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THE EVOLUTION OF HUMAN RIGHTS THEORY: FROM NATURAL LAW TO CONSTITUTIONAL ENSHRINEMENT IN THE DIGITAL AGE

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Abstract

The contemporary world is undergoing rapid digital transformation, which is reshaping the theoretical foundations of human rights. While human rights were traditionally viewed as universal moral and legal principles aimed at protecting dignity, freedom, and equality, developments in digitalisation, artificial intelligence, biotechnology, and global information networks require their reconsideration within a new socio-technical context. The growing dependence on digital platforms, extensive use of personal data, and the expansion of algorithmic decision-making challenge the ability of traditional legal systems to ensure effective human rights protection. Particular attention is drawn to fourth-generation human rights, which include digital, cognitive, and epistemic rights related to autonomy of thought, protection from manipulative influence, access to reliable information, and participation in knowledge creation. At the same time, bioethical rights are emerging in response to advances in reproductive technologies, medical genetics, and issues concerning a dignified end of life. These developments contribute to a new legal paradigm that combines digital autonomy with the ethical challenges of the digital age. Currently, most of these rights remain insufficiently

consolidated at the normative level, and the absence of a unified international legal framework highlights the need for further theoretical reflection and normative harmonisation. The study of fourth-generation rights is therefore essential for developing effective human rights protection mechanisms in a dynamic digital society and for advancing contemporary legal scholarship.

Keywords

Human rights, digitalization, fourth generation rights, digital rights, cognitive autonomy.

Resumo

O mundo contemporâneo está passando por uma rápida transformação digital, que está a remodelar os fundamentos teóricos dos direitos humanos. Embora os direitos humanos fossem tradicionalmente vistos como princípios morais e jurídicos universais destinados a proteger a dignidade, a liberdade e a igualdade, os avanços na digitalização, inteligência artificial, biotecnologia e redes globais de informação exigem sua reconsideração dentro de um novo contexto sociotécnico. A crescente dependência de plataformas digitais, o uso extensivo de dados pessoais e a expansão da tomada de decisões algorítmicas desafiam a capacidade dos sistemas jurídicos tradicionais de garantir a proteção eficaz dos direitos humanos. É dada especial atenção aos direitos humanos de quarta geração, que incluem direitos digitais, cognitivos e epistémicos relacionados com a autonomia de pensamento, a proteção contra influências manipuladoras, o acesso a informações fiáveis e a participação na criação de conhecimento. Ao mesmo tempo, os direitos bioéticos estão a surgir em resposta aos avanços nas tecnologias reprodutivas, na genética médica e nas questões relacionadas com um fim de vida digno. Esses desenvolvimentos contribuem para um novo paradigma jurídico que combina a autonomia digital com os desafios éticos da era digital. Atualmente, a maioria destes direitos permanece insuficientemente consolidada a nível normativo, e a ausência de um quadro jurídico internacional unificado destaca a necessidade de uma maior reflexão teórica e harmonização normativa. O estudo dos direitos de quarta geração é, portanto, essencial para o desenvolvimento de mecanismos eficazes de proteção dos direitos humanos numa sociedade digital dinâmica e para o avanço dos estudos jurídicos contemporâneos.

Palavras-chave

Direitos humanos, digitalização, direitos de quarta geração, direitos digitais, autonomia cognitiva.

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Introduction

The rapid development of digital technologies is radically changing the conditions for the realization and content of human rights in the global context. The digitalized use of personal data, algorithmic systems, artificial intelligence, and biotechnology challenges traditional legal approaches that were developed in the industrial and post-industrial era. Digital transformation affects the fundamental aspects of individual autonomy, access to information, protection of privacy, dignity, and thus creates a new paradigm that requires rethinking the very nature of human rights (Custers, 2022; Razmetaeva et al., 2022; Farkaš, 2024). In this context, the term "fourth-generation human rights" is increasingly used in scientific discourse to encompass the latest rights that are being formed in response to technological and cultural changes (Baroni, 2024; Robles-Carrillo, 2024).

At the same time, the legal regulation of new rights remains fragmented and uneven: national legal systems demonstrate different readiness to institutionalize such rights, while international law mostly preserves the classical concept of the universality of human rights, without taking into account the specifics of digital interaction and the artificial environment (Kokhan et al., 2020; Perepolkin et al., 2021; Dutchak et al., 2020). Although, at the same time, certain documents (EU Regulation 2016/679; Charter of Fundamental Rights of the EU, 2000 (European Union, 2012); Oviedo Convention, 1997) already trace certain contours of digital and bioethical rights. Despite this, there is no conceptual integrity, and, moreover, the lack of unified terminology, contradictory interpretations of legal personality in the context of digitalization, as well as the

unevenness of the normative consolidation of new rights create a number of legal and theoretical challenges (Müller-Salo, 2025; Teo, 2024; Alazzam et al., 2023).

In view of this, the purpose of this paper is to comprehensively study the theoretical and legal foundations of the formation of fourth-generation human rights, analyze current international and national legislation on digital, bioethical and epistemic rights, identify trends in their normative institutionalization, and formulate proposals for improving legal regulation in the context of digital transformation.

Analysis of the latest research and publications

The development of human rights theory has been the subject of research by many scholars, both in Ukraine and in foreign scientific literature. Gready (2024), rethinking the concept of "human rights", concludes that a comprehensive update of human rights methods and strategies is needed to effectively respond to current challenges and ensure their relevance in a rapidly changing world. Fagan (2024) reveals the main limitations of the individualistic approach to human rights and proposes a rethinking of the subject of rights through the prism of relationality, justifying such conclusions by the fact that the traditional concept of human rights is based on the idea of an autonomous, independent individual. However, according to the author, this approach does not take into account the complexity of identity and relationships between people, which is especially important in the context of modern challenges. Maruschchak (2021) analyzes the impact of digital technologies on human rights and legal regulation in the context of digitalization, from traditional approaches to modern challenges caused by digital transformations. The researcher outlines the range of rights that are inherent in the change, including the right to privacy, freedom of expression, and access to information.

Special attention is paid to the study of a new generation of rights that is becoming increasingly relevant in today's environment under the constant influence of digital technologies. In particular, the scientific publication Custers (2022) is devoted to the study of the possibility of creating new fundamental rights adapted to the challenges of the digital age, where the author emphasizes that traditional human rights, which were formed in the "pre-digital era", may be insufficient to effectively protect the rights of human and civil liberties in the modern technological environment. Such conclusions stimulate scientific and legal discussion on the adaptation of human rights to the realities of the digital world and emphasize the need for legal consolidation of new digital rights. Razmetaeva, Barabash, and Lukianov (2022), emphasizing the rapid development of technology in general and artificial intelligence in particular, also consider it necessary to revise traditional approaches to human rights. The authors propose to expand the range of entities responsible for human rights to include organizations, as well as to consider the possibility of recognizing artificial intelligence as a subject of legal relations. In addition, the term "the spectrum of algorithmic-based digital technologies" is introduced to more accurately describe the phenomena associated with artificial intelligence and algorithms.

Bieliakov et al. (2023) explore the evolutionary nature of changes in the human rights system under the influence of digitalization and propose a list of digital rights that includes both new rights and the adaptation of existing rights to the digital environment, focusing on the feasibility of constitutional recognition of digital rights for their effective integration into national legal systems. Delicata (2015) analyzes the possibility of adapting the concept of natural law to the challenges of the digital age, emphasizing that digital technologies form new cultural ideas and change our perception of reality, which in turn affects traditional moral and legal concepts. Therefore, the question is raised of the need to rethink natural law in light of these changes, given the importance of integrating technological innovations into the dimension of morality, in order to preserve human dignity and ethical principles in the digital environment.

At the same time, the scientific and legal space raises the question of the rationality of combining digitalization and human rights. For example, the study by De Gregorio and Radu (2022) demonstrates how the latest trends affect the basic constitutional functions, such as the protection and realization of fundamental rights, and, of course, the limitation of power to avoid usurpation. Scholars argue that current changes in the governance of the global Internet call into question the global paradigm that underlies it (it is a decentralized, open and neutral framework that promotes freedom of expression and free exchange of information) and affect the architecture of power and freedoms in the digital environment. The authors emphasize that digital technologies are closely related to constitutionalism, as they are not only a set of tangible and intangible structures, but also serve as a certain "infrastructure" for the realization of freedoms.

Teo (2024) analyzes the impact of artificial intelligence on the current human rights paradigm. The author uses the concept of "slow violence" - a term derived from ecological theory - to describe the slow, imperceptible, but systemically destructive impacts of artificial intelligence on human rights. The idea is that artificial intelligence does not always violate rights immediately and explicitly, but at the same time, it creates conditions for discrimination, loss of autonomy, and dehumanization, especially through algorithmic decision-making systems.

Despite a significant number of scientific publications on this topic, a number of issues remain open and require in-depth scientific analysis. In particular, examples of legislative regulation of the new generation of rights and the constant emergence of new ones due to the development of information technology.

Research Methods

In the course of the study of human rights in the context of digitalization, a set of general scientific and special legal methods was used, which allowed for a systematic and interdisciplinary analysis of this phenomenon. The methodological basis was the logical-structural and system-analytical approaches which made it possible to reveal the evolution of the human rights concept from the classical to the modern understanding. The historical and legal method was used to trace the stages of formation of the human rights concept and to identify the link between the development of society and the

transformation of legal categories. The comparative legal method was used to analyze foreign experience of legislative consolidation of the fourth generation of rights, in particular in such countries as France, Canada, the Netherlands, and Ecuador. The normative legal method allowed us to analyze international and regional acts that already partially enshrine new forms of rights, such as digital, bioethical, and environmental rights.

In addition, an interdisciplinary approach was applied, which made it possible to take into account the complex nature of modern challenges. The combination of these methods made it possible to carry out a comprehensive scientific understanding of the topic and to formulate solid conclusions about the need to rethink and enshrine the latest human rights in the context of digital transformation.

Research Results

The constant evolution of society, culture, and political institutions, which has gone through several stages, has certainly led to the development of human rights - from a view of human rights through the prism of traditions, morality, and religion in ancient civilizations to modern thoughts about the possibility of implementing digital rights.

In the Middle Ages, legal religious thought developed, recognizing the dignity of a person, but restricting his or her rights depending on social status. During this period, documents such as the Magna Carta in England played an important role. The New Age was a turning point, when, on the wave of philosophical ideas, the dogma of natural human rights - to freedom, property, and equality - began to take shape, reflected in such historical acts as the US Declaration of Independence or the French Declaration of the Rights of Man and the Citizen. The nineteenth century saw the expansion of the list of rights: in addition to personal rights, socio-economic rights (the right to work, education, social protection, etc.) were actively recognized, and in the twentieth century, after the end of the two world wars, the international community adopted the Universal Declaration of Human Rights, and later a number of international covenants and conventions that made it possible to formalize the system of human rights protection at the global level.

Accordingly, in the twentieth century, the concept of human rights underwent a significant rethinking under the influence of research by representatives of scientific and legal doctrine, leading philosophers and lawyers. Their ideas became a catalyst for the transition from the classical liberal understanding of rights as a means of limiting state power to more substantive models that take into account the moral, political and social nature of human rights in a democratic society. Dworkin (1977) approached human rights as morally justified claims that are valid even against a democratic majority. In his theory, he emphasized that individual rights are principles, not just legal norms, rejecting legal positivism and arguing that every law enforcement has a moral component. In this context, human rights acquire not only a normative but also an ethical dimension, which should be undoubtedly present in the interpretation of law. The concept of "justice as fairness", in which human rights are seen as part of the fundamental freedoms necessary for any legitimate political system, implies understanding the nature of rights as universal

and inalienable, and emphasizes the importance of institutional realization of rights, that is, not only regulation, but also actual enforcement within the social system (Rawls, 1971). Citizenship and political inclusion are a prerequisite for the practical realization of human rights, and a fundamental human right is to belong to a political community capable of guaranteeing these rights (Arendt, 1951).

Thus, under the influence of new views, a vision of law as a moral norm, as an institutional guarantee of justice, and as a political condition of belonging to society was formed. Taken together, these approaches allow us to form a multidimensional theory of human rights, where ethics, politics and law interact in the context of postmodern statehood and digital transformation.

The twenty-first century continues to influence the development of rights in the context of modern challenges: information technology, globalization, environmental safety, the rights of LGBT communities, gender equality, and digital privacy. This stage is characterized not only by the consolidation of rights, but also by the struggle for their practical implementation, as well as by the strengthening of the role of international institutions.

Modern legal science encourages the development of human rights theory in its close relationship with global transformations, which leads to a rethinking of natural law as the basis of universal moral imperatives and the adaptation of rights to the digital environment. Within the framework of theoretical approaches, the key is to view human rights not only as legally enshrined legal norms, but as a multidimensional phenomenon that includes moral, social, and technological components. An important theoretical aspect is the recognition that constitutional guarantees of rights cannot be effective without their reinterpretation in the digital society.

Since today, the digital transformation of human rights is seen as a systemic change in the very content of subjective law due to the digitalization of social relations, scholarly approaches emphasize that global digital policy initiated within the UN carries certain risks of hermeneutical injustice when universal digital standards ignore cultural diversity (Gwagwa & Mollema, 2024). This understanding to some extent calls for the formation of digital rights that are based not only on technological feasibility, but also on the right of cultures to self-determination.

This view resonates with the position on the legal multidimensionality of digital identity, which emphasizes that it is not only the object of personal data regulation, but also the basis of digital subjectivity, and, accordingly, requires a special legal regime based on the authenticity of the person (Robles-Carrillo, 2024).

The concept of a "good digital life" is also considered within the framework of this issue, which demonstrates how digital reality transforms social communication and thus forms new standards of ethical interaction and moral autonomy. In this context, it is not only the guarantees of rights that become important, but also the ability of an individual to realize and control their own digital behavior (Müller-Salo, 2025). This thesis directly correlates with the conclusions about the transformation of the right to self-determination in the digital economy, where a person becomes dependent on behavioral patterns constructed by digital platforms, which, accordingly, changes the essence of their will

and creates the need to protect digital autonomy as a new component of basic rights (Pisani, 2024).

In turn, the study of cognitive and social changes in the digital era raises the question of the need to recognize new forms of legal personality that arise as a result of the integration of human thinking and digital technologies. Digital transformation is seen as a factor that not only shapes the external environment but also changes the nature of human cognitive ability itself, which indicates the relevance of legal protection of cognitive autonomy, which, in the context of the growing influence of artificial intelligence and algorithmic information processing, acquires the characteristics of the need for regulation by law (Farkas, 2024; Khatniuk et al., 2023).

Thus, the results of scientific research indicate the formation of a new set of human rights - the fourth generation of rights based on digital autonomy, epistemic subjectivity, the right to authentic identity and cognitive integrity.

Contemporary scholarship increasingly emphasizes the need to recognize digital rights as a new generation of human rights, including the right to digital identity, privacy, personal data protection, freedom of algorithmic choice, etc. These rights are increasingly viewed as the "fourth generation of rights" that has emerged as a result of the digital transformation of society and the redefinition of the values of a democratic state (Baroni, 2024). These rights include digital rights, i.e. those related to the use of information technology, and somatic (biological) rights, which relate to bioethics and medical technologies. At the same time, it can be noted that there is no unified approach to the definition and classification of these rights at the international level, which complicates their recognition and implementation in national legal systems (Kokhan at al., 2020). A new view of fourth-generation rights is also reflected in the concept of "epistemic rights" that have emerged in response to transformations in the field of knowledge and information. These rights include, in particular, the right to accurate information, protection from manipulative content, the ability to understand how information systems work, and the ability to participate in knowledge creation as a subject, not just as a consumer. It is not just about the right to information in the classical sense of the right of access to public data, but about something deeper - the human right to be an active participant in the epistemic space that is formed in interaction with digital platforms, algorithms, and artificial intelligence (Risse, 2021).

Another category of fourth-generation rights that scientists pay attention to is somatic rights, which are associated with a specific object, namely the human body, and depend on the level of development of biology, genetics, medicine, technology, and society as a whole. It is proposed to classify somatic rights into four groups: the right to euthanasia, reproductive rights and rights related to the disposal of organs and tissues, sexual rights, and the right to gender reassignment (Ivanii, 2019). The wide discretion of states in the legal regulation of relations related to the use of biotechnology suggests that the fourth generation theory of human rights can become the basis for reaching a consensus on the development of biotechnology to prevent people from losing their identity.

Despite the undeniable actualization of digital and somatic rights, these phenomena still remain in the realm of doctrinal justification and scientific hypothesis. The lack of

international consensus on the typology of human rights leads to the fact that new forms of legal relations caused by technological progress do not have an adequate protection mechanism, as they are not institutionalized as objects of constitutional or international legal regulation (Perepolkin at al., 2021).

Scholars emphasize that fourth-generation rights are not yet unambiguously enshrined in international and national legal systems, and their recognition depends on the willingness of society and states to integrate new aspects of human rights into their legislative and law enforcement practices (Barabash et al., 2024). There are increasing proposals to integrate digital rights protection into public policy and establish dual protection mechanisms through public and private law, with an emphasis on a scenario-based approach to protecting personal rights in future legislation (Song & Ma 2022).

Although there is no single consolidated act that would contain a complete list of fourth-generation rights and regulate them in law, examples of some of them can be found at the international level. In particular, EU Regulation 2016/679 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (2016) is one of the most important modern documents that enshrines the right to personal data protection, including the "right to be forgotten", restrictions on automated information processing, and the right to data portability. These norms are directly related to digital rights as part of the fourth generation.

The Council of Europe Convention on Human Rights and Biomedicine (Oviedo Convention, 1997) was the first international legal instrument regulating bioethics and human rights protection in the field of biomedicine and enshrines rights in the field of bioethics, including consent to medical intervention, prohibition of interference with the human genome, and protection of privacy in medical research.

Thus, the term "fourth generation rights" is not yet used in international legal acts, but at the same time, certain elements are already present in UN documents, in particular in the context of digital rights. Several UN Human Rights Council resolutions (A/HRC/RES/20/8; A/HRC/RES/32/13) on human rights recognize the right to privacy in the digital age, acknowledging that the same rights that a person has in the offline environment should also be protected in the online environment, in particular the right to freedom of expression, which is exercised regardless of frontiers and through any media of one's choice, in accordance with the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights.

In the context of the European Union law, the Charter of Fundamental Rights of the EU, which has already covered part of digital rights (the right to personal data protection, Article 8), is worth highlighting in the context of the issue under study (European Parliament & Council of the European Union, 2016). In addition, in 2023, the EU began working on the concept of the Digital Decade, which considers the introduction of "digital principles", including: the right to a safe and secure digital environment; the right to algorithmic transparency; the right to electronic identity.

National legislation in some countries has already taken some steps in this direction against the background of modern legal discourse, which increasingly clearly outlines the

need for a normative definition of fourth-generation rights. The Constitution of Ecuador (Constituent Assembly of Ecuador, 2008) was revolutionary in this sense, granting legal status to nature itself. It enshrines the concept of "Pachamama rights" - the land as a living being that has inalienable rights to existence, restoration and protection. This recognition of ecosystems as a subject of law is a vivid example of environmental rights included in the fourth generation of rights.

Another direction, namely the consolidation of rights in the field of medical science and reproductive freedom, is demonstrated by the French Law on Bioethics (République Française, 2021), which gives citizens the right to use assisted reproductive technologies regardless of gender or marital status, and guarantees the right to know or not to know their genetic origin. In the context of protecting women's rights, the African Charter on Human and Peoples' Rights, together with the Protocol on the Rights of Women (African Union, 2003), enshrines women's right to reproductive health, including access to contraception and health services, as well as the right to abortion in cases of rape or life-threatening circumstances. This approach demonstrates the gradual introduction of reproductive rights as fundamental elements of personal freedom and self-determination. Special attention should be paid to the legal regulation of euthanasia in Canada and the Netherlands. Both countries allow voluntary medical death as an act of dignity, providing patients with the opportunity to make the final decision about their lives. This right, although controversial, is increasingly recognized as part of a new legal order that emphasizes personal choice, dignity and autonomy (Parliament of Canada, 2016; Government of the Netherlands, 2002). Table 1 provides a comparison of the legislative consolidation of fourth generation rights in the national legal systems of different countries.

Table 1. Legal acts of national law of the countries that enshrine the fourth generation rights (as of 2025).

Document	Type of rights	Main provisions	Country / Organization
Constitution of Ecuador (2008)	Environmental rights	Granting nature the legal status of a subject of law	Ecuador
French law on bioethics (2021)	Bioethical and reproductive rights	Right to access to reproductive technologies, genetic identity, prohibition of cloning	France
Maputo Protocol (2003)	Reproductive rights of women	The right to medical care, contraception, and abortion in cases of violence	African Union

Euthanasia Act of Canada (2016)	The right to a dignified death	The right to medical assistance in euthanasia as a personal decision	Canada
Euthanasia Act of the Netherlands (2002)	The right to a dignified death	Enshrining legal procedures for voluntary euthanasia	Netherlands

Source: created by the author on the basis of the Constitution of Ecuador (2008), the French Law on Bioethics (2021), the Maputo Protocol (2003), the Canadian Euthanasia Act (2016), the Dutch Euthanasia Act (2002)

Discussion

An analysis of the above theoretical approaches and legal acts leads to the conclusion that fourth-generation human rights, although not yet fully recognized internationally, are increasingly gaining ground as a concept that responds to global transformations in the field of digital technologies, bioethics, information security and ecology. The academic literature notes that classical approaches to human rights need to be revised in light of new challenges, including digital privacy, algorithmic autonomy, cognitive integrity, and even digital identity (Custers, 2022; Razmetaeva et al., 2022; Bondarenko et al., 2022; Robles-Carrillo, 2024). At the same time, there is a broad interdisciplinary approach. The discussion also raises a number of problems related to the lack of a single normative definition of fourth-generation rights at the level of international law (Perepolkin et al., 2021; Kryshtanovych et al., 2022), which complicates the process of implementing such rights at the national level. However, despite this, some countries demonstrate examples of progressive legislative regulation: The Ecuadorian Constitution (2008) granted legal status to nature; the French Law on Bioethics (2021) covers a wide range of reproductive and bioethical rights; the experience of Canada and the Netherlands in regulating the right to a dignified death shows a gradual evolution of legal thought towards legitimizing personal choices about one's own life and death.

In contrast, digital rights, despite extensive doctrinal development, have so far remained largely in the realm of recommendations and political declarations. The EU, by adopting Regulation 2016/679 and launching the Digital Decade initiative, actually enshrines some digital rights, but they have not yet been formed into a coherent system. The same can be said about the concept of epistemic rights (Risse, 2021), which, although receiving increasing attention, has not yet been formalized in law.

Thus, the discussion confirms that fourth-generation human rights have a high potential for development, but are currently mostly at the stage of theoretical reflection and selective implementation. This creates a demand for further normative consolidation and interdisciplinary understanding of these rights to ensure an effective human rights mechanism in the new digital era.

Conclusions and Prospects for Further Research

The research findings suggest that digital transformation is not only a challenge, but also a catalyst for rethinking the concept of human rights, stimulating the formation of a new generation of rights - the fourth generation rights, covering such areas as digital autonomy, epistemic subjectivity, cognitive security, bioethical freedom, and environmental interaction. The content of these rights is a dynamic process and continues to be shaped by the development of artificial intelligence, algorithmic control, biotechnology, and global digital communication.

Despite active discussion in the scientific community, these rights have not yet been properly formalized at the international level. At the same time, some examples of national legislation (France, Canada, the Netherlands, Ecuador) indicate the existence of progressive legal experience that can serve as a basis for further harmonization of legal standards. In particular, the issue of developing a consolidated international act that would outline the conceptual framework, principles and mechanisms for protecting human rights in the digital age is relevant.

Further research could focus on a comparative legal analysis of the models of enshrining fourth-generation rights in different jurisdictions, the development of theoretical models of epistemic, cognitive and algorithmic rights, and the definition of the legal status of digital subjectivity. Particular attention should also be paid to the formation of practical mechanisms for the realization of such rights in public and private law, and the development of models of future legislation adapted to the rapidly changing technological context.

The study of fourth-generation rights demonstrates high intellectual and legal prospects, which requires not only theoretical comprehension but also active lawmaking at the national and international levels. The timeliness and depth of these efforts will determine the effectiveness of human rights protection in the new digital reality.

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