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BEHAVIORAL BIAS ARISING FROM THE USE OF ARTIFICIAL INTELLIGENCE IN LEGAL RESEARCH

VIESES COMPORTAMENTAIS DECORRENTES DO USO DA INTELIGÊNCIA ARTIFICIAL NA PESQUISA JURÍDICA

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Abstract: The present article aims to highlight the importance of artificial intelligences and their consequences in the field of legal research, covering both negative and positive aspects in academic, judicial, and professional realms. It also seeks to present how this is reverberating in people's behavioral biases due to the use of these new technologies. Additionally, it shares ethical factors that must be respected for the appropriate use of this tool, ensuring it does not harm its users. Furthermore, it brings some examples of artificial intelligences that can be utilized and their different purposes. The qualitative methodology with a bibliographic review was employed.

Keywords: Artificial Intelligence. Legal Research. Behavior. Innovation.

Resumo: O presente artigo visa destacar a importância das inteligências artificiais e suas consequências no campo da pesquisa jurídica, em seus aspectos negativos e positivos, tanto em âmbito acadêmico, judicial e profissional, também buscando apresentar a que ponto isso está reverberando nos vieses comportamentais das pessoas decorrentes do uso destas novas tecnologias. Além disso, compartilhando fatores éticos que devem ser respeitados para o uso mais adequado dessa ferramenta, para que assim não prejudique quem está utilizando. Ademais trazendo alguns exemplos de inteligências artificiais que podem ser utilizadas e suas diferentes finalidades. Foi utilizado a metodologia qualitativa com revisão bibliográfica.

Palavras-chave: Inteligência Artificial. Pesquisa Jurídica. Comportamento. Inovação.

1. Introduction

The use of artificial intelligence (AI) in the daily lives of people across various fields has been a constant presence. Therefore, scientific observation of this utilization is of paramount importance, especially concerning legal research in its many aspects.

Highlighting the significance and consequences of AI in the field of legal research and examining its reverberations, both negative and positive, in academic, judicial, and professional realms is essential to keeping pace with the rapid technological advancements that can improve the efficiency and speed of various tasks.

Consequently, behavioral analysis has also become necessary to understand the impact of AI on social behavior and its legal implications, and to what extent we can use this innovative technology to further propel research in the field of law. This can enhance the human-machine relationship through the study of behavior.

Through a qualitative methodology, including a literature review and a deductive approach, a study was conducted on how this virtual world and certain technological innovations in scientific research can contribute to the advancement and deepening of research in the humanities and social sciences, with an emphasis on legal research.

This work explores the various roles that artificial intelligence plays in the work of legal researchers and professionals, as well as different ethical perspectives to ensure a more appropriate use of these tools, considering also the detrimental ways of inappropriate use of this technology.

2. Artificial Intelligence in Legal Research and Its Effects on Human Behaviour

Looking at a historical overview of the last two millennia, we can see that the greatest technological advancements have occurred in the past fifty years, a pace unseen before in the Christian era, especially considering that less than two hundred years ago, Brazil was still a slave-holding country sustained by a feudal system.

With the rising digital technologies, humans can take advantage of these advancements in everyday life, future work, and professional development (Demaría, 2020). Research is needed to optimize human behavior in response to these various technologies; regarding artificial intelligence, it is essential to investigate how people can use this tool

ethically, considering the implications of more effective applications and situations where it cannot be used.

According to Coelho (2017), artificial intelligence consists of algorithms programmed into a machine, thereby having cognitive abilities comparable to or even surpassing those of a human, enabling it to perform tasks that were previously exclusive to humans. However, this technology can work continuously without pausing, delivering results within seconds and handling a vast complexity of information to assist people in carrying out repetitive and tedious tasks.

With technologies rapidly impacting human behavior, we observe that legislation has not kept pace with the emergence of these new tools. Silva (2019) notes a certain resistance to implementing artificial intelligence in the legal field due to fears of negative consequences. Hence, it is crucial to conduct new research to address questions such as: What could be the negative impacts of using artificial intelligence in the judicial sphere? Are we creating a generation of incompetent professionals due to the excessive use of AI? Could this mark the beginning of a revolution in the way humanity works? These questions must be explored through research and thoughtful consideration to ensure sustainable technological advancement.

This rapid advancement has caused perplexity for some and concern for others. However, a closer examination reveals how much we have progressed and can still prosper with the integration of new technologies aimed at improving quality of life and work efficiency, while respecting the ethical conditions for the proper use of these digital tools.

Several ethical components are being considered for the use of AI, referencing European countries, such as:

> Planning and regulation involve human intervention and oversight, technical robustness and safety, privacy and data management, transparency, diversity, non-discrimination and fairness, social and environmental well-being, and accountability (Moreno, 2021).

These ethical components are crucial for the sustainable use of this technology in research, particularly in the legal field. Proper use of these facilitators allows harmonious coexistence with these new technologies, potentially resolving problems rather than creating further disturbances.

Another major aspect to consider is copyright issues. Since the work produced by artificial intelligence is based on existing creations, it raises concerns that many paintings, photographs, music, texts, and more are being used to create new content without proper

attribution to the original work. The European Union Intellectual Property Office acts to validate the originality of data and research (Moreno, 2021). The most appropriate application regarding copyright involves the transparency of information provided by AI, referencing all sources that influenced the response offered to the user.

Another good use of Machine Learning is reported by Castro (2019), who noted that in Recife there are approximately 447 thousand accumulated Fiscal Execution processes, and with the tool "Elis" it was possible to advance 70 thousand of them in 15 days. This high agility facilitated their progress, achieving a productivity that a human being could never accomplish. This highlights the importance of implementing such tools in repetitive activities.

An additional example to be demonstrated is the work that the OAB of Espírito Santo, in conjunction with Legal Labs, has been doing with the creation of "OABJuris" (ORDEM…, 2019). In this demonstration, the lawyer can search for jurisprudence, and with AI, the most relevant decisions to support legal documents will be returned. It is also possible to search for case law in different courts across the country. In addition, various other organizational facilities and statistical data on the judiciary are offered by the platform. This is the type of tool that may be more suitable for law firms dealing with large volumes of cases, facilitating the maintenance of the quality of results.

From the examples shown earlier, different ways of using artificial intelligence come to mind. Here, we have a separation of important implications of these tools:

> Automation of repetitive tasks, time optimization in programming, AI is essential in robotics, problem-solving with inference and deduction techniques based on program development, it can be seen in the automation of customer service, prediction and recommendation algorithms applied to news, sales, behaviors, locations, movies, music, temperature, medical diagnosis and treatment systems, fraud investigation and analysis, personal assistants capable of recognizing human speech and assisting with task scheduling, service requests, interpersonal communication by phone or email, answering questions, automated vehicle driving, among others (Coelho, 2017).

Scarlet (2021) states that the conditioning of humans with new technologies is linked to the functioning of the dopaminergic system, through the continuous sequence of stimuli for dopamine release; and that there is a psychology of conditioning associated with the economy of attention and vigilantism. The ease brought using new technologies makes us feel good, as being able to have the answers we seek in the palm of our hand in a few seconds is known to make us more comfortable.

In the realm of education, several advantages and issues arise with the advent of Artificial Intelligence, as Burani and Vieira (2020) assert. From a more digitized post-pandemic education context, various facilitative tools for digital work have come into prominence, and with that, artificial intelligence has become a simplifier in the teaching and learning process. Therefore, it is important to understand the different applications that teachers and students can use to achieve better efficiency in their work, considering the limitations of the tools and their non-substitutive nature. For example, the authors (Lima, et al., 2021) highlight some artificial intelligences (AI), such as bibliometrics, which is a quantitative and statistical evaluation technique to measure indices of knowledge production and dissemination, to measure and indicate the most productive directions in scientific research, and specifically in the field of law, jurimetrics.

Jurimetrics dates to the 1950s in the USA, where its applied form to Law was described: "with the purpose of documenting and rationalizing information. It is a study developed through processes of analysis, research, and data management that allows the researcher a systematic view of legal decisions" (Ramírez; Díaz; Fernández, 2016, apud Andrade, 2018).

Understanding the legal behavior of judges with the help of jurimetrics investigation patterns enables the legal professional to make more fruitful and expeditious judicial requests. This accurate analysis of metadata identifies similar behavior patterns, considering that in the context of Judicial decisions encompass thousands of cases with similar characteristics. (Andrade, 2018).

Such is the importance of empirical research in the judiciary, as it demonstrates the achievement of goals and verifies the most recurrent types of actions at each instance, the volume of appeals, and the most used defense arguments. From this, it is inferred that there are significant research results, where there is a closer alignment between decisions and the reality of the facts. (Andrade, 2018).

Moreover, some software has emerged in the market that aids legal research in qualitative analysis, where the researcher can encompass a greater amount of information and, through this artificial intelligence, conduct a broader, more fruitful, and deeper analysis of the collected data; considering that software was previously more used for quantitative research in statistical data analysis.

As an example of software, we can mention the R-Studio System, which can carry out advanced statistical studies and, with basic commands, construct a robust analysis.

(Andrade, 2018). We can also consider the applicability of artificial intelligence algorithms capable of automating routine tasks of lawyers, enabling professionals to focus on more complex cases without being distracted by mundane activities of the profession. (Ksennia, 2020). From this, one can see the potential to improve efficiency, accuracy, and productivity, being important in analysing large amounts of data, identifying patterns, and predicting outcomes.

Legal courses carry the stigma of focusing predominantly on research with bibliographic reviews (Pinheiro, et al, 2019), thus distancing themselves from social reality. This author points out that this form of research is no longer sufficient and that it is ideal for the researcher to get to know the research object more closely through interviews, life stories, and participant observation, given that legal research deals with people and social events.

3. The impacts of Artificial Intelligence on Human Behaviour

However, it is important to be aware of what is called algorithmic biases, which are systematic distortions in the results produced by artificial intelligence, arising from biased data input by developers or inherent flaws in the system (Toledo, et al., 2023). Therefore, the responsiveness of AI must always be verified and measured to understand if there are alterations in the information.

In this regard, various potential behaviors can be considered regarding the use of this technology. For instance, considering the user's perspective, the field of prompt engineering is crucial for developing better responses, understanding that the results generated will be directly influenced by user commands.

Another possibility is that individuals may become accustomed to using these tools and develop a dependency, potentially leading to an inability to think and solve problems independently. Alternatively, there is also potential for enhancing creativity, where individuals may behave in ways that generate new ideas previously unconsidered.

Overall, the potential of this technology lies in improving workflow efficiency, as it assists in initiating work processes, such as an artist who uses AI to start an artwork when unsure where to begin, or a researcher who seeks authoritative figures in their field.

Considering the developer's perspective, behavioral possibilities are linked to the programmer's ability to create algorithms that are as efficient as possible for machine

learning. Data input must ensure that results are not harmful to humans, where a single typing error or flawed logic could detrimentally affect outcomes.

It is also necessary to consider that each person has individual differences and a unique morality, which affects the judgment of different behaviors and ideas. With this diversity of morality in human nature, it is understood that the diversity of ways of thinking can be a trigger for problems in the future, as Artificial Intelligence is programmed by people who may have moral judgments that do not align with what is being established as right.

This enters a field of research on the moral psychology of Artificial Intelligence, being explored by Bonnefon, Rahwan, Shariff (2024), who discuss the early stages of these machines making moral decisions. An example of this can be seen in the decisions made by autonomous cars, where through the algorithm it is determined whose safety should be prioritized in traffic collisions.

For example, a developer might make a mistake in some calculation and thus impair the machine's ability to solve a specific problem, such as a tool that helps engineers with structural calculations for a building having a programming error, to the point of not detecting structural flaws in the project, thereby making it prone to a potential tragedy.

Terrones (2024) also notes the insufficient educational elements regarding ethics in AI engineering studies, potentially leading to over-reliance on digital tools in the future. Such over-reliance could prove highly detrimental in professions where human lives are at stake, such as engineering. Furthermore, concerns persist that even a minor typing error could jeopardize aspects of globalization and human civilization if AI is used indiscriminately.

Another consideration to be made is that the advancement of AI-generated chatbots has enabled the creation of texts similar to those written by humans, having repercussions in various areas, especially in education. A study by Ho, Hancock, and Miner (2018) showed that participants could not differentiate whether they were talking to a robot or a human. This highlights the difficulty people have in identifying whether a text is from a person or not, even though there are technologies that allow for determining if the text was written by AI, such as "ZeroGpt.com". However, even though there are many tools to detect whether a text is AI-generated, there are also many others that modify the text so that it is not identified as autonomously written, such as "QuillBot," which alters the text to prevent it from being identified as AI-written.

4. Conclusion

Given the various changes regarding technological innovation in legal research and the rapid advances with the emergence of artificial intelligences that can greatly assist the progress of science and humanity, it is necessary to enhance artificial intelligences to aid in academic, judicial, and professional realms. By leveraging the positive aspects we can extract from these new possibilities, coupled with deepening and broadening knowledge, the enhancement of artificial intelligences becomes essential. This enhancement will undoubtedly contribute significantly to legal scientific research. Encouraging their learning is a good practice that will increase people's productivity, both using existing tools and in the creation of new AIs with Machine Learning. This, in turn, increases the chances of generating more scientific output in a shorter period, thereby generating more knowledge.

However, it is crucial to use these tools appropriately to avoid drawbacks in legal research. This entails considering regulatory actions aimed at increasing people's confidence and legal security in the use of Artificial Intelligence, from a perspective centered on human beings. That is, the use of these tools should benefit people without harming them in any way, requiring supervision and interventions to prevent the tool from becoming entirely autonomous and making decisions on its own, meaning this technology cannot have a substitutive character.

Therefore, people should use this technology to contribute to problem-solving, facilitate scientific research, streamline processes through the automation of repetitive activities, foster creativity with new ideas such as academic hypotheses, improving the workflow and being faster and easier for researchers and even potentially identify relevant authors in literature.

Through the study of "Prompt Engineering," greater precision in the results delivered by Artificial Intelligence can be achieved, refining machine work for more efficient responses based on prompts that align more closely with expected outcomes. Therefore, the study of this field of knowledge is also of great importance for the improvement of research, as it provides more precise and creative responses during the development of ideas in scientific writing.

There is also a significant opportunity to use these tools in qualitative research, improving the organization, separation, classification, coding, and analysis of data, thereby greatly enhancing scientists' efficiency. Machines have the capacity to read kilobytes of

information in any language within seconds, summarize key ideas, and provide practical guidance on conducting research as efficiently and comprehensively as possible. If humans can harness this capability in favour of science, it will represent a significant leap forward in generating new knowledge.

Lastly, the amalgamation of ethical knowledge regarding the use of these tools, appropriate command engineering for their intended purposes, and understanding of machine learning will be crucial for the use of artificial intelligence in the development of legal research. Therefore, the importance of Brazilian research in creating a national system capable of assisting all legal professions cannot be overstated.

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