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Derechos humanos, vulnerabilidad e inteligencia artificial: un análisis en perspectiva constitucional

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Abstract: This article addresses the impact of artificial intelligence (AI) on human rights from a constitutional perspective, focusing on the vulnerability of certain groups in the face of technological advances. After an introduction contextualising the relevance of the topic, human rights in the technological context are examined, with a particular focus on the vulnerability of certain groups. An assessment is made of the areas of special protection for these people in relation to the use of AI, and discrimination arising from algorithmic biases is discussed. The conclusions highlight the need for legal research in the field of AI to focus on ensuring that technological progress does not undermine human rights acquired over time. The importance of protecting vulnerable groups, whose vital development may be disproportionately affected by the impact of AI, is emphasised. It identifies areas where the advancement of AI may generate adverse effects on citizens' rights, underlining the importance of adapting this technological progress to the protection of human rights. It also highlights the risk of algorithmic biases in the processing of personal data, highlighting the need to protect the privacy and data of individuals as fundamental elements to ensure an AI that respects human rights. It concludes that only an AI that

respects these rights can contribute to a more advanced and just society, based on democratic principles.

Keywords: human rights, vulnerability, artificial intelligence, constitutional law, democracy.

Resumen: Este artículo aborda el impacto de la inteligencia artificial (IA) en los derechos humanos desde una perspectiva constitucional, centrándose en la vulnerabilidad de ciertos grupos frente a los avances tecnológicos. Tras una introducción que contextualiza la relevancia del tema, se examinan los derechos humanos en el contexto tecnológico, con especial énfasis en la vulnerabilidad de ciertos grupos. Se realiza una evaluación de las áreas de protección especial para estas personas en relación con el empleo de la IA, y se discute la discriminación derivada de los sesgos algorítmicos. Las conclusiones destacan la necesidad de que la investigación jurídica en el campo de la IA se centre en garantizar que el avance tecnológico no menoscabe los derechos humanos adquiridos a lo largo del tiempo. Se enfatiza la importancia de proteger a los grupos vulnerables, cuyo desarrollo vital puede ser afectado de manera desproporcionada por el impacto de la IA. Se identifican áreas donde el avance de la IA puede generar efectos adversos en los derechos de los ciudadanos, subrayando la importancia de adaptar este progreso tecnológico a la protección de los derechos humanos. Igualmente se destaca el riesgo de sesgos algorítmicos en la tramitación de datos personales, resaltando la necesidad de proteger la privacidad y los datos de los individuos como elementos fundamentales para garantizar una IA respetuosa con los derechos humanos. Se concluye que solo una IA que respete estos derechos podrá contribuir a una sociedad más avanzada y justa, fundamentada en principios democráticos.

Palabras clave: derechos humanos, vulnerabilidad, inteligencia artificial, derecho constitucional, democracia.

Introduction[1]

One of the most salient issues in the subject of the expansion of AI is that globalisation and technological advances have become so intrinsic to humanity itself that they both benefit and threaten it. So the use of AI in almost every aspect of human life has a direct bearing on the way we orient the way we organise ourselves as societies and, by extension, on the protection and guarantee of the rights of the inhabitants within it. For obvious reasons, this protection and guarantee must be given with greater attention to those people who are most vulnerable and also to those rights that are non-negotiable in any human organisation: human rights.

The universality of human rights must be specific, overcoming false reductionism, identifying a human characteristic as essential for the whole of humanity (Ballesteros 2003). And as Fernández Ruiz-Gálvez (1999) reminds us, the very notion of human rights as a cultural and historical concept, as a prepositive ethical and legal regulatory ideal, has from its origins carried with it an aim of universality, a vocation of being rights ascribed to all human beings, the ownership of which corresponds to all. All of this being aware of the successive generations of rights that have been implemented throughout history (Fernández Ruiz-Gálvez 1996). Thus, by applying or introducing a technology whose nature is as expansive as that which sustains artificial intelligence itself, the most expansive human rights themselves are clearly going to be challenged. The relationship between these concepts is direct.

Against this background, if one studies the issue at hand in this paper in depth, it is easy to see that AI can improve people's lives in a variety of ways, depending of course on how it is used. Thus, AI can help solve complex problems and perform tasks more efficiently and accurately, saving time and resources and improving people's quality of life. For example, AI can be used to diagnose diseases faster and more accurately, or to develop safer and more sustainable transport technologies. In addition, AI can also help address social and environmental challenges, such as climate change and poverty, by analysing data and developing innovative solutions. However, it is

[1] This work has been carried out within the framework of the R&D&I Project PID2022-136439OB-I00/ MCIN/AEI/10.13039/501100011033, *Derechos y garantías públicas frente a las decisiones automatizadas y el sesgo y discriminación algorítmicas*, funded by the Ministry of Science and Innovation, Co-funded by European Regional Development Fund "A way to make Europe".

important to bear in mind that the impact of AI on people's lives will depend on how it is used and how the challenges and risks associated with its use are managed.

Naturally, law is largely shaped by the different overlapping social scenarios and, consequently, AI has a lot to say in its development and its impact on society, especially on those who do not enjoy a privileged position. If we approach the introduction of technology with the aspiration of making people's lives easier, it is certainly always welcome. The only issue to be considered in that regard will be how to persuade humanity that the indiscriminate use of technology may result in a reduced ability to carry out everyday tasks. But that topic, without detracting from it, is for another field of research.

The question to be highlighted will be aimed at studying the impact on vulnerable people, especially on the human rights of all, of the massive use and incorporation of artificial intelligence in our lives.

Strictly speaking, the use of algorithms determines the possibility of inputting a quasi-unlimited amount of data from which a behaviour, an action or a consequence can be inferred. In the legal order, it is as much as extrapolating a result from a huge amount of data that makes a response possible from a legal point of view. However, the very incidence of the human aspect of law implies that we must be wary of an uncritical surrender to technology. The fact is that not every decision sponsored by artificial intelligence is necessarily the best. It will be objective, for obvious reasons, since it is not directed by an individual, by a person. But the elements that have been taken into account to make a certain decision will come either from the data provided by a person or from the artificial intelligence's own learning capacity. In any case, the note of objectivity can be preached, but not that of infallibility. The technological entity can be wrong. It cannot make a bad extrapolation of data, because it does not conceive of error in its conceptualisations, but it can make an error because of the data it uses to make the decision.

This opens an interesting range of possibilities to reflect on, since many parameters come into play in the legal scenario when making a decision. The legality of an action implies a certain interpretation of the human reality, and to end up with an element of which the notes of humanity are not predicated can lead to minor, major or disastrous mistakes, depending on the intensity of the decision and the rights at stake. Thus, when decisions based on artificial intelligence interact with human rights, those whose greater protection must be established by the legal system by definition, the risk of affecting people's lives in their most sensitive issues is extremely high.

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Nevertheless, we can indicate that the use of AI in democracy can have both positive and negative effects. On the one hand, AI can help improve the efficiency and transparency of democratic processes[2], for example through the use of big data analytics technologies to identify patterns and trends in electoral preferences, or through the use of *chatbots* and voice systems to facilitate access to information and public services. However, the use of AI in democracy is also likely to raise concerns related to privacy, security, and information manipulation. For example, the use of artificial intelligence technologies to collect and analyse personal data may put citizens' privacy at risk, and the use of AI to influence political decisions may affect the integrity and fairness of democratic processes. Overall, the impact of AI on democracy will depend on how it is used and how the challenges and risks associated with its use are managed.

As can easily be seen, this is not a dilemma of mere technological progress or not, but rather what is at stake is the fact that the impact of artificial intelligence on human rights in a concrete way, and of technological progress in general, can disrupt the basic elements of societies and, in so doing, dynamite them.

Hence, the main reflection should be on how to adapt artificial intelligence in harmony with human reality. Because technological progress is as uncontroversial as it is debatable whether the incorporation of artificial intelligence into all aspects of life does not entail an associated risk.

1. Human rights in technological terms. Special attention to vulnerability

There are two main rationales supporting the adoption of a human rights perspective in the context of technological progress: first, there is an intrinsic argument, which recognises that a human rights-based approach is the most appropriate from an ethical or legal perspective. Second, there is the instrumental argument, which recognises that a human rights-based approach leads to better and more and sustainable outcomes in terms of human progress.

In the same vein, it should be noted that the Vienna Declaration emphasises the responsibility of states and international organisations

[2] And in this regard, it should not be forgotten that the right to political participation is a human right recognised in Article 21 of the Universal Declaration of Human Rights (Castellanos 2020).

in creating an enabling environment to ensure the full enjoyment of human rights. This implies the elimination of all forms of human rights violations and their underlying causes, as well as overcoming obstacles to the realisation of these rights. Furthermore, it highlights that the proliferation of extreme poverty is a factor limiting the full and effective enjoyment of human rights. This correlation is relevant in the context of the expansion of artificial intelligence, as the most vulnerable people may face greater challenges in accessing and benefiting from emerging technologies due to socio-economic disparities. Protecting human rights therefore implies addressing inequities in the access and use of artificial intelligence to ensure that its development and deployment does not perpetuate the exclusion and marginalisation of the most disadvantaged groups.

Regardless of any technological evolution developed, it will be necessary to focus on certain groups that, due to social, historical or any other type of circumstances, do not have the capacity to raise their voices to correct or denounce certain effects of progress in the course of their lives. We are referring, of course, to those vulnerable groups that may suffer the negative consequences of certain technological advances (Castellanos 2024). In this respect, Ballesteros (1999) affirms that human beings are more radically vulnerable than self-sufficient, which is why the review of these issues responds to a collective need.

Thus, since the beginning of the so-called specification process of human rights, consisting of a greater determination and specification of the subjects of rights, there is no doubt that concern for the most vulnerable groups in society has fortunately been growing. Thus, on the one hand, in the international sphere, there has been a proliferation of Universal Declarations as well as Treaties and Conventions relating to those groups of people whose common characteristic is that, for various reasons, they find themselves in a disadvantaged social position, particularly unprotected and defenceless, making them especially vulnerable. These are groups of people in need of special protection or guardianship, even if the threat that makes this protection necessary varies. In this regard, mention should be made, among others, of the Declaration on the Rights of the Child of 20 November 1959, the International Convention on the Elimination of All Forms of Racial Discrimination of 21 December 1965, the Convention on the Elimination of All Forms of Discrimination against Women of 18 December 1979, the Convention on the Rights of the Child of 20 November 1989, the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families of 18 December 1990, the Convention on the Rights of

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Persons with Disabilities of 13 December 2006. All these groups, which for different reasons, historical, cultural, economic, etc., are particularly vulnerable, are more likely to suffer discrimination, marginalisation or any other type of violation of their rights in the face of the emergence of new human needs or new forms of threats and attacks on equality, freedom, solidarity and security of people. And we cannot forget that the United Nations 2030 Agenda has as its motto "leave no one behind".

On the other hand, vulnerability has been the subject of profound reflection in recent decades in the fields of philosophy and law. Classical authors have devoted their efforts to delving into the inherent fragility of human beings and their natural interdependence. We should mention here Alasdair MacIntyre (2001), Amartya Sen (2000), Martha Nussbaum (2006) and Zygmunt Bauman (2017) or Bauman (2013), among others.

A vulnerability that has undoubtedly been accentuated in the first two decades of this new century due to the occurrence of a series of circumstances such as the succession of a series of economic, health, climatic and also humanitarian crises caused by the succession of armed conflicts such as the one in Syria or now in Ukraine or the Gaza Strip, which are causing an unprecedented exodus of refugees. To this situation must undoubtedly be added the economic and social transformations that are taking place due to technological changes and the spread of new technologies and artificial intelligence which, in addition to giving rise to the so-called revolution 4.0 revolution, are calling into question our form of social and legal organisation based on work as a central pillar and are having a dramatic impact on the most vulnerable groups. Authors such as Cassilli (2021), who wonders whether mankind will finally be able to get rid of work thanks to robots, have warned about this circumstance, as well as Zuboff (2020) analysing from Orwell's *1984* dystopia (2013) to *The Age of Surveillance Capitalism* or Yuval Noah Harari (2016) who considers that "AI will be able to collaborate in the creation of human jobs in other ways (new jobs) in parallel".

It can be concluded that the incorporation of AI has many benefits, but it is also necessary to consider that there are many challenges and risks associated with this technology. The main one is that of generating some kind of discrimination. Disrupting human rights by generating unequal treatment is one of the main elements to work on from a legal perspective. And vulnerable groups are those most likely to suffer some kind of harm caused by the development of AI (Saiz Garitaonandia 2023, Terrones 2023), so it is necessary to

establish the specific areas in which the citizen in question may be harmed (Ammerman 2022) and to generate the necessary means to mitigate and eliminate this potential discrimination or unfavourable treatment.

For these reasons, there are ethical concerns regarding the use of artificial intelligence, such as the perpetuation of discriminatory biases, inequality, the widening of the digital divide, social divisions, lack of transparency in algorithms, among others. This may even lead to imbalances between or within countries. However, steps are being taken to control these problems through ethical recommendations by UNESCO and recent EU regulations. It is important to remember that AI is a great opportunity for humanity, but its limits need to be regulated to ensure that it is used in a way that respects human rights. Rather than holding back progress and innovation in AI, these ethical concerns should be an impetus to research and develop technologies in an ethical and sustainable manner, in line with the sustainable development goals of the UN's 2030 AGENDA.

In this way, we find areas susceptible to undergo a profound transformation due to the implementation of Artificial Intelligence and this evolution may affect certain vulnerable groups with greater impact, generating some discriminatory situation. Generally speaking, we address the issue with regard to vulnerable groups such as, firstly, minors. The impact of new technologies on the development of the rights of minors must necessarily be addressed. Electronic devices are omnipresent in the lives of our minors, an omnipresence that has innumerable effects on their development, education, cognitive capacities, relational capacities, affective-sexual life, social life and on their self-awareness and self-perception. There is an urgent need to analyse both the positive and negative consequences of artificial intelligence in their lives.

We must also look at the issue of gender. Discrimination against women in the use of artificial intelligence is due to a number of reasons, one of the main ones being the lack of diversity in the AI development team, which can lead to unconscious biases in model design and training. In addition, datasets are often used that reflect existing inequalities in society, which can perpetuate these biases in model performance. This leads to addressing these problems through diversity in AI development teams and conscious curation of datasets. These problems are also extrapolable to the migrant population and to certain discriminatory effects based on race. The same is true for older people with the issue of new technologies and the generation gap. And, of course, the impact on disability is also significant (Valle 2023).

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Artificial intelligence can be a great tool for improving the integration and inclusion of people with disabilities, but it could also become an insurmountable barrier for many of them. Unsuspected prospects of a full and independent life would open up for them if the development of these technologies is done with the participation and for the benefit of all citizens, which is why the sum of all potentialities and capacities is required.

2. An assessment of areas of special protection for vulnerable people in relation to the use of AI

Within this framework of thinking about the impact of AI on human rights, it is essential to propose comprehensive research on how artificial intelligence may affect society and individuals. This research must include a thorough analysis of the associated benefits and risks, as well as a realistic understanding of the technical and economic aspects. It is also crucial to take into account national and international regulations that may have an impact on these issues, as well as to study relevant public and private initiatives, and the current state of academic and industrial research in these areas and related standards. Hence, in the following, we will briefly outline a number of areas that would benefit from further study.

First, the impact of AI on jobs and employment should be studied. Artificial intelligence has the potential to have a major impact on employment as, on the one hand, it can help improve productivity and efficiency in a variety of industries, which can create new jobs and increase the demand for employees with specific skills in AI-related fields. It can also automate repetitive and dangerous tasks, improving safety on the job. But on the other hand, AI may also have a negative impact on employment due to the automation of certain jobs, which could reduce the demand for workers in certain areas (Acemoglu and Johnson 2023). This could lead to an increase in unemployment and increased competition for remaining jobs, affecting low-skilled occupations to a greater extent and, consequently, directly affecting the most vulnerable groups. There could also be inequality in access to AI-related jobs, which could widen economic and social gaps. Indeed, there is no shortage of threats to the most vulnerable populations in the employment sector from the use of AI.

The main thing to assess in this area, therefore, will be its possible effects on employment and to take measures to mitigate its negative impacts, especially on the most vulnerable population. This includes

investment in training and education for AI-related skills, as well as the creation of occupational safety programmes for workers affected by automation.

Another impact to highlight is on means of transport such as the autonomous car. AI in relation to transportation can progressively impact beneficial issues such as increased road safety as autonomous cars use advanced sensors and machine learning technologies to detect and avoid accidents, which could significantly reduce the number of traffic accidents and related fatalities. It also leads to greater traffic efficiency as autonomous cars can communicate with each other and with traffic systems to avoid congestion and optimise traffic flow.

We can even see greater accessibility for people with disabilities or the elderly as autonomous cars could allow these people to move around more independently and safely. To which we can add the issue of parking as autonomous cars can be programmed to find a parking spot and park autonomously, which could reduce the need to build expensive car parks. However, there are also some challenges and concerns related to the use of autonomous cars, such as the cost of developing and producing these vehicles, the security of data collected by sensors, and the potential for autonomous cars to cause job losses in the professional driver sector. These difficulties directly affect the most vulnerable populations in that they pose a barrier to entry to a service that clearly discriminates on the basis of economic capacity. It also generates a dependence on the control of the data provided, requiring a greater willingness to provide all types of information, also affecting the possibility of certain disadvantaged groups (migrant population) in terms of stabilising and processing the information. And, ultimately, it has an impact on the loss of employment, which results in greater difficulties for the most vulnerable population in terms of retraining. The study should focus on analysing the extent to which the most vulnerable people are affected by the introduction of the autonomous car.

Moreover, in the interests of improved efficiency, remote healthcare will also advance as AI enables remote patient monitoring and diagnosis, allowing patients to receive medical care regardless of their geographic location. However, there are also concerns about the impact of AI on healthcare, such as the potential for AI algorithms to perpetuate discrimination and inequality in access to healthcare, the privacy and security of medical data, and the potential for medical professionals to lose skills and knowledge due to automation.

The risks involved focus on affecting the most vulnerable populations as they do not improve current problems in terms of access to the healthcare system, so perpetuating health-related

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problems through the application of AI would increase inequalities and difficulties in healthcare for more vulnerable people. In addition, the tendency for AI to solve problems in practice in terms of efficiency would lead to treatment impact studies evaluating criteria that do not respond to a human rights-based treatment characteristic.

If the possibilities of cure and treatment are reduced to the percentage of efficiency of the process and the effects derived from it, the most vulnerable population will necessarily receive discriminatory treatment for the sake of a series of parameters to be managed by AI that would not respond to a human medical criterion. In this respect, this point is particularly significant in the development of AI in health in order to implement AI systems based scrupulously on respect for human dignity and rights.

Another area to highlight must necessarily be the impact of AI on education. AI can enable personalisation of learning by analysing data on student performance and adapting teaching content accordingly, providing a more personalised learning experience.

It also generates the possibility of developing virtual tutors as AI can be used to develop virtual tutors that can provide personalised feedback and guidance to students. AI can even be used to automatically assess student work, which can save time and resources for teachers. However, the digital divide, data privacy, and the automation of tasks that could replace teachers pose a major danger to the impact of AI in education.

It is no coincidence that one of the main SDGs addressed by UNESCO's own Recommendation on the Ethics of Artificial Intelligence (2021) is No. 4 "Quality education" together with No. 10, which refers to the "Reduction of inequalities". With regard to children, this is particularly relevant as applications of artificial intelligence in people's lives, in general, can have a negative impact on the cognitive development of young people and on the creation of inequality gaps between different groups. For example, studies suggest that excessive use of electronic devices can contribute to problems with attention, memory and academic performance in children and adolescents. In addition, limited access to technology and lack of digital skills can increase inequalities among migrants, older people and people with disabilities. It is important to take these factors into account when developing technology and education policies and programmes to ensure that all groups have the necessary skills and access to benefit from technologies and are not marginalised.

Another area to consider that affects people is the relationship of AI's impact on energy. In this area, AI can predict consumption and

therefore optimise its generation, reducing costs and improving efficiency. It can predict when maintenance is likely to be needed, which can help reduce downtime and improve availability, it is also possible to generate renewable energy, with solar and wind applications, by monitoring and controlling weather factors, as well as developing smart grids, which can improve the efficiency and security of energy supply by monitoring and automated control of demand. All of this is based on the analysis of data collected from sensors and devices connected to the energy grid, allowing for more informed decision-making on energy generation, distribution and consumption. However, all these implications come against the backdrop of the complexity and security of smart grids, and the privacy of customer data. In addition, the most vulnerable groups will be subject to decisions based on efficient energy production, disregarding the personal costs they incur and hindering access to energy. So not only will decisions have to be objectified by efficiency criteria, but dealing with the issue from the perspective of vulnerable groups will imply the mitigation and progressive elimination of those barriers that prevent equal access.

Another notable area is the impact of AI on logistics. By using AI on the work of trucks and drivers, costs can be reduced and efficiency improved due to the ability to plan delivery routes and optimise the use of resources. Demand for products and services can also be predicted, which can help companies to better plan their inventory and logistics. There is even the possibility to monitor the progress of deliveries and the position of vehicles in real time, allowing for greater transparency and better coordination. This goes hand in hand with progressive automation in order processing, which can help reduce errors and improve processing speed.

Vulnerable groups may be disadvantaged by the elimination of jobs in which they can develop due to the progressive automation of these jobs and also by not including the demand requirements of their products in the efficiency parameters. The economic difficulties that normally accompany groups that suffer discriminatory treatment may make it unattractive for artificial intelligence to collect their data to forecast product demand, so that the lower economic capacity will be aggravated by greater difficulties in the supply of products that they demand and, consequently, by higher prices, which will deepen the discriminatory and unfavourable treatment of vulnerable groups.

Given its strategic nature in countries such as ours, it is important to look at the impact of AI on tourism. AI-based virtual assistants can help travellers plan their trips, make reservations and answer questions,

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providing personalised recommendations: based on the analysis of travellers' data and providing personalised recommendations on destinations, accommodation and activities. Also significant is the impact in terms of machine translations and language recognition, which can facilitate communication for travellers. All of this is focused on the vast amounts of data collected on travellers and tourism trends, allowing for more informed decision-making on tourism planning and marketing strategy. Difficulties will come from data privacy and ethics in the use of technology, as well as the destruction of tourism-related jobs.

As the service sector is a favourable scenario for the integration of vulnerable groups into the labour market, the increase in technological possibilities related to tourism will put upward pressure on prices, undermining the ability of vulnerable groups to access it.

It is obviously fundamental for the protection of human rights to analyse the impact of AI on the environment, due to the direct implications that its protection has on the defence of people's rights and quality of life. We assume that society as a whole, including marginalised groups, and the environment have an active role to play in the whole process of developing and using artificial intelligence. It is necessary to promote sustainability and environmental responsibility, and to encourage research in this direction to ensure that the development of artificial intelligence is carried out in a sustainable way for future generations. Thus AI can be used to analyse large amounts of data collected on biodiversity and help scientists detect patterns and trends that can be used to improve wildlife and ecosystem conservation, as well as monitor the reduction of greenhouse gas emissions and improve energy efficiency.

Accurate climate predictions will help farmers to plan their crops and communities to prepare for extreme weather events, and AI is also relevant to optimise recycling and waste management processes, helping to reduce the amount of waste sent to landfills and increase the efficiency of recycling processes. In terms of negative impact, the massive use of AI may require a large number of computers and electronic devices, which will increase the greenhouse gas emissions associated with the production of these devices and their disposal. In addition, the use of AI in agriculture and fisheries may increase overfishing and deforestation, all of which have a greater impact on vulnerable groups in terms of employment, access to certain more environmentally friendly goods and services, and access to pollution-free areas.

Another scenario to reflect on is the impact of AI on the financial sector. AI-enabled analysis of large amounts of financial data, such as

bank transactions, stock prices and economic data, will help investors and banks make informed decisions. It will also help automate financial processes, such as loan approval, fraud detection and investment management, reducing costs and increasing efficiency. AI will also be used for personalised financial advice to customers, such as investment recommendations and savings plans, helping customers to make informed financial decisions. Such developments may significantly harm vulnerable groups insofar as the use of AI in the financial sector may amplify economic inequalities by giving investors with access to AI an advantage over investors without, and may also increase the risk of fraud and vulnerability to cyberattacks. In addition, the possibility of denial of loans and access to financial services because of the handling of people's data, or precisely because they belong to vulnerable groups, can be multiplied exponentially. The product of all this may be a clear advance in discrimination due to the use of AI.

And finally, in this non-exhaustive selection of AI impacts in the sphere of impact on people's rights, the impact of AI on access to housing must also be considered, because AI can contribute to exclusion and inequality in access to housing if it is used to automate decision-making in housing allocation, which could lead to increased discrimination and exclusion of vulnerable groups. In addition, AI can contribute to higher housing prices through the automation of property valuation, which could make it more difficult for people on low incomes to access housing. The conclusion of all this is the necessary conviction from the public sector to develop policies to favour access to housing for all people, regardless of their economic or social situation.

3. **Discrimination derived from AI biases**

Artificial intelligence can be biased and discriminate against people if the data and machine learning models used to train it contain biases or misinformation. As is well known, AI systems rely on data that they collect and analyse to "learn" and perform tasks autonomously, so if the data used to train an AI contains biased information or prejudices, it is possible that the system will also reproduce those biases and discriminate against certain people or groups. For example, if an AI system is trained with data that shows a higher number of crimes committed by people of a certain ethnic group, it is possible that the system will "learn" to discriminate against that particular group. It is important to bear in mind that biases in AI can have serious consequences in areas such as security, health and justice, so it is

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essential to ensure that the data and models used to train AI are objective and free of bias.

There are several methods for detecting biases in artificial intelligence. One of the most common is statistical analysis of the data used to train the AI, to identify possible biases in the data patterns and in the way the system processes and uses that information. Quality assessment techniques for machine learning models can also be used to measure the performance of the system on specific tasks and compare it with that of other systems or humans. Another way of detecting biases in AI is by conducting tests or experiments to evaluate the behaviour of the system in different situations and contexts, and to verify if there are differences in its performance depending on variables such as gender, race, age or sexual orientation of the people interacting with it. In general, it is important to bear in mind that the detection of bias in AI requires a systematic and rigorous approach, including the participation of experts in the field and the use of appropriate tools and techniques.

Algorithmic discrimination is a phenomenon that occurs when AI systems or algorithms used to make automated decisions indirectly or unconsciously discriminate against certain individuals or groups. This can occur when the data used to train the AI or to develop the algorithms contains biased information or prejudices, or when the machine learning models used reproduce or reinforce those biases. Algorithmic discrimination can have serious consequences in areas such as health, education, justice and employment, and can affect equity and social justice. It is therefore important to address algorithmic discrimination by identifying and correcting biases in the data and models used to train AI, as well as by implementing measures and regulations to ensure the responsible and ethical use of these technologies.

Moreover, the introduction of biases also generates discriminatory situations, so we not only address the issue from the results but also from the generation of the data to be studied in order to reach these inferences. This leads us to study how to obtain this data on personal actions in order to be able to analyse the information and provide a response from a technological point of view. Privacy and data protection will therefore be directly related to the impact of human rights on the results obtained.

Conclusions

Artificial intelligence has dominated most research in recent years. Its exponential development and the novelty of its appearance in practically

any field has aroused the research curiosity of a huge number of people. Regardless of this, the importance of legal research in this field is determined by the impact that unbridled technological progress may have on people's human rights. Thus, successive research should focus on ensuring that technological progress does not come at the cost of overturning rights that have been achieved by people for generations.

Most legal studies, such as this one, are set in this context of opposing the rapid advancement of technological possibilities to the guarantees of human rights. Thus, in the development of the paper we have emphasised the question of the relevance of AI in the development of the lives of particularly vulnerable groups, as they will be subject to impacts with less protection. It is the task of law to determine which groups are likely to be negatively impacted in their life development and to establish the appropriate guidelines to curb this incidence. Likewise, in order to carry out this task, we have established a series of areas, not exhaustively, but at least with a certain projection, in which the overwhelming advance of AI can generate adverse effects on citizens' rights. Undoubtedly, the positive advances are also significant, and this has been explained in each of the areas, so the solution is not to reduce technological progress, in any case, but to adapt this necessary progress to the care and protection of citizens' rights, particularly their human rights, and especially those who, due to circumstances of all kinds, are among vulnerable groups.

And the last scenario we have described is that of danger related not to the advance in itself, but to some specific characteristic of the advance of AI in the impact of human rights. In this respect, the biases that may occur in the processing of people's data take on particular prominence. Bearing in mind that all this technology is nourished by the data generated by citizens through their activity, privacy and data protection must play a leading role in this matter, precisely because of the widely held idea in this work that dignity and human rights must be the cornerstone of all AI development. Only an AI that respects human rights will be able to establish a more advanced and just society, protected by the democratic scenarios in which it develops. This is the pillar on which to build the whole unstoppable future society, in which AI will play an increasingly important role.

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