Gerardo Javier Ulloa Bellorin

PhD candidate in Civil Law and Constitutional Legality
(University of Camerino, Italy)
Professor, 2015–2019
(University of Zulia, Venezuela)
gerard.ulloabellorin@unicam.it

ARTIFICIAL INTELLIGENCE AND NATURAL LAW: A CHALLENGE TO BE OVERCOME

ABSTRACT. Since the last century, computer science has not stopped growing, innovating and producing changes in society. Facing these changes, the legislator is called to create certain rules that can accompany computer science and, especially, artificial intelligence (AI) in its constant development, providing legal security to users, to the scientific and business community and, in general, to the whole society. The problem posed by artificial intelligence focuses on the fact that law will have to create institutions in order to regulate the "behavior" of these computer systems, which today have wide autonomy. Law, conceived to regulate the behavior of the human being, needs to make substantial changes in its interior.

This study aims to analyze this situation in the light of the theories that consider natural law as the foundation of law. For this purpose, in a first phase, artificial intelligence, its definition and characteristics were analyzed, as well as the legal areas where there is concern about the changes originated from the introduction of the AI. Then, general considerations about natural law, its definition, functions and importance are presented. Finally, observations were made about the advisability of considering natural law theories, in the search for solutions to questions presented in the legal field by the evolution of AI in society. This study is documentary-type, based on the consultation and consideration of different specialized texts on the subject. The special technique of direct observation was used to describe and analyze homogeneous characteristics of the phenomena studied, so it is classified as a descriptive study.

The study of AI allows us to observe the benefits it has given to society areas such as medicine, entertainment, public administration and even in the practice of law through systems that allow helping lawyers. Some of the problems analyzed are those related to civil liability, personal data protection, algorithm contracts and transhumanism. Some emblematic cases regarding the use of AI are presented, as the case of the citizenship granting to a robot endowed with AI, the consideration of the copyright of a work created through AI in China and the discovery of powerful drugs. It was also possible to determine that the legal problem of AI is in the degree of autonomy that these systems possess. The analysis of natural law allowed us to observe its influence on the creation of the current conception of law and its formative and critical function.

The doctrine, in the search for a solution to this problem, has proposed to use a dogmatic consistent with the theories that support contemporary law, without resorting

to unsustainable fictions. The proposal of a new legal status for autonomous artificial intelligence systems seems to be a viable solution. Theories of natural law could be useful to guide the formulation of legal precepts applicable to the subject of artificial intelligence; in addition, to provide deep and effective criticisms of the proposed solutions. These new rules must present a solution within the values and principles of the legal system, which respects its unity and maintains the main value of the person.

KEYWORDS: artificial intelligence; natural law; new technologies law; science and law.

Preliminary considerations

The impact of computer science development in the world has been revolutionary. Since the appearance of the first UNIVAC computer in 1946[1], computing sector has not stopped growing, innovating and producing changes in society.

Today, the spearhead of computer technology is the development of the so-called Artificial Intelligence (AI), which has been possible; thanks to software that mimics the decision-making process of the human mind[2] that has live computer circuits called biochips. Experts say that with the development of these new technologies, certain problems of legal, ethical and even psychological nature will arise[3]. In the legal field, problems arise due to the insufficiency of current laws to regulate all activities that have been influenced by artificial intelligence. Two elements should be considered: the rapid development of this technology, which covers several areas, such as medicine, commerce, entertainment, public administration, among others; and the novelty of the matter; the autonomy with which these systems work represents a new paradigm for law.

In 1942, the Russian science-fiction writer Isaac Asimov conceived the so-called "Three Laws of Robotics", according to these: 1) a robot cannot harm a human being or, by inaction, cannot allow it to get hurt; 2) a robot must obey the orders given by humans unless such orders contravene the first rule; 3) a robot must protect itself as long as this protection does not contravene the first and second rules. For 75 years, these laws have inspired the principles in the development of robots[4], but today, the legislator is called to create certain rules that can accompany robotics and, therefore, artificial intelligence along with its development, providing legal security to users, the scientific and business community, and in general, to the entire society.

The problem posed by artificial intelligence is centered on the fact that law will have to create institutions that regulate the "behavior" of these computer systems, which today have such autonomy to reach the level of reproducing. Law was conceived to regulate the behavior of the human being, so modifying its barriers is undoubtedly, a substantial change of its

---

[1] Ingrid Ileana Nicolau, 'Human Rights and Artificial Intelligence' (2019) 12 JL & Admin Sci 64.
[2] Nancy Blodgett, 'Artificial Intelligence Comes of Age' (1987) 73 ABA J 68.
[3] Nicolau (n 1).
[4] Ibid.

foundation. For this reason, the analysis of this situation with the theories of natural law is considered interesting and convenient. This study will analyze, in a first phase, Artificial Intelligence, its definition and characteristics, to later move on to the legal areas where there is concern about the changes caused by the introduction of AI. Next, general considerations about natural law, its definition, functions and importance will be presented. Finally, observations will be made on the advisability of the use of natural law theories, in the search for solutions to questions presented in the legal field by the evolution of AI in society.

Artificial Intelligence, a challenge to law

Intelligence is associated with the human's ability to adapt to new requirements, but in fact, the term intelligence designates a conglomerate of mental phenomena that are not susceptible to exact classification. In computing science, the term intelligence has been used to distinguish certain machines that have reached a certain degree of operational autonomy; this use is very far from the human connotation of intelligence[5].

Intelligence is equivalent to thinking, so the digital system in order to be classified as intelligent in society, must think. It is also required that this thought resembles that of the human being. Therefore, it should be able to reproduce the brain processes. In that sense, the lack of a phylogenetic attribute called plasticity, typical of beings with a nervous system, was the first challenge to ensure that "machines" could handle human language. In 1955, Rossenblantt created a machine that worked on this principle. The system called "perceptron" learned to recognize shapes with degrees of variation[6].

Nowadays, AI systems can perform many more activities: they can handle objects, recognize handwriting and faces with great precision, they can even recognize the emotional state of the human being, its language and even translate appropriately, recognize fingerprints, can detect obstacles, weather forecasts, medical diagnoses and have the ability to adapt quickly to extreme conditions. In addition, they evolve alone, analyzing data, gradually expanding their neural networks and improving their performance. As expected, they learn faster than humans; they have the ability to plan their ways of learning and structure data they obtain, which allows them to make decisions for themselves[7].

This has led to redefining Artificial Intelligence, considering it a digital system that learns by itself, develops its own search and learning systems, can have its own language (without being understood by humans), develops its

---

5   Pedro Nel Rueda Garces, 'La Inteligencia no Humana de Indole Mecanica' (1986) 15 Revista Temas Socio-Jurídicos 97.
6   Ibid.
7   Nicolau (n 1).

own neural networks artificial, it can write its own programs and have decision power[8].

AI experts are focused on making these systems fulfill six general tasks in the future: 1) solve problems; 2) explain the results; 3) learn from experience; 4) reprogram their knowledge; 5) break the rules when necessary; and 6) determine the relevance of knowledge. So far, AI systems are capable of fulfilling the first three tasks[9].

Problems posed by Artificial Intelligence are typical of an emerging and almost totalizing phenomenon, which lead to the establishment of new legal tools that in the complexity of national systems provide adequate solutions to ensure technological needs. In order to accomplish this, two peculiarities should be considered: the first is that the novelty of AI resides predominantly in the evolution of its self-learning, and the second is that for legal interpretation, AI systems often underestimated or ignored, have a high responsiveness[10].

Currently, the issues that concern legal doctrine in relation to AI focus on the responsibility that arises from legal acts, in which AI is immersed; besides the protection of personal data, the application of legal reasoning product of AI and transhumanism. There are suggestive cases that have accompanied the development of these issues, namely: the recognition of the right of citizenship to a robot and the recognition of the copyright to the work of an AI system.

The diffusion of systems equipped with artificial intelligence in contemporary reality allows the enunciation of a series of issues relevant to the discipline of civil responsibility[11]. The peculiarity of the subject, according to the doctrine, focuses on the possibility that this responsibility may become autonomous, so the problem lies in the algorithm that regulates the system's self-learning process. In addition, the "author" of the algorithm may be a different subject from the one that incorporates it into an "intelligent" product or one of its components, and different in turn, from whom "trains" the system[12].

Regarding a novel argument such as this, it is considered appropriate that the formulations historically developed to make up civil liability are not abandoned, but rather serve as sustenance for the renewal of this matter[13]. In February 2017, the European Parliament ruled on the behavior's unpredictability of the new generation of robots, referring to the alleged insufficiency of the current legal framework that allows adequate protection in relation to the damage caused by such autonomous systems[14].

---

[8] Nicolau (n 1).
[9] Ibid.
[10] Ugo Ruffolo, 'Intelligenza artificiale e diritto – Intelligenza artificiale, machine learning e responsabilità da algoritmo' (2019) 7 Giur. It. 1657.
[11] Gustavo Tepedino and Rodrigo da Guia ilva, 'Challenges of Artificial Intelligence in Civil Liability Issues' (2019) 21 Revista Brasileira Direito Civil 61.
[12] Ruffolo (n 10).
[13] Carlo Casonato, 'Intelligenza artificiale e diritto costituzionale: prime considerazioni' (2019) March Diritto pubblico comparato ed europeo 101.
[14] Tepedino and da Guia ilva (n 11).

This unpredictability affects the definition of what exactly should be considered as a malfunction of the programming code, as it would create on the one hand the possibility of damage (based on the presumption of good faith), produced by a faulty autonomous system and damage caused by a non-defective autonomous system. In any case, the attribution of responsibility for damages must be granted to people, and not to robots, lacking legal personality[15].

The doctrine has also identified as an essential problem the protection of the right to privacy, that is, the protection of personal data in the interaction with AI systems. Personal data is information directly related to the person, his or her personal, public or professional life, whether it is information about the physical identity, physical or digital address, medical or patrimonial information, among others[16]. The estimated amount of data to be generated by 2020 is 44 zettabytes worldwide, equivalent to 44 billion gigabytes. This figure can give us an idea of the amount of sensitive information that is produced daily and the exponential growth of the damage that can be caused by the incorrect collection of this data[17]. Precision medicine, for example, feeds on the possibility of treating and acquiring millions of clinical information data, in order to diagnose and possibly treat a disease quickly and accurately. In this case, the informed consent tool has proven ineffective, because the consent initially expressed by the patient may not have provided for the "use" made by the AI system[18].

Artificial intelligence has developed as the branch of computer science that deals with the symbolic representation of knowledge. It exhibits those characteristics associated with human intelligence, especially reasoning and problem solving of particular interest. Artificial intelligence programs have encountered extreme difficulties in the legal reasoning process. There have been many attempts to explain and quantify this process. Law is not a closed system. It is about the behavior of people, institutions and their values. The challenge of AI is to build models that take into account people, institutions, behavior, moral and social values[19].

Initially, computer science developed expert systems to address various areas of law, for example, in commercial, tax and retirement matters. Practice, since then, has shown that artificial intelligence systems are effective in handling complex situations, as in hostile negotiations and in solving cases, in which there are several conflicting laws. At that time, it was claimed that the purpose

---

[15] Tepedino and da Guia ilva (n 11).
[16] Nicolau (n 1).
[17] Casonato (n 13).
[18] Ibid.
[19] E C Jr Lashbrooke, 'Legal Reasoning and Artificial Intelligence' (1988) 34 Loy L Rev 287.

of the system was not to solve the problem or replace the lawyer, but rather to help the lawyer analyze a case or make a decision[20].

The advantages of the algorithm have also been considered for its application in the administration of justice; some countries already have AI systems in this area. These systems could carry out investigations extremely quickly, helping to free up human time for more demanding tasks. However, the question that arises is whether an algorithm can have the effective capacity to carry out delicate and discretionary operations of legal interpretation[21].

One of the objectives of computer science through artificial intelligence is to improve human capabilities[22]. Many people see biotechnology, medical sciences and genetic engineering along with artificial intelligence, the path to "human enhancement"; that is the improvement of physical and cognitive abilities of the individual, even overcoming the barriers of the human condition, and, why not mortality. Given this "transhumanism", not only bio-techno-ethical dilemmas could arise, but also legal ones. Currently, there are already devices that decode neuronal activity by reading thought and transmitting impulses and commands to artificial devices, such as limb prostheses and bionic prostheses with mind control. It is likely that the development of these techniques will lead us to wonder about a new conception of the human body and its inviolability[23].

In recent years, the interaction between AI and society has increased; the examples come from different areas and from different societies. Thus, for example, in 2017, Saudi Arabia granted citizenship to a robot named Sophia. This is a human robot created by the Hanson Robotics company. Sophia embodies a unique combination of science, engineering and art transformed into the world's first robot citizen, and the first robot innovation ambassador for the United Nations Development Program. Sophia is particularly helping to understand human-robot interactions and their possible service applications and entertainment[24].

Recently, a court in Shenzhen, Guangdong Province decided to provide copyright protection to a work generated by an artificial intelligence system. A financial article created by the robot Dreamwriter pertaining to Tencent Company was copied without authorization. The People's Court of Shenzhen Nanshan District stated that the defendant Shanghai Yingxun Technology Company had infringed Tencent's copyright, resulting in civil liability. The court considered that the work done by the robot Dreamwriter complied with a form of logical and reasonable expression and content, with some

---

[20] Blodgett (n 2).
[21] Casonato (n 13).
[22] Ibid.
[23] Ugo Ruffolo e Andrea Amidei, 'Intelligenza artificiale e diritto – Intelligenza artificiale e diritti della persona: le frontiere del "transumanesimo"' (2019) 7 Giur. It. 1657.
[24] 'Sofia' *(Hanson Robotics)* <https://www.hansonrobotics.com/sophia> (accessed: 01.03.2020).

originality. Until then, no other court in another part of the world had ruled in favor of the recognition of the copyright to the work created by an AI system. Copyright is traditionally recognized as the fruits of intellectual work, of the creative power of the human mind[25].

According to the doctrine, the AI paradigm has created two new figures of subjective law to which could be attributed a constitutional importance; these are: the right to know the nature of the interlocutor and the right to a human decision. The first refers to the right to knowing if you are dealing with a human subject or if on the contrary, you interact with an AI system. The second one consists of the right to be recipients of decisions that are the result of a process in which a human component is present[26].

Natural law, some general premises

The legislative changes raised by the AI go beyond a mere modification. Everything seems to indicate that technological advances will lead man to overcome some barriers, which had been created during history to give foundation to law as we know it today. In that sense, it is considered necessary to make some considerations about the theories they see in natural law, the foundation of contemporary positive law.

Historically, three approaches about the relationship between natural law and positive law have been developed. For the first one, natural law and positive law are two separate and different orders. This considers that natural law acts as an autonomous source of positive law. A second approach states that positive law and natural law are in strong contradiction. For this, natural law is an alternative, anti-establishment, potentially revolutionary source based on the law of resistance. The third approach seeks integration between positive law and natural law. Natural law is cataloged as a justification for positive law, and in this relationship a 'phenomenon of mutual understanding and incorporation is observed, in which a unitary and complex legal system of the entire legal phenomenon tends to be made'[27].

There are two functions that can be attributed to natural law: a creative function that guides the configuration or formulation of the legal precepts applicable to new social or economic conditions, and a critical function that provides the basis for examining intelligently and effective previously established legal precepts[28]. Cicero classified natural law as a guide of life and duties, which directs man towards his perfection. Instead, the Christian view of natural law considered it as commandments and prohibitions that told

---

[25] Li Yan, 'Court rules AI-written article has copyright' *(Ecns.cn,* 09.01.2020) <http://www.ecns.cn/news/2020-01-09/detail-ifzsqcrm6562963.shtml> (accessed: 01.03.2020).
[26] Casonato (n 13).
[27] Pietro Perlingieri, *Interpretazione e legalità costituzionale* (ESI 2012).
[28] Roscoe Pound, 'Natural Natural Law and Positive Natural Law' (1960) 5 Nat LF 70.

man how to act on earth, so as not to receive divine punishment[29]. For this tendency, God has given man the power to discern between good and evil, and the freedom of choice that can lead to happiness or misery. Therefore, the duty of man consists of two things: first, to make constant efforts to determine what the will of God is; and secondly, obey that will[30].

Weber defined natural law as the independent norms of any positive law, and superior to it, whose dignity derives not from arbitrary regulations by the investiture of a legislator, but from the precision of its binding force[31]. Therefore, every human being is subject to natural law. Man, in so far as it is matter, is dominated by the laws that govern the cosmic order, laws that direct his development, and as a moral being, he is obliged to work to achieve his personal end; therefore, it is considered that man is justified to enjoy abilities, acts and services that allow him to reach his goal[32].

The intimate link between natural law and positive law constitutes a derivation of the link between ethics and positive law, characterized by the circumstance that the primary values of the human person are found in natural law[33]. As an effect of contrary theories, natural law has had to respond to two opposing accusations with each other. On the one hand, being ethical and not direct, and on the other, having its foundation in nature[34]. Natural law evidences the existence of rules of behavior whose reason emerges from the nature of man and social life, which are imposed on the mind and which have a character of necessity, not physical, but moral[35].

Natural law is presented as that system of principles, which human reason has discovered to regulate human behavior in all its various relationships[36]. This could lead us to have to specify who is considered to be human. It is not up to the law to define the human condition, for this the legal sciences use philosophy. This reveals to us that man is a person; that is, a complete individual entity, endowed with reason and owner of its actions, which is aware of a destiny to fulfill and which consists in the development of its nature[37].

The human being is a rational being, with a highly developed ability to respond to reasons, which is an important aspect of his nature[38]. This ability includes the power to use standards to guide their own actions[39]. But only intelligence and pure reasoning are not enough, all human faculties must

---

[29] Walter Berns, 'Foreword: Natural Law, Natural Rights' (1992) 61 U Cin L Rev 1.
[30] Joseph Story, 'Natural Law' (1988) 7 J Christian Jurisprudence 31.
[31] Michel Coutu, 'Idée de Droit Naturel a la Lumière de la Sociologie Juridique de Max Weber, Le' (1988) 29 C de D 121.
[32] Antoine Favre, 'Droit Naturel et Droit Positif' (1968) 21 REDI 443.
[33] Angelo Falzea, 'Nel Cinquantenario della Convenzione europea sui Diritti dell'uomo' (2000) 6 Riv. Dir. Civ. 10695.
[34] Francesco Viola, 'Diritto naturale italiano' (2002) 2 Nova et Vetera IV 33
[35] M Nast, 'Irréductible, Droit Naturel' (1920) 29 Annales Dr Com & Indus Français, Etranger & Int' l 143.
[36] Story (n 30).
[37] Favre (n 32).
[38] John Gardner, 'Nearly Natural Law' (2007) 52 Am J Juris 1.
[39] Ibid.

be appealed, also considering feeling, belief, and intuition, among others. Since, the rules serve basically to frame social realities, organize them legally, indicating an orientation, their elaboration must be based mainly on the observation of social facts to identify the legal rules that best adapt to that specific society, without affecting the aspirations of conscience, feelings or postulates of reason[40].

Law is composed of a moral element, justice and an element that includes physical factors (geographical facts, economic conditions and others) and psychic factors (traditions, level of civilization, the nature of man, moral being). This factor represents all the material and historical conditions that constitute the social environment[41].

Consequently, it is claimed that legality is not necessarily fair. Justice implies an evaluation that must be found according to a scale of worthy interests and values. These cannot fail to be reflected in the rules and principles and, therefore, in the legal culture present at a given time and place. As a result, justice is considered relative because it is historically conditioned[42].

At this point, it is important to mention that the reference to man's nature has been the firm and vigorous basis on which the category of current human rights has been built[43].

Considerations about the impact of AI in law

In the last decades of the nineteenth century, legal doctrine argued about the need to impose positive law on equity and therefore, on natural law. We remember, for example, the speech of Professor Scialoja, in 1879, at the opening of the academic year of the University of Camerino, entitled *"Del diritto positivo e dell'equità"*. Scialoja, who opposed equity, observed in relation to natural law that, above the positive laws, a natural and universal law is admitted. Since positive law is an accidental and imperfect expression, therefore, it must conform to natural law in order to be applied[44].

Today, the doctrinal discussion should focus more on legal rationing in order to not losing its foundation, its basis in natural law. It is true that we cannot go back, or stop moving forward in the technological field, because it is considered that this can cause a strong social impact, but it is necessary to find legal solutions that respect moral and legal principles that society has developed so far[45].

Undoubtedly, AI is one of the most important discoveries of human evolution, as it was electricity, fire or atomic energy. All risky discoveries that

---

[40] Nast (n 35).

[41] Favre (n 32).

[42] Pietro Perlingieri, 'Francesco Gentile e la Legalità costituzionale: Dalla diffidenza alla piena sintonia' (2014) II L'Ircocervo 1.

[43] Falzea (n 33).

[44] Felice Mercogliano, *Saggi di diritto romano* (ESI 2018).

[45] Nicolau (n 1).

if used improperly can cause great damage. However, when used wisely, they have brought great benefits to humanity, improving the quality of life, even leading to the prolongation of life and its evolution[46]. Recently, for example, a group of experts reported about the discovery of potent antibiotics through the use of AI. The artificial intelligence system was able to identify new and powerful antibiotics from a set of more than 100 million molecules. These antibiotics work against a wide range of bacteria, including tuberculosis and strains considered untreatable[47].

In the legal area, the contributions of the AI are also considerable, as we saw it has contributed to improving the work of lawyers through the analysis of complex laws, and today, it serves as an auxiliary to the judiciary system of some countries. However, as a science that studies society, artificial intelligence has created some problems from a theoretical point of view. Some of them were mentioned before such as the problem of civil liability, protection of personal data and transhumanism.

The effects of the AI can continue to be analyzed in other institutions of law, as in the case of the contract, where we talk about the "algorithmic contract", in which the AI system not only has the capacity to perform the services contractually agreed, but it also to carry out automatically evaluations on the existence of conditions for execution, giving the AI system the ability to make negotiation decisions by itself, to enter into contracts and execute them, in some cases, negotiating with other machines[48]. It is true that there is a plurality of ways to conclude the contract, and that many times interested parties can follow different itineraries from the proposal / acceptance duo[49]. Nevertheless, the problem arises from the figure of the nature of the expressed contractual will. Blockchain technology, for example, has allowed the development of smart contracts, whose characteristic is automatic execution without having to be governed by man[50].

The challenge that legal systems achieve in the face of new artificial intelligence technologies is the need for new and specific rules. In this direction, on February 16, 2017, the European Parliament, through a Resolution, issued recommendations regarding civil law standards on robotics for the European Commission., in which the deficiencies of the current regulatory framework regarding contractual liability are stated, as the traditional rules become inapplicable[51].

---

[46] Nicolau (n 1).
[47] Jo Marchant, 'Powerful antibiotics discovered using AI' (*Nature*, 20.02.2020) <https://www.nature.com/articles/d41586-020-00018-3#ref-CR1> (accessed: 01.03.2020).
[48] Francesco Di Giovanni, 'Intelligenza artificiale e diritto – Attività contrattuale e intelligenza artificiale' (2019) 7 Giur. It. 1657.
[49] Rocco Favale and Giovanni Varanese and Maria Paola Mantovani, *Diritto civile comparato. Percorsi di approfondimento* (Editoriale Scientifica 2019).
[50] Di Giovanni (n 48).
[51] Ibid.

The doctrine, in the search for a solution to this problem, has proposed to use a dogmatic consistent with the theory of legal business and responsibility without having to elaborate once again unsustainable fictions. A new legal status is proposed for autonomous artificial intelligence systems, carefully adapted to the role they really perform. Their autonomous decisions have legal relevance, and are subject to responsibility. In that sense, the legal system should grant a limited legal subjectivity that allows AI systems to enter into contracts on behalf of others as representatives. Regarding liability, it is stated that they must be recognized as auxiliary with the capacity to act in accordance with contractual and extra-contractual liability, so that the machine's defective behavior, and not simply the company's behavior constitutes the violation of a duty that should be imputed to the company[52].

Theories of natural law could be useful to guide the formulation of legal precepts applicable to the subject of artificial intelligence, in addition to being able to provide deep and effective criticisms of the proposed solutions[53].

In the creation of these new specific rules, artificial intelligence law must be considered that may accompany AI systems in their evolution, which may have much broader automation margins than they currently have[54]. These new rules must present a solution within the values and principles of the legal system, which respects its unity and maintains the main value of the person[55].

REFERENCES

Bibliography

Authored books
1. Mercogliano F, *Saggi di diritto romano* (ESI 2018) (in Italian).
2. Perlingieri P, *Il diritto civile nella legalità costituzionale secondo il sistema italo-comunitario delle fonti* (3rd ed, ESI 2017) (in Italian).
3. Perlingieri P, *Interpretazione e legalità costituzionale* (ESI 2012) (in Italian).
4. Rocco F and Varanese G and Paola M, Mantovani, *Diritto civile comparato. Percorsi di approfondimento* (Editoriale Scientifica 2019) (in Italian).
5. Teubner G, *Soggetti giuridici digitali? Sullo status privatistico degli agenti software autonomi* (Femia P dir, ESI 2019) (in Italian).

Journal articles
6. Berns W, 'Foreword: Natural Law, Natural Rights' (1992) 61 U Cin L Rev 1 (in English).
7. Blodgett N, 'Artificial Intelligence Comes of Age' (1987) 73 ABA J 68 (in English).
8. Casonato C, 'Intelligenza artificiale e diritto costituzionale: prime considerazioni' (2019) March Diritto pubblico comparato ed europeo 101 (in Italian).

---

52 Gunther Teubner, *Soggetti giuridici digitali? Sullo status privatistico degli agenti software autonomi (*Femia P directed, ESI 2019).
53 Pound (n 28).
54 Casonato (n 13).
55 Pietro Perlingieri, *Il diritto civile nella legalità costituzionale secondo il sistema italo-comunitario delle fonti,* (3rd ed, ESI 2017).

9. Coutu M, 'Idée de Droit Naturel a la Lumière de la Sociologie Juridique de Max Weber, Le' (1988) 29 C de D 121 (in French).
10. Falzea A, 'Nel Cinquantenario della Convenzione europea sui Diritti dell'uomo' (2000) 6 Riv. Dir. Civ. 10695 (in Italian).
11. Favre A, 'Droit Naturel et Droit Positif' (1968) 21 REDI 443 (in French).
12. Francesco Di G, 'Intelligenza artificiale e diritto – Attività contrattuale e intelligenza artificiale' (2019) 7 Giur. It. 1657 (in Italian).
13. Garces P Nel Rueda, 'La Inteligencia no Humana de Indole Mecanica' (1986) 15 Revista Temas Socio-Jurídicos 97 (in Spanish).
14. Gardner J, 'Nearly Natural Law' (2007) 52 Am J Juris 1 (in English).
15. Lashbrooke E C Jr, 'Legal Reasoning and Artificial Intelligence' [1988] 34 Loy L Rev 287 (in English).
16. Nast M, 'Irréductible, Droit Naturel' (1920) 29 Annales Dr Com & Indus Français, Etranger & Int' l 143 (in French).
17. Nicolau I I, 'Human Rights and Artificial Intelligence' (2019) 12 JL & Admin Sci 64 (in English).
18. Perlingieri P, 'Francesco Gentile e la Legalità costituzionale: Dalla diffidenza alla piena sintonia' (2014) II L'Ircocervo 1 (in Italian).
19. Pound R, 'Natural Natural Law and Positive Natural Law' (1960) 5 Nat LF 70 (in English).
20. Ruffolo U e Amidei A, 'Intelligenza artificiale e diritto – Intelligenza artificiale e diritti della persona: le frontiere del "transumanesimo"' (2019) 7 Giur. It. 1657 (in Italian).
21. Ruffolo U, 'Intelligenza artificiale e diritto – Intelligenza artificiale, machine learning e responsabilità da algoritmo' (2019) 7 Giur. It. 1657 (in Italian).
22. Story J, 'Natural Law' (1988) 7 J Christian Jurisprudence 31 (in English).
23. Tepedino G and Guia ilva Rodrigo da, 'Challenges of Artificial Intelligence in Civil Liability Issues' (2019) 21 Revista Brasileira Direito Civil 61 (in English).
24. Viola F, 'Diritto naturale italiano' (2002) 2 Nova et Vetera IV 33 (in Italian).

Websites
25. 'Sofia' *(Hanson Robotics)* <https://www.hansonrobotics.com/sophia> (accessed: 01.03.2020) (in English).
26. Marchant Jo, 'Powerful antibiotics discovered using AI' (*Nature,* 20.02.2020) <https://www.nature.com/articles/d41586-020-00018-3#ref-CR1> (accessed: 01.03.2020) (in English).
27. Li Y, 'Court rules AI-written article has copyright' (*SCNS,* 09.01.2020) <http://www.ecns.cn/news/2020-01-09/detail-ifzsqcrm6562963.shtml> (accessed: 01.03.2020) (in English).

Херардо Хав'єр Уллоа Белорін

ШТУЧНИЙ ІНТЕЛЕКТ І ПРИРОДНЕ ПРАВО: ВИКЛИК, ЯКИЙ НЕОБХІДНО ПОДОЛАТИ

Анотація. Починаючи з минулого століття, інформатика не припиняє зростати, впроваджувати інновації та спричиняти зміни в суспільстві. Зіткнувшись із цими змінами, законодавець покликаний створити певні правила, які можуть супроводжувати інформатику та особливо штучний інтелект при їх постійному розвитку, забезпечуючи правову безпеку користувачам, науковому та діловому співтова-

Gerardo Javier Ulloa Bellorin

риству та, загалом, усьому суспільству. Проблема, порушена штучним інтелектом, фокусується на тому, що праву доведеться створювати інституції для регулювання "поведінки" цих комп'ютерних систем, які сьогодні мають широку автономію. Право, задумане для регулювання поведінки людини, повинно внести суттєві зміни в свій внутрішній світ.

Мета стаття – проаналізувати цю ситуацію в світлі теорій, які розглядають природне право як основу права. Для цього на першому етапі було проаналізовано штучний інтелект, його визначення і характеристики, а також правові сфери, де існує занепокоєння щодо змін, які виникли внаслідок впровадження штучного інтелекту. Потім подаються загальні міркування щодо природного права, його визначення, функцій і значення. Нарешті, були зроблені зауваження щодо доцільності врахування теорій природного права у пошуках вирішення проблем, що виникають у правовому полі під впливом еволюції штучного інтелекту в суспільстві. Це дослідження є освітнім, заснованим на консультаціях і розгляді різних спеціалізованих текстів із цього питання. Спеціальний прийом безпосереднього спостереження застосовувався для опису та аналізу однорідних характеристик досліджуваних явищ, тому дослідження класифікується як описове.

Вивчення штучного інтелекту дає нам змогу спостерігати переваги, які він дав таким сферам суспільства, як медицина, розваги, державне управління і навіть у юридичній практиці завдяки системам, що спроможні допомагати юристам. Деякі з аналізованих проблем – це проблеми, пов'язані з цивільною відповідальністю, захистом персональних даних, автоматизованими контрактами та трансгуманізмом. Представлені деякі символічні випадки використання штучного інтелекту: випадок надання громадянства роботові, наділеному штучним інтелектом, розгляд авторських прав на твір, створений за допомогою штучного інтелекту в Китаї та відкриття потужних наркотиків. Також можна було визначити, що юридична проблема штучного інтелекту полягає в ступені автономності, яким володіють ці системи. Аналіз природного права дав змогу помітити його вплив на створення сучасної концепції права та його творчу й критичну функції.

Доктрина, шукаючи вирішення цієї проблеми, запропонувала використовувати догматику, сумісну з теоріями, що підтримують сучасне право, не вдаючись до нестійких фікцій. Пропозиція нового правового статусу для автономних систем штучного інтелекту, як видається, є життєздатним рішенням. Теорії природного права можуть бути корисними для формулювання правових приписів, що застосовуються до штучного інтелекту; крім того, надати глибоку й ефективну критику пропонованих рішень. Ці нові правила повинні представити рішення у межах цінностей і принципів правової системи, яка поважає свою єдність і зберігає основну цінність людини.

Ключові слова: штучний інтелект; природне право; право нових технологій; наука і право.