

## Legal education and artificial intelligence: first draft of a constitutionalized private law approach<sup>1</sup>

### *Ensino jurídico e inteligência artificial: primeiro esboço de uma abordagem civil-constitucional*

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#### Abstract:

With the recent development of new applications equipped with artificial intelligence, debates are growing around not only their legal repercussions, but also their possible impacts on the training of legal professionals and on their careers in the near future. This essay seeks to analyze some possible repercussions on the teaching of Law of the recent growth of artificial intelligence technologies. In particular, the paper analyzes: proposals for the creation of specific disciplines in the curricula of Law Schools for the study of the interaction between law and technology; proposals for inserting student training in the use of intelligent systems in the curricula of Law Schools; and, finally, the thesis that artificial intelligence would replace the current functions of legal education. The work adopts the constitutionalized private law perspective and seeks to highlight the risk that the aforementioned trends promote the replacement of legal system values, notably the protection of human dignity, by market values.

**Keywords:** Constitutionalized private law; legal education; artificial intelligence.

#### Resumo:

*Com o desenvolvimento recente de novas aplicações dotadas de inteligência artificial, crescem os debates em torno não apenas de suas repercussões jurídicas, mas também de seus eventuais impactos sobre a própria formação dos profissionais do Direito e sobre suas carreiras no futuro próximo. O presente ensaio busca analisar algumas possíveis repercussões sobre o ensino do Direito do crescimento recente de tecnologias dotadas de inteligência artificial. Analisam-se, em particular: as propostas de criação de disciplinas específicas nas grades curriculares dos cursos jurídicos para o estudo da interação entre Direito e tecnologia; as propostas de inserção do treinamento de estudantes para o uso de sistemas inteligentes no currículo dos cursos jurídicos; e, por fim, a tese de que a inteligência artificial substituiria as funções atuais do ensino universitário do Direito. O trabalho adota a perspectiva civil-constitucional e busca destacar o risco de que as tendências ora referidas promovam a substituição dos valores do ordenamento, notadamente a tutela da dignidade humana, pelos interesses do mercado.*

**Palavras-chave:** Direito civil-constitucional; ensino jurídico; inteligência artificial.

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“Ó menina, vai ver nesse almanaque /  
como é que isso tudo começou”

– Chico Buarque, “Almanaque”, 1981

## 1 Introduction: Beyond "*Chat GPT*"

Law and artificial intelligence have never been so close. The availability to the general public, a few months ago, of certain tools *online* The issue of artificial intelligence seems to have consolidated the issue (until then the subject of prospective concern on the part of lawyers) as one of the greatest legal challenges of today. The emblematic example, without a doubt, has been the service called *Chat GPT* (*Pre-trained generative transformer*), now ubiquitous in news reports and legal articles on the subject. Created by the American developer OpenAI, it is an algorithm capable of producing unpublished texts in response to commands and questions provided by the user and that impresses with its ability to reproduce human language, although it does so from the statistical analysis of correlations between words in a gigantic sample universe of texts with which it was fed. and answer the question *Tickets* paraphrasing these sources, with a dizzying processing speed (Garattoni, 2023a).

And other similar tools are also emerging in the current scenario for the same ability to simulate human dialogues with the user, such as the *LaMDa*, another model of language that, like the *Chat GPT*, is based on a type of neural network, called *Transformer*, created by Google in 2017, initially for translations (Garattoni, 2023a). In addition to these examples, there are other types of algorithms, aimed at simulating various aspects of human creativity. Services such as *Dall-E* (also developed by OpenAI), *Halfway* and the *Stable diffusion*, which use artificial intelligence to create images in a wide variety of styles and patterns, from illustrations to absolutely realistic photographs, based on user-entered commands (Rossini, 2023a). There are also types of *software* capable of performing other tasks, such as identifying the content of images, completing texts, suggesting products, etc. (Garattoni, 2023a). The next frontier, which has already been explored, seems to be the production of videos from any user command, one of the characteristics of the next algorithm *GPT* (Garattoni, 2023b).

Why has this latest generation of technologies made such an impact? The use of robots equipped with artificial intelligence is already consolidated in the most diverse sectors of the market. In other words, these are artificial intelligence mechanisms in the most varied everyday situations, although in most cases the public is not fully aware of it. On the other hand, one would expect that today's society is already to some extent accustomed to the emergence of

disruptive technologies, absolutely unexpected, almost daily. As strenuous as it is to keep up with the pace of innovation, especially for people from generations who witnessed the world before the current technological tipping point, the emergence of robots capable of simulating human language cannot be said to be exactly unexpected. What would the *Chat GPT* And are their counterparts so peculiar?

A preliminary answer could lie in the speed of diffusion that these technologies have been able to obtain. Although we are used to the emergence of technologies capable of causing drastic impacts on daily routine, social relationships, economic sectors and, finally, on human life, there may be no precedent<sup>2</sup> of the emergence of a technology capable of affecting global society in such a dramatic way and that has reached so many people at the same time, literally overnight. Five days after its launch, on November 30, 2022, more than a million people had already tried the *Chat GPT*; with less than two months of existence, the algorithm has surpassed the 100 million user mark, becoming the fastest-growing application in history (Caparroz, 2023a). While we have all witnessed the way in which the *Smartphones*, social media, and social networking services. *streaming* Videos, music and games, among many other examples, have revolutionized human relations and the global market in recent years, it cannot be ignored that their insertion into social reality has taken place gradually. Services such as *Spotify* and social networks such as *Facebook*, by way of illustration, it took about five years to reach the number of users that *Chat GPT* it obtained it in less than two months (Caparroz, 2023a).

Also of particular concern is the possibility that technologies such as *Chat GPT* They will inevitably be inserted into basic services in a very short time, as a more than predictable reaction of the market to the possibility of cost reduction. Services *Telemarketing*, customer service and many others, who have been using robots for a relatively long time, will increasingly do so in a way that is practically imperceptible to the user. Microsoft quickly announced that it would integrate the *Chat GPT* to your search engine results on the Internet, *Bing* (Garattoni, 2023a). The search engine itself *Google* He already has the conversational robot *Bard* (Garattoni, 2023a), as well as artificial intelligence resources have already been incorporated into the *Gmail* and *Google Docs* (Garattoni, 2023c). In simple terms: unlike what happened with *Smartphones*, *streaming* and social networks, the use of this type of algorithm will hardly remain optional for a long time; It will not be possible to observe its development and know its potential risks from a safe distance.

<sup>2</sup> Some claim that there has not been a similar revolution since the beginning of the Enlightenment (cf. Kissinger et al., 2023).

Educators around the world have also raised pertinent and more specific questions about this type of technology. Absolutely absurd answers provided by the *Chat GPT* to users, spreading incorrect information.<sup>3</sup> After all, the algorithm feeds on texts that may contain false or inaccurate data and, even if this is not the case, it can reach absurd conclusions when processing these texts.<sup>4</sup> The same robot also "accused" a person of sexual harassment based on alleged journalistic reports that did not exist (Melo, 2023), while the *Halfway* created a false image of Pope Francis in a haute couture coat that even deceived the editors of *Vogue* magazine (Rossini, 2023b), which generated enormous concern about the potential use that these technologies will have for dissemination and even for the apparent "proof" of *Fake news*.<sup>5</sup> Anxieties about the reproduction of discriminatory patterns against minorities and hate speech by intelligent tools are also known (Perrigo, 2021). There is also a great deal of discussion about the possible configuration of plagiarism in the results created by language algorithms (Garattoni, 2023c): given the ease with which they paraphrase original texts or simply use ideas without citing their authors, researchers have already identified that these technologies are capable of producing plagiarism of the "most different flavors" (Marques, 2023).

And even the type of activities and evaluations that educators at the most diverse levels can propose to their students has been put in check: from the school assignments of children and adolescents (Herman, 2022) to the theses and dissertations of graduate researchers may have been generated by the *Chat GPT*,<sup>6</sup> which is capable of producing entire books from simple commands (Garattoni, 2023a). Although all these concerns are justified and should already be enough to advise a very careful global reflection on the limits of the development of this type of artificial intelligence (and so much so that even technology tycoons, not always recognized for their prudence, have already recommended the temporary suspension of research for this type of algorithm),<sup>7</sup> Arguments like these are unlikely to suffice for the productive sector. After

<sup>3</sup> It is reported, for example, that *Chat GPT* would have recommended that a user add ground tiles (*sic*) to breast milk, because "porcelain can balance the nutrients in milk" (Garattoni, 2023a).

<sup>4</sup> The problem is particularly serious because the algorithm does not reveal the sources consulted or clarify the processes and connections carried out to arrive at the results presented, as Kissinger et al. (2023) highlight.

<sup>5</sup> On the relationship between *Chat GPT*'s artificial intelligence and the very concept of "truth", cf. the sobering finding of Kissinger et al. (2023): "The truth of Enlightenment science was reliable because every step of replicable experimental processes was also tested and therefore reliable. The truth of generative AI will have to be justified by completely different methods and may never become equally absolute." The authors add that tools to identify falsehoods created by artificial intelligence may not be enough: "they must be backed by a high level of human skepticism."

<sup>6</sup> *Chat GPT* is reported to have already been used to produce a scientific paper that "could be approved in an initial review" (Stock, 2023).

<sup>7</sup> Twitter entrepreneur Elon Musk and Apple co-founder Steve Wozniak have recommended halting artificial intelligence training, reports Vallance, 2023.

all, proponents of technological "breakthroughs" will always claim to have an unwavering faith in developers' ability to create tools to contain the risks created.

And, in fact, these tools can emerge, even if they do not completely solve the problems. There is already talk, for example, of the possibility of creating a "watermark", imperceptible to man, capable of pointing out all kinds of content created by artificial intelligence (Garattoni, 2023a). The developers of this type of *software* have also committed to correcting the databases that feed them, although they are sometimes involved in scandals about the working conditions of the workforce they use for this purpose (Perrigo, 2023a). In this sense, everything points to the fact that alternatives will also be found in education to overcome many of the problems created by artificial intelligence. The prohibition of the use of electronic devices during tests in educational institutions and even in public exams, for example, has been adopted for many years as a response to the risk of fraud already caused by much more rudimentary technologies.<sup>8</sup> The solutions to these types of problems will not be simple, of course;<sup>9</sup> But it is necessary to advance firmly and as quickly as possible in its development.

In any case, it seems clear that legal studies that focus on very specific risks derived from artificial intelligence will generally be condemned to obsolescence from the date of their publication: the existing problems and solutions will probably have already changed by the time the endpoint is inserted in them. Before this study also fully submits to this inevitable dating, it is necessary to enter into some concerns, these directly related to the university teaching of Law, which, for better or worse, will possibly be more lasting than many of the problems described above. They are scattered notes, collected in the middle of the ocean of uncertainties created by the current stage of artificial intelligence. Its selection among so many other possible anxieties obeyed a single criterion, undoubtedly somewhat arbitrary: it deals with problems that, contrary to what it may seem, were not created – at least not exclusively – by the use of these new technologies.

<sup>8</sup> As for Chat GPT, in the same direction, New York schools have already banned access to the service on all devices and networks connected to their facilities (Barbosa, 2023).

<sup>9</sup> Marche (2022) offers a realistic and grim portrait: "Humanities departments judge their undergraduate students based on their essays. They award degrees based on Ph.D. com in writing a dissertation. What happens when both processes can be significantly automated? From my experience as a former Shakespeare teacher, I imagine it will take 10 years for the academy to come to grips with this new reality: two years for students to discover technology, another three years for professors to recognize that students are using technology, and then five years for university administrators to decide what to do about it. in any case. Teachers are already among the most overworked and lowest-paid people in the world. It is already a question of humanity in crisis. And now this."

## 2 Artificial intelligence and proposals to reform the curriculum of university law curricula

The first (and possibly the most obvious) reaction of academia to the growth of artificial intelligence tools in the public debate translates into the perception that the legal problems derived from their use and development should be part of the curricula of university law degrees. This process, as is well known, has already taken place in recent years in relation to new technologies of various kinds, whose legal repercussions are generally grouped under names such as "digital law", "law and technology", "law and internet", etc., transformed into new curricular "disciplines". The reaction, expressly encouraged by the Ministry of Education,<sup>10</sup> It is to a certain extent understandable, and there does not seem to be a reasonable discrepancy as to the need for the academic debate and university training of new jurists to seek permanent updating in the light of technical and social evolution.<sup>11</sup> Therefore, if there is any consideration to be made on the subject, it is a question of *how* and *when* Promote this type of curricular insertion.

Although it is probably not too late to consider the construction of an "artificial intelligence law" as an autonomous branch of study, this type of proposal, especially in the short term, recommends caution. The autonomy of a new legal sector should, ideally, result from a gradual and spontaneous process, during which the set of sources (normative, jurisprudential and doctrinal) and the theoretical framework of a given subject expand to such an extent that its scientific separation from civil law, constitutional law, etc., is revealed, at a given moment, inevitable. When this process operates naturally from the academic development of the discipline itself, the greater the chances that the scholar will bear in mind that the autonomy thus acquired is merely didactic: the solutions, innovative or old, to the problems of the new sector will derive from the entire legal system, being compatible, from the logical and

<sup>10</sup> The National Curricular Guidelines for Law careers (Resolution No. 5/2018 of the Chamber of Higher Education of the National Council of Education, with the modification of Resolution No. 2/2021) provide, in Article 5, II, that the curriculum of Law careers must "necessarily" include, among others, "essential contents" referring to "Digital Law".

<sup>11</sup> See, among many others, the considerations of Santos et al. (2021).

Pensar, Fortaleza, v. 28, n. 2, p. 1-35, jul./set. 2023

evaluative point of view, with all other sectors.<sup>12</sup>

The deliberate and early creation of a "law of artificial intelligence" as an autonomous discipline to be taught in university courses and developed in graduate programs and research institutions is troubling insofar as it seems to invite the scholar to believe in the illusory possibility of constructing an entire branch of law *Ab nihil*, supposedly endowed with its own logic and a peculiar set of values, more or less independent of the other legal sectors.<sup>13</sup> Therefore, the critique formulated by the civil-constitutional school to the microsystematic perspective is taken up.<sup>14</sup> that so many errors and techniques usually produce<sup>15</sup> (Think, in our recent experience, of the clear setback in compensation protection for victims of damage in a virtual environment that was already promoted by Brazilian jurisprudence, after the advent of the Civil Rights Framework for the Internet and, particularly, of its much-criticized Article 19, the result of a frank and excessively sectoral perspective on the subject).<sup>16</sup>

This fragmentary perspective, potentially the result of an early autonomization of the legal repercussions of artificial intelligence, tends to be strengthened if a general regulatory statute on the subject is approved.<sup>17</sup> Although a draft Legal Framework is being processed in the National Congress, at the time of writing this study, in which human rights and democratic values are indicated as references,<sup>18</sup> The risk that a "particular meaning" of these guidelines will

<sup>12</sup> In this sense, the possible practical repercussions that may arise from certain general guidelines are worrying, such as: "Legal education has to be epistemologically redesigned, leaving the 'retrospective' model in a dogmatic past (which applied past solutions to present and future problems, with professors-authorities with all the knowledge), and assuming a 'prospective/projective' model, with the prioritization of the development of coping skills complex and complex problems. construction of alternatives that did not exist until then" (Fornasier, 2021, p. 26. Free translation).

<sup>13</sup> According to Tepedino and Silva (2020, p. 7), "the foundations for the protection of factual hypotheses associated with artificial intelligence should not be sought in new and scarce normative diplomas. On the contrary, the systematic treatment of the matter must take into account the legal system in its entirety, avoiding the search for useless and disaggregating microsystems, with peculiar principles and foundations."

<sup>14</sup> Perlingieri (2008, pp. 628-629) criticizes: "There are no norms that do not presuppose the system and at the same time do not contribute to forming it; There are no norms that are not intelligible in their effective scope if they are not inserted, as integral parts, in a formal (legislative system) and substantial (social system) totality. This result postulates the overcoming of exegesis considered exclusively as a search for and individualization of the literal meaning of the text. [...] Precisely because special laws, by definition, are no longer concrete principles of codist principles, but constitutional ones, they cannot have autonomous or independent sectoral logics of the global logics of the constitutional framework; moreover, they must always be conceived and known within the framework of the unitary system".

<sup>15</sup> Cf., for example, the critique of microsystematic logic proposed by Tepedino (2011, p. 88).

<sup>16</sup> Allow us to refer to Souza (2019, p. 280), where he pointed out "the setback operated by the normative diploma in relation to the understanding that had been applied by the Superior Court of Justice".

<sup>17</sup> In this sense, Tepedino and Silva (2020, p. 7) ponder that, "instead of seeking – often thoughtlessly – new legal instruments and new legal diplomas, better results will be achieved with the effort of rereading the institutes available and already known to civil lawyers. [...] In most cases – except, of course, in cases where legislative innovation seems indispensable – the interpreter must exhaust the normative data and the value potential of the system."

<sup>18</sup> Bill No. 21/2020.

become popular in the industry cannot be overlooked if the potential new law is interpreted as a stand-alone microsystem.<sup>19</sup> As civil-constitutional doctrine has been warning, such a tendency consists of a serious logical and axiological subversion of the system, since it turns the infraconstitutional norm into an unacceptable apex of the hermeneutical process (Tepedino, 2000).

In addition to the bias that it may imply for the scholar as a consequence of the scientific organization of the subjects themselves, it seems advisable to avoid this tendency, at first, also because it makes the academic development of the subject more susceptible to the evident and inevitable pressures of the market (from those suffered by university courses, especially those of private educational institutions, that need to "make known" their relevance and capacity to insert students into the labor market, to the pressures suffered by research programs in search of funding).<sup>20</sup> The counteroffensive perpetrated by the so-called "Big Techs" to the attempts, in Brazil, to approve a regulatory framework<sup>21</sup> to combat disinformation on the internet offers a timely reminder of the efficiency of economic agents in disseminating their own values.<sup>22</sup>

It seems more advantageous today to study the various problems caused by the use and development of artificial intelligence tools, together with their first appearances of normative and jurisprudential treatment, by the traditional disciplines of the university curriculum.<sup>23</sup> such as civil law, administrative law or criminal law (invariably, the areas that will be called upon to hold responsible, with their range of remedies already known, various agents for the first negative results produced by new technologies).<sup>24</sup> Undoubtedly, all doctrinal works and

<sup>19</sup> Suffice it to point out that, among the "foundations" for the development and application of artificial intelligence in Brazil, the original wording of the bill lists, in its article 4, respect for ethics, human rights and democratic values as the third point of a list that contains, with equal relevance and priority of mention, scientific and technological development. innovation, free enterprise and free competition.

<sup>20</sup> According to Pietro Perlingieri (2008, pp. 59-60), in a lesson that is completely applicable to the subject at hand, "if modern society is characterized by a plurality of sources and values, by an ideological and productive diversification, so that it cannot be reduced, according to the iron laws of the market, to an instrument of competition, conflictive or not, This means that any attempt to recognize in the modern jurist exclusively an in-house lawyer who knows the legislation of the sector, of a branch of the legal system, attentive more to circulars than to principles, to the letter of the law rather than to its legitimacy and legitimacy, to ephemeral terminology and specialized notions rather than to common and consolidated notions over time, it would be reductionist. in the illusion that one can read and understand without following the path from which each significant part of the global system originates."

<sup>21</sup> Bill No. 2,630/2020, still in process at the time of writing.

<sup>22</sup> By way of illustration, cf. the news published by Dantas (2023).

<sup>23</sup> In fact, "the consideration of a new branch of law focused specifically on the issues of robotics and artificial intelligence ends up giving rise to the systematic treatment of the subject. After all, the problems brought by artificial intelligence, although challenging and sometimes unusual, dialogue with very sedimented categories of civil law" (Tepedino; Silva, 2020, pp. 6-7).

<sup>24</sup> Even in the face of innovation, "inevitably, we return to the primary instruments of knowledge, through which law is constructed observing the normative and logical canons that characterize the order and the historical and cultural peculiarities of society" (Perlingieri, 2008, p. 71).

research projects aimed specifically at the subject will be necessary to understand its technical and social idiosyncrasies and, thus, build the necessary theoretical framework for its legal confrontation;<sup>25</sup> But the prior anchoring to the more traditional sectors of legal dogma, especially at the undergraduate level (but also for researchers and graduate students), can contribute greatly to the construction of a supposed new sector on the margins of the system and, in particular, of the set of constitutional values.

Such considerations seem to be even more pressing if one proposes to reduce the traditional program of university law courses to allow the introduction of "new" disciplines focused on contemporary problems (e.g., artificial intelligence). This is an old trend,<sup>26</sup> not only imposed, to a certain extent, by the policies of the Government itself<sup>27</sup> as well as spontaneously sought by educational institutions, increasingly in favor of the "emphasis" model, which subdivides the curriculum into groups of disciplines supposedly intended to prepare the student for certain career options that he or she intends to pursue. Although interesting in itself (and, strictly speaking, long advocated in Brazil),<sup>28</sup> concerns about how such a model can be implemented. A student interested in working in the area of technology in the future could give up, totally or partially, the workload that would be dedicated to "traditional" disciplines, such as tax law or criminal procedure, to attend classes on legal topics related to the internet, data security, artificial intelligence, etc.

The reasons why this model is seductive seem obvious. The student in the course is proposed to exchange disciplines that he does not want to learn, generally full of theoretical

<sup>25</sup> On the importance of academic studies on digital technologies, given the unique peculiarities of their structuring and the particular challenges for regulation that derive from them, see, from the perspective of common law, Lessig (1999).

<sup>26</sup> On the proposals for reform of the legal curricula in Brazil for more than a century, cf. Bodin de Moraes, 2013b.

<sup>27</sup> The National Curricular Guidelines for the Law career (Resolution No. 5/2018 of the Chamber of Higher Education of the National Council of Education) establish, in its article 5, paragraph 3, that higher education institutions may "[...] define emphasis on a certain field(s) of Law and articulate new skills and knowledge necessary for the new challenges that arise in the world of Law, such as: Environmental Law, Electoral Law, Sports Law, Human Rights, Consumer Law, Child and Adolescent Law, Agrarian Law, Cyber Law and Port Law".

<sup>28</sup> This model was already defended, for example, in the 1950s, by San Tiago Dantas (2001, pp. 64 et seq.). However, it is necessary to pay attention to the way in which the author proposed it. He maintained, in the first place, that "the intellectual training of the jurist is one, and does not imply without prejudice the elimination of any of the disciplines, which today constitute the curriculum of our Faculties"; Then, he proposed a partial curricular division, which he called "flexible", in which the student continued to study all the subjects, but in different proportions depending on the specialization chosen by the student; Finally, he proposed only four specializations, all of them based on absolutely consolidated and developed disciplines: Criminal Law, Commercial Law, Administrative Law and Economic and Social Sciences; he even mentioned labor law, but stated that he "had doubts" about the convenience of making this "a field of cultural specialization" (Ibid., p. 68). It is not from the author's reasoning that the proposal for the suppression of entire disciplines of the traditional curriculum is taken from the author's reasoning, nor from a market division of the curriculum, but rather from an organization guided by deeply sociocultural and historically situated components.

elaborations aimed at solving apparently old problems, for others, with a more contemporary, dogmatic, lighter language and aimed at problems with which the student immediately identifies. Potential new students are offered a modern and engaging curriculum, whose subject names are much more self-explanatory to the lay public than much of the traditional curriculum terminology, while promising the prospect of career upgrading and easier insertion into the labor market. Whether driven by genuine scientific enthusiasm or pragmatic market interests, innovation is almost always more compelling than tradition.

For the treatment of problems as innovative as those created by artificial intelligence, however, the flight from traditional disciplines is probably the most disabling measure that could be offered to the student. The legal instruments that are developed to deal with the matter, especially at the initial stage, must necessarily be derived from the remedies already proposed by the more traditional sectors of law.<sup>29</sup> It is the study of the latter, which have a long theoretical development and extensive experience in dealing with known issues, which can provide a solid basis on which the future applicator of law will be able to build, little by little, the resources and methods to address issues that are still little known, with which not only he, but also But also the generations before yours, still have little or no experience.<sup>30</sup>

The replacement of the workload destined for "traditional" disciplines by the advent of "innovative" disciplines focused on contemporary problems ends up depriving the student of this useful and truly legal instrument, offering in exchange the student's exposure to content typical of legal sectors that are still incipient:<sup>31</sup> hasty comments on laws, which limit themselves to paraphrasing the regulatory text and contribute little to its interpretation; the reading of the first judicial decisions, elevated to the category of "jurisprudence" despite lacking the volume and antiquity to do so; the repertoire of technical terms, technological jargon and anecdotal or

<sup>29</sup> As Perlingieri (2008, p. 60) points out, the construction of sectoral norms and their correct understanding "is never, and not only, the work of the legislator, but is the stratified result of the constant activity of the interpreter in contact with reality and, therefore, the result of the reasoning of jurists and jurisprudence. There is no law outside a system and there is no system without principles of law: these, the fruit of *interpretatio*, constitute the system."

<sup>30</sup> In this sense, with regard to the insufficiency of the technique of civil liability to exercise the necessary control over the protection of personal data in the face of the development of new technologies, Rodotà (1973, p. 139) had already argued, many years ago, that, despite this, civil liability could serve to open the way to new control mechanisms, as well as to reinforce them.

<sup>31</sup> For Perlingieri (2008, p. 59), "if the jurist cannot identify with the technocrat nor can he be a simple reader of the Official Gazettes and of the first hasty comments on the laws, it means that he, even before being superficially informed by so many numerous specialized and computerized sources of information, must be trained, that is, cultured, cultured, rich in a sensibility that, based on a natural attitude, is the result of adequate attention to the dynamism and complexity of the socio-legal phenomenon and to the reasonableness or unreasonableness of its contents".

picturesque cases that has become characteristic of a large part of law and technology studies.<sup>32</sup>

It seems much more useful for the student himself, in this scenario, that the updating of his university education occurs through the insertion of the problems caused by artificial intelligence and new technologies in the daily life of the so-called "traditional" disciplines, showing the student how the existing instruments for old problems can offer a first answer, undoubtedly still insufficient,<sup>33</sup> to new challenges. At the same time, it is up to the legal academy, especially the more experienced generations of professors and researchers, to contribute, with the theoretical density and practical experience they have accumulated throughout their careers, to the gradual construction of what may or may not become, in the future, a new sector of legal knowledge. Unfortunately, this mission is generally undertaken by younger researchers, fresh from university campuses, attracted by the novelty of current problems and the frugality of the theoretical body already existing around them, but devoid of the particularly profound legal reasoning that would be necessary for the enterprise, and that only time and daily dedication would provide them. That these young researchers can, at least, have received in their training an adequate base in the disciplines that, at the present time, can effectively offer them the essential basis.

### **3 Artificial intelligence and technical training proposals for future legal professionals to use it**

Directly related to the previous question seems to be another tendency, also quite widespread: that of arguing that the *manipulation* of artificial intelligence tools becomes an integral part of university law curricula. At the limit, it is even proposed that curricula cover subjects such as programming and data analysis (Fornasier, 2021, p. 15). Part of the motivations already set out above also apply to this trend: from the traditional fascination around the idea of innovation as a value in itself (how could the insertion of new technologies in teaching methodology be negative?) to the business interest of private educational institutions in differentiating the courses they offer according to technological resources (it will not be difficult for the reader, you probably remember the advertising campaigns of higher education

<sup>32</sup> Problems also listed in Italian law by Perlingieri (2008, chapter II, *passim* and, in particular, pp. 72 and 77).

<sup>33</sup> Once again we must refer to the lesson of Rodotà (1973, p. 139), who, referring to the role of civil liability in the protection of personal data, recognized that, although insufficient for the creation of a system of social control of the matter, it was possible to resort to civil liability to highlight new phenomena, offering them a first regulation.

institutions that proudly offered electronic devices to law students.) But there seems to be a more genuine pragmatic concern in this tendency to familiarize the student with the use of technologies: how else, it is argued, would it be possible to prepare the future jurist for a labor market in which he will necessarily be forced to interact with robots and algorithms?<sup>34</sup>

The problem, in this area, does not seem to be the introduction of the use of new technologies in teaching methodology or in the curriculum, but the affirmation of their necessity or, more specifically, the deviation of perspective that derives from it. That future legal professionals will face, sooner or later, the obligation to interact with mechanisms equipped with artificial intelligence seems, as far as can be foreseen at the present time, inevitable. However, this fate was also foreseeable in relation to the popularization of personal computers in Brazil in the 1990s, or with respect to the drastic expansion of Internet access observed in the country in the early 2000s. However, university law courses did not rush to include in their compulsory curricula notions of what was then called "computer science", and which is so present in the reality of lawyers and other legal careers; many courses of excellence, especially in the country's public universities, thrive to this day without the mediation of digital resources (except for what was necessary to make mandatory curricular internships viable, given the progressive digitalization of the Brazilian Justice), not even for the purposes of paradidactic activities.

And if the comparison of these cases with artificial intelligence may seem exaggerated, it is probably because the more "intelligent" technologies become, the more intuitive the proposed use of them and the less laborious the user's familiarity is intended to be.<sup>35</sup> In other words: if the technologies "of the past" did not require the training of future lawyers in the university environment, it is not realistic that the artificial intelligence tools that are coming will impose a need of this nature. It is worth emphasizing that this is not a case of hypotheses in which the student's extracurricular access to certain technologies is hindered by a prohibitive financial cost, a scenario in which the familiarization of students with these instruments in the university environment would become an authentic and laudable measure of social inclusion. What is argued is only that, even in cases such as this, the training of students in the use of such technologies does not seem to have a direct relationship with the teaching of law in itself and

<sup>34</sup> In this sense, in fact, the National Law Curricular Guidelines (Resolution No. 5/2018 of the Chamber of Higher Education of the National Education Council, with the modification of Resolution No. 2/2021) provide, in its Article 5, III, that the curriculum of Law careers must "encompass studies related to digital literacy, distance practices mediated by information and communication technologies".

<sup>35</sup> It is stated that integration with artificial intelligence should be guided by "*human-centric strategies*", defined as those that improve the user experience (Paun, 2023).

says nothing about the programmatic quality of legal courses.

The argument may be too sophisticated to claim that the lessons about the *Risks* the use of artificial intelligence tools and the *Suitable shapes* to use them. Such a measure would, at first glance, have a double utility: it would not only try to prevent errors in the exercise of the profession by future traders (alerting them, for example, to the reliable ways of conducting research based on the new algorithms and to the fallibility and bias of the results), but it would also inform students about the type of concrete problem that future professionals will encounter in the future. social reality (Diamond et al., 2018). In this sense, there is no doubt that a global reassessment of the relationship between the individual and technology is increasingly urgent, with a general awareness of the population about the risks and dilemmas imposed by the new instruments, as a measure of true promotion of citizenship (Bennett Moses, 2019). It is enough to see how Brazilian (and, to a large extent, world) society has shown itself vulnerable to the spread of the *Fake news* in recent years, even among the strata of the population with access to higher education.

However, precisely because it is a question of citizenship, the role of offering this type of debate and awareness to society should be eminently the responsibility of basic education, preferably in a scenario, still utopian today, in which it has been possible to offer quality basic public education to all children. school-age girls and adolescents. It is basic education that, because of its universality, must prepare citizens for life in society. An important part of this construction of citizenship, it is worth emphasizing, is already transferred to university law curricula, but aimed at more specific problems in this area, these are disciplines such as philosophy of law, legal anthropology, legal sociology, history of law, etc.<sup>36</sup> disciplines that, it is worth noting, generally suffer repeated attacks and cuts in the Brazilian experience (Maia, 2019). If the university career project must be guided by the training of jurists who are, above all, citizens endowed with sensitivity to the issues of the social environment in which they are inserted, the first measure must be the strengthening of these disciplines.<sup>37</sup>

However unique the challenges posed by artificial intelligence or other technologies to

<sup>36</sup> According to Maria Celina Bodin de Moraes (2013b, p. 3), the teaching of these disciplines in law courses aims to "try to mitigate the technicality and abstractionism that traditionally dominate the teaching of law in the country".

<sup>37</sup> As Perlingieri (2008, pp. 73-74) proposes, the student is expected to be introduced to "the system of sources, the paths of argumentation aimed at individualizing the rules to be applied in the specific case, the value of legal language and definitions, the principles and values that characterize the legal system, the problematization, relativity and historicity of the legal phenomenon as an aspect of a broader cultural phenomenon always in debt of knowledge with ethics, economics, politics and that, precisely, in the primacy of politics finds its foundation".

legal regulation may be, these remain<sup>38</sup> and always are problems included in the general duty of updating that every student and legal professional must try to observe with respect to the legally relevant social controversies of his time.<sup>39</sup> which should, without a doubt, permeate the discussions held in the most diverse disciplines, but not as a specific object of study, but as opportunities to apply the values of the system, the technical-normative instruments and the hermeneutical methods that make up, yes, the content of the specific training of the jurist.

Moreover, if it is understood that it would be up to the university career to make up for the historical deficits of basic education in the country, the main measure<sup>40</sup> What must be taken must be to train students in the use of the great and true tool of the jurist, which remains, even today, the word.<sup>41</sup> Despite the fact that the Portuguese language is increasingly forgotten in the curricula of law courses, the number of university students who continue their comprehensive training, generally achieving the degree and even taking the Bar Exam (Cabral, 2011), making serious errors in writing and grammar and showing themselves unable to communicate their ideas clearly and coherently in writing, is alarming. or interpret the content of texts. It is a cruel irony to suggest that, in a scenario such as that of legal education in Brazil, the tool to which students must necessarily be familiar is artificial intelligence. It would be much more realistic to predict that the spread of artificial intelligence mechanisms, by facilitating (perhaps excessively) innumerable intellectual processes,<sup>42</sup> possibly contributing to an even larger deficit in language learning by students who will eventually enter university.

At this point, we come to the aforementioned deviation from perspective: that the lawyer's tool would be in the process of becoming artificial intelligence or, more directly, that the lawyer

<sup>38</sup> In this sense, arguing, in the North American experience, that university teaching of law must encompass new technologies in view of the unique problems they impose on legal regulation, cf. LESSIG, 1999, *passim*.

<sup>39</sup> Thus, for example, they would be comparable to social conflicts arising from ethnic discrimination or gender issues, and it would be sufficient for existing curricular disciplines, recognizing the relevance of these discussions, to adapt their content to cover them (Santos *et al.*, 2021, p. 99).

<sup>40</sup> As Perlingieri (2008, p. 80) critically ponders, in a lesson perfectly applicable to the Brazilian context: "Legal literacy presupposes an attentive and adequate cultural sensitivity, a maturity in the contents and in the possession of language: the liberation of access in favor of those who have great deficits in relation to these specific qualities is a responsibility that cannot be made to fall unpunished on the university system."

<sup>41</sup> Regarding the role of language in legal epistemology, without prejudice to the differences between systems, it is worth referring to the study by Mertz (2007, p. 215), who argues: "Legal epistemology is based on linguistic processes: specialized decipherment of written legal texts, appropriate use of analogies and concomitant legal-linguistic structures, argumentation within these structures, the ability to speak in the different voices and in the various positions necessary to argue effectively" (Free translation).

<sup>42</sup> As Kissinger et al. (2023) reflect: "To the extent that we use our brains less and our machines more, humans may lose some abilities. Our own critical thinking, writing, and [...] *The design* can atrophy. The impact of generative AI on education can manifest itself in the diminished ability of future leaders to discriminate between what they intuit and what they mechanically absorb. Or it could result in leaders learning their methods of negotiating with machines and their military strategy with generative evolutions of AI, rather than humans at computer terminals."

of the future will be (largely or even exclusively) an advocate of artificial intelligence. *Tickets* to intelligent algorithms. In a word: the conversion of the operator of the Law into the operator of the law. *software*. Or even the conversion of the legal profession, historically an intellectual profession, into a technical profession, a category that has historically been the object of a scandalous precariousness in the national experience, a reflection of the elitist and slave-owning nature that shaped Brazilian society.<sup>43</sup>

If the university degree in Law, like the training of liberal professionals in any other subject, must prepare the future jurist for the exercise of his or her profession, transforming the curriculum also implies transforming, for better or for worse, the social perception of the nature of this profession. And it does not seem necessary to explain what project for the country is pursued, nor what is the fate of the Democracy of the Rule of Law, when legal careers, particularly law, are characterized as professions condemned to precariousness, in which knowledge is in the instrument and not in the user<sup>44</sup> and the preponderant function of the lawyer is, at most, mediating relations between investors and developers in high-risk financial operations: <sup>45</sup> The rule of market laws is taken into account, to which the architecture of new technologies adapts with unusual naturalness.<sup>46</sup>

Today, we talk about *Uberization* (Martins; Guariento, 2020) and in a future in which petitions and court rulings will be filled out by algorithms<sup>47</sup> And the entire legal phenomenon will be "predictable" – because it can be programmable – sometimes in the name of a

<sup>43</sup> In this regard, cf., for all, Cunha, 2000, *passim* and, particularly, pp. 90-92. On vocational technical training in Brazil, cf., by the same author, Cunha (2017).

<sup>44</sup> According to Harari (2018, pp. 99-100), "the danger is that if we invest too much in the development of AI and too little in the development of human consciousness, the simple and sophisticated artificial intelligence of computers could only serve to enhance the natural stupidity of humans."

<sup>45</sup> Some experts in the field analyze that the success of artificial intelligence technologies "will soon replace much of the work of interns and beginning lawyers," and that the most relevant activity of the lawyer in this scenario becomes that of "designing innovative contracts, which protect high-risk investors, intermediating the relationship between investors and innovative ventures created by inexperienced entrepreneurs." After all, "the development of financial technologies and services has demonstrated the impossibility of traditional legal regulation to create its regulatory legal basis" (Fornasier, 2021, p. 14. Free translation).

<sup>46</sup> On the relationship between the programming of technological instruments and market interests, see the interesting analysis, rich in examples that are now partly old (but still very eloquent), in LESSIG, 1999, *passim*.

<sup>47</sup> It remains to be seen: "Digital technologies do not seem to allow much time for more immediate and efficient forms of conflict resolution to emerge. Perhaps car accident disputes will be resolved very soon with checks on automated vehicle logs and programming; consumer complaints about delivery services can be resolved quickly through GPS verification; perhaps divorce proceedings occur from the moment someone' s *smartphone* detects, through GPS and text messages, that someone in the couple has been unfaithful; and perhaps wills are executed as soon as a wearable device detects the death of its user" (Fornasier, 2021, p. 10. Free translation). Or, even: "From the formulation of simple petitions, to the rigorous mastery of the control of procedural acts to the admissibility of appeals and the verification of respect for precedents by judicial decisions, technological advances point to an increasingly significant mastery by AI of those legal functions that have greater standardization and, therefore, potential for repetition" (Santos *et al.*, 2021, p. 100).

"democratization" or a "universalization" of access to justice.<sup>48</sup> The implications of such proposals for the implementation of the Act itself will be briefly discussed in the following topic. For the time being, it is necessary to denounce the serious logical subversion that consists of presenting the practice of law by qualified professionals to interpret and apply it as a source that promotes insecurity and unpredictability or as an obstacle to universal access to justice and in propagating the gradual replacement of these professionals by artificial intelligence tools as promoters of stability and democracy. The fallacy, worthy of the preliminary versions of the *Chat GPT*, would only receive credit from a student who had been trained to operate algorithms rather than legal rules and concepts.

It seems unlikely that the consolidation of artificial intelligence as a producer of contracts, petitions and decisions will be able to replace, in the foreseeable future, the practice of law and other legal careers. Unfortunately, it is a little more likely to be able to replace a part of the legal profession, that of professionals who, having not received a quality university education, are already currently subject to precarious regimes and low remuneration, providing (although making the best efforts) a technically imperfect service to clients who belong, in general, to the most vulnerable sectors of the population.<sup>49</sup> It is possible that this type of work is considered replaceable by the creation of intelligent algorithms, as well as by the hasty and massified judicial sentences that proliferate in cases that, in general, have the interests of this same segment of the population as their object.<sup>50</sup> Perhaps he will go so far as to claim that artificial intelligence could help reduce the Treasury's spending on public defenders who are dedicated to meeting part of this demand.

It seems unlikely, on the other hand, that there will cease to exist a category of professionals with good training and better working conditions, to which only a part of the population will have access and who is still capable of effectively understanding and weighing the human interests at stake in the legal phenomenon. Perhaps, at first, the law envisaged

<sup>48</sup> To the assertion that law can only be practiced by human beings, it is sometimes replied that this notion can be "[...] insufficient to contain the evolutionary march of technology. If legal services are not accessible or appreciated for the value they offer, consumers will opt for legal services provided by technology, even if they are of inferior quality, although, in fact, in many cases, the technology may even be as good or better than the service of human lawyers" (Fornasier, 2021, p. 11. Free translation).

<sup>49</sup> Thus, statements such as that "professionals who are at risk of being replaced by robots are those who have stagnated their performance solely in operational tasks", or that "only those lawyers who strive to master digital resources and their numerous applications will enjoy this unprecedented improvement" (Strutzel, 2023).

<sup>50</sup> By way of illustration, the founder of an American legal *technology* company that offers legal advice to consumers, stated in an interview: "There will still be many good lawyers who may be arguing in the European Court of Human Rights, but many lawyers are charging a lot of money to copy and paste documents, and I think they will definitely be replaced, and should be replaced" (Caparroz, 2023b).

without the mediation of intelligent technological mechanisms will even become an "added value" for the exercise of the profession, something like the certification of organic food, which raises the market value of the product grown by traditional means. It would not, in fact, be the first time that technological advances, so necessary and potentially useful for society, would contribute to the deepening of inequalities.<sup>51</sup> As you can see, the flourishing of artificial intelligence really invites us to rethink many aspects of the teaching and practice of law in Brazil. Teaching future jurists to operate algorithms, however, is substantially far from the compelling reflection. Especially because, as is often the case with new technologies, it is unlikely that generations of teachers will have much to teach, in this sense, to young people, generally young people, who access university courses, much more accustomed to the pace of innovation.<sup>52</sup>

## 4 Artificial intelligence and the functions of legal education

The above considerations communicate directly with a third trend. It is becoming more and more widespread, even within the university environment, that the development of mechanisms equipped with artificial intelligence has been progressively assuming the functions of university teaching, including (and particularly) Law. In general, this thesis concludes with the recommendation that the university, in order not to "lose space" in society and become obsolete, should seek to "reformulate" itself.<sup>53</sup> On the edge, the biggest AI enthusiasts predict a future in which replacing human teachers with robots will be a means of reducing costs and increasing teaching efficiency.<sup>54</sup> The human master, perhaps, will have the same fate predicted for lawyers: the aforementioned *Uberization* (*Reccio*, precariousness) of the profession (Streck, 2020a). Strictly speaking, however, the idea translates a mere variation of what has already been discussed in the previous topic. Again, this kind of belief seems to be based on a deviation of perspective. If in the previous topic we commented on the deviation of the role of the jurist with respect to what is said about legal education, we now move on to the deviations of perspective

<sup>51</sup> On the promotion of inequalities by artificial intelligence technologies, see also the arguments of Streck (2023a).

<sup>52</sup> The point is remembered, for example, by Stock, 2023.

<sup>53</sup> It states, for example, that "many sets of tasks that are currently at the heart of higher education practice will be replaced by AI based on complex algorithms [...]. Therefore, universities must rethink their pedagogical functions and models, as well as their future relationship with AI solutions and their owners" (Fornasier, 2021, p. 20. Free translation). The author highlights the ethical problems arising from the probable biases of programmers in algorithms.

<sup>54</sup> In this sense, textually, Fornasier, 2021, p. 18, according to which artificial intelligence "*will reduce costs for learners, compared to the training of experienced teachers*".

with respect to the function of the teaching of law itself in the training of the future jurist.

The internal logic of this type of construction is unassailable: as it becomes increasingly easy for anyone (and not just the qualified professional) to access information on any area of knowledge, the role of the university in providing such information would become less relevant.<sup>55</sup> If a few years ago, in painfully outdated language, it was possible to say that information was available "at the click of a button", simply by "surfing" the internet, today there is enough artificial intelligence to extract legally relevant information from a specific case (even when the user does not know how to ask the right question), algorithms capable of providing such information even without provocation (based on search patterns and the most important needs of the user). information common to each user) and, finally, it should be said that the data is at least one voice command away.

The problem, not hard to see, is in the premise. Those who believe that the university and, in particular, law courses have the purpose of informing their students, providing them with data on each curriculum, translate very precariously the essential function of higher education. Memorizing information, while an essential part of the process, is not the ultimate goal of legal education.<sup>56</sup> While many public competitions for legal careers, especially in their early stages, essentially (and unfortunately) consist of true mnemonic tests for candidates,<sup>57</sup> The daily life of the legal operator, from the liberal professional to the public official, has always allowed the consultation of the normative, jurisprudential and even doctrinal sources that are necessary, requiring a minimum memorization.

The purpose of the higher education of future jurists, insofar as it prepares them for the exercise of their profession, should be to teach students the methods and difficulties involved in interpreting the rule and its application to specific controversies. The program of the

<sup>55</sup> Cf., by the way, the diagnosis made by Marco Antonio Zago, president of FAPESP, to *Jornal da Ciência* on 23.3.2023: "Today young people depend much less on university to acquire new knowledge. Many young people, especially those who have already had a better education in their basic part, even see college as something that delays life. [...] People have to feel the need to go to university. Before, they felt that need, because at the university they learned fundamental things that they did not have outside the university. In recent times, knowledge has begun to spread more widely, but the title still had a very large weight and, now, all this weight is disappearing" (Available at: [http:// http://www.jornaldaciencia.org.br](http://www.jornaldaciencia.org.br)).

<sup>56</sup> After all, as Perlingieri (2008, p. 57) argues, in a lesson that can be fully extended to the Brazilian case, contemporary law is characterized by an ideological and methodological pluralism, so that "discovering the roots of the debate, also ideological, present in the doctrine, allows [the jurist] convinced choices and a more conscious participation. It is not by memorizing laws and decisions that the jurist acquires 'sensitivity', but with a critical and dialectical awareness of reality, including legislative reality."

<sup>57</sup> And, for this same reason, it is stated that "the passing of the Bar Exam or, in general, in the various entrance examinations to public legal careers in the country could not serve as an indicator of the quality of legal education offered by our universities. From this perspective that is excessively attached to the letter of the law – and, now, "to the letter of the precedents" – and not very reflective, these exams tend to test only the candidate's ability to memorize" (Bodin de Moraes, 2013b, p. 12).

"traditional" disciplines, with their seemingly endless repertoires of concepts and institutes, undoubtedly introduces the student to the general systematization of the subject and to the interrelations between each point of the program (a preliminary stage that seems indispensable<sup>58</sup> in systems *civil law*, based on theoretical systematization<sup>59</sup>), so it must do so with the primary objective of enabling the student, based on repeated exposure to consolidated examples of interpretation and application of legal solutions to specific problems, to develop that competence generally designated by the imprecise expression "legal reasoning"<sup>60</sup> – that is: that apprehends the eminently informal logic<sup>61</sup> which is typical of his work and which will allow him, in the future, to identify what type of argumentation is legally valid and how it is possible to seek solutions to concrete problems from the abstract sources at his disposal.<sup>62</sup>

As already mentioned, it is also up to the university to lead the student to develop a critical eye and a sensitivity to social reality that allows him to understand the Law not only as a technique, but also in its political, historical and social insertion,<sup>63</sup> sophisticating his capacity to, during the interpretative and application process, contribute to the improvement of the system and its perennial updating.<sup>64</sup> Those who, in the face of the growth of artificial

<sup>58</sup> It is worth recalling, by way of illustration, that San Tiago Dantas (2001, p. 62), when proposing, as early as the 1950s, the adoption of a casuistic method of teaching (still so widespread by the reformist proposals of Brazilian legal education), recognized the need for the systematized study of institutions to be supplemented in part by the reading of books by students and in part by a "parallel exposition of the institutions, according to the traditional systematic criterion", by the assistant professors.

<sup>59</sup> An interesting analysis of the inseparable relationship between the activity of the *civil law* jurist and the stability of the system (and thus the concepts and abstractions of the theory) as opposed to the conduct of the *common law lawyer*, accompanied by an examination of how one system can benefit from the experience of the other, is developed by Hyland, Year 2014.

<sup>60</sup> As described by San Tiago Dantas (2001, p. 63), "education focused on legal reasoning itself, placing its emphasis on the examination and solution of specific controversies, and not on the expository study of institutions, refers the jurist to the social fact that generates Law, places its spirit at the root of the problem to which the norm must provide a solution".

<sup>61</sup> Regarding the fuzzy logic of legal reasoning, Maria Celina Bodin de Moraes (2013b, pp. 5 et seq.) adds: "the lawyer's activity mainly resorts to argumentation, since it is up to him to convince the judge of the reasonableness of his thesis. And the judiciary has also increasingly entrusted its legitimacy to the arguments used in the grounds of decisions. Under the postpositivist paradigm, for example, the technique of weighting has been extended for the resolution of cases of collision of principles, a procedure essentially inspired by the theory of argumentation, based on the existence of a fuzzy logic, which departs from mathematical rationality, without renouncing the processes of verification of reasonableness that guarantee its legitimacy."

<sup>62</sup> As Perlingieri (2008, p. 69) proposes: "the training of the jurist, understood as a critical capacity in the reconstruction of facts and problems, is characterized by a constant represented by the individuation of legality and by a variable that goes back to the evolution of the cognitive methods and instruments used".

<sup>63</sup> Maria Celina Bodin de Moraes (2013b, p. 5) points out that in legal education, the "zetetic methodology, currently, and increasingly, is confused with dogmatics".

<sup>64</sup> After all, "the legal phenomenon is not exhausted in this legislative and jurisprudential phenomenon, but is identified with the global experience of the social" (Perlingieri, 2008, p. 62) and "the appropriation of this necessary sensitivity translates into the acquisition of a logical instrument with arguments to be used not in a mechanical and repetitive way, but also by knowing its cultural foundations and the socio-economic consequences of its application" (Ibid., p. 59).

intelligence, conclude that the university is losing its *informative* role, therefore depreciate the *formative* role that is much more central in legal education.<sup>65</sup> When they argue for the need to "rethink" higher education in law, its didactic methods and its evaluation modalities, in the face of the growing information offered by non-academic sources, they can simply find that, long before intelligent algorithms, the methods they had been adopting prioritized the ability to memorize more than the education of the student.<sup>66</sup>

These considerations, however, should not fall into a simple "critical reductionism". The news that *Chat GPT* would be "passed" in the law school entrance exam in the United States,<sup>67</sup> as well as in the Brazilian Bar Association Exam (Romani, 2023), which scandalizes so many people, should not be as eloquent as it seems at first glance. On the one hand, because the memorization of information is indeed part of the academic training of any intellectual profession, it simply should not be, especially for the jurist, its central purpose. On the other hand, because intelligent algorithms, in their current stage, are capable of establishing logical relationships between data, which is sometimes sufficient for the correct solution of the specific problems proposed by the exams. And, finally, because the projects to reform the methods of evaluation, almost always quite vehement in their criticism, invariably clash with the factual reality of what is feasible in the face of the overwhelming number of students who each year enter law schools, take the bar exam<sup>68</sup> or take public exams.

Sophisticated teaching and evaluation mechanisms, capable of measuring with the necessary rigor the critical capacity, technically defined creativity and legal reasoning of the examinees, are difficult to support with a large number of students<sup>69</sup> and, even less, with the

<sup>65</sup> After all, the true objective of legal education "is not the systematic study of institutes and norms, but the preparation, development, training and, finally, the full realization of legal reasoning" (Dantas, 2001, p. 60).

<sup>66</sup> This is a tendency, not exclusive to the Brazilian case, towards a "simplifying reform of university studies", as Perlingieri (2008, p. 78) points out; In this sense, the author warns: "the lower number of pages and hours of study and classes cannot eliminate the training method by replacing it with the merely informative one".

<sup>67</sup> According to Garattoni (2023c), if previous versions of *Chat GPT* were already able to pass the *Bar Exam*, but remained among the 10% of the worst results, the most current version is already capable of passing among the 10% of the most competent candidates.

<sup>68</sup> By way of illustration, in the XXIX Bar Exam (2019), more than 122 thousand students were enrolled (*Bar Exam in numbers*, IV, p. 84. Available at: <https://fgvprojetos.fgv.br>). According to the document (p. 42), in 2017, more than 817 thousand students enrolled in law careers throughout the country.

<sup>69</sup> Let us think of the material impossibility of teaching with more than a hundred students techniques such as those, for example, called "active" or "participative methodologies", reproduced ad nauseam by most contemporary studies on legal education (by way of illustration, cf., among many others: Santos et al., 2021).

levels of objectivity necessary especially for the selection of admission to public careers.<sup>70</sup> There is much room for improvement, to be sure, but this must involve the construction of creative solutions to such factual circumstances, without giving in to calls for "alternative" methods that, while easy to propose in their utopian purposes, in practice do not rigorously test either the memory or any other professionally relevant competence of the candidates. It is curious how the well-known (and already very old)<sup>71</sup> discourse that, with greater or lesser rigor, condemns the method of expository classes<sup>72</sup> in Law, because it understands that it would place the teacher in an authoritarian position and the students in a merely passive role (a discourse generally fostered by well-intentioned humanist and progressive visions, although often extracted from somewhat superficial readings of proposals aimed mainly at the education of children). Recently, it has been used by some authors as an argument to transform law courses, based on "alternative methodologies", into privileged spaces for the training of technologists who meet the needs of the market.

There is even no shortage of those who propose, given the impossibility of foreseeing what skills will be required of the lawyer and many other professionals in a few years' time,<sup>73</sup> that the teaching program (even at the university level) becomes the development of skills as essential as they are generic, such as "creativity" or "cooperation", in a kind of nihilism that, in practice, would render idle any discussion of a teaching that was intended to be designated *legal*. If the "passing" of algorithms in law exams offers a good opportunity for reflection, this

<sup>70</sup> An eloquent example is recalled by María Celina Bodín de Moraes (2013b, pp. 12-13). This is CNJ Resolution No. 75/2009, still in force today with modifications, which provided for the "humanistic training" of the candidate as a subject evaluated in the first phase of the competitions for the judiciary in Brazil and was highly criticized for the serious simplification that led to the "study" by the candidates of complex sectors of philosophy, sociology and other human sciences. More than a decade later, although it has undergone several important reforms, the aforementioned "humanistic education continues to be included in the minimum programmatic contents provided for in the Resolution. For a critique of one of the most recent reforms of the Resolution, in 2021, which included digital law, behavioral economics and the economic analysis of law, among other topics, in the aforementioned "humanistic training", cf. Streck (2021).

<sup>71</sup> Suffice it to recall how the expository method was already harshly criticized in the 1950s by some of the most brilliant Brazilian jurists, such as San Tiago Dantas (2001, pp. 60 et seq.). The author, however, recognized its usefulness as a subsidiary resource in legal education.

<sup>72</sup> The famous concept of "banking education" proposed by Paulo Freire in his *Pedagogy of the Oppressed* (1974) is often alluded to, although the author himself has specified that his criticism should not be confused with the expository method: "The evil, in fact, is not in the expository class, in the explanation made by the teacher. This is not what characterizes what I criticized as banking practice. I have criticized and continue to criticize that type of educator-student relationship in which the educator is considered the exclusive educator of the student. In which the educator breaks or does not accept the fundamental condition of the act of knowing, which is its dialogical relationship" (Freire, 1992, p. 61).

<sup>73</sup> On this unpredictability of the future of professions and of the skills that will be useful to professionals in a few years' time, cf. Harari, 2018, Chapter 19. The author points out, but with regard to the basic education of children and adolescents, that it is often proposed today that the focus should be on the development of critical thinking, creativity, cooperation and communication (Ibid., p. 323).

should be the limit of their contribution: the necessary reform of education and assessment systems should not be aimed at preventing this from happening, but at improving the selection of the competencies to be expected of examinees and the efficiency of the methods of assessing these competencies within what is really possible.<sup>74</sup>

Another apparent error sometimes materializes in the aforementioned proposals to "reduce" the compulsory curriculum<sup>75</sup> or to hastily replace "traditional" disciplines with more "contemporary" ones, ignoring that, if jurists are now capable of conceiving solutions, even preliminary, to the challenges imposed by artificial intelligence, they owe this capacity to the contact they had during their time of training with institutes and categories that were already so consolidated (Perlingieri, 2008, p. 85). We are, therefore, faced with two tendencies: on the one hand, that of those who only adhere to structure and abstraction in the teaching of law (the emphasis on memorization without an applicative purpose); on the other hand, that of those who dispense with traditional themes (dogmatically developed) in favor of contemporary themes (for now, only practical problems devoid of a theoretical framework that explains and resolves them). In our legal tradition, it is necessary to follow the middle path, presenting the student with a syllabus that is ordered by theory and dogmatics, but which is materialized and completed by illustrating how these instruments operate, at the time of application, to promote the values of the system in the solution of practical cases, which are rarely perfectly subsumed to the categories and *fattispecie* Abstract. It is by getting used to moving between the most abstract layers and the most concrete levels of the legal phenomenon, in matters in which a minimum consensus is already established, that the future jurist will be able to contribute in a useful way to the confrontation of current problems.

To use a simple example, while it is true that one of the most immediate remedies that can be proposed for the problems created by the diffusion of artificial intelligence mechanisms is civil liability for damages arising from it, just to gather some information about the civil reparation regime in Brazilian legislation (including that which may be established specifically for the subject), easily recoverable by means of intelligent research systems, it will hardly be

<sup>74</sup> On educational proposals that are unadaptable to all socioeconomic contexts in times of technological uncertainty, cf. the critique of Harari, 2018, p. 327.

<sup>75</sup> In Italian doctrine, for example, cf. Critique of Perlingieri (2008, p. 78). In Brazilian doctrine, cf. the forceful conclusion of Maria Celina Bodin de Moraes (2013b, p. 3): "although the curriculum of the law degree may undergo changes, its essence turns out, in the end, to be the same. The renewal, therefore, of legal education in the country can no longer take as a reference a broad reform in the curriculum of the subjects; What needs to change is the teaching method."

enough for a young jurist to achieve useful results,<sup>76</sup> if he has not previously understood the multiple conceptual and application difficulties of the requirements that give rise to the duty to compensate, the profoundly political character of the legal regime of civil liability, the evaluative logic that underlies the evolution of the issue in Brazil (with the loss of centrality of the wrongful act in favor of the notion of unjust damage), the difficulties in proving and liquidating the damage, etc.<sup>77</sup> It is with a solid command of what is already consolidated in the field of civil liability that it will be prepared, for example, to deal with the foreseeable accusation, by the productive sector, that the adoption of an objective model of civil redress would "inhibit" technological innovation<sup>78</sup>, an accusation as old as the development of strict liability itself throughout the twentieth century and that could only be taken seriously<sup>79</sup> by those who were unaware of the system of sharing the financial burdens inherent in that system of reparation.<sup>80</sup>

It is relatively easy, to be sure, to resort to the rhetoric that presents the legal academy as having an authoritarian and elitist monopoly on knowledge that would otherwise be objectively apprehended by all, and to the dissemination of this knowledge through new technological instruments as a supposedly democratic and emancipatory measure.<sup>81</sup> This portrait of an autocratic academy is sometimes combined with a vaguely combative discourse of an unsympathetic "legal jargon",<sup>82</sup> a combat, however, not always attentive to the difference between the baroque style so well known among jurists (and which can effectively prevent law from approaching society) and the necessary terminological rigor that is essential to any profession. When one understands, however, the complexity and delicacy of the process of

<sup>76</sup> This is because software that "is based exclusively on language analysis can represent a useful cognitive tool, but insufficient and sometimes deviant" (Perlingieri, 2008, p. 71). Thus, the "technological revolution cannot pretend to be exhausted in a task that is limited to applying *software* to 'data', without a committed and constant hermeneutical activity on the part of jurists. Otherwise, the risk will be based on the mere literality of the data, on words that by their very nature are indeterminate and ambiguous, often on an unstable balance between the meaning attributed to them by technical language and that common language" (Ibid., p. 70).

<sup>77</sup> On these points, all of which have been widely commented on, it is possible to refer to the report and references collected in Souza, 2018.

<sup>78</sup> An argument that, as expected, has already been raised by the productive sector, as stated in Perrigo, 2023b.

<sup>79</sup> In recent Brazilian doctrine, for example, the argument has become commonplace among proponents of the civil liability systems adopted by the Civil Rights Framework for the Internet and the LGPD. A development of the critique can be found in Souza, 2020, pp. 42 et seq.

<sup>80</sup> On this point, cf. Bodin de Moraes, 2006, *passim*.

<sup>81</sup> It states, for example: "Legal education [...] It seems that the examination and understanding of historical events allows for the resolution of future problems through the application of previous legal doctrines and decisions. The educator-student relationship was, therefore, necessarily hierarchical. But past experience, in the hands of a teacher with knowledge and authority, may not be relevant in a changing reality, when all information is easily available online" (Fornasier, 2021, pp. 6-7. Free translation).

<sup>82</sup> Let's think about the growth of "profiles" on social networks that advertise as a central virtue the fight against "legal jargon" (illustratively, the news published by Ferreira, 2022).

training the jurist, the enormous challenge to which he is launched when, already graduated, he is required to face a concrete reality that is increasingly changing and unusual, as well as the profound political and social implications that his activity will bring to the maintenance of the Democratic Rule of Law itself. That portrait becomes difficult to sustain.

Indeed, there seems to be, among those who enthusiastically celebrate the possibility that petitions and judgments will be filled by intelligent algorithms, at best, the same naïve belief in a neutral and objective hermeneutical activity that nurtured the so-called school of exegesis at the dawn of modern French civil law.<sup>83</sup> In fact, there is no substantial novelty among the heralds of the "loss of usefulness" of the legal academy. They take refuge, as a general rule, in the same elements that have so often been reissued in other historical moments: the attachment to formalism, the confusion between security and a notion of predictability<sup>84</sup> that is never really obtained, the belief in the neutrality of the hermeneutical process, the return to the pure and simple subsumption of the norm to the fact.<sup>85</sup> They only change the subject responsible for promoting the syllogism, which now celebrates a kind of *bouche de la loi algorithm*. Depending on the formulation (and the programming you want to give the robot), there are those who say, at the other end of the spectrum, that they are reissuing the old legal realism.<sup>86</sup>

It is true that the current state of the application of the law in the country contributes greatly to this return to the past in technological clothing: the dissemination of the conception that there are "massive demands" without relevant concrete differences between them; the construction of a civil process obsessed with illusory speed as a central value and with the real need for the dejudicialization of conflicts;<sup>87</sup> the seal of the legal community and of the legislator himself for the development of a system in which it is believed in the possibility that judicial decisions can be applied by syllogism to new cases with the nickname of "precedents".<sup>88</sup>

<sup>83</sup> A school that would be surpassed at the end of the nineteenth century by the scientific school of authors such as Raymond Saleilles and François Gény, as Henri De Page points out, according to which exegesis was "a parenthesis" in the history of the development of legal ideas. The author even alludes to the "*nécrose de l'exegese*" (De Page, 1948, p. 12).

<sup>84</sup> It is stated, for example, that the quantitative analysis of legal data using algorithms "*allows some predictability of a specific outcome for legal decisions*" (Fornasier, 2021, p. 7).

<sup>85</sup> For a critique of the civic-constitutional perspective of the exacerbation of these elements, see, for all, Bodin D de Moraes, 2013a.

<sup>86</sup> In this sense, with fine irony, Lenio Streck (2020b) ponders that the algorithms programmed to predict how judges would judge cases do not resolve the criticisms of the so-called judicial "decisionism", but only rescue the old legal realism already proposed by Wendell Holmes.

<sup>87</sup> On the possibility of using robots to solve "simple" cases and speed up the decision-making process, cf. Review of Streck, 2023c.

<sup>88</sup> For a critique of the notion of "precedents" as it has been called in Brazil, cf. Bodin de Moraes, 2014.

Likewise, the irresponsible proliferation of law courses in the country,<sup>89</sup> the reduction of the publishing market to "didactic" books that are increasingly summarized and oriented towards memorizing the material functionalized for exams and competitions,<sup>90</sup> the migration of legal "teaching" to the Internet (where it is simplified, trimmed and compressed to fit in a few characters of text or seconds of video) contribute to this state of affairs.<sup>91</sup> All of these ingredients reinforce the argument for the robotic interpreter, as they portray hermeneutical activity less and less as the result of technical detail and evaluative sensitivity and more and more as an automatable mass production of application.<sup>92</sup>

To these problems so deeply rooted in our praxis and to those in favour of replacing the intellectual training of jurists with "intelligent" tools, civil-constitutional thought has offered, for some time now, the very beginning of a common answer: the legal system is only complete in the light of the concrete case; there are no "easy cases", nor problems so simple that they can be solved by the simple application of the subsumptive method; each concrete case is unique and its peculiarities must be so. for the purposes of individualizing the applicable regulations.<sup>93</sup> As long as artificial intelligence algorithms remain "random parrots",<sup>94</sup> mere reproducers of texts devoid of creative capacity<sup>95</sup> and, even less, of that kind of sensitivity and rationality<sup>96</sup> that characterize the training of lawyers, the function of the legal academy must remain strictly

<sup>89</sup> This problem is exemplified by the drastic measure reported by Angelo and Vital, 2022.

<sup>90</sup> In Italian doctrine, for example, cf. Critique of Perlingieri (2008, p. 78). In the Brazilian experience, Maria Celina Bodin de Moraes (2013b, pp. 6-7) describes: "Teaching materials, especially textbooks (and, consequently, everyday life in the classroom), are shown to lack a guided reflective base, adequate to provide methodological support for a renewed form of teaching civil law. The options are few and weak, in general. On the one hand, the traditional methodology, still hardened by a formalist positivism, or by a natural law of generic foundation, both founded on absolute truths and, for this very reason, incompatible with contemporary philosophical constructions. [...] On the other hand, appropriating the void generated by the insufficiency of tradition and the dissatisfaction and disinterest of students in the face of the obsolescence of the proposed questions and the archaism of traditional language, there is a proliferation of teaching material of inferior quality, which, in the name of facilitating access to knowledge, sacrifices the necessary scientific rigor of Law".

<sup>91</sup> On the growth of "profiles" on social networks aimed at clarifying legal content, cf. Ferreira, 2022.

<sup>92</sup> To the point of recommending that law students learn about artificial intelligence to have the "opportunity to orient their careers to avoid the legal occupations most vulnerable to automation and focus on activities for which their education and skills are valuable [...] In general, the trend of AI has been the automation of highly structured and repetitive tasks, or with discernible underlying patterns" (Fornasier, 2021, p. 24. Free translation).

<sup>93</sup> For a development on these points, with references to the main authors of the civic-constitutional school, allow us to refer to Souza, 2022, item 4.

<sup>94</sup> The term "*stochastic parrots*," which is quite recurrent, refers to a pattern recognized in probabilistic theory that originates from random events. See, for example, Bender et al., 2021.

<sup>95</sup> "AI, as it is currently developed, is efficient for specific tasks, such as solving equations, but it is still very ineffective at tasks that require creativity. Given that creativity and interdisciplinary skills will continue to be human domains for longer than expected, they form the basis of an interesting training for the human professionals of the future" (Fornasier, 2021, p. 13. Free translation).

<sup>96</sup> As Perlingieri, 2021, p. 59 proposes, "a legal sensitivity, formed in the near and remote roots of positive law, but always anchored in the *continuum* of values that are in civil society and in the legal system".

the same.

But this is only a temporary respite. Although the gross errors made by human conversational algorithms are still a laughing matter, it is not unlikely that, sooner or later, these same tools will be able to reproduce human capacities with much more fidelity, perhaps even identifying patterns capable of rationalizing, to some extent, this indistinct set of rules, so difficult to enunciate in the abstract. what is called "legal reasoning".<sup>97</sup> When that time approaches, it will be necessary for society as a whole to face the most serious of questions: how easily it is prepared to dispense with the human element in this phenomenon so inherently social, not only conceived *for* men, as in Hermogenian's famous adage,<sup>98</sup> but also, and above all, built daily *by* men.

## 5 In conclusion: human dignity remains and always

The "future" has arrived. But it did not bring with it the promises that inhabited the collective imagination; It did not implement the sad scenario of literature's famous dystopias, nor did it provide us with the fascinating ethical dilemmas of humanoid robots proposed by the film industry in the last decades of the twentieth century. It still looks at artificial intelligence with a playful curiosity or romantic admiration, instead of recognizing it for what it really is: an instrument, as useful as it is dangerous, depending on its handling. For example, the case of the engineer who developed the algorithm was known *LaMDa* who went so far as to argue that the robot would have "created life" and that it would have the consciousness of a child (Garattoni, 2022). Reminiscent of the children's story *Le avventure di Pinocchio: storia di un burattino*, written by Italian Carlo Collodi in 1883, the case might have had a more useful outcome if the developer had taken the time to warn the public that algorithms, such as the character in the tale, eventually lack the truth.

Among those who are dedicated to pointing out the concerns raised by artificial intelligence mechanisms such as *Chat GPT*, it is perhaps worth returning, in the light of the

<sup>97</sup> The complexity of this reasoning is described by María Celina Bodín de Moraes (2013b, p. 5): "In the activity of the legal professional or researcher, reasoning must be, at the same time, deductive and inductive. In working on the search for the norm that will be applied to the specific case, the jurist must turn his gaze to the entire legal system, but, in the first place, to the Constitution, the highest text of the system, which cannot be contradicted. But not only that. The legal norm is a cultural product, part of social science, and it is essential to promote its interdisciplinary study, in order to insert it into social reality, with its political, economic, sociological, psychological, etc. repercussions."

<sup>98</sup> Here we allude to Hermogenian's maxim taken from the Digest, 1. 5. 2: Every law is conceived for man (*hominum causa omne ius constitutum est*).

questions highlighted above, to the same question asked in the Introduction to this study: why does an algorithm that reproduces human language cause such a peculiar commotion? One possible answer seems to lie in understanding what human abilities this robot intends to replace. All the tools created by man throughout history have set out to free humanity from tasks considered strenuous or cumbersome, or to improve the way people performed them. Even computers capable of performing monumental calculations are destined to save human beings what would be an effort, even if it is mental, eminently mechanical. The new generation of algorithms, however, at least at first glance, seems to be designed to spare man the tasks that, in the Western tradition, have long been the defining feature of the very concept of humanity: reasoning and creative expression.<sup>99</sup> Applied to legal education, in particular, the "repetitive" and "cumbersome" task that artificial intelligence seems to replace, among its enthusiasts, is that of teaching.<sup>100</sup>

The same philosophical tradition that, in modernity, praised human rationality and the cognitive capacities of the individual was, as is well known, the source that gave rise to contemporary conceptions of human dignity.<sup>101</sup> If these same abilities can be replicated (and, if they are not yet, they will soon be with higher quality) by robots, perhaps it would be possible to ask: what remains intact in our humanity?<sup>102</sup> What continues to justify the protection of human dignity?<sup>103</sup> Artificial intelligence is worrying because it confronts us with a question whose answer has become unpostponable: has global society really definitively introjected the ideal of the inherent dignity of every human individual affirmed in the great international treaties of the last century? We are able to implement a substantial dignity statute<sup>104</sup> to all people

<sup>99</sup> Particularly with regard to the relevance of human writing ability in the education system, it has been said that it functions as "*a gatekeeper, a metric of intelligence, a teachable skill*" (Herman, 2022).

<sup>100</sup> The role that would remain for the teacher, in this perspective, would be to "build the character" of students: "AI will inevitably move education towards learning wisdom. The main goal of human use of AI is to free man from basic, repetitive work, to allow participation in more important or interesting things. But education is basically divided into two strands: 'teaching', which is the transfer of knowledge, and it is part of the educator's job that AI can do better than human beings; and 'education', which is the cultivation of character, the incentive for students to explore the unknown, in discovery, creation and the love of knowledge, and this part is difficult to replace with AI" (Fornasier, 2021, p. 17. Free translation).

<sup>101</sup> For a history of the evolution of the philosophical and legal concept of human dignity in Brazilian law, with special emphasis on the Kantian matrix of this paradigm and its foundation in human rationality, cf. Bodin de Moraes, 2006, item 2.

<sup>102</sup> As Harari (2019, p. 41) points out, "in the past, machines competed with humans primarily in physical abilities, while humans remained ahead of machines in cognitive ability. Thus, when manual labor in agriculture and industry was automated, new jobs emerged in the service sector that required the kind of cognitive skills that only humans possessed. However, AI is beginning to surpass humans in an increasing number of these skills, including understanding human emotions. We don't know of any third field of activity, besides the physical and cognitive, in which humans will always maintain a safe margin."

<sup>103</sup> Questions that had already been anticipated, with other applications, by Rodotà (2017, pp. 15-16).

<sup>104</sup> Cf. Rodotà (2017) *passim* and, particularly, p. 13.

when they are pressured by the interests of the market,<sup>105</sup> by the discourse of efficiency, by the seduction of convenience and the "bias of automation",<sup>106</sup> by the fascination around innovation as an end in itself? Or, again: has the ideal of human dignity had enough time to prepare society to defend it?

It is not, therefore, the tool that the lawyer should be suspicious of, but its developers and users.<sup>107</sup> If artificial intelligence is worrying because of its potential to spread everything from plagiarism to disinformation, it is because there is no certainty about the seriousness of social commitment to fight these trends. If artificial intelligence is capable of reproducing discriminatory biases and hate speech, the reason is that it is based on human intellectual content, whose authors have not been able to prioritise the ultimate value of order: the dignity of all people. If there is fear that new technologies will massively annihilate jobs, it is because it is recognized that, at this stage in our social development, we are still not really convinced that the products of human action and knowledge, even when they are imperfect, are endowed with a unique and irreplaceable inherent value. The very mechanisms of artificial intelligence could be included among these products and celebrated as one more triumph of humanity, if they did not reveal our own insecurity about the solidity that the still young ideal of human dignity has managed to ensure until this moment in history.

As is well known, one of the characteristics of the postmodern society in which we are inserted is the progressive loss of prestige of those who, in ancient societies, enjoyed the highest social esteem: the elders, the older members of the community, possessors of experience and guardians of the knowledge that, accumulated by previous generations, they would be responsible for transmitting them to future generations. In our model, knowledge and experience are replaced by productivity and consumption,<sup>108</sup> the elderly, seen as a burden and source of expenses for the State, give prominence to the young, capable of producing and using the new instruments.<sup>109</sup> Would it really be the sole responsibility of artificial intelligence if the

<sup>105</sup> If a reference to this point is necessary, cf. Perrigo's Story (2023b).

<sup>106</sup> The term (in English, *automation bias*) is used to designate the progressive difficulty that people have to doubt the results produced by machines; a scenario of "excessive confidence" in the product coming from automation is created, to the point of making specialists in the most varied areas of knowledge uncomfortable by questioning these results. In this regard, cf. Kissinger et al., 2023.

<sup>107</sup> A necessary critique of the interests underlying the development of intelligent mechanisms with obviously harmful results (such as the elimination of consulted sources, the assistance provided to various frauds and the general damage to education at the most diverse levels) is developed by Lenio Streck (2023b). On this point, in more general terms on technological tools, cf. also the considerations of Perlingieri (2008, p. 71).

<sup>108</sup> Stefano Rodotà identifies, for example, "a person locked in a logic of consumption that produces a regressive anthropology" (Rodotà, 2017, p. 16).

<sup>109</sup> The relationship between ageing and consumer culture in postmodernity is the subject of repeated studies in other areas of knowledge, such as sociology. By way of illustration, cf. Featherstone and Hepworth, 2003.

next step is to replace young people with the algorithm, which is more productive and creative? Wouldn't the results be different if the same technology emerged in another social context? A society truly committed to human dignity finds in artificial intelligence systems powerful allies for decision-making, but which are incapable, both from a technical point of view and from a cultural and legal point of view, of replacing the self-determination of each and every one of us (Rodotà, 2017, p. 16) – and that, by transparently evidencing the discretionary choices that programmed them and the mechanisms to produce their results (Perlingieri, 2008, p. 71), they never manage to superimpose their products on the unattainable, because inherent, value of human knowledge.

The crisis, therefore, may not have been created – but evidenced – by artificial intelligence, because it is not only, and much less mainly, a crisis of technical and legal instruments to deal with the new reality. On the contrary, it is, above all, a crisis of values. To the jurist who intends to contribute to overcoming it, perhaps a central recommendation is outlined, prior to the legislative activity that will soon intensify and to the construction of concepts and normative instruments to face the new reality: it is necessary, in the first place, to turn his gaze, once again, to the principle of human dignity.<sup>110</sup> As long as the interpreter is not convinced of this evaluative north, throwing himself into the sea of the uncertainties of contemporaneity will probably result in shipwreck attempts. The legal treatment of artificial intelligence and the teaching of law in a world of robotic reproduction of human language must be based on this assumption: the effective commitment of the whole of society to the Democratic State<sup>111</sup> and with the concrete promotion of a dignified existence for all people.<sup>112</sup>

A few years ago, in a doctrinal article (Souza, 2020) that proposed to support the technical insufficiency of the proposals for the attribution of legal personality to mechanisms endowed with artificial intelligence (apparently, another by-product, either of the romantic vision around "humanized" robots, or of the market's interest in removing responsibility from their developers), the plot of the film was mentioned *Blade Runner*, directed by Ridley Scott in

<sup>110</sup> "There is no doubt that the relationship between the market and institutions represents the central problem of modernity. It is necessary, however, to be aware that the protagonist of this relationship is and continues to be man, as a person and not reduced to a consumer or producer" (Perlingieri, 2008, p. 129).

<sup>111</sup> See Harari's warning about the risks of artificial intelligence in the world's democracies: "Forget about school essays. Think about the upcoming U.S. presidential race in 2024 and try to imagine the impact of AI tools that can be made to mass-produce political content, fake news, and writing for new cults [...]. Democracy is a conversation, and conversations depend on language. When AI hacks language, it can destroy our ability to have meaningful conversations, thus destroying democracy" (Harari, 2023).

<sup>112</sup> As Rodotà proposes, "to keep the human dimension, its richness, unpredictability and freedom at the centre" (Rodotà, 2017, p. 16).

1982, which described a dark future, set in a fictional year of 2019, in which ethical dilemmas were developed regarding androids endowed with a human-identical appearance (and perhaps a superior emotional capacity). That "future" has not arrived; The ethical dilemmas we face are still eminently restricted to individuals. Allow us, however, to conclude these incipient considerations with the same paraphrase that was made, on that occasion, of the most famous scene in the film: while society vacillates as to the evaluative direction that the legal system should follow (in terms of artificial intelligence and in many others), the ideal of human dignity is forgotten and lost in time. like tears in the rain.

## References

- ANGELO, Tiago; VITAL, Danilo. The OAB will ask the MEC to prohibit the opening of new law courses for five years. **Conjuro**, Brasília, Dec 12. 2022. Available in: <https://www.conjur.com.br/2022-dez-12/oab-mec-barre-novos-cursos-direito-cinco-anos>. Access date: 7 Jul. 2023.
- BARBOSA, Andressa. New York schools ban the use of ChatGPT. **Forbes**, [S. l.], 9 Jan. 2023. Available in: <https://forbes.com.br/forbes-tech/2023/01/escolas-de-nova-york-proibem-o-uso-do-chatgpt/#:~:text=O%20ChatGPT%2C%20chatbot%20de%20intelig%C3%A2ncia,e%20redes%20nas%20escolas%20p%C3%ABlicas>. Access date: 7 Jul. 2023.
- BENDER, Emily M.; GEBRU, Timnit; MCMILLAN-MAJOR, Angelina; SCHMITCHELL, Schmargaret. On the dangers of stochastic parrots: can language models be too big? *In*: FAccT '21: 2021 ACM CONFERENCE ON EQUITY, ACCOUNTABILITY AND TRANSPARENCY. **The minutes of the [...]**element. New York: Association for Computing Machinery, 2021. pp. 610-623. Available in: <https://doi.org/10.1145/3442188.3445922>. Access date: 7 Jul. 2023.
- BENNETT MOSES, Lyria. We help future citizens navigate an automated and data-driven world. **UNSW Law Research Paper**, [S. l.], n. 19-28, p. 1-19, 2019. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3370016](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3370016). Access date: 7 Jul. 2023.
- BODIN DE MORAES, María Celina. From the Judge Mouth of the Law to the Law According to the Mouth of the Judge: Notes on the Application-Interpretation of Law at the Beginning of the Twenty-First Century. **Revista de Direito Privado**, São Paulo, v. 14, n. 56, p. 11-30, Oct./Dec.2013a.
- BODIN DE MORAES, María Celina. The principle of human dignity. *In*: BODIN DE MORAES, Maria Celina (coord.). **Principles of contemporary civil law**. Rio de Janeiro: Renew, 2006. pp. 1-60.
- BODIN DE MORAES, María Celina. For a humanist teaching of civil law. **Civilistica.com**, Rio de Janeiro, year 1, n. 2, p. 1-19, 2012. Available at: <https://civilistica.emnuvens.com.br/redc/article/view/37>. Access date: 7 Jul. 2023.
- BODIN DE MORAES, María Celina. Teachers or judges?. **Civilistica.com**, Rio de Janeiro,

year 3, n. 2, p. 1-5, 2014. Available at:

<https://civilistica.emnuvens.com.br/redc/article/view/179>. Access date: 7 Jul. 2023.

BODIN DE MORAES, María Celina. Risk, solidarity and objective liability. **Revista dos Tribunais**, São Paulo, v. 95, n. 854, p. 11-37, dez. 2006.

BODIN DE MORAES, María Celina; SOUZA, Eduardo Nunes de. Education and culture in Brazil: the question of homeschooling. **Civilistica.com**, Rio de Janeiro, year 6, n. 2, p. 1-33, 2017. Available at: <https://civilistica.emnuvens.com.br/redc/article/view/297>. Access date: 7 Jul. 2023.

CABRAL, Themys. The pearls heat up the debate around the OAB exam. **Gazeta do Povo**, [S. l.], 4 years ago. 2011. Available at: <https://www.gazetadopovo.com.br/vida-e-cidadania/perolas-aquecem-debate-em-torno-do-exame-da-oab-byynmspz7jacylf3p6fdp21xq/>. Access date: 7 Jul. 2023.

CAPARROZ, Leo. ChatGPT surpasses TikTok and is the platform with the highest user growth. **Superinteressante**, [S. l.], 17 Feb. 2023a. Available at: <https://super.abril.com.br/tecnologia/chatgpt-supera-tiktok-e-e-plataforma-com-o-crescimento-mais-rapido-de-usuarios>. Access date: 7 Jul. 2023.

CAPARROZ, Leo. Artificial intelligence will defend a defendant in court. **Superinteressante**, [S. l.], 9 Jan. 2023b. Available in: <https://super.abril.com.br/ciencia/inteligencia-artificial-vai-defender-um-reu-no-tribunal>. Access date: 7 Jul. 2023.

CUNHA, Luiz Antônio. Baccalaureate: a shortcut to the past. **Educação & Sociedade**, Campinas, v. 38, n. 139, p. 373-384, Apr./Jun. 2017.

CUNHA, Luiz Antônio. Industrial-manufacturing education in Brazil. **Revista Brasileira de Educação**, Rio de Janeiro, n. 14, p. 89-193, May/Aug. 2000.

DANTAS, Dimitrius. Social media ads drive false information about the fake news bill, according to a study. **O Globo**, Brasília, April 27, 2023. Available at: <https://oglobo.globo.com/politica/noticia/2023/04/anuncios-em-redes-sociais-impulsionam-informacoes-falsas-sobre-pl-das-fake-news-aponta-estudo.ghtml>. Accessed on: 7 Jul. 2023.

DANTAS, Francisco Clementino de San Tiago. Legal education and the Brazilian crisis. *In*: DANTAS, Francisco Clementino de San Tiago. **Words of a master**. Rio de Janeiro: Forensics, 2001. pp. 51-84.

DE PAGE, Henri. **Traité élémentaire de droit civil belge**. Brussels: Émile Bruylant, 1948. verse 1.

DIAMOND, Randy J. *et al.* Let's teach our students legal technology... But what should we include? **AALL Spectrum**, [S. l.], p. 23-28, Sept./Oct. 2018.

FEATHERSTONE, M.; HEPWORTH, M. The mask of aging and the postmodern life course. *In*: FEATHERSTONE, M.; HEPWORTH, M.; TURNER, B. (ed.). **The Body: Social Process and Cultural Theory**. London: Sage Publications, 2003. p. 389-404.

FEFERBAUM, Marina; RADOMYSLER, Clio Nude. Educational initiatives: artificial intelligence and legal professions. *In*: SILVA, Alexandre Pacheco da; FABIANI, Emerson Ribeiro; FEFERBAUM, Marina (ed.). **Transformations in legal education**. São Paulo: FGV Direito SP, 2021. pp. 18-34.

FERREIRA, Catarina. Lawyers gain projection on social networks with anti-legality. **Folha**

**de São Paulo**, [S. l.], 18 Mar. 2022. Available in: <https://www1.folha.uol.com.br/seminariosfolha/2022/03/advogados-ganham-projecao-nas-redes-sociais-com-anti-juridiques.shtml>. Access date: 7 Jul. 2023.

FORNASIER, Mateus Oliveira. Legal education in the twenty-first century and artificial intelligence. **Revista Opinião Jurídica**, Fortaleza, year 19, n. 31, p. 1-32, May/August. 2021.

FREIRE, Paulo. **Pedagogy of hope**. São Paulo: Paz e Terra, 1992.

GARATTONI, Bruno. An artificial intelligence bot has gained consciousness, says a Google engineer; The company denies this. **Superinteressante**, [S. l.], 9 years ago. 2022. Available at: <https://super.abril.com.br/coluna/bruno-garattoni/bot-de-inteligencia-artificial-adquiriu-consciencia-diz-engenheiro-do-google-empresa-nega>. Access date: 7 Jul. 2023.

GARATTONI, Bruno. The future of artificial intelligence and what's next after ChatGPT. **Superinteressante**, [S. l.], 16 Feb. 2023a. Available at: <https://super.abril.com.br/tecnologia/o-futuro-da-inteligencia-artificial-e-o-que-vem-depois-do-chatgpt>. Access date: 7 Jul. 2023.

GARATTONI, Bruno. Microsoft and OpenAI are preparing a new version of ChatGPT, which will be able to generate videos. **Superinteressante**, [S. l.], 13 Mar. 2023b. Available in: <https://super.abril.com.br/coluna/bruno-garattoni/microsoft-pode-estar-prestes-a-apresentar-o-gpt-4-o-novo-cerebro-do-chatgpt/>. Access date: 7 Jul. 2023.

GARATTONI, Bruno. OpenAI presents GPT-4, its new artificial intelligence algorithm; Google announces AI features for Gmail and Docs. **Superinteressante**, [S. l.], 14 Mar. 2023c. Available at: <https://super.abril.com.br/coluna/bruno-garattoni/openai-apresenta-o-gpt-4-seu-novo-algoritmo-de-inteligencia-artificial-google-anuncia-recursos-de-ia-para-o-gmail-e-o-docs>. Access date: 7 Jul. 2023.

HARARI, Yuval Noé. **21 lessons for the 21st century**. São Paulo: Companhia das Letras, 2018.

HARARI, Yuval Noé. Yuval Noah Harari argues that AI has hacked into the operating system of human civilization. **El Economista**, [S. l.], 28 April 2023. Available at: <https://www.economist.com/by-invitation/2023/04/28/yuval-noah-harari-argues-that-ai-has-hacked-the-operating-system-of-human-civilisation>. Access date: 7 Jul. 2023.

HERMAN, Daniel. The end of high school English. **El Atlántico**, [S. l.], 9 December 2022. Available at: <https://www.theatlantic.com/technology/archive/2022/12/openai-chatgpt-writing-high-school-english-essay/672412/>. Access date: 7 Jul. 2023.

HYLAND, Richard. Shall we dance? Translation by Eduardo Nunes de Souza. **Civilistica.com**, Rio de Janeiro, year 3, n. 2, 2014. Available at: <https://civilistica.emnuvens.com.br/redc/article/view/584>. Access date: 7 Jul. 2023.

KISSINGER, Henry; SCHMIDT, Eric; HUTTENLOCHER, Daniel. ChatGPT heralds an intellectual revolution. **The Wall Street Journal**, [S. l.], 24 Feb. 2023. Available at: <https://www.wsj.com/articles/chatgpt-heralds-an-intellectual-revolution-enlightenment-artificial-intelligence-homo-technicus-technology-cognition-morality-philosophy-774331c6>. Access date: 7 Jul. 2023.

LESSIG, Lawrence. The law of the horse: what cyberlaw could teach. **Harvard Law Review**, [S. l.], v. 113, n. 2, p. 501-549, Dec. 1999.

- MAIA, Dhiego. Bolsonaro proposes to reduce funding for sociology and philosophy courses in the country. **Folha de São Paulo**, São Paulo Apr 26. 2019. Available in: <https://www1.folha.uol.com.br/educacao/2019/04/bolsonaro-propoe-reduzir-verba-para-cursos-de-sociologia-e-filosofia-no-pais.shtml>. Access date: 7 Jul. 2023.
- MARCHE, Esteban. The college essay is dead. **El Atlántico**, [S. l.], 6 December 2022. Available at: <https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/>. Access date: 7 Jul. 2023.
- MARQUES, Fabrício. Covert plagiarism in ChatGPT texts. **Pesquisa Fapesp**, São Paulo, March 9, 2023. Available at: <https://revistapesquisa.fapesp.br/o-plagio-encoberto-em-textos-do-chatgpt/>. Access date: 7 Jul. 2023.
- MARTINS, Ricardo Maffeis; GUARIENTO, Daniel Bittencourt. OAB vs. startups. Will this be the beginning of the uberization of the legal profession? **Migas**, [S. l.], 13 Mar. 2020. Available at: <https://www.migalhas.com.br/coluna/impressoes-digitais/321656/oab-versus-startups--sera-esse-o-inicio-da-uberizacao-da-advocacia>. Access date: 7 Jul. 2023.
- MELO, João Osório de. Experts are discussing whether it is possible to sue ChatGPT for defamation. **Conjuro**, [S. l.], April 17, 2023. Available in: <https://www.conjur.com.br/2023-abr-17/especialistas-discutem-possivel-processar-chatgpt-difamacao>. Access date: 7 Jul. 2023.
- MERTZ, Isabel. **The Language of Law School: Learning to Think Like a Lawyer**. New York: Oxford University Press, 2007.
- PAUN, Goran. Intersecting UI and user experience best practices with artificial intelligence. **Forbes** [S. l.], 04 Apr. 2023. Available in: <https://www.forbes.com/sites/forbesagencycouncil/2023/04/04/intersecting-user-interface-and-user-experience-best-practices-with-artificial-intelligence/?sh=32168206896d>. Access date: 7 Jul. 2023.
- PERRIGO, Billy. An artificial intelligence helped write this work. It may contain racism. **Tiempo**, [S. l.], 23 August. 2021. Available at: <https://time.com/6092078/artificial-intelligence-play/>. Access date: 7 Jul. 2023.
- PERRIGO, Billy. Exclusive: OpenAI used Kenyan workers on less than \$2 an hour to make ChatGPT less toxic. **Tiempo**, [S. l.], 18 January 2023a. Available at: <https://time.com/6247678/openai-chatgpt-kenya-workers/>. Access date: 7 Jul. 2023.
- PERRIGO, Billy. Big Tech is already pushing to loosen Europe's AI rules. **Tiempo**, [S. l.], 21 Apr. 2023b. Available at: <https://time.com/6273694/ai-regulation-europe/>. Access date: 7 Jul. 2023.
- PERLINGIERI, Pietro. **Civil Law in Constitutional Legality**. Rio de Janeiro: Renew, 2008.
- RODOTÀ, Stefano. The anthropology of *homo dignus*. Translation by María Celina Bodín de Moraes. **Civillistica.com**, Rio de Janeiro, year 6, n. 2, p. 1-17, 2017. Available at: <https://civillistica.emnuvens.com.br/redc/article/view/647>. Access date: 7 Jul. 2023.
- RODOTÀ, Stefano. **Elaboratori elettronici e controle sociale**. Bologna: Il Mulino, 1973.
- ROMANI, Bruno. ChatGPT is "approved" in the first phase of the OAB test. **Estadão**, [S. l.], 21 Feb. 2023. Available in: <https://www.estadao.com.br/link/cultura-digital/chatgpt-aprovado-em-prova-da-primeira-fase-da-oab/>. Access date: 7 Jul. 2023.
- ROSSINI, María Clara. How Artificial Intelligences that create images work.

**Superinteressante**, [S. l.], 31 January 2023a. Available at: <https://super.abril.com.br/tecnologia/como-funcionam-as-inteligencias-artificiais-que-criam-imagens/>. Access date: 7 Jul. 2023.

ROSSINI, Maria Clara. 3 tips to identify if an image was made by Artificial Intelligence. **Superinteressante**, [S. l.], 5 Apr. 2023b. Available in: <https://super.abril.com.br/tecnologia/3-dicas-para-identificar-uma-se-uma-imagem-foi-feita-por-inteligencia-artificial>. Access date: 7 Jul. 2023.

SANTOS, Rodrigo Miotto two; BASTOS JÚNIOR, Luiz Magno Pinto; ROSA, Alexandre Morais da. Legal education and artificial intelligence: taking digital transformation seriously in law courses. **Revista Científica Disruptiva**, [S. l.], v. 3, n. 1, p. 81-108, Jan./Jun. 2021.

SOUZA, Eduardo Nunes de. Current dilemmas of the legal concept of personality: a critique of the proposals for the subjectivation of animals and the mechanisms of artificial intelligence. **Civilistica.com**, Rio de Janeiro, year 9, n. 2, p. 1-49, 2020. Available at: <https://civilistica.emnuvens.com.br/redc/article/view/562>. Access date: 7 Jul. 2023.

SOUZA, Eduardo Nunes de. In Defense of the Causal Nexus: Fault, Imputation and Causality in Brazilian Civil Liability. In: SOUZA, Eduardo Nunes de; SILVA, Rodrigo da Guía (coord.). **Current controversies in matters of civil liability**. São Paulo: Almedina, 2018. pp. 33-102.

SOUZA, Eduardo Nunes de. Indices of the interpreter's attachment to the methodology of civil-constitutional law. **Journal of the Faculty of Law of the UERJ**, Rio de Janeiro, n. 41, p. 1-41, 2022. Available at: <https://www.e-publicacoes.uerj.br/index.php/rfduerj/article/view/56476>. Access date: 7 Jul. 2023.

SOUZA, Eduardo Nunes de. What tutelary freedom in the age of irresponsible opinion? **Revista Brasileira de Direito Civil**, Belo Horizonte, v. 22, p. 271-283, oct./dec. 2019.

STOCK, Lucas. Will ChatGPT revolutionize teaching in universities and schools? **Deutsche Welle**, [S. l.], 20 Jan. 2023. Available in: <https://www.dw.com/pt-br/chatgpt-revolucionar%C3%A1-o-ensino-em-universidades-e-escolas/a-64470992>. Access date: 7 Jul. 2023.

STRECK, Lênio. CNJ wants to change competition for judge: another good market for intensive schools? **Conjuro**, [S. l.], 23 Set. 2021. Available at: <https://www.conjur.com.br/2021-set-23/senso-incomum-cnj-mudar-concurso-juiz-boa-cursinhos>. Access date: 7 Jul. 2023.

STRECK, Lênio. Artificial intelligence: and the child was never seen again at the airport. **Conjuro**, [S. l.], 2 February 2023a. Available at: <https://www.conjur.com.br/2023-fev-02/senso-incomum-inteligencia-artificial-menino-nunca-foi-visto-aeroporto>. Access date: 7 Jul. 2023.

STRECK, Lênio. ChatGPT, the class of the useless and the dog that pushed children in the river! **Conjuro**, [S. l.], 23 February 2023b. Available at: <https://www.conjur.com.br/2023-fev-23/senso-incomum-ia-classe-inuteis-cao-empurrava-criancas-rio>. Access date: 7 Jul. 2023.

STRECK, Lênio. The "triumph" of homo *uber juridicus*. **Conjuro**, [S. l.], 5 Mar. 2020a. Available in: <https://www.conjur.com.br/2020-mar-05/senso-incomum-triunfo-homo-uber-juridicus>. Access date: 7 Jul. 2023.

STRECK, Lênio. Can a robot judge? Who programs the robot?. **Conjuro**, [S. l.], 3 September 2020b. Available at: <https://www.conjur.com.br>. Access date: 7 Jul. 2023.

STRECK, Lênio. If the robot is for simple cases, let's call the doorman! No offense! **Conjuro**, [S. l.], February 6, 2023c. Available at: <https://www.conjur.com.br/2023-fev-06/lenio-streck-robo-casos-simples-chamemos-porteiro-ofensa>. Access date: 7 Jul. 2023.

STRUTZEL, Tercio. Advocacy 4.0 vs. artificial intelligence. **Migas**, [S. l.], april 2023. Available at: <https://www.migalhas.com.br/depeso/384702/advocacia-4-0-versus-inteligencia-artificial>. Access date: 7 Jul. 2023.

TEPEDINO, Gustavo. The applicability of the Civil Code in consumer relations: dialogues between the Civil Code and the Consumer Protection Code. *In*: LOTUFO, Renan; MARTINS, Fernando (coord.). **20 years of the Consumer Protection Code: achievements, challenges and perspectives**. São Paulo: Saraiva, 2011. pp. 67-88.

TEPEDINO, Gustavo. The Civil Code, the so-called microsystems and the Constitution: premises for a legislative reform. *In*: TEPEDINO, Gustavo (org.). **Problems of civil-constitutional law**. Rio Janeiro: Renew, 2000. pp. 1-16.

TEPEDINO, Gustavo; SILVA, Rodrigo da Guia. Synopsis of the new frontiers of civil law. *In*: TEPEDINO, Gustavo; SILVA, Rodrigo da Guia (coord.). **Civil Law in the Age of Artificial Intelligence**. São Paulo: Thomson Reuters, 2020. pp. 5-9.

VALLANCE, Chris. Elon Musk among experts urging a halt to AI training. **BBC**, [S. l.], 30 Mar. 2023. Available in: <https://www.bbc.com/news/technology-65110030>. Access date: 7 Jul. 2023.