this sense, Ost inaugurates the notion of postmodern law as a fluid, interstitial, and informal science — one that is highly adaptable and capable of being shaped by the factual circumstances of each case (1993, p. 187).

4.3.4. Exu and Curupira

A Brazilian equivalent to Hermes would likely be Exu: an entity in Afro-Brazilian religions (precisely Candomblé and Umbanda) who may be male or female and who acts as a messenger between worlds, present both on earth and in spaces of obscurity in order to guide souls, bring clarity, open pathways, and resolve controversies. Exu mediates between the sacred and the profane and proposes curious paths with great potential for understanding the practical application of legal norms, intuiting the perfect balance between legal theory and legal dogmatics. The Exu judge would be one who adjudicates from within the crossroads, focused clearly on their designated role without becoming lost in their own power. In this sense, Exu constitutes an antithesis to the Olympian judges, engaging with political and social issues only to the extent required by their essentiality and practical inevitability in the pursuit of justice, while maintaining hermeneutic balance.

Figure 4 - Exu male and female figures.



Note. Reproduced from "Livro premiado no Jabuti narra as transformações sofridas por Exu no Ocidente" by N. Pais, 2024, *Jornal da USP* (<https://jornal.usp.br/?p=792278>). Image credit: George Chemeche, *Eshu: The Divine Trickster*.

This correlation can and should be made in order to situate all these theories within the Brazilian and Latin American reality. To date, all of these judicial models have relied upon Greek, male, and Eurocentric figures, which say little about Afro-Indigenous South American

culture: a culture that is itself extraordinarily rich and reveals much more about supra-emblematic integration within ecosystems, consistent with the posthumanist perspective defended here in relation to cyborg justice, as well as the future of our relationship with technology and the environment. It is hoped that these reflections may serve as a foundation for future research that is more robust, original, and less dependent upon Europe, recognizing the insufficiency of European heroic representations in encompassing the diversity, needs, potentialities, specificities, and innovations of the Latin American continent.

I therefore propose a more creative engagement with local spiritual, and perhaps even folkloric, figures as a means of advancing reflection on the role of justice, while also creating space for pluralistic solutions that, in the long term, appear to be far more effective in achieving systemic and synergistic balance.

As this thesis does not intend to explore this innovation in depth, its objective is merely to introduce this possible correlation as a point of departure for future investigations, considering Exu as a possible judicial archetype. Numerous possibilities for correlation exist, and other examples would include Xangô, the male orixá of justice, thunder, and law — an even more obvious parallel rooted in Afro-descendant religions; or Oxum, the female orixá associated with justice, diplomacy, fresh waters, and wisdom.

Another example would be Curupira, “one of the entities most respected by humankind, especially in the Amazon, where they still live” (Yamã, 2008, p. 37, as cited by Santos et al., 2022, p. 21). Curupira is an indigenous entity originated from Brazil who is considered to be the guardian of the forest against depravity by exploiters, hunters, prospectors, etc. He was elected the symbol of COP30 — the 30th UN Climate Change Conference, which took place in the Brazilian city of Belém, in the Amazon, in 2025.

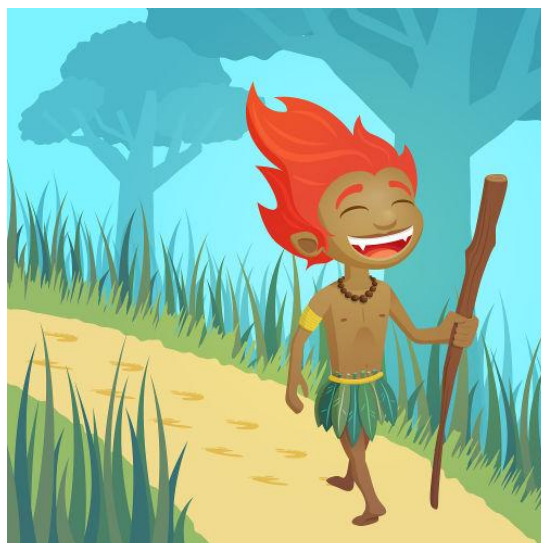
Figure 5 — *Curupira as part of the visual identity of COP30.*



Note. Reproduced from *Entre o moderno e o eterno, Curupira é símbolo da COP 30 e da proteção ambiental de São Paulo*, by F. Franco and J. P. Barreto, 2025, *Assembleia Legislativa do Estado de São Paulo* (<https://www.al.sp.gov.br/noticia/?id=500968>). Image credit: COP30.

Despite the variety of ways this entity is depicted — which depends on the culture/ethnic group/peoples, with different names, gender, and slightly different functions (Rodrigues, 2020, as cited in Santos et al., 2022, p. 13) — this enchanted being is traditionally pictured by the Brazilian folklore as a boy with backward-facing feet, with fire coming out of his head:

Figure 6 — Curupira (traditional representation)



Note. Reproduced from Silva, D. N. (n.d.). *Curupira* [Imagem]. Shutterstock/Brasil Escola. <https://brasilecola.uol.com.br/historiab/curupira.htm>

The fire symbolizes his strength and agility; his feet confuse hunters or bad intended people in the forest, for protection of the life therein; his mysterious noises desorient the enemies of nature (Franco & Barreto, 2025); and in some cultures, he is constantly testing the roots of the trees foreseeing big storms, hoping to protect the people by warning them through rituals and spiritual communication (Santos et al., 2022, p. 19). Such characteristics could easily serve as a metaphor for post-humanist judges: agility, experimentation, and the protection of the ecosystem as a whole, recognizing that there is no true separation between us and other forms of life, as proposed in Haraway's theories. Curupira himself is an entity that is neither human nor animal: he is more-than-human, existing at the border between worlds, much like cyborgs. Thus, he represents the cyborg judge in its most complete more-than-human form, balancing subjectivity with algorithmic neutrality in a liminal state.

In fact, Franco & Barreto (2025) suggests the neutrality of this entity — despite its obvious justice compass that points only to nature deserters —, as part of a Brazilian folklore that is not at all dichotomic, but is indeed very close to what it means to be human.

Curupira is the guardian of the forest and lives among the buttress roots of the kapok tree (*sumaúma*). He enjoys silence and is constantly wandering through the forest. When he becomes tired, he sits on a tortoise, which serves as his seat. The elders say that he has long hair, a hairy body, black eyes, and backward-facing feet. There are several types of Curupira: the father of the kapok tree, the owner of the tortoise, the guardian of the other animals, the male Curupira, and the female Curupira. Curupira frightens hunters by striking the roots of trees. He lures and enchants people. When Curupira attacks, the only way to kill him is by striking his body with a piece of rotten wood. Yet before dying, he always says: “If one day I come to an end, another will

take my place, guarding everything that belongs to me.” (Tikuna Teachers, in Monte & Freire, 2007, p. 31, as cited by Santos, Machado, & Abreu, 2022, p. 14)

His backward-facing feet reveal a temporally paradoxical orientation that connects past, present, and future, an important gift for a cyborg judge to deal with the contradictions between the legal traditions of the past and the technologies of the future, including the integration of Dworkin’s integrity through this careful attention to principles. Curupira integrates such classic legal theories without ceasing to move toward the future by incorporating pragmatic instruments for the optimization of justice, such as AI systems themselves, in their various applications.

Furthermore, the Curupira judge would protect vulnerable people, attentive to the most cherished values of the Citizen Constitution (alternative name for the Brazilian Constitution) against the domination of minorities, in light of the entire catalogue of social rights contained in Article 5 (Brazil, 1988, art. 5). There is, therefore, an active, agile, and relentless protection against the predatory exploitation of ecosystemic resources — applying a more-than-human perspective that includes human beings as one of the components of this living and integrated ecosystem. This requires historically situated and territorialized sensitivity, acting as a guardian of Indigenous peoples who, by deliberate euphemism, originated everything that followed.

Since this guardian-hero is situated on the land, within the forest he protects, there is no hierarchy such as the Olympian, Greek hierarchy of Hercules, Jason, Hermes, and others, which is verticalized in its essence. Rather, we witness an organic relationship with the associated community, within an interconnected, more-than-human context. Thus, he combines Hermes’ database, Hercules’ legitimacy, and Jason’s pragmatism, without losing the essential element of integration that is fundamental and absolutely central to his cyborg condition.

Perhaps the symbolic legitimacy of this type of judge does not even stem from the confirmed relations of domination described by Bourdieu, as previously analyzed — reflections of the social desire for order, permeated by legitimate power and violence, institutionalized. Instead, it arises from the integrated ecosystem itself, which is represented by this symbolic figure of nature who defends itself from its most vulnerable foundations, while remaining paradoxically neutral.

His instrumental knowledge is natural, localized, and ecosystemic, a form of situated knowledge that is not necessarily omniscient, as in Hercules. Perfection does not depend upon omniscience, but rather upon a territorialized awareness of the needs of the system within which one is embedded — as the forest in the story of Curupira.

In this way, the Curupira judge, with his backward-facing feet, disorients wrongdoers who act in bad faith, distinguishing through balancing and contextual assessment the different forms of exploitation: bad-faith extractivism is punished, but subsistence extraction, for example, is not punished to the same extent. Thus, there is proper space for accountability. Distinguishing between predatory and legitimate conduct further suggests a model of judicial technology guided by substantive values rather than neutrality alone. In view of this, the human side of the Curupira cyborg judge becomes essential, capable of discerning socially complex situations for the fair and effective application of the law. They calibrate the technological side of AI to identify patterns of predatory litigation or abuse of rights, thus combining a neutral tool with a human value compass — thereby merging deep knowledge of the substantive and local context with technological assistance while remaining accountable to the communities they serve.

In conclusion, rather than forgoing this opportunity, the present thesis seeks to suggest a preliminary examination of local possibilities to depict the cyborg judge in the figure of mystical “heroes” in Brazilian culture — one that combines all of the most important facets of

a judge, as previously exposed. Brazilian folklore and afro-originated beliefs are a rich, unparalleled source of knowledge to philosophically understand the relation between humans and the ecosystem, leaving a fertile space for post-humanist investigations, which are crucial for the hybridity behind cyborg justice today.

In its timeless potential, and symbolically engaging with decolonial historicity, “folklore is the union of the modern and the eternal. We carry ancestral traits that are constitutive of human formation” (Franco & Barreto, 2025). May it serve as a foundation for future proposals that are willing to move beyond the obvious in order to imagine a more harmonious and authentic future that looks toward the [Global] South. Re-reading the *praxis* of law through decolonial lenses may help us rethink judicial adjudication, with promising impacts for the future of cyborg justice.

CONCLUDING REMARKS. Rethinking Law in the Age of Cyborg Judges

This research aimed to demonstrate how AI is already intrinsically integrated into judicial systems, assisting the adjudication process, and has become a lasting feature of contemporary society. This matters because judicial decisions have a moral dimension with a significant impact on the lives of individuals and society as a whole, and unfair judgments can lead to serious moral harms in a given litigation and to the members of a community (Dworkin, 1986, p. 1). Therefore, we urge greater clarity regarding the extent to which AI may influence judicial decision-making and, consequently, the future of our society.

Furthermore, after comparing through analogy the case of faceless judges in the Americas with robot or avatar judges, we conclude that Brazil's current use of AI does not amount to anonymity as the phenomenon of faceless judges does, even though AI is already being deployed to assist in the adjudication process — MARIA, used by the Brazilian Federal Supreme Court, as shown in *Appendix 1* of the present thesis, is a good example of how AI is being deployed for adjudication without compromising the judicial authority and social legitimacy.

However, in a future where AI is developed to the point of performing the same interpretative tasks as a human judge does, taking into consideration contextualized, subjective, and nuanced analysis, we may begin to discuss the possibility of replacing humans for robots in legal adjudication, with additional ethical and philosophical considerations.

Ultimately, the future of cyborg justice will depend on the will of the population. Drawing on Dworkin and combining his perspective with Bourdieu's, legitimacy is not only a legal matter but also a social construct grounded in collective acceptance. Thus, in other words, the people decide the course of automated adjudication: should society choose to accept such a model — that is, decisions conducted by robot judges —, then it may acquire social and symbolic legitimacy through the collective confirmation of the robot's legal

authority, allowing for coercive and power relations between them and the parties subject to the jurisdiction.

This, however, would not necessarily imply constitutional validity according to the legal apparatus that exists today. Insofar, a robot judge could be considered unconstitutional in Brazil for violating the principle of the natural judge, as well as contradicting the interpretation of the Inter-American Court of Human Rights regarding the right to a fair trial — which, in cases involving faceless judges, presupposes the physical identity of the judge in the proceedings. This creates an important precedent, even though this Regional Court has never ruled on AI-related sentencing cases.

As a result of this reality and the theories evoked in this thesis, cyborg judges now have an even more relevant responsibility to represent society's will through legitimate force and coercion under the aegis of the democratic rule of law. To address the main challenges posed by AI in the adjudication process, Toledo & Pessoa (2023) suggest a few measures:

broader participation of legal professionals and civil society in public debates on judicial AI; external audits to improve transparency and mitigate biases; the development of hybrid AI models combining data-driven and knowledge-based approaches; mandatory disclosure to the parties regarding the use of AI in judicial processing and decision-making; the possibility for parties to object to AI-based adjudication and request human review; mechanisms for nullification or revision of AI-assisted decisions rendered without prior notice or consent; the adoption of fine-tuning and debiasing techniques during system training; and the standardization of AI systems across Brazilian courts under the coordination of the CNJ in order to facilitate oversight and the resolution of systemic issues. (free translation)

In this sense, human judges — but also cyborg judges, as discussed throughout this research — must actively engage in the decision-making process, fully understanding the

capabilities and limitations of the AI systems, while consistently and distinctly valuing human capacities of judgment (Crootoof, 2019, p. 244). One must recognize the *sui generis* characteristics of human activity, such as interpreting nuanced cases and constructing meaning from complex subjective concepts by drawing on the human *black box*, as previously discussed.

Moreover, a balance between social and technological development is imperative for an interconnected posthumanistic approach. In this regard, judges should:

uphold political orientation, translate institutional strengths into effective governance, and remain firmly committed to a people-centered approach, improving and implementing the judicial accountability system, and ensuring that information technology always serves as an auxiliary tool [...]

[...] courts should continuously improve adjudication, enforcement and judicial management, so as to ensure that the public can feel fairness and justice in every judicial case (Supreme People's Court of the People's Republic of China, 2026)

Finally, another recommendation for this context was declared on World Press Freedom Day 2025 by the United Nations (UN) Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression, the Organization for Security and Co-operation in Europe (OSCE) Representative on Freedom of the Media, the Organization of American States (OAS) Special Rapporteur for Freedom of Expression, and the African Commission on Human and Peoples' Rights (ACHPR) Special Rapporteur on Freedom of Expression and Access to Information in Africa. They stated that AI is advancing faster than the safeguards designed to protect human rights, under a predominantly market-oriented logic that tends to minimize human rights guarantees. They further argued that the market structure behind AI development creates dependency and deepens global inequalities, producing different outcomes and unequal levels of access. As Irene Khan stated,

"Despite risks, AI is here to stay and should be governed through a human-centered, multi-stakeholder approach focused on public trust, democratic resilience, and information quality rather than profit or speed" (Khan, as cited in Organization of American States, 2025).

Against this backdrop, we argue that these concerns are particularly salient in the Global South, where a human rights-centered approach requires engagement with local epistemologies and symbolic frameworks for envisioning the future of cyborg justice. After drawing a few of the representations of an ideal judging model, such as Hercules, Jason, Jupiter, and Hermes models for an ideal judge, we conclude that such representations are insufficient, especially in complex contexts like Brazil, with historical and social implications that demand for judicial innovation and a humanistic approach. Not coincidentally, many jurists argue that an ideal judge must manage to combine different facets of all these different archetypes.

In this context, the present work mentioned Exu and Curupira as alternatives that could be studied in future researches to replace the classic Greek Mythological Gods and Heroes that have been traditionally used to elucidate the role of judges in the last decades. Indigenous and Afro-Brazilian entities are both related to the future of the ecosystem and the past of our history, stained by *coloniality* ideals that challenge the practice of justice until modern days. Unlike the Greek examples, Brazilian entities reveal one step further towards the posthuman world, where machines, humans and nature coexist within an interconnected, organic, and interdependent system, amounting to a more-than-human reality.

Maybe the future research expected to derive from this thesis will start discussing, in fact, more-than-human justice and not just cyborg justice. We hope to plant seeds for an ecosystemic approach, suggesting new hermeneutical paths towards the legitimacy of judicial decisions, intertwined with human rights — or we must say, more-than-human rights, or ecosystemic rights.

In this regard, and more objectively, open questions remain untouched: do we need to rethink the way we interpret human rights in light of artificial intelligence? And if so, should human rights be understood beyond the strictly human subject, toward more-than-human or cyborg frameworks of existence? What could an ecosystemic and embodied ontology of the human possibly reveal about the limits of contemporary human rights? If we are discussing robot judges, should this phenomenological approach to human authority be at all embedded within law?

The tension surrounding AI may not only concern regulation or control, but also a deeper unease about its evolving potential. If this is the case, part of this fear may reflect a broader lack of education regarding self-awareness and our own ontological condition as cyborg humans, leaving projects such as Justice 4.0 without proper theoretical compass or clear dispositions that may substantiate future frameworks for the limits of the crossroads between AI assistantship and human adjudication.

From this perspective, interpreting rights through a strict separation between AI and the human condition becomes increasingly limited. Hermeneutics in human rights may therefore risk reproducing narrow conceptions, detached from *historicity*, lacking plural and situated experiences of existence. A relational approach could lead towards this more-than-human reality, where Curupira judges relate with the objects of law, within a broader network of endogenous and exogenous relations. Now that digital systems blur the boundaries of human experience, Curupira judges start becoming part of their own relational network without compromising principles of impartiality and their legitimate authority.

Considering their hybridity, the confirmation of their authority into a legitimate force system comes, in fact, from various sources, without restricting the self to anthropomorphic dimensions. This also raises unresolved questions about the status of artificial intelligence: how does the notion of a “machine mind” relate to human consciousness in this hybridity

system? What are its practical implications in a future where complex computational configurations are figured? Does this comparison reveal anything about the future architecture of rights, based on the architecture of our relations to the more-than-human world?

While these questions remain open, they suggest the possibility of rethinking hermeneutics and human rights beyond traditional, purely anthropocentric frameworks, toward more emancipatory approaches. How could our rights and human symbolic authority remain meaningful to operate in a world where the boundaries of the human are no longer stable? Those are non-trivial questions that Justice 4.0 should incorporate into the prospects of the future of justice, considering that human kind can flourish alongside the system beyond biotraditions.

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APPENDICES

Appendix 1. Table of main tools applied to various Brazilian Courts of Justice

— *Created with assistance from generative AI, precisely ChatGPT and Claude, integrating an analysis of a previous study with an additional reflection regarding the impacts on decision-making*). (Fundação Getúlio Vargas, 2025, p. 155-195)

AI & Court	Main role	Activities covered	How it works	Impact on decision-making ²⁸
MARIA (Supreme Federal Court — STF)	Case analysis and decision support	Similar case search; indexing of digitized documents; text similarity; summarization; case clustering; report and <i>ementa</i> generation	Integrated into the STF-Digital case management system; uses generative AI (GPT and Gemini) to suggest reports, <i>ementas</i> , and precedents via predefined prompts (no user-typed prompts required)	Direct — explicitly improves judicial decision-making; judges report more complete and precise analyses

²⁸ According to the analysis of the author of the present dissertation, elaborated with assistance from the LLM. Therefore, the information in this column is not included in the original study from FGV, and comes from an additional analysis of the data available.

Logos (Superior Court of Justice — STJ)	Jurisprudence research and legal drafting support	Similar case search; indexing of digitized documents; entity extraction; text similarity; summarization; process clustering; legal drafting	Uses GPT-4o via Microsoft Azure/SERPRO; performs semantic analysis of filings, answers case-based questions, compares petitions and decisions, drafts and reviews legal texts within Justiça Web	Direct — improves analytical precision and legal reasoning; 38% productivity increase (H1 2025)
Chat-JT (Superior Council of Labor Justice — CSJT)	Multi-purpose legal and administrative AI assistant	Summarization; jurisprudence analysis; draft generation; administrative writing (official letters, emails); code generation	Generative AI chat platform (Gemini 1.5 Flash and Llama 3) integrated with the Falcão jurisprudence repository; supports multiple LLMs and custom assistants	Indirect — supports reasoning and drafting; no formal impact on judicial decisions mapped yet

ApoIA (Federal Regional Court, 2nd Region — TRF2)	Multi-functi on legal AI assistant (drafting, automation, summarizati on)	Identification of predatory litigation; procedural automation; summarization; text revision; abstract generation; draft generation	Multi-provider generative AI (GPT-4.1, Claude 3.5 and 4, Gemini 2.5 Flash) integrated with DataLake/CODEX; retrieves filings by case number; supports prompt sharing and style adaptation; available via PDPJ Conecta	Indirect — supports drafting and analysis; no formal impact study yet
TJMG Assistant (Court of Justice of Minas Gerais — TJMG)	Virtual legal assistant for document processing and drafting	Procedural automation; summarization; <i>ementa</i> generation for rulings; draft generation	Non-intrusive assistant embedded in PJe and JPe; summarizes documents without upload/download; generates <i>ementas</i> and drafts; includes full audit logs	Indirect — influences drafting and reasoning; no formal impact study

ASSIS (Court of Justice of Rio de Janeiro — TJRJ)	Decision and draft generation	Extraction and identification of data; summarization; document classification; full judgment drafting (sentences, interlocutory decisions, reports, orders)	Natural language models with RAG; integrated into e-PROC and PJe; classifies filings, extracts data, summarizes records, and produces fully customized draft decisions aligned with each judge's profile	Strong direct impact — highest level of involvement; actively produces full draft sentences
Galileu (Regional Labor Court, 4th Region — TRT4)	Judgment drafting assistant	Legislation consultation; indexing; text similarity; summarization; analysis of petitions and responses	Developed by TRT4 innovation lab; cross-references claims and defenses; suggests structured summaries, issue segmentation, and legal grounds based on precedents and binding decisions	Direct — substantial support for judicial reasoning; does not generate final decisions
GAIA Assistant e (TJRS)	Procedural conversation al assistant	Indexing; text similarity; summarization; semantic search	Conversational AI (Claude 3.7) embedded in eProc (first and second instance);	Indirect — supports analysis and

			assists judges and clerks in organizing and interpreting case data	workflow; impact under evaluation
GAIA Audiências Inteligentes (TJRS)	Hearing transcription and summarization support	Text similarity; summarization; automatic speech transcription	Uses Claude and AWS Transcribe to generate real-time transcripts and structured summaries; outputs reviewed by parties before finalization; development phase	None — procedural support only; no decision influence
GAIA “Explicação, tá, tchê” (TJRS)	Access-to-justice tool for citizens	Summarization; legal simplification; visual law/plain language design	Citizen-facing tool (Gemini); users submit their own documents and receive simplified versions; no internal database	None — no judicial impact
GAIA Petição Inicial (TJRS)	Initial petition intake and classification support	Indexing; entity extraction; automatic subject classification (TPU)	Uses GPT-4o to classify petitions according to the Unified Procedural Table; future phase	Indirect — improves intake accuracy

			will extract structured metadata (parties, value, legal aid, etc.)	and data quality
GAIA Minuta (TJRS)	Judicial drafting support	Procedural automation; summarization; draft decision generation based on case content and judge's style	Developed with startup jAI and AWS; analyzes case files and prior writing patterns; generates draft decisions via single command within eProc; up to 5× faster drafting reported	Direct — strong drafting support; significant efficiency gains; no formal impact study yet
GAIA Salus (TJRS)	Administrative health benefits validation	Administrative support; validation of medication expense documents	Uses GPT-4o and OCR to verify receipts, prescriptions, and ANVISA records; reduces processing time from ~45 min to <5 min	None — purely administrative

GAIA SEI (TJRS)	Administrati ve workflow automation	Indexing; text similarity; document routing; administrative workflow support	Integrated into SEI (maintained by Anatel); streamlines document handling and internal processes; handles only non-confidential data	None — administrati ve only
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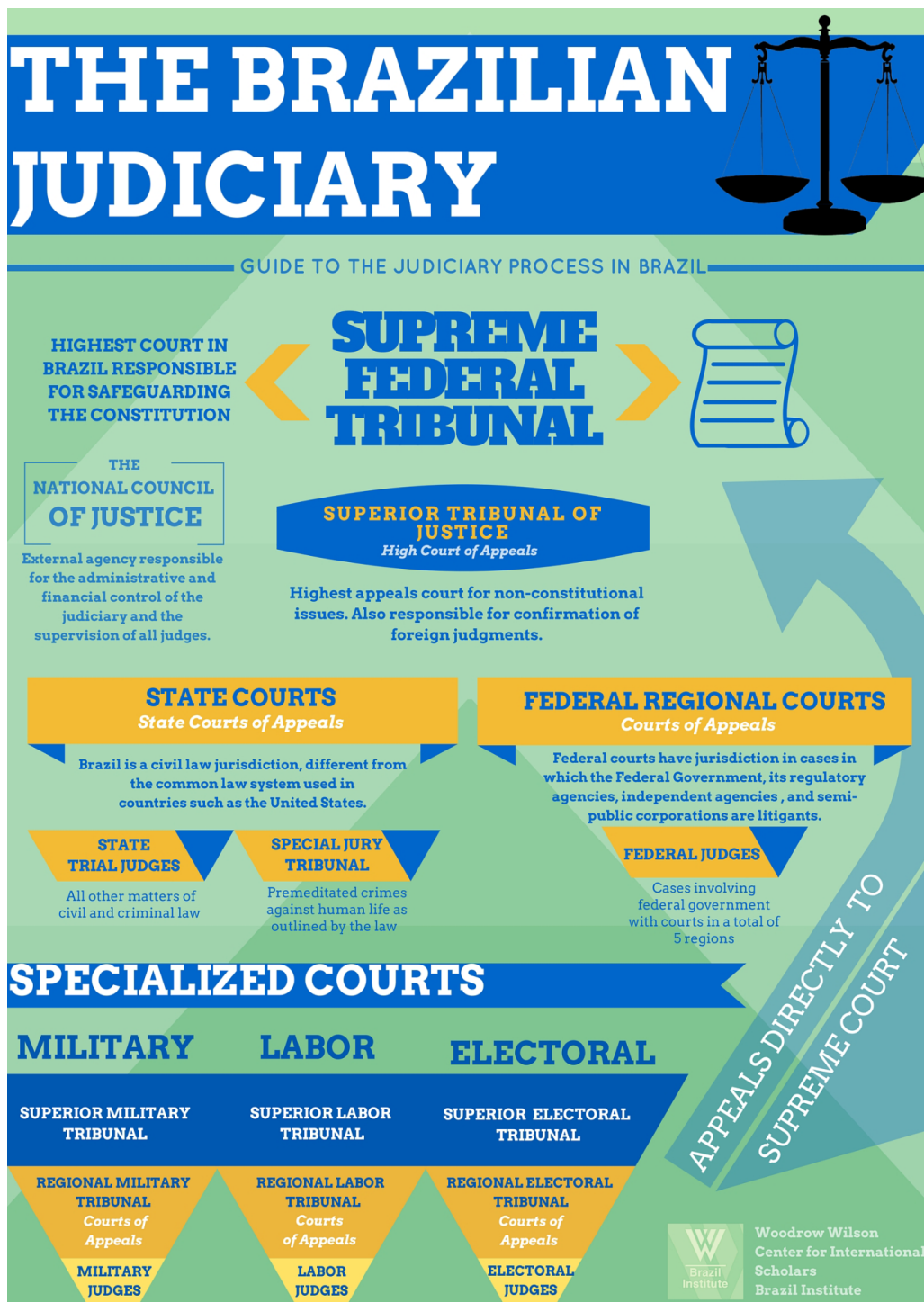
Appendix 2. Scheme of the Brazilian Judiciary

— Brazil Institute. (2015, September 22). *A simplified version of the Brazilian judiciary.*

Brazil

Portal.

<https://brazilportal.wordpress.com/2015/09/22/a-simplified-version-of-the-brazilian-judiciary/>
(brazilportal.wordpress.com)



Appendix 3. Thoughts on transhumanist judges

Until this point, the present dissertation has distinguished cyborg judges (as per the post-humanism theory) and robot judges (fully artificial judges). However, there might be a third type that was not yet discussed. In order to make a successful distinction between the three, it is worth briefly describing the transhumanist judge: an improved human being, merged with technology for enhancement of their fundamental condition.

The transhumanist theory was introduced by a group of enthusiasts of the World Transhumanist Association, founded in 1998 by Nick Bostrom and David Pearce, which led to the publication of the Transhumanist Declaration (1998), and the Transhumanist Frequently Asked Questions (1999). (Schneider, 2009, p. 2-3) Its main aspiration is to reach a human developmental state in which “the only real difference between you and an AI creature of standard design is one of origin—you were once a natural. But you are now almost entirely engineered by technology”. (2009, p. 4)

Sourdin (2018) introduces transhumanism as an alternative to the dichotomy between robot and human — or cyborg, for the maintenance of the human condition, combined with the surrounding ecosystem —, by merging both into one single figure, as in science fiction:

the philosophy and science of transhumanism is aimed at ‘fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities’. (2018, p. 1131)

In terms of AI implementation, for instance, transhumanist judges would integrate the technological systems into their own bodies, adding computational circuits to their body to enhance human genetics, boosting memory and data processing abilities. These judges would overcome fundamental limitations of the biological body that may affect their activities at work, such as hunger and tiredness. (2018, p. 1131) Judges then become hybrid entities that

challenge the original idea of what a judge even is, given their superintelligence and transhumanistic character.

Notice, however, one of the key distinctions between the hybridity of a post-humanist and a transhumanist judge: transhumanism takes a step further to radically boost the transformations in human capacity, merging our biology with technologies that would then radically enhance original traits. Technology, in this scenario, ceases to be a mere instrument for human efficiency, and becomes a core constituting part of human biology/composition.

This discussion matters for the future, because it should depict the core constituting values (or *essential properties*, according to patternism theories²⁹) of a human judge. Such values/properties would guide further transhumanist discussions on the role of judges and future enhancement through technologies, preserving core fundamental principles in favor of human dignity and societal best interests:

Further, the topic of the nature of persons is of clear relevance to the related topics of human nature and human dignity, issues that are currently key points of controversy in debates over enhancement (see, e.g., Bostrom, in press, “Dignity and Enhancement”; Fukuyama, 2002). (Schneider, 2009)

If we are to conceive of the existence of the transhumanist robotic judges in the future of justice, there may be foremost logical-philosophical premise challenges for its feasibility. The main logical barrier, according to the teachings of Schneider (2009), is to maintain the humanity of an enhanced being, by conserving their essential properties — being that the theory for logic explanation and validity that was chosen by the transhumanist movement —, as well as understanding the limits of such transformations: when does a human cease to be human and become something else? What is the right dosage of robotic features for

²⁹ In short, the transhumanist theory follows patternism, an updated version of the psychological continuity theory — thus implying that transhumans would keep their humanity by conserving essential properties of their psychological pattern. These essential properties correspond to our computational configurations – i.e. sensory systems of the brain. (Schneider, 2009, p. 7)

enhancement of a human being? And how can our institutions embed this trend, if it ever arrives?

In this regard, Goding & Tranter (2023) help us identify a particular concern with the inadequacy of new categories such as the transhumanist judge in the traditional legal system. According to their study, concerns with distinct categories such as human, machine, embodiment and separation need to give way to concepts of *becoming*, such as flux, flow and the emergent, in order to adequately capture the reality of contemporary human life with the digital (2023, p. 333) Thus, humans have already merged with technology in society's imagery, but law preserves its traditional, stationary categories that lean towards binary definitions. They offer an example of delivery workers to elucidate their hypothesis, as follows:

The precariat delivery rider is less envisaged as an individual human in the way that *the man* is presented in the robot law scholarship and more an assemblage composed of bicycle-human-device-platform. (2023, p. 334)

For what is worth, transhumanist theories are still part of a fictional future, and still lack a coherent set of logical explanations for what it defends, which questions its future prospects. Schneider (2009) stresses that “Transhumanism cannot claim that enhancement is desirable, for its very means of deciding whether it is—its theory of personal identity—is seriously flawed.” (2009, p. 10) Although a small enhancement can still preserve identity, as change increases gradually it becomes unclear where human identity may be lost, suggesting the creation of a robotic replica instead of an enhanced subject. (2009, p. 10-11)

Should a transhumanist judge be able to prove and maintain their humanity after a series of tech-bio enhancements, then responsibility and accountability may still prevail, leaving space for a legitimate authority behind the process of adjudication. However, should the borderline between a human and a machine become opaque, or should the society

disconfirm the legitimacy of the transhuman judge, it should be nearly impossible to conceive their institutional existence, track their reasoning, and account for the decisions. Nevertheless, this is still an important theory to keep in mind for future discussions, should the transhumanist agenda/manifest ever advance and prove itself achievable.

Appendix 4. Further examples of AI tools in Brazilian State Courts

Several AI projects in the judiciary show a direct or indirect impact on judicial decisions or rulings. After analyzing them for the purpose of this study, a few stand out for its direct impact as cognitive support to the decision process:

- AlphaJus from the State Court of Bahia (TJBA) (Tribunal de Justiça do Estado da Bahia [TJBA], 2023), supports decisions through the recommendation of similar cases to guarantee jurisprudential consistency, uniformizing the interpretative/decision results;
- Robô Haia from TJBA, which can:

“identify the petition within the case file; finalize the case; review the case file and identify the request; draft a document detailing the relevant procedural steps; publish the judge’s ruling in the electronic journal; and serve notice on the Public Prosecutor’s Office and/or the Public Defender’s Office via the system” (TJBA, 2023);

- Maat from the Court of the Federal District (TJDFT) (Tribunal de Justiça do Distrito Federal e dos Territórios [TJDFT], 2024), responsible for detecting similarities that lead to the recommendation of stay of proceedings or the application of binding thesis established in the PJe for cases adhering to qualified precedents;
- ARANDU from the State Court of Amazonas (TJAM) (Tribunal de Justiça do Estado do Amazonas [TJAM], 2025), a Generative Pre-trained Transformer platform that, among other activities, supports with drafting and summarizing legal documents and providing basic legal analysis;
- GaIA from the State Court of Rondônia (TJRO) (Tribunal de Justiça de Rondônia [TJRO], 2025), which uses generative AI to draft the judges'

votes/decisions and their abstract, but counting on revision and final validation from a human assistant;

- ASSIS from the State Court of Rio de Janeiro (TJRJ) (Tribunal de Justiça do Estado do Rio de Janeiro [TJRJ], n.d.), another generative AI created for sentence drafting, as well as decisions and reports, that replicates the wording and argumentation style after training;
- Galileu from the 4th Regional Labor Court (TRT4) (Tribunal Regional do Trabalho da 4ª Região [TRT4], 2024), which suggests drafts for sentences according to the main identified themes of a lawsuit, as well as summarizing the contents of legal documents;
- Robô Auxiliar from the State Court of Santa Catarina (Tribunal de Justiça de Santa Catarina [TJSC], 2024), a neural network that classifies petitions to suggest drafts of decisions to be checked by the user;
- SAVIA from the State Court of Minas Gerais (Tribunal de Justiça do Estado de Minas Gerais [TJMG], n.d.), an assistant based on ChatGPT to help with legal writing and interpretation;
- GAIA Minuta from the State Court of Rio Grande do Sul (Tribunal de Justiça do Estado do Rio Grande do Sul [TJRS], n.d.), which suggests sentence drafts according to the writing style of each judge;
- and MAIA from State Court of Pernambuco (Tribunal de Justiça de Pernambuco [TJPE], 2025), which generates complete drafts of reports, votes, and summaries with anti-bias mechanisms.