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CONTEMPORARY CHALLENGES IN THE FIELD OF BIOETHICS AND THE APPLICATION OF ARTIFICIAL INTELLIGENCE

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FOREWORD

CONTEMPORARY CHALLENGES IN THE FIELD OF BIOETHICS AND THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE

Due to the importance of topics in the field of bioethics in contemporary society and the rapid development of digital technologies and artificial intelligence, the Institute for Political Studies in Belgrade has prepared this thematic issue of the *Serbian Political Thought* journal. The first part of the journal, conceptualized as a thematic issue, comprises nine articles by authors from four countries. The three papers published in the second part of the issue also explore important and significant scientific topics, further confirming the journal's exceptional scientific contribution to the scientific community.

Considering that trends in science today are characterized by an interdisciplinary and multidisciplinary approach when studying challenging topics that are becoming increasingly important from the aspect of legal regulation, but also from the aspect of politics, religion, sociology, philosophy, ethics, psychology, pedagogy, digital technologies and medicine, it is clear that the future of social sciences and researchers lies in their mutual connection, as well as in connection and joint cooperation with researchers from the other scientific fields. The rapid pace of scientific development in these areas raises new doubts, and it can be said that a Pandora's box of bioethical issues has been opened, regarding which a broader social consensus does not yet exist. We are witnessing the contemporary challenges and ethical dimensions of technological developments in reproduction, as well as their political implications and long-term consequences on all aspects of individual life and society as a whole. The issues of surrogacy, in vitro fertilization, ethicality of (anti) transgender policies, organ donation and euthanasia, but also the increasingly current genetic engineering, are issues that directly influence the beginning, the extension, and the end of human life. Also, bioethics is inextricably linked with the development of new technologies and artificial intelligence, and the best examples of this are the future that is announced – ectogenesis (pregnancy using an artificial uterus).

The power of artificial intelligence to serve people is undeniable, but so is its ability to increase human rights violations related to health,

education, freedom of movement, the right to privacy, and other rights. The development of digital technologies, along with the spiritual poverty of modern societies and the people in them, increases the risk of various abuses related to the current issues under consideration in the field of bioethics and the use of artificial intelligence. Therefore, one of the questions is whether and what dangers arise from promoting science without ethical awareness and responsibility for human life, human dignity, and being guided primarily by political and economic interests in the domain of new scientific research. On the other hand, it is important to recognize all the advantages and benefits that technological development and the development of digital technologies and artificial intelligence provide us in the modern world, as well as the opportunities for their safe application.

In the introductory article, by analysing real-world incidents and international regulatory approaches, Dr. Matić Bošković and Dr. Kostić outline strategies for strengthening judicial cybersecurity and safeguarding AI applications, emphasizing the urgent need for global legal and technological safeguards to protect justice systems from digital exploitation and AI-enhanced cyberattacks. The inherently transnational nature of cyber threats and AI misuse calls for coordinated judicial policies that align with global and regional frameworks, the authors conclude.

In the following paper, Prof. Dr. Stanković analyses the use of artificial intelligence in the exercise of competences of local self-government in the Republic of Serbia and different possibilities of using AI in the performance of communal activities in general, with particular emphasis on three key points for the wider application of artificial intelligence in local self-government in the Republic of Serbia in the future.

Authors Dr. Rajić Ćalić and MA Živković analyze how the use of artificial intelligence in the workplace, in the digital age, affects the possibility of workers exercising new rights and new forms and ways of working that pose a challenge to labor legislation. They emphasize that employers can use (generative) artificial intelligence tools when hiring and controlling workers, which raises a number of questions in the field of ethics, the exercise of fundamental workers' rights, and the protection of personal data, and propose new legal solutions in the field of labor law and intellectual property rights.

The subject of the next paper is a comparative analysis of the regulatory approaches of the European Union, the People's Republic of China, and the United States of America. The authors Dr. Dabić and Dr. Stanković by analyzing the specificities, but also the contradictions, of AI governance in large jurisdictions, offer a rounded judgment on the (in)compatibility of value-based regulation with the pragmatic need to achieve technological supremacy, emphasizing that the regulation of artificial intelligence reflects the value, (geo)political, and (geo) economic priorities of prominent actors in this domain.

The right to a healthy environment, guaranteed by constitutions worldwide, is a fundamental human right that affects all citizens. The legal framework for its protection and the norms regarding the use of artificial intelligence in environmental protection are addressed by the authors, Dr. Stanić and Dr. Galić. The authors conclude that artificial intelligence and an appropriate legal framework are integral to a chain that should lead to a healthy environment.

Given that the fight against malignant diseases constitutes one of the European Union's central health policy priorities, as articulated in the strategic document Europe's Beating Cancer Plan, the article by Dr. Vukadinović Marković and Prof. Dr. Kambovski explores the potential of artificial intelligence to advance the goals of that agenda, with particular emphasis on enhancing screening programs and fostering the development of personalized therapeutic approaches. The authors analyze the regulatory frameworks governing the application of AI in the healthcare systems of the Republic of Serbia and the Republic of North Macedonia, highlighting the importance of protecting patient privacy, mitigating algorithmic bias, and safeguarding informed consent in a technology-mediated medical environment.

Surrogacy is the subject of research in the following paper, as it is one of the most sensitive and controversial issues in contemporary family law and human rights law. Prof. Dr. Jančić Mihić analyzes law regulation in this area, focusing on the proposed legal framework of altruistic-gestational surrogacy within the Pre-draft of the Civil Code of Serbia. Although surrogacy presents certain risks of abuse, legal difficulties, and challenges, the conclusion is that the possibility of its regulation and incorporation into the national legal system should not be automatically excluded.

In recent decades, euthanasia has been an extremely current but also controversial issue from a legal, moral, ethical, and religious point

of view. Supporters of its legalization emphasize the human right to a dignified death and the need to act humanely and respect the person's desire to choose death over life in suffering and pain. In the eighth paper of the thematic block, the author Dr. van Aardt states that even though euthanasia is mostly illegal, there is an ever-increasing drive towards legalization, concluding that validating euthanasia through national statute, the fundamental human right to live is de facto nullified for many more people than the few whose assumed right to die is compromised. That the right to life is an inalienable, absolute, fundamental human right and *jus cogens* norm that transcends the individual and human life remains intrinsically inviolable and sacrosanct even when the condition of one's existence is adversely affected by discomfort, agony, and infirmity, represents the conclusion of this paper.

In the final article of the thematic section, prompted by the inconsistent use of the terms sex and gender in the landmark case X v. the Former Yugoslav Republic of Macedonia (now Republic of North Macedonia) before the European Court of Human Rights (ECtHR), the authors Prof. Dr. Ignovska and Prof. Dr. Arsov emphasize that while the X v. North Macedonia judgment marks a significant step in affirming transgender rights, it also exposes the ECtHR's ongoing terminological ambiguity. In the absence of clear and consistent language, and in pursuit of fulfilling human rights obligations, particularly under articles 8 and 14 of the ECtHR, a legal compromise has emerged: recognizing gender identity as a fundamental aspect of personal identity, protected under the right to respect for private life.

The paper by Dr. Perić Diligenski is the first one in the second part of the issue and examines the phenomenon of vetting in the judiciary in Albania, Bosnia and Herzegovina, and Serbia, as post-communist countries in the European Union accession process. The author approaches vetting as an anti-corruption instrument useful in systems where the rule of law is systematically and continuously violated, as well as where the independence of judges and public prosecutors is compromised. In the following paper Dr. Malešević explores the "Macedonian Question" through the lens of the cultural memory of Alexander the Great, examines the ideological and cultural constructions that shape contemporary understandings of the ancient legacy, concluding that the Macedonian Question today is not only a matter of national identity, but also a field in which global processes of cultural hegemony, ideological construction, and strategic competition are reflected. Finally, there is a review by

Dr. Voin Bojinov. The author analyzes why Bulgaria missed a unique opportunity to become the energy center of the Balkans, and Special attention is given to failed projects, such as the Belene nuclear power plant and the "South Stream" gas pipeline. The review demonstrates the interdependence between energy security, political decisions, and external political pressures.

I would like to thank the authors for their dedication and high-quality work, as well as the Editorial team of the Journal and the anonymous reviewers for their contributions and cooperation in the preparation of this thematic issue of *Serbian Political Thought.*

Belgrade, December 2025
Guest Editor of this issue of the *Serbian Political Thought* journal
Dr. Ana Čović, Principal Research Fellow

THIS ISSUE'S THEME

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JUSTICE UNDER SIEGE: CYBER THREATS AND THE MALICIOUS USE OF AI IN THE JUDICIARY[***]

Abstract

As judicial systems increasingly integrate digital technologies and artificial intelligence (AI), they become more efficient yet highly vulnerable to cyber threats and AI-driven manipulations. This paper examines the growing risks of cyberattacks targeting the judiciary, as well as the malicious use of AI in legal proceedings, both of which pose severe threats to judicial integrity, fairness, public trust, and the broader judicial policy framework. The article explores key cybersecurity vulnerabilities, including ransomware attacks on court databases, AI-powered deepfake evidence manipulation, algorithmic bias in automated decision-making, and AI-driven misinformation campaigns. The weaponisation of AI in

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legal contexts, through fraudulent case manipulation, automated hacking, and digital surveillance, raises profound concerns about due process, judicial independence, and access to justice. These challenges directly affect judicial policy, as they demand new safeguards and adaptive governance models capable of preserving impartiality and accountability in an increasingly digital justice environment. By analysing real-world incidents and international regulatory approaches, this paper outlines strategies for strengthening judicial cybersecurity and safeguarding AI applications. Recommendations include enhanced digital forensics, AI transparency requirements, independent auditing mechanisms, and cross-border legal cooperation to combat cyber threats and AI misuse in the judiciary. Crucially, these measures must be integrated into judicial policy at national and supranational levels to ensure the resilience of reforms. As courts continue to embrace digital transformation, a proactive and resilient security framework is essential to preserve the rule of law in an era of evolving cyber threats and AI-driven legal manipulations. This study underscores the urgent need for global legal and technological safeguards to protect justice systems from digital exploitation and AI-enhanced cyberattacks.

Keywords: cybersecurity, cyber threats, judicial policy, AI manipulation, digital forensics

INTRODUCTION

In recent years, the judiciary has become increasingly reliant on digital technologies to improve the delivery of justice. Innovations such as electronic filing systems, virtual hearings, AI-assisted legal research, and predictive analytics have promised greater efficiency, transparency, and accessibility in judicial processes (Matić Bošković 2024a, 482). These advancements have been accelerated by global trends, including the COVID-19 pandemic, which necessitated rapid digital transitions in court systems worldwide (Matić Bošković and Nenadić 2021, 265). However, this transformation has also exposed courts to a range of cyber and AI-related vulnerabilities that threaten the very principles upon which modern justice is built.

Courts and judicial authorities now face dual technological challenges: the escalating sophistication of cyber threats and the

emerging misuse of artificial intelligence. Cybercriminals and politically motivated actors increasingly target courts with ransomware, phishing campaigns, and denial-of-service attacks, often paralyzing judicial services and jeopardizing sensitive legal data (Brown 2024). At the same time, the misuse of AI, through deepfake evidence, biased algorithms, and misinformation campaigns, raises serious ethical, procedural, and legal concerns (Citron and Chesney 2019, 147; Toskić Cvetinović and Tošić, 2022, 333). Recognising these risks, some European countries have already started adapting their legal frameworks. In Denmark, for example, the government prepared amendments to the copyright law aimed at preventing the creation and dissemination of AI-generated deepfakes (Bryant 2025). This initiative, believed to be the first of its kind in Europe, seeks to strengthen the protection of individuals' rights over their identity, including their image and voice, and serves as a model of how targeted legislative innovation can safeguard judicial integrity in the face of rapidly evolving technological threats (World Economic Forum 2025).

Unlike other public institutions, the judiciary plays a unique constitutional role: it must uphold impartiality, protect individual rights, and serve as a final arbiter in legal conflicts. Any disruption to this function, whether through compromised data, manipulated evidence, or undermined trust, has far-reaching implications not only for individual cases but also for the integrity of democratic governance. Yet, despite these risks, judicial systems have often been slower than other sectors to implement comprehensive cybersecurity strategies or critically assess the use of AI tools within their proceedings (Yoon 2023, 358). Addressing these challenges requires not only technological responses but also the development of judicial policies that integrate cybersecurity and AI governance into broader justice sector reforms. By embedding these policies into national judicial strategies and aligning them with EU rule of law standards, courts can ensure that digital innovation reinforces, rather than undermines, judicial independence and accountability.

This article critically examines the intersection of digital technology, cybersecurity, and AI within the justice sector. It addresses the growing exposure of courts to cyberattacks and the weaponization of artificial intelligence, both of which can compromise judicial independence, fairness, and public trust. Drawing on global cybersecurity intelligence, regulatory frameworks, and real-world incidents, the paper aims to shed light on the evolving threat landscape and propose strategic

solutions. In doing so, it highlights the need for a robust, rights-based, and technologically informed approach to safeguarding justice in the digital age.

CYBERSECURITY VULNERABILITIES IN JUDICIAL SYSTEMS

Judicial systems handle highly sensitive and mission-critical information, rendering them frequent targets for cybercriminals, state-sponsored entities, and ideological hacktivist groups. One of the most severe threats comes from ransomware attacks on court databases, which have, in some instances, halted court operations and resulted in data loss and disruptions to public services. While global examples such as the 2020 ransomware attack on the Texas judiciary (Bleiberg 2020) and the 2021 breach of South Africa's Department of Justice has received broad attention (Pieterse 2021, 3), recent high-profile attacks in Europe underscore the regional relevance and urgency of this issue.

One of the most disruptive attacks occurred in the Netherlands in 2023, when the digital court platform used for remote hearings and document filing was brought down by a distributed denial-of-service (DDoS) attack, delaying hearings and obstructing access to legal filings (NL Times 2023). The attack highlighted the judiciary's growing dependence on continuous online availability and the fragility of national infrastructure under targeted pressure.

Ransomware attacks have increasingly targeted justice sector institutions, with notable examples illustrating the severe operational and data security risks they pose. In January 2022, the French Ministry of Justice fell victim to the LockBit ransomware group, which claimed responsibility for a cyberattack that exposed internal documents. The attackers published a selection of files on the dark web and threatened further leaks unless a ransom was paid. While the Ministry claimed that critical judicial services were not affected, the incident highlighted weaknesses in protecting governmental legal data and prompted reviews of cybersecurity protocols (Kovacs 2022). The same year, in March 2022, the Los Angeles County Superior Court experienced a significant ransomware attack that disrupted access to online services and caused delays in court operations. Although the court did not confirm whether sensitive case data was exfiltrated, internal communications

acknowledged the compromise of IT systems and emphasized efforts to restore services securely (Los Angeles County Superior Court 2024).

These cases reveal patterns of vulnerability that are exacerbated by the continued use of outdated IT infrastructure in many courts, which often lack necessary security patches and updates. A 2023 report from the European Union Agency for Cybersecurity (ENISA) found that phishing and credential theft remained among the top three attack vectors across judicial systems in member states. Judicial personnel, including clerks and judges, frequently receive minimal training in digital hygiene, making them susceptible to deceptive links, malicious attachments, and social engineering tactics.

Additionally, cascading risks from interconnected systems remain a critical concern. The 2025 cyberattacks on the Legal Aid Agency in the UK temporarily compromised coordination with the Courts Service, delaying hearings for vulnerable populations reliant on public legal support (Mitigo 2025). The breach affected approximately 2.1 million records, including highly sensitive personal data such as criminal histories, national insurance numbers, and financial details. This example illustrates how a breach in one part of the justice ecosystem can disrupt broader judicial processes. Recent cases also reveal how breaches in one part of the digital justice chain can have cascading effects (Check Point Research 2023, 25).

In parallel, judicial personnel frequently do not receive adequate cybersecurity training, thereby increasing susceptibility to phishing attacks and credential theft (Dixon 2022, 38). Court systems often lag in providing consistent, up-to-date cybersecurity training to judges, administrators, and staff, particularly on phishing risks and credential protection. Moreover, cybersecurity professional emphasizes that, across sectors, employees remain a key vulnerability (University of Chicago 2025).

The vulnerabilities extend beyond technical infrastructure. The rapid transition to virtual hearings and electronic filings has increased dependence on third-party vendors and cloud-based solutions. Courts have grown reliant on external digital platforms for managing case files, conducting remote processing, and maintaining digital archives. This reliance introduces critical risks related to supply-chain vulnerabilities, software misconfigurations, and insufficient contractual safeguards for data protection (Moyer 2021). Inadequate vetting of service providers and

fragmented procurement practices exacerbate these threats, especially in lower-capacity judicial systems.

These developments underscore the urgent need to integrate cybersecurity as a core element of judicial reform agendas. In addition to infrastructure upgrades and technical safeguards, building a cybersecurity culture across the judiciary through awareness, training, and regular stress-testing is essential to reducing systemic risk.

THE WEAPONISATION OF AI IN LEGAL CONTEXTS

The use of artificial intelligence in legal settings introduces another layer of complexity and risk that goes beyond traditional cybersecurity concerns. AI technologies, ranging from large language models to facial recognition and deepfake generators, can be weaponised in ways that undermine judicial processes, distort evidence, and compromise the principles of fairness and impartiality.

Deepfake technology, for instance, enables the generation of synthetic audiovisual content that can be misused to fabricate evidence, thereby misleading judges, juries, and even opposing counsel (Citron and Chesney 2019, 150). Chesney and Citron warn that deepfakes represent a 'new disinformation war' that could corrupt the evidentiary process by making it difficult to determine what is authentic. For example, fabricated video recordings of confessions, threats, or illicit activities could be submitted as digital evidence, especially in systems without robust forensic verification protocols.

Algorithmic decision-making tools, including risk assessment instruments used for pre-trial release or sentencing, often rely on historical data that reflect entrenched social and racial biases (Matić Bošković 2024a, 486). As demonstrated in the ProPublica investigation, the COMPAS algorithm, widely used in US courts, disproportionately labels Afro-Americans defendants as high-risk compared to white defendants with similar records (Angwin *et al*. 2016). Similar concerns have been echoed in European jurisdictions where predictive policing and AI-assisted legal analytics are being introduced without sufficient transparency or regulatory oversight (Sartor 2020, 32).

Generative AI models also introduce new risks through the automated creation of fraudulent or malicious legal documents. There have already been reported cases where generative AI tools like ChatGPT were used to draft entire legal pleadings, including fabricated case

citations. In 2025, the UK's High Court justice issued a warning after multiple lawyers cited entirely fictitious legal cases generated by AI in their briefs (Lawless 2025). In one £90 million lawsuit, a lawyer referenced 18 cases that did not exist. In another housing dispute, five phantom precedents were used. Chief Justice cautioned that such behaviour "has serious implications for the administration of justice and public confidence" in the legal system.

Facial recognition technologies, increasingly used in court-adjacent law enforcement processes, also raise serious legal and ethical concerns. Multiple studies have demonstrated higher error rates for non-white individuals, potentially leading to wrongful accusations or mistaken identity in courtroom proceedings (Garvie *et al*. 2016; Buolamwini and Gebru 2018, 1). In legal settings where such evidence is admitted without rigorous scrutiny, the results may be miscarriages of justice grounded in flawed AI outputs.

The integration of artificial intelligence into judicial processes poses significant risks of "techno-capture" and authoritarian oversight. As noted by the UN Special Rapporteur on the independence of judges and lawyers (A/80/169) from July 2025, influence over AI tools is likely to become a focal point for executive and legislative actors seeking to curtail judicial independence. Judges from multiple jurisdictions have expressed concern that AI may be deployed not as a neutral support tool, but as an instrument to standardize decisions and align them with political or institutional priorities (UN Rapporteur 2025, 18). The example of China illustrates this risk most vividly; courts there have incorporated AI systems to monitor and evaluate judicial reasoning, with the stated aim of promoting consistency, but in practice, these tools incentivize conformity with the model's outputs, reduce space for judicial discretion, and open the door to political oversight. Such practices risk undermining judicial autonomy and transforming AI into a tool for reinforcing state power, rather than safeguarding impartial justice (Stern *et al*. 2021, 518).

Taken together, these developments raise serious concerns about due process, judicial independence, and access to justice. The opacity of many AI systems, especially proprietary models that are not open to audit, means that litigants, defence counsel, and even judges may be unaware of how decisions are being shaped. This 'black box justice' problem undermines transparency and the right to a fair trial (Garret and Rudin 2023, 561).

IMPACTS ON JUDICIAL INTEGRITY AND THE RULE OF LAW

The cybersecurity vulnerabilities and AI manipulation discussed in the preceding sections converge to undermine the core principles of judicial functioning. These technological risks, while often viewed through a technical lens, have profound normative consequences for legal certainty, procedural fairness, public trust in the rule of law, and judicial legitimacy.

The increasing frequency and severity of cyberattacks on judicial infrastructure can delay or derail legal proceedings, leading to the erosion of due process rights. For instance, ransomware incidents that lock court databases or corrupt evidence files may prevent timely hearings, disrupt the chain of custody, and impair evidentiary integrity (Dixon 2018, 37). These digital disruptions disproportionately affect vulnerable populations with limited access to alternative legal resources, thereby exacerbating existing inequalities in the justice system (Quintanilla *et al*. 2023, 250).

Simultaneously, the misuse of AI tools introduces new vectors for undermining judicial integrity. Deepfake technology can fabricate persuasive but false evidence, while generative AI can automate the production of fraudulent filings or synthetic legal arguments designed to overwhelm the judiciary (Citron and Chesney 2019, 149). When manipulated audio-visual materials are indistinguishable from authentic recordings, courts may struggle to verify the credibility of key evidence or witness statements, thereby eroding confidence in the fact-finding process and weakening the perceived impartiality of justice. Such falsifications not only risk wrongful convictions or acquittals but also undermine public trust in the judiciary's ability to distinguish truth from fabrication in an increasingly digital environment. The integrity of judicial reasoning depends on transparency, verifiability, and accountability, all of which are threatened when AI systems are used to obscure provenance or manipulate evidentiary foundations.

These developments challenge fundamental principles such as judicial independence, equality before the law, and the right to a fair trial. Surveillance-enabled malware and digital profiling tools can be used to monitor or influence judicial decision-makers, undermining impartiality and creating chilling effects, particularly in politically sensitive or high-profile cases (Liger and Gutheil 2023, 25). Research shows that when

courts become vulnerable to technological manipulation, public trust in their impartiality and competence declines significantly (Angwin *et al*. 2016).

Furthermore, the lack of regulatory oversight for AI-based legal tools heightens the risk of automated discrimination. Risk assessment algorithms and sentencing recommendation systems, if unregulated and opaque, can perpetuate historical biases and reinforce social disparities (Angwin *et al*. 2016). Without mandatory transparency and auditing requirements, these technologies may invisibly distort judicial outcomes, calling into question the objectivity of decisions and the fairness of proceedings.

To uphold the rule of law in an increasingly digital legal ecosystem, judicial institutions must proactively embed safeguards for technological integrity. This includes not only upgrading IT infrastructure and enhancing cybersecurity literacy but also establishing ethical and legal frameworks for the accountable use of AI. Institutional resilience in the digital age depends on the judiciary's capacity to maintain transparency, independence, and equitable access to justice despite evolving technological threats.

INTERNATIONAL AND REGULATORY RESPONSES

The international community has begun to recognise the profound implications of artificial intelligence on cyber threats for judicial integrity and the rule of law. In response, a series of legal and regulatory initiatives have been launched at national, regional, and global levels, each addressing different dimensions of the challenge. Efforts to address these challenges vary across jurisdictions.

At the European Union level, the 2024 Artificial Intelligence Act marks the EU's first comprehensive regulatory framework for AI, introducing a graduated, risk-based approach to governing the development and use of artificial intelligence systems (Regulation 2024/1689). The Act explicitly classifies certain uses of AI in the justice sector as high-risk applications, including systems for predictive justice, biometric identification, and evidence analysis (Matić Bošković 2024b, 115). For these uses, the Regulation requires strict conformity assessments, transparency obligations, and ongoing monitoring to mitigate bias and ensure accountability. The inclusion of the judiciary in the high-risk category highlights the EU's recognition of the sensitivity

of court proceedings and the need for safeguards to preserve both procedural fairness and fundamental rights.

In the United States, the National Institute of Standards and Technology (NIST) has introduced its AI Risk Management Framework (2023), which provides a set of voluntary but widely endorsed standards for managing risks related to AI deployment (NIST 2023). Although not legally binding, the framework is already shaping practice across public institutions, including courts, by encouraging systematic risk identification, mitigation strategies, and testing protocols before AI tools are integrated into adjudication or case management systems. By embedding cybersecurity preparedness into judicial contexts, the NIST guidelines aim to prevent vulnerabilities such as data manipulation or biased decision-making.

A significant development in Europe was the adoption of the Council of Europe's Framework Convention on Artificial Intelligence and Human Rights, Democracy, and the Rule of Law, in May 2024 (CEPEJ 2018; CoE 2024). These instruments represent the first legally binding international treaty on AI, establishing legal obligations for states to ensure that AI systems respect human rights, democratic values, and rule of law standards throughout their life cycle. The Convention introduces safeguards for transparency, accountability, and oversight of AI systems, and it extends explicitly to judicial institutions, thereby recognising courts as a sensitive domain where misuse of AI can have systemic consequences for democracy.

At the global level, the United Nations Office on Drugs and Crime (UNODC) has taken a complementary approach through the Global Judicial Integrity Network (Contini 2019). While not producing binding rules, it has initiated discussion on ethical guidance for the use of AI in courts. These discussions emphasise the risks of undermining judicial independence, the dangers of algorithmic bias, and the need for clear ethical frameworks to guide judges when confronted with AI-generated evidence or digital manipulation, such as deepfakes. The UNODS's soft-law approach complements binding instruments by promoting shared values and peer learning.

Finally, national responses such as Denmark's 2025 amendments to its copyright law illustrate how states are moving to adapt traditional legal instruments to technological realties. While narrowly focused, this initiative highlights how domestic legal systems can pioneer approaches that may later influence broader regional or international standards.

Nonetheless, existing responses often remain fragmented and lack comprehensive coordination. There is a growing need for a cohesive global strategy that integrates legal reform, digital forensics, AI auditability, and cross-border legal cooperation. This should include establishing clear standards for explainability and oversight of AI tools, deploying advanced capabilities for detecting deepfakes, and enhancing resilience through continuous training of judicial personnel.

STRATEGIES FOR RESILIENCE AND SAFEGUARDS

Addressing cybersecurity threats and the misuse of artificial intelligence in the judicial system requires a multi-layered and integrated strategy that goes beyond technical fixes and embedded resilience at structural, institutional, and cultural levels. Courts must invest in strengthening their digital infrastructure, implementing mandatory cybersecurity audits, adopting zero-trust architectures, and ensuring systematic cyber training for judicial staff (ENISA 2023). Regular audits are crucial to detect vulnerabilities before they are exploited, while targeted training addresses the persistent risk of human error, such as phishing and weak credential use, which remains one of the most common entry points for attackers.

In parallel, AI governance must prioritise transparency and accountability. This entails explainability obligations for AI tools used in judicial contexts, clear documentation of their functioning, and independent oversight mechanisms to prevent bias or "black box" decision-making (Sartor 2020, 24). Such safeguards are indispensable to uphold fairness, protect fundamental rights, and maintain trust in the digitalization of justice.

Good practices from European and international courts illustrate the importance of resilience planning. When the European Court of Human Rights suffered a cyber-attack coinciding with the *Demirtaş v. Turkey (No. 2)* judgement (Application no. 14305/17, judgement of 22 December 2020) (European Union 2021), contingency protocols under the Rules of Court enabled secured electronic filing (European Court of Human Rights 2018), and alternative submission channels, safeguarding access to justice. Similarly, the International Criminal Court, after detecting suspicious activity in its systems, collaborated with Dutch authorities to strengthen its cybersecurity framework and accelerate its migration to cloud-based infrastructure (Voelkerrechtsblog

2025). These cases highlight that effective judicial cybersecurity depends not only on prevention but also on institutional partnerships and adaptive modernization.

Building digital forensics capacities is equally essential. While the proliferation of manipulated evidence, particularly deepfakes, continues to grow, judicial systems must be able to authenticate the integrity of digital material (Venema and Geradts 2020, 15). Specialized forensic units should be equipped with advanced tools to detect digital tampering, verify metadata, and maintain the chain of custody of electronic evidence. Embedding these capacities directly into prosecutorial and judicial workflows will enhance both evidentiary reliability and the persuasiveness of evidence in court (Sandoval *et al*. 2024, 7).

Finally, resilience cannot be achieved in isolation. Cross-border cooperation must be promoted through harmonization of cybercrime laws, mutual legal assistance frameworks, and real-time information sharing mechanisms (EUROJUST 2020, 4). Together, these strategies provide a robust foundation for securing the judiciary in a digital era.

Justice systems can no longer treat cybersecurity and AI governance as peripheral issues. They must be embedded in judicial modernization strategies from the outset. Building a resilient justice system in the digital age requires not only technological upgrades but also legal, institutional, and cultural changes. Public trust in courts hinges on the integrity of the processes and the authenticity of decisions. Without credible digital safeguards, judicial digitization risks becoming a liability rather than a reform. Conversely, by embracing secure and ethical innovation, judicial systems can reinforce their legitimacy and better serve societies in an era of rapid change.

CONCLUSIONS

The integration of digital technologies and artificial intelligence (AI) into judicial systems is both inevitable and transformative. From streamlining case management and improving access to justice to enabling remote hearings and predictive analytics, digital tools hold significant promise. However, this transformation comes with a paradoxical cost; the very systems designed to enhance efficiency and transparency can also become vectors for unprecedented risks to judicial integrity, due process, and the public's trust in the rule of law.

This article has shown that cyberattacks targeting the judiciary are no longer hypothetical or isolated incidents. They have disrupted courts across continents, compromised sensitive data, and exposed critical gaps in infrastructure, training, and digital preparedness. Meanwhile, the malicious use of AI, from deepfakes and algorithmic bias to disinformation campaigns, has introduced new ways to distort evidence, harass judicial actors, and manipulate the outcomes or legitimacy of legal proceedings.

The consequences of these threats are far-reaching. As the judiciary serves as the last bulwark of constitutional rights and democratic accountability, its vulnerability to cybercrime and AI misuse threatens not only individuals' access to justice but also the structural integrity of democratic governance itself. When judicial institutions are digitally compromised, their capacity to deliver impartial, consistent, and transparent decisions is severely impaired.

To address these challenges, judicial systems must adopt a proactive, system-wide approach that combines cyber resilience, ethical AI governance, and comprehensive judicial policy reform. Judicial policy is the mechanism through which technological safeguards are embedded into the institutional fabric of the courts. It provides the framework for mandating regular cybersecurity audits, introducing zero-trust infrastructure, expanding digital forensics capacities, and regulating the admissibility of AI-generated evidence. By integrating these elements into judicial policy, courts can move beyond ad hoc technical fixes and create sustainable, legally grounded protection.

At the same time, no single jurisdiction can tackle these issues in isolation. The inherently transnational nature of cyber threats and AI misuse calls for coordinated judicial policies that align with global and regional frameworks. Emerging frameworks such as the EU's AI Act and initiatives by UNODC and the Council of Europe offer building blocks for a shared judicial policy environment, where innovation is encouraged but bound by transparency, accountability, and human rights safeguards.

Ultimately, the legitimacy of the judiciary in the digital era will depend on technology but also on the strength of judicial policies that govern its use. By embedding secure digital practices, ethical AI standards, and cross-border cooperation mechanisms into judicial policy, courts can ensure that technological innovation becomes a powerful enabler of justice rather than a source of vulnerability.

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ПРАВОСУЂЕ ПОД ОПСАДОМ: САЈБЕР ПРЕТЊЕ И ЗЛОНАМЕРНА УПОТРЕБА ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У ПРАВОСУЂУ[***]

Резиме

Како правосудни системи све више интегришу дигиталне технологије и вештачку интелигенцију (ВИ), они постају ефикаснији, али истовремено и знатно рањивији на сајбер претње и манипулације засноване на ВИ. Овај рад истражује растуће ризике од сајбер напада усмерених ка правосуђу, као и злонамерну употребу ВИ у судским поступцима, који представљају озбиљну претњу судском интегритету, правичности, поверењу јавности и ширем оквиру правосудне политике. Чланак анализира кључне рањивости у области сајбер безбедности, укључујући нападе рансомвером на судске базе података, манипулацију доказима путем *deepfake* технологије, алгоритамску пристрасност у аутоматизованом доношењу одлука и дезинформационе кампање које користе ВИ. Употреба ВИ као алата у правним контекстима, кроз лажне манипулације предметима, аутоматизовано хаковање и дигитални надзор, изазива дубоку забринутост у погледу права на правично суђење, независности судства и приступа правди. Ови изазови непосредно утичу на

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[***] Овај рад је резултат истраживања које подржава Министарство науке, технолошког развоја и иновација кроз Споразум о реализацији и финансирању научних истраживања СРО у 2025 са Институтом за криминолошка и социолошка истраживања (бр. 451-03-136/2025-03/200039) и кроз пројекат "Прилагођавање правног оквира друштвеним и технолошким променама са посебним фокусом на вештачку интелигенцију, који спроводи у 2025. години Институт за упоредно право и који финансијски подржава Министарство науке, технолошког развоја и иновација (бр. 451-03-136/2025-03/200049).

правосудну политику, јер захтевају нове механизме заштите и прилагодљиве моделе управљања који могу очувати непристрасност и одговорност у све дигиталнијем правосудном окружењу. Анализом стварних случајева и међународних регулаторних приступа, рад предлаже стратегије за јачање сајбер безбедности судства и заштиту примене ВИ. Препоруке обухватају унапређење дигиталне форензике, транспарентност ВИ, независне механизме ревизије и прекограничну правну сарадњу у борби против сајбер претњи и злоупотребе ВИ у правосуђу. Од суштинског је значаја да се ове мере интегришу у правосудне политике на националном и наднационалном нивоу како би се обезбедила отпорност реформи. Како судови настављају дигиталну трансформацију, проактиван и отпоран безбедносни оквир постаје неопходан за очување владавине права у ери све софистицираних сајбер претњи и ВИ-заснованих правних манипулација. Овај рад наглашава хитну потребу за глобалним правним и технолошким механизмима заштите како би се правосудни системи заштитили од дигиталне експлоатације и сајбер напада потпомогнутих ВИ.

Кључне речи: сајбер безбедност, сајбер претње, правосудна политика, манипулације ВИ, дигитална форензика

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PERSPECTIVES OF THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN LOCAL SELF-GOVERNMENT IN THE REPUBLIC OF SERBIA

Abstract

The paper analyses the use of artificial intelligence in the exercise of competences of local self-government in the Republic of Serbia. After the introductory considerations, which also include a short review of the legal framework of the AI in the Republic of Serbia, there is an analysis of different possibilities of using AI in the performance of communal activities in general. After that, there is a brief presentation of the concept of local self-government in Serbia and its shortcomings, and then the discussion about possibilities of applying AI in municipalities and cities in the Republic of Serbia, primarily bearing in mind their size and scope of competences. In the concluding considerations, the results of the research are summarized, with particular emphasis on three key points for the wider application of artificial intelligence in local self-government in the Republic of Serbia in the future.

Keywords: artificial intelligence, local self-government, municipality, city, Republic of Serbia

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INTRODUCTORY CONSIDERATIONS

Artificial intelligence (AI) is rapidly becoming a part of the everyday life of most people on the planet, and its development indicates that in the future almost all segments of human activity and human life will be affected with its use. The degree to which it can affect people's daily lives, the redesign of business processes, and the way of functioning and organization of public administration and other state bodies, in an extremely short time, is huge, already noticeable, and very unpredictable (Milovanović 2023, 5–6). Public administration, despite its inherent conservatism, is an area in which AI can be used to optimize administrative processes, improve decision-making quality, and enhance public services delivery (Borissov and Hristozov 2024, 409).

Local self-government is one of the areas in which AI could be widely used in the near future, and it can already be said that some of its competences are already being carried out with the help of tools offered by AI. Of particular importance is the fact that with the help of AI, the immediacy of relations between citizens and local authorities could be increased, which should be one of the basic goals of democratic local self-government. It is, therefore, not surprising that cities around the world are striving to establish themselves as leaders in urban innovation through the development and implementation of AI systems (Yigitcanlar, Agdaş, and Degirmenci 2023, 1135).

Local self-government in the Republic of Serbia has a dual nature, as it is defined by the Constitution as both a human right and a political institution. The legislator opted for the traditional concept of local self-government, in which the local assembly is the highest body. Units of local self-government in Serbia are relatively large, among the largest in Europe in terms of population, which brings with it certain advantages and disadvantages, among which the biggest problem is the distance of citizens from local organs. AI can help bring local authorities closer to ordinary citizens.

The Republic of Serbia is gradually creating the legal framework for the application of AI. In March 2023, the Government of the Republic of Serbia adopted the Ethical guidelines for the development, application and use of trustworthy and responsible artificial intelligence with the aim of ensuring compliance with high security, ethnic and technical standards in the development of artificial intelligence systems. In 2025, the Strategy for the development of artificial intelligence from 2025 to 2030 was also

adopted, and it defines the legal framework, institutional structure, and deadlines for the adoption of relevant laws and regulations on AI. The AI has already been incorporated into certain laws (e.g., the Criminal Code, the Law on Personal Data Protection, and the Law on Public Information and Media). The adoption of a general Law on Artificial Intelligence is also being prepared, and its full implementation is planned by the end of 2027. All this indicates that the central political authorities of the Republic of Serbia pay great attention to AI and that its use will be regulated in the future by a number of laws and regulations, including the general Law on artificial intelligence. This will undoubtedly create a lot of opportunities for AI to be used appropriately at the local self-government level as well.

Today, there is a widespread opinion that artificial intelligence will enhance the efficiency, accuracy, and transparency of administrative services for the public and business (Herasym 2025, 1). Despite the fact that the scale of the AI activities in the future can hardly be estimated, it already offers significant opportunities for improving the efficiency of the performance of competences of local self-government. Some of these possibilities will be presented in the next section, followed by a brief analysis of the model of local self-government in the Republic of Serbia and recommendations on how its weaknesses could be eliminated or at least mitigated by the use of AI, as well as recommendations on specific possibilities to use AI in the exercise of competences of local self-government in Serbia.

POSSIBILITIES OF APPLYING ARTIFICIAL INTELLIGENCE IN THE EXERCISE OF LOCAL COMPETENCES

Artificial intelligence is very compatible with the exercise of local self-government competences. The use of AI in local self-government has many advantages, and its greatest virtue is that it enables the simultaneous realization of two principles that are often mutually exclusive – economy and efficiency. In other words, in most cases, it contributes to increasing the efficiency of certain tasks while reducing the costs necessary for their performance. There are several areas in which AI can improve the efficiency of local self-government and, at the same time, provide significant savings. In short, the AI is being used in the public sector for automated decision making, for chatbots

to provide information and advice, and for public safety and security (Henman 2020, 209). In certain situations, AI imitates human thinking in solving complex problems (Stančetić 2019, 225). Since this is an area that is developing at a rapid pace, it is almost impossible to predict the limits to which the development of AI will reach in five or ten years, but it is already possible to recognize several opportunities for its use in the exercise of local self-government competences.

First of all, in the field *of processing of various submissions* that citizens send to local self-government, it is possible to establish a system of electronic submission of documentation, in which the AI will recognize the text, digitize it, and, after that, provide answers. This is primarily possible in simple procedures, such as the procedures for issuing certain certificates, registration of residence, etc. These are procedures in which complex decision-making is not required, and they are relatively numerous in practice. In this way, AI can make a significant contribution to the local administration.

Secondly, artificial intelligence can play a significant role in *internal control procedures and the detection of irregularities in the work of local administrative services*. Appropriate tools guided by the AI can easily detect irregularities in revenue and expenditure planning, errors in utility billing, and so forth.

Thirdly, *in the field of planning and development*, artificial intelligence can contribute to the planning of budget revenues and expenditures, analyse costs and discover opportunities for savings in the future, offer appropriate urban and spatial optimization solutions, assess the impacts of planned infrastructure projects, as well as predict the need for schools and hospitals. In this area, of course, AI does not act alone, but as a corrective factor and source of advice and ideas to experts in the relevant fields. Determining what tasks AI can perform needs caution, because entrusting overly complex tasks can lead to bad consequences, which is called the phenomenon of imperfect delegation in the context of the use of artificial intelligence in public administrations (Loi and Spielkamp 2021, 759).

Fourthly, the AI can significantly contribute to *the improvement of local democracy*, enabling a more direct relationship between citizens and local authorities, which is one of the most important goals of local self-government. The AI has the ability to quickly and efficiently analyse and systematize the data provided by citizens in surveys and applications, and even on social networks. Additionally, it is possible to establish

appropriate platforms that enable the participation of citizens in the creation of ideas and decision-making, since AI is capable of processing and systematizing a large number of proposals and different opinions. Chatbots and virtual assistants are increasingly being used to improve citizen participation by offering ongoing assistance and tailored support (Yigitcanlar *et al*. 2024, 1580). In a similar way, AI can automatically create reports on the work of local authorities, which would significantly contribute to increasing the quality and efficiency of their work.

Fifthly, *in the field of infrastructure management*, AI can manage public lighting and turn it on and off as needed, which can provide great energy savings. In addition, there are various possibilities for its use in the field of traffic, starting from the regulation of traffic lights and traffic signals depending on the needs in certain periods of the day, to monitoring the quality of traffic infrastructure and timely pointing out its potential damage.

Sixthly, in the field of environmental protection, AI can be used as a tool for monitoring the quality of air, water, and soil, and in particular, it can be used for the purpose of preventive prediction of pollution, thus enabling action on its prevention. AI can also play an important role in the field of waste management, especially through the optimization of routes for its collection.

Seventhly, artificial intelligence can play a significant role in the *field of security and surveillance* in local self-government. On the one hand, its function can be simple, in the control of standard video supervision that serves to detect suspicious behaviour or possible incidents, and, on the other, it can also be complex, in predicting risks based on historical data or even managing crisis situations caused by disasters such as earthquakes, fire, or flood.

These areas of use of AI in local self-government certainly are not a complete list of possibilities for its application, especially since new AI tools are appearing day by day, more perfect and sophisticated than those that were known until recently. However, it is quite clear that the use of AI in the seven mentioned areas provides great opportunities for improving and facilitating the exercise of the competences of local authorities.

COMPATIBILITY OF THE CONCEPT OF LOCAL SELF-GOVERNMENT IN SERBIA WITH THE APPLICATION OF ARTIFICIAL INTELLIGENCE

After breaking with the achievements of socialist constitutionalism in the last decade of the last century, the Republic of Serbia, on the basis of the Constitution of 1990, left the so-called communal system and returned to the classic model of local self-government, which had a significant tradition in the Serbian monarchy in the 19th century. By abandoning the communal system, however, Serbia did not make a complete break with the concept of local government as it existed in socialist Yugoslavia, since it retained the model of the so-called large municipalities. It was introduced in Yugoslavia gradually, and finally introduced in the second half of the 1960s. Today, units of local self-government in Serbia can be considered large, both according to the criterion of the size of the territory and according to the criterion of the size of the population.

Proper measurement of the size of the unit of local self-government is one of the most important prerequisites for its successful functioning. When considering the size of a unit of local self-government, both territorial and population criteria should be taken into account (Fridrih 2005, 200–201). Over the past decades, there has been a trend of enlargement of units of local self-government in Europe, as it has been estimated that the ideal size usually meant an increase in units of local self-government, which most often resulted in the merger of municipalities, which to some extent annulled the tradition (Baldersheim 2002, 209).

In general, the concept of large municipalities has certain advantages and disadvantages compared to the concept of small municipalities, and the advantages of one concept are at the same time the disadvantages of the other and *vice versa*. The concept of large municipalities implies strong units of local self-government, which include a significant territory and a large number of inhabitants, which implies good personnel potentials for the performance of local self-government competences, but also the collection of significant material resources from taxes and fees, which contributes to the financial autonomy of local self-government. From these virtues, another one logically follows – in the case of the existence of large municipalities, it is usually not necessary to establish the second level of local self-

government (the so-called intermediate level), which reduces the number of levels at which authority is exercised, and reduces the number of authorities, making it much more receptive and clearer to the ordinary citizen.

The main disadvantage of the concept of large municipalities is that it leads to the distancing of citizens from local self-government. A large territory and a large population do not lead to the formation of coherent local communities, which is one of the basic goals of local self-government. Large communities make it impossible to develop a sense of local belonging, especially in a situation where large municipalities were formed by redrawing and merging the territories of historical communities, which had annulled tradition and weakened the sense of solidarity among citizens. In addition, large municipalities usually have a large administrative sector, which leads to their bureaucratization, and due to the size of their population, it is impossible to apply direct democracy (Jovičić 1974, 101–108).

Opting to keep the concept of large municipalities established in the former Yugoslavia, the Serbian legislator consciously accepted all the advantages and disadvantages of that concept, although some of them have been mitigated, such as groundlessness in tradition, since units of local self-government have been functioning in their current form for more than half a century, and during that time they have established a certain tradition. In terms of population, Serbian units of local self-government are among the largest in Europe. There are currently 174 units of local self-government in the Republic of Serbia – 145 municipalities, 28 cities, and the City of Belgrade (Zakon o teritorijalnoj organizaciji Republike Srbije 2007, Articles 16–24). According to the last census in 2022, there were 6,647,003 inhabitants in Serbia, which means that an average of over 38 thousand inhabitants live in Serbian units of local self-government. That number was previously significantly higher: according to the 2011 census, there were 7,186,862 inhabitants in the Republic of Serbia, so the average number of inhabitants in units of local self-government was more than 41,000 (Bojanić 2013, 86).

One of the biggest problems that has arisen as a consequence of the aforementioned concept of the structure and territorial basis of local self-government is the so-called problem of the distance of citizens from the local organs, because a large number of citizens live far from the local self-government bodies and their services. A representative example is the city of Kraljevo, which occupies an area of more than 1,500 square

kilometres and has more than 110,000 inhabitants. Residents of that city (and many other cities and municipalities) have to travel up to 50 kilometres to meet their basic needs – take out personal documents, a birth certificate, or certify a document (Stanković 2023, 123–124). The AI can play an important role in solving this problem. The tools it offers could allow citizens to obtain identity documents without going to the central office of local authorities. In addition, AI can simplify administrative procedures in many cases, which would avoid citizens having to submit a large number of different documents (statements, certificates, etc.) to local authorities in order to exercise their rights (often, citizens effectively have the role of "courier" between these organs).

In the Republic of Serbia, there is a single-level and monotypic local self-government (Stanković and Milisavljević 2018, 31). Bearing in mind that they occupy a considerable territory and include a large number of inhabitants, units of local self-government in the Republic of Serbia also have significant competences. According to the Law on local self-government, unit local of self-government performs the following competences: 1) adopts its statute, budget and final account, spatial and urbanistic plans and development programs of the municipality, as well as strategic plans and programs of local economic development; 2) regulates and ensures the performance and development of communal activities, local transport, use of construction land and business premises; 3) takes care of the construction, reconstruction, maintenance and use of local roads and streets and other public facilities of municipal importance; 4) takes care of the needs of citizens in the field of education (pre-school education and primary and secondary education), scientific research and innovation, culture, health and social welfare, child welfare, sports and physical education; 5) ensures the achievement of the special needs of persons with disabilities and the protection of the rights of vulnerable groups; 6) takes care of the development and improvement of tourism, crafts, catering and trade; 7) adopts and implements programs to encourage local economic development, undertakes activities to maintain existing and attract new investments, and improves general business conditions; 8) takes care of the protection of the environment, protection from natural and other disasters, protection of cultural goods of importance for the municipality; 9) takes care of the protection, improvement and use of agricultural land and implements rural development policy; 10) takes care of the realization, protection and

promotion of human and minority rights, gender equality, as well as public information in the municipality; 11) forms and regulates the organization and work of bodies, organizations and services for the needs of the municipality, organizes the legal aid service and regulates the organization and work of peace councils; 12) determines the symbols of the municipality and their use; 13) manages municipal property and determines the rates of source revenues, as well as the amount of local taxes; 14) prescribes violations of municipal regulations; 15) performs other tasks of local importance determined by law (e.g., in the areas of defense, protection and rescue, fire protection, youth policy, zoo hygiene, etc.), as well as tasks of direct interest to citizens, in accordance with the Constitution, law and statute (Zakon o lokalnoj samoupravi 2007, Art. 20, Para. 1). The use of the AI is conceivable and possible in the performance of almost all of the competences of local self-government. In the following text, we will expose some of the possibilities of using AI in all groups of competences. Of course, involving AI in the performance of certain competences is not an easy task, as many public organizations are struggling to adopt this technology (Neumann, Guirguis, and Steiner 2022, 114).

In the field of spatial and urban planning and development programs of the municipality, as well as strategic plans and programs of local economic development, the mechanisms and tools offered by the AI can greatly contribute to improving the results of local self-government, especially when considering that the majority of units of local self-government in Serbia still do not have an internal act that regulates in detail the procedure for planning, auditing, monitoring, evaluating and reporting on the implementation of the development plan, i.e. the umbrella planning document (Stalna konferencija gradova i opština [SKGO] 2024, 13). When it comes to spatial and urban planning, AI can speed up and improve all phases of the development and monitoring of planning documents, through the analysis of satellite images and drone images, it can recognize and signal undesirable changes in land use and monitor illegal construction and occupation of public areas, it can also offer simulations of urban development (by creating possible scenarios of how an area will develop depending on the infrastructure investments), and can also contribute to the optimization of infrastructure, by suggesting the best locations for schools, health facilities, parks and public transport based on population density and population movements. When it comes to local self-government development programs, AI can help both in

the development and implementation of programs, through the analysis of data on the needs of the population, data processing (from surveys, public debates, social networks and citizens' applications), recognizing priorities in terms of communal infrastructure, security and green spaces, smart budgeting and automatic reporting on the progress of program implementation (graphs, interactive maps, etc.). It is similar in terms of the development of strategic plans and programs of local economic development, where it is possible for AI to create and monitor economic strategies, to analyse market trends, to help attracting investments by creating customized presentations for potential investors highlighting the appropriate advantages (location, supply, logistics), to provide support to entrepreneurship through smart systems for advising small and medium-sized enterprises. It can also simulate economic scenarios by examining how different measures (e.g., tax breaks) would affect the employment and income of the municipality.

In the field of communal utilities, local transport, use of construction land, and office space, the AI can play a very important role. When it comes to communal utilities, AI can monitor the condition of infrastructure (algorithms can analyse sensor data on water pressure, pollution levels, vibrations in pipes and predict failures before they occur), through video surveillance it can recognize problems in the field (e.g. broken benches, interrupted lighting, illegal landfills) and to automatically submit reports to the system, and can also manage lighting (there are systems that, based on the movement of people and vehicles, reduce or increase lighting to save energy). In the field of local transport, AI can plan routes and timetables (by analysing the number of passengers, traffic jams and events in the city), predict delays (by monitoring vehicles in real time and alerting passengers to delays via an app or screens at stations), determine the required number of vehicles at all times, and coordinate all modes of public transport. In the field of construction land use, AI can analyse satellite images, create simulations of the impact of new facilities on traffic, infrastructure, and air quality, automatically rank investor bids based on set criteria, and create a virtual model of the municipality in which scenarios are tested before making decisions. AI could also considerably contribute to speeding up construction permit procedures with its tools, and official data show that in 2024, three out of four types of construction permits on average required more days than the legal deadlines, i.e., cities and municipalities exceeded the legal deadlines for issuing three types of

permits (Nacionalna alijansa za lokalni ekonomski razvoj [NALED] 2025). In terms of the use of office space, AI can automatically record vacant office spaces, predict which types of office space will be most in demand, optimize rental prices (algorithms can suggest prices based on location, status, market trends and interests), and can create a digital system for drafting lease agreements, allowing citizens and companies to do everything electronically, without going to the local institutions.

In the sphere of competence related to *local roads and streets and other public buildings of municipal importance*, the AI can contribute to the maintenance of roads by monitoring the damage (cameras and sensors on public transport vehicles can record the pavement, and the AI can recognize damages and automatically report to the competent services), can optimize traffic lights and traffic signs in real time in order to reduce traffic jams and can analyse the flow of vehicles to plan changes to street routes. In the case of public buildings of municipal importance, it can contribute to increasing energy efficiency (managing heating, air conditioning and lighting based on the number of people in the building and weather conditions), it can monitor the condition of individual buildings (sensors can detect moisture, cracks and failures in installations, and drones can record roofs and facades to assess damage), it can optimize the use of space and plan required investments. In addition, AI applications could be used to report damage to roads or public buildings (a citizen takes a photo of the problem, and the system recognizes the type of damage and forwards the report) and send automatic responses and notifications to citizens about the status of remediation.

The possibilities of using the AI are great in the *field of education, scientific research and innovation, culture, health and social care, child protection, sports and physical culture*. In the field of education and science, AI can analyse the progress of each student and propose customized tasks and materials for him, support children in learning at home through interactive platforms, perform administrative tasks (keeping records, creating schedules, monitoring absences), monitor scientific publications and discover new opportunities for local projects, connect researchers with each other, automatically review documents and patents, and so on. In the field of culture, it can contribute to the digitization of cultural heritage (to catalog archival material, photographs, audio and video recordings), it can make recommendations for the audience, create virtual tours that allow people to see museums and

monuments online, and analyse the attendance of cultural events and programs. In the areas of health, social and child care, AI can help in diagnostics (by analysing medical and laboratory findings), make appointments (optimize doctors' schedules and reduce waiting times), predict health and social risks based on available data, perform automatic allocation of social assistance, create smart systems for kindergartens, analyse the developmental needs of children and contribute to increasing the safety of children through video surveillance. Finally, in the field of sports and physical culture, AI can create apps that track physical activity and provide personalized advice, plan infrastructure usage based on demographic and health data, and analyse competitions through videos.

In the field of meeting the special needs of persons with disabilities and protecting the rights of vulnerable groups, AI can create smart platforms for reporting and monitoring their needs (e.g., mobile applications), can translate in real time (e.g. text and speech into sign language, text into speech, etc.), can facilitate the movement of persons using wheelchairs, blind and visually impaired, and can also be adapted to public transport. For other vulnerable groups (poor, elderly people, refugees, victims of violence, national minorities), AI can analyse data on social income, health, housing and education, automatically process requests for assistance, analyse the effectiveness of support programs, create systems for anonymous reporting of violence and discrimination, contribute to better targeting resources and increase the involvement of persons with disabilities and vulnerable groups in the planning of measures related to them. AI could contribute to increasing the employment of members of vulnerable groups. Analyses have shown that the share of members of vulnerable and endangered groups in total unemployment is very high and that certain measures should be taken to employ them (Centar za socijalnu politiku [CSP] 2016, 106–107).

In the field of *development and improvement of tourism, crafts, hospitality industry, and trade*, AI could have a wide application, which is already common in the world. When it comes to the tourism and hospitality industry, special tourism applications that recommend tourist routes and content based on interest, weather conditions, and provide real-time translation into multiple languages can be of great importance. AI can process data from mobile devices, sensors, and social networks in order to monitor the movement of tourists and optimize the offer, create virtual tours, analyse reviews of catering facilities, and give personalized recommendations in the menu (applications that recommend dishes

to the guest based on previous choices or allergies). In the field of craftsmanship, AI can contribute to preserving tradition and increasing the visibility of local craftsmen through the creation of catalogues, demand analysis, and the design of virtual workshops to improve craft techniques. Finally, in the domain of commerce, AI has the ability to predict which products will be in demand in certain periods, to create smart cash registers, to contribute to better marketing in accordance with the preferences of individual customers, and so on.

When it comes to the competence of local self-government in the *field of local economic development, investments, and improvement of general business conditions*, AI offers a large number of tools. In the sphere of encouraging local economic development, AI can analyse data and trends through processing large amounts of data (demography, employment, economic structure), it can recognize economic potentials by analysing the state of natural resources, infrastructure, and human capital, it can facilitate administrative procedures and simulate different scenarios of development and the impact of new projects on the local economy. In the field of investments, AI can establish investor support systems (virtual assistants that provide investors with appropriate information), supervise operations, analyse potential risks, design appropriate promotional campaigns, propose optimal locations for the development of new investment projects, and prepare investment profiles of local self-government in several languages. In the segment of general business conditions, it is possible to shorten administrative procedures with the help of AI, to improve infrastructure (smart systems for road maintenance, public lighting, energy and water supply, which increase the quality of business conditions), and it is also possible to analyse the impacts of the legal framework on business with the help of AI and propose its improvement. Data shows that cities are more efficient than municipalities in providing business conditions in Serbia, such as issuing appropriate permits (NALED 2025).

The competences of *environmental protection, protection from natural and other disasters, and protection of cultural property of importance for the municipality* are also suitable for the tools and mechanisms provided by the AI. Analyses show that Serbia is vulnerable to climate change, and particularly worrying vulnerability indicators are: agricultural capacity (food), dam capacity (water), access to improved sanitary facilities (health), projected change in grain yield, projected change in biome distribution (ecosystem services), dependence

on imported energy (infrastructure), projected changes in the risk of flooding (human settlements/natural habitats), and it is important to mention engagement in international environmental conventions (Zelena stolica 2023, 3). In the areas of environmental protection and protection from natural disasters, the AI can monitor and process data from sensors on the quality of air, water and soil and warn of pollution, can propose preventive measures in order to prevent pollution, optimally manage waste, give recommendations for the creation of new green areas, educate citizens (e.g., on recycling, energy and water saving), forecast meteorological, hydrological and geological data, send notifications to citizens at the risk of a disaster (SMS, applications, public displays), analyse risks of earthquakes, floods and fires and so on. In this way, AI could significantly contribute to reducing material damage caused by climate change and extreme weather events in Serbia, which in the period 2015–2020 was estimated at at least 1.8 billion euros, while material damage in the period 2000–2015 was estimated at at least five billion euros (Zelena stolica 2023, 3). In the sphere of protection of cultural property of importance to the municipality, AI is able to digitize cultural property, detect damage to it, analyse the impact of climate and pollution on cultural property and propose measures for their protection, contribute to the promotion of cultural heritage (personalized guides, applications and virtual assistants) and manage security systems (e.g. cameras that detect suspicious activities in the vicinity of protected facilities).

In the *field of protection, improvement, and use of agricultural land and implementation of rural development policy*, the AI has great potential. When it comes to agricultural land, the AI can perform surveillance through satellite images and drones, keep a digital land cadastre, analyse soil quality and propose protection measures, give recommendations for sowing (suggest the best crops for individual plots, in accordance with soil, climate and market needs), manage smart irrigation and connect producers with customers and steer land use towards more profitable crops. In the field of rural development, AI can analyse demographic trends, provide support to small farmers (virtual advisors who provide information on subsidies, credits, trends, and technologies), create "digital cooperatives" (virtual platforms for farmers to bring together for joint purchasing, sales, and marketing), design training systems for farmers, and help develop rural tourism.

The AI can also find application in *the realization, protection, and promotion of human and minority rights, gender equality, and public information in the municipality.* Analyses have shown that systematic monitoring of citizens' views and acting on the information thus collected is an area in which local self-governments in Serbia show results below average (SKGO 2024, 18). The AI can recognize where are the biggest obstacles in exercising rights (e.g. access to institutions, access to public services for persons with disabilities), supervise discrimination (processing data from complaints, surveys and the media in order to identify forms of discrimination or unequal treatment), identify cases of gender inequality (through the processing of statistics on employment, education, healthcare), provide certain forms of legal support (e.g. how to file a complaint, where to seek protection) and carry out an analysis of public discourse (word processing tools can recognize hate speech in local media or on social networks). In the segment of public informing, AI, among other things, can provide personalized information to citizens (to create customized news for everyone based on their interests), to provide reliable information about the municipality's services through virtual assistants, to filter out inaccurate information, and to limit the spread of fake news.

The AI can also be useful in the areas of *organization and work of municipal bodies, organizations and services, as well as the organization of the legal aid service to citizens, and the organization and work of peace councils*. Generally, strengthening the role of the assembly of local self-government units in communicating with citizens would enable "this body to perform its representative role on a higher level, which is essential for the implementation of the principles of local democracy" (SKGO 2024, 16). In the domain of municipal bodies, organizations and services, the AI could perform part of the administrative tasks (processing requests, classification of documentation, keeping records), analyse the needs for personnel and propose a better distribution of employees in services, compile reports from the sessions of municipal bodies, but also enable electronic communication of citizens with services, which would lead to an increase in the degree of local democracy. This would undoubtedly be very useful, since analyses have shown that it is desirable "to form a working body of the Assembly for the consideration of citizens' petitions and complaints" (SKGO 2024, 14). In the field of organization of the legal aid service to citizens, AI can create virtual legal assistants that would provide citizens with basic information

(about rights, procedures, necessary documents) and help them fill in requests, complaints or contracts, then create systems for case analysis that recognize typical legal problems of citizens and direct them to the competent services or lawyers, as well as to use algorithms to identify emergencies or socially sensitive cases and put them at the forefront. It is similar to the organization and work of peace councils, where AI can suggest possible directions of mediation based on similar previous cases, can keep a digital archive of cases for better work in the future, and can educate members of the peace council by creating instructions, mediation models, and dispute simulations for their training.

In exercising the competences of *municipal property management and determining the source revenue rate and the amount of local taxes*, AI could provide good analytics, digitalization, and transparency in operation. Meanwhile, analyses have shown that, despite the efforts made, units of local self-government achieve "insufficient results" in record-keeping and management of public property, with between one quarter and one third of units of local self-government failing to inventory all property, i.e., register public property in their own favour (SKGO 2024, 13). In municipal property management, AI could process satellite imagery and spatial plans to update the municipal property registry, anticipate the need for repairs, and analyse lease data, space use, and market prices, which makes it possible to determine whether an asset is underused and how to make better use of it. When it comes to revenues and fees, the AI can, based on historical data, macroeconomic trends and demographic trends, project future revenues, test different rates of local taxes and fees and see their impact, identify the risk profiles of taxpayers, propose an optimal level of fees that balances the revenues of the municipality and the burden on citizens, and propose differentiated fees according to some categories of citizens.

Finally, in the field *of violations of municipal regulations,* the AI can effectively analyse the existing practice (both in its own and other municipalities), to monitor and detect violations (e.g. illegal parking, throwing garbage outside the container, violation of the rules on the use of public areas, etc.), to automatically categorize and filter reports that arrive through applications or contact centres, recognizing whether there is a basis for a violation, to use algorithms to isolate persons who frequently violate regulations, to prepare proposals for decisions on violations based on the collected data (photos, videos, sensors), to

propose differentiated penalties depending on the severity and frequency of violations and to analyse the effectiveness of penalties.

The listed possibilities of using the AI in various areas of competence of local self-government in Serbia do not make a complete list of possibilities for its use, because the list is much longer, and will continue to grow over time. It only provides a good illustration of how it would be possible to ensure a more efficient performance of the legal competences of local self-government in Serbia with the help of AI today, while reducing the costs of performing them.

CONCLUDING CONSIDERATIONS

It has long been clear that rapid technological progress is affecting all spheres of human activity, and that the future brings innovations that were unimaginable a decade or two ago. The AI will be an important part of the future of humanity, and its proper use could make it easier to perform a large number of jobs, with many once-valued professions disappearing. In the field of local self-government, AI can help in many ways, some of which have been outlined in the previous sections of this paper.

When it comes to local self-government in the Republic of Serbia and its attitude towards AI, three key points can be noted. Firstly, it is important to emphasize that the Republic of Serbia has already taken steps towards creating an appropriate legal framework for the use of AI, in which the Law on Artificial Intelligence will have a central place, and its full implementation is planned by the end of 2027. Its adoption will also enable units of local self-government to implement the AI more widely in the near future. Secondly, the AI provides many opportunities to overcome the problems caused by the concept of large municipalities in Serbia, especially tools that will bring local authorities closer to ordinary citizens. And thirdly, bearing in mind that local self-government in the Republic of Serbia has a significant number of original and entrusted competences, the AI can contribute to the performance of most of them. The most significant benefit of the application of AI in the performance of competencies of local self-government is that, in practice, its use enables the reconciliation of two principles that are often opposed – the principle of efficiency and the principle of economy, because at the same time it increases efficiency and reduces costs in performing local self-government tasks. The use of AI, however, brings with it potential

problems, such as a reduction in the number of employees, so the real effects of its use will be shown in the future.

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ПЕРСПЕКТИВЕ ПРИМЕНЕ ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У ЛОКАЛНОЈ САМОУПРАВИ У РЕПУБЛИЦИ СРБИЈИ

Резиме

Вештачка интелигенција (ВИ) великом брзином постаје део свакодневице већине људи на планети, а њен развој указује да ће у будућности готово сви сегменти људске активности и људског живота бити прожети њеном употребом. Локална самоуправа је једна од области у којима би ВИ у блиској будућности могла да буде у широкој употреби, а већ данас се може рећи да се поједине њене надлежности већ обављају уз помоћ алата које нуди вештачка интелигенција. Нарочито је важна чињеница да би уз помоћ ВИ могла да се повећа непосредност односа између грађана и локалних органа, што би требало да буде један од основних циљева демократске локалне самоуправе. Коришћење вештачке интелигенције у јединицама локалне самоуправе има много предности, а највећа њена врлина је у томе што омогућава истовремено остваривање два принципа који се често међусобно искључују – економичности и ефикасности. Она, другим речима, у највећем броју случајева доприноси повећању делотворности при вршењу одређених послова, истовремено смањујући трошкове који су неопходни за њихово обављање. Постоји више области у којима ВИ може побољшати делотворност локалне самоуправе и уједно обезбедити значајне уштеде, а у раду је наведено седам области које су у овом тренутку најзначајније. У Републици Србији, вештачка интелигенција би могла да допринесе решавању проблема који са собом доноси концепт тзв. великих општина, као и унапређењу обављања готово свих надлежности које према Уставу и законима припадају локалној самоуправи. Централни део рада је посвећен анализи ефеката употребе вештачке интелигенције у вршењу свих петнаест група надлежности (изворних и поверених) које

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предвиђа Закон о локалној самоуправи и решавању проблема који су се појавили у пракси. Након опсежног истраживања и анализе могућности употребе вештачке интелигенције у области локалне самоуправе наметнуо се закључак да она може да помогне на много начина. У Републици Србији су запажене три кључне тачке у односу према вештачкој интелигенцији у локалној самоуправи. Прво, Република Србија је већ предузела кораке у правцу стварања одговарајућег правног оквира за коришћење вештачке интелигенције. Друго, вештачка интелигенција пружа велики број могућности за превазилажење проблема концепта великих општина у Републици Србији, а нарочито алате који ће приближити локалне органе обичном грађанину. И треће, вештачка интелигенција може да допринесе већој ефикасности у обављању већине изворних и поверених надлежности општина и градова у Републици Србији.

Кључне речи: вештачка интелигенција, локална самоуправа, општина, град, Република Србија

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LEGAL PROTECTION OF WORKERS AND EMPLOYERS WHEN USING ARTIFICIAL INTELLIGENCE IN THE WORKING ENVIRONMENT[***]

Abstract

The use of artificial intelligence in the work environment by both workers and employers represents the present in which many issues of labor law are realized, which indirectly affect both Commercial Law and Intellectual Property Law. In the digital age we are in, workers exercise new rights and new forms and ways of working that pose a challenge to labor legislation, while employers can use (generative) artificial intelligence tools when hiring and controlling workers, which raises a number of questions in the field of ethics, the realization of basic workers' rights, and the protection of personal data. The issue of legal protection of artificial intelligence developed by workers in an employment relationship with an employer is open. In the spirit of the

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new EU regulation 2024/1689 on determining the conformity of the rules on artificial intelligence, the authors in this paper propose new legal solutions in the field of Labor Law and Intellectual Property Law *(de lege ferenda)*.

Keywords: labor law, intellectual property law, worker, employer, artificial intelligence, new types of work

INTRODUCTION

The fourth industrial revolution brought us artificial intelligence with the help of technical means from the third industrial revolution (computers, software, electronic databases, the Internet) (Marković 2024, 101–102). It seems that it is not possible to function without information technology, which has introduced considerable changes in the world of work, economy, intellectual property, and the protection of personal data. As existence is secured from work as a relationship in which remuneration is one of the characteristics, the changes that occur in and in connection with work relationships are especially in focus. Attention to labor relations has increased since the use of digitization and artificial intelligence. Although it is indisputable that the application of digitization and artificial intelligence has brought benefits for both employers and employees, one cannot ignore all the challenges in the employment relationship, which have arisen as a result of these changes (Božičić 2023, 92). Digitization of work seems to be a consequence of the influence of information technologies in labor relations, which has opened up some legal questions, such as whether artificial intelligence can replace people or employees, how to protect personal data in the context of digital work, or what the nature of intellectual property arising from labor relations is. It is indisputable that employers use artificial intelligence to monitor the work of employees, and the positive effects of applying artificial intelligence to the world of work are mostly reflected in the field of productivity. However, the modernization of artificial intelligence systems led to the fact that these systems take over some of the powers that the employer has, as platform workers emerged, whose position is particularly specific and unfavorable. This is because software based on the large amount of data it stores can make discriminatory

decisions, without the possibility for employees to influence them. There is also the issue of protecting employees' personal data.

A particularly challenging issue is the protection of intellectual property rights on artificial intelligence, created in the employment relationship, especially bearing in mind that the basis of the development of artificial intelligence is a computer program. There is also the issue of the universally popular application of generative artificial intelligence ChatGPT which, based on the user's query, can, based on the user's query, create or generate text that "imitates" human intelligence, which additionally started a discussion about the way to regulate artificial intelligence in the workplace. This is especially due to the fact that Serbian labor laws and those that regulate intellectual property do not know the concept of artificial intelligence, which represents an additional problem in understanding artificial intelligence as a sophisticated information system, which consists of one or more computer programs (software) and an electronic database.

In the paper, the authors tried to answer some of the dilemmas presented, using the normative and comparative law method. After the introduction, part of the research is dedicated to the way artificial intelligence is used by the employer, then the part dedicated to the treatment of artificial intelligence created in the employment relationship, while the end of the paper will be dedicated to new forms of work, which arose as a result of the influence of digitization and artificial intelligence in the employment relationship.

Considering the set title of the research topic, the authors proceed from the following hypotheses: it is necessary to define at the legislative level the concept of information system and artificial intelligence in order to apply the provision concerning copyrights to computer programs and databases, as well as the right of producers to databases; furthermore, the absence of transparency when using artificial intelligence by the employer is associated with considerable challenges in terms of protecting personal data and making discriminatory decisions in the employment process and at work; and finally, harmonization of domestic legislation with European standards is a necessary step in order to promote and apply new employee rights, which our law does not recognize.

(UN)AUTHORIZED USE OF ARTIFICIAL INTELLIGENCE BY THE EMPLOYER

We are witnessing the digital revolution, which has resulted in the influence of digital tools in all spheres of society, including labor relations. Thus, the traditional working relationship is changing under the influence of digitalization. We agree with De Stefano that technological transformation is inevitable and that it represents the price for all the benefits that social processes record through the use of new technologies (De Stefano 2018, 1). As the theory states, artificial intelligence "is at the heart of digital transformation" (Kovačević 2024, 87), which represents a significant indicator of technological development that has been accelerated by this. Reljanović and Misailović (2021, 408) point out that the digitization of work arose as a response to the development of information technologies, and that digital work reached its peak during the Covid-19 pandemic. One of the issues that deserves the attention of scientists is the degree of influence that artificial intelligence has in the sphere of work, starting with employment, while the way in which employers use this tool in the exercise of their powers is followed with special interest. In this sense, Reljanović and Misailović (2021, 408) conclude that digitization has had a double impact on labor relations, on the one hand, creating new occupations based on digitization, but at the same time, it has led to the precariousness of the position of employees, which they believe is a necessary companion to the flexibilization of work. This should be especially related to the mental health of employees, who in the digital age are expected to always be available (*alwys on culture*), to carry out work tasks even after leaving the workplace and after working hours have expired, so the line between business and private life is difficult to draw, especially when it involves working outside the employee's premises. Such a pace of work often leads to the so-called *employee burnout*, and in Japan, the expression for employees who take their own life because of work (*karroshi*) has become popular (Rajić Ćalić 2023, 303–319; Balnožan 2023, 237–258). As Špadina and Ljubić (2024, 407) point out, constant availability leads to a drop in employee concentration, increased stress, emotional exhaustion, and addiction to the use of digital devices. We should also not forget the employee's right to privacy, which is difficult to protect due to working in the digital age, where a large amount of employee data is available to the employer. As Misailović (2025, 283) underlines, the employee's right to privacy

must be viewed in the context of the limits of the employer's authority and the employee's obligation to perform work tasks at the workplace and within working hours, relying on the principle of proportionality and transparency. Special attention when it comes to privacy protection must certainly be focused on the employee who performs work outside the employer's premises. This is particularly relevant in this case, as it is necessary to balance the employer's interest in supervising the employee's work, which is not conducted on their premises, with the employee's interest in maintaining their privacy, thereby establishing a balance between family and professional life. Guided by the aforementioned principles, the interests of the employer and the employee in this case must be harmonized by establishing the supervision of the employee's work by infringing the employee's privacy as little as possible, with the mandatory notification of the employee about the measures that the employer will use (Misailović 2025, 284). The request for privacy protection also applies to data circulating through the use of the Internet by the employee, as well as e-mail and telephone, which creates the need for the introduction of special surveillance measures in the digital world of business performance (Pivčević and Erceg Ćurić 2022, 122). As the right to privacy is provided for in Article 8 of the Convention on the Protection of Human Rights and Fundamental Freedoms, it is valuable to recognize the violation of the right to privacy in cases that now serve as a guide at the national level. In a court, case *Bărbulescu v. Romania* (61496/08, par 121–122), European Court of Human Rights demanded that national legislations to ensure the protection of the employee's privacy at the workplace, as well as that the national courts in judging take into account the interests of employers and employees through notifying the employee about the surveillance, who had to be informed in advance about the surveillance and its content, then through the justification of the surveillance, the degree of encroachment into the employee's private sphere and the like. Also interesting is the verdict in the case of *Antović and Mirković v. Montenegro* (70838/13), in which the court adopted a broader understanding of private life, based on the fact that the performance of a professional activity, such as the work of a professor at a university, must be subject to protection because it represents "private social life." Accordingly, the violation of Article 8 of the Convention is represented by the installation of video surveillance in some of the rooms at the faculty where professors teach, because the

amphitheatres where classes are held are "the place where professors and students interact and where their social identity is built."

Therefore, it is important to keep in mind that job security gains additional value in the context of digitalization, which some authors claim is the basic dimension of dignified work (Reljanović and Misailović 2022, 443). This is a conclusion we agree with, bearing in mind that working in a digital environment together with artificial intelligence represents a suitable ground for precarization, as well as that remuneration is an element that distinguishes the employment relationship from other relationships, which ensures the existence of the employee and his family, and it is necessary to protect the employee from the uncertainty that his employment relationship will be terminated. It is clear that the use of information and communication technologies together with artificial intelligence has numerous benefits in the working relationship, but at the same time we must be aware of the creation of potentially greater risks of violation of certain rights, especially when it comes to decision-making by appropriate software based on algorithms that leave complete decision-making autonomy, so that in fact these tools, by means of artificial intelligence, take over the role played by employers. It is true that many jobs performed by employers are automated, and with the help of artificial intelligence, they can be performed by various software. This is especially important if we keep in mind that there is no possibility for the employee to be involved in the decision-making process, that is, that digital tools together with artificial intelligence can completely replace humans when it comes to management positions (Zappala 2023, 623). In this sense, it is worth pointing out the existence of digital platforms, which, as Božičić claims, represent a kind of virtual labor market, because they function through the Internet as an application, connecting employers and employees through algorithmic platforms (Božičić 2023, 91).[1] Algorithmic platforms are changing the traditional two-sided working relationship by introducing a platform alongside clients who are looking for a specific job and platform workers who are qualified to perform a specific job. As stated, these platforms function with the help of a large amount of data that is stored from the moment when users register, and on through all stages of the employment relationship, whereby the algorithm takes over some

[1] The author defines an algorithm as an instruction, a set of steps, or a procedure for solving a problem or task.

of the functions of the employer (Božičić 2023, 91). More precisely, the platform selects workers, supervises and evaluates their work, on which the final assessment of the specific worker and the scope of work that will be assigned to him crucially depends (Božičić 2023, 95). Here, in fact, there is a complete takeover of the employer's function, which is called algorithmic management, closely linked to the risks that this way of decision-making carries, in the form of a lack of transparency in terms of algorithmic functioning, but also a lack of objectivity when making decisions (Božičić 2023, 101). Such decisions should be "rational, neutral, unbiased and equal for all to whom they apply," otherwise the possibility is created for the emergence of the so-called algorithmic discrimination, which is considered one of the negative consequences of the impact of artificial intelligence on human rights (Prlja, Gasmi, and Korać 2023, 60).[2] Špadina (2023, 173) warns of the same, indicating that the data in itself is, of course, not discriminatory, but a discriminatory decision can be reached during the interpretation process due to data that is not correct, is partially correct, or is skewed with certain prejudices. This kind of discrimination can especially be a problem when selecting candidates in the recruitment process, considering that algorithms can exclude certain candidates from the selection process, without the possibility of using all factors that can prevent discriminatory decisions. This is the case especially with complex algorithms (Špadina 2023, 173). Reljanović and Misailović (2021, 425) highlight the disadvantageous position of workers hired through platforms, emphasizing that algorithms evaluate work without considering other relevant factors, which would be taken into account if the assessment were made by the employer.[3] The question can rightly be asked: can new technology, together with artificial intelligence, completely replace the employer? On the other hand, the question that can be heard much more often is: will automation and artificial intelligence replace people in many workplaces?

[2] As the algorithm is based on the data it stores, the possibility of making discriminatory decisions increases if the data taken into account is based on discriminatory decisions. Such is the case with the frequent employment of men in certain workplaces. The authors point out that it is not difficult to achieve algorithmic discrimination by selecting target variables and classes, selecting system data, and selecting characteristics.

[3] The authors cite the example of a delivery person, whose work is evaluated by an algorithm based on pre-collected data, so if the worker is unable to perform work on a certain day due to illness, he receives negative points, which affects the distribution of work, and in some cases, the termination of the employment contract.

That digital tools together with artificial intelligence must be used carefully, and it has become clear with the emergence of systems that can control the work of employees. Although it is emphasized that the use of such software contributes to more productive work for the employer (Ter Haar and Otto 2023), its use without control can be questionable when it comes to employee privacy. This refers to software that tracks the location of employees, which is beneficial to the employer in controlling remote work (De Stefano 2018, 7).[4] This author also points out that it is about controlling the work of employees without limits, all with the aim of monitoring work efficiency. Cankaya (2023, 42) refers to the use of Desktime software, which gives the employer the opportunity to monitor the attendance and productivity of employees by monitoring the employee's official communication. That the surveillance possibilities are almost unlimited, as stated at the beginning, it was shown by the example of using the Work Examiner software, which is programmed to monitor all the activities of the employee on the computer, so the employer can have an insight into what the employee searches, the content of the documents he downloads, the emails the employee sends (Çankaya 2023, 42). This is confirmed by De Stefano (2018, 9), who refers to the use of the Fitbit application for insight into the activities of employees outside of working hours and on the premises of the employer. The author indicates that employers tend to use these applications in order to monitor activities outside of working hours, and all in the context of the already mentioned always-on culture. Such applications can collect a large amount of data about the employee, which can detect their behavior outside the workplace, with the possibility of monitoring the employee's activities on social networks, and the author points to similar behavior in the Ford car company (De Stefano 2018, 9).

PROTECTION OF INTELLECTUAL PROPERTY RIGHTS ON ARTIFICIAL INTELLIGENCE CREATED IN A WORK RELATIONSHIP

At the level of the European Union, a long-awaited Regulation was adopted that regulates some basic issues related to artificial intelligence, the so-called AI Regulation. In Article 3 of the EU AI Regulation AI

[4] The author particularly points to the position of employed truck and van drivers, as well as delivery crews, where systems are used to check the location, as well as online freelancers, whose work is checked based on ratings on the platform.

"Artificial Intelligence System" is defined as a machine-based system that is designed to work with different levels of autonomy and that can show adaptability after deployment, and that, for explicit or implicit goals, concludes, based on the input data it receives, how to generate outputs such as predictions, content, recommendations or decisions that can affect the physical or virtual environment (Regulation EU 2024/1689, Art.3). However, this The EU regulation on artificial intelligence does not directly regulate artificial intelligence created in the employment relationship. For this reason, we will perform a comparative legal analysis of the positive regulations that regulate copyright protection of the computer program that is the basis of artificial intelligence.

In the era of information technologies, in which the digital transformation of all social processes is more than represented, ready-made "package" solutions in the banking sector, telecommunications, companies, electricity distribution, and other sectors that are widely called "information systems" have come to the fore. Information systems represent a broader term than "software" and consist, among other things, of a database model and application software (i.e., computer program + program description, i.e., accompanying technical documentation), which "manages" the aforementioned database (Živković and Hasić 2022, 335). As an example of an information system, we can take, e.g., software (one or more computer programs) that processes the (electronic) database of all electricity consumers that is systematically organized and has its original structure.

That it is precisely the information system that is the precursor and the foundation on which AI was created is represented by examples of works by authors who talk about the use of AI in the process of digitalization of electricity supply. The positive effects of AI in the production of electricity would be the optimization of electricity production, overcoming the problem of (un)confidentiality of the amount of electricity supplied/consumed, but also challenges related to the human factor, control and maintenance of hardware (equipment, machines, networks), in order to achieve energy efficiency and sustainability (Mišković 2024, 261). One of the most popular generative artificial intelligences is *ChatGPT,* which is a language model created by San Francisco-based AI company *OpenAI* (Živković 2024, 331). *ChatGPT* has become the fastest- growing software application in history, with the power to mimic human abilities to produce text, images, videos, music, and software codes (Čović 2024, 661). This means that *ChatGPT* has

affected all industries and raised an open legal question regarding the regulation of (generative) artificial intelligence that is created in the employment relationship.

Our positive legal regulations in the field of intellectual property law, especially copyright and related law, as well as labor law do not recognize the "concept of artificial intelligence," and since artificial intelligence is basically a sophisticated information system that basically represents one or more computer programs (software) that together with an electronic database form an information system, we will analyze the positive legislation in the field of protection of computer programs and databases in employment. It should be pointed out that for the regulation of artificial intelligence in the employment relationship, positive legal regulations from the field of intellectual property rights are applied as lex specialis. For a better understanding of the above, we will provide an explanation of these terms, and then perform a comparative legal presentation of copyright protection on computer programs, copyright on the database structure, as a particularly related sui generis right of the database producer. Finally, after analyzing these terms, we will analyze the computer programs and (electronic) databases created in the work relationship that represent the basis on which artificial intelligence is developed.

A computer program in any form means a computer program in source and target (executable) code.[5] It is important to point out that the ideas and principles on which any element of a computer program is based, including the elements that are the basis for its interface, are not protected (Hasić i dr. 2023, 299.) The term "computer program" used by the Law on Copyright and Related Rights of Bosnia and Herzegovina (ZASP BIH 2010) and on which copyright may exist, should be distinguished from the term "software" in the technical and legal sense. Software is a broader term than a computer program, and can consist of one or more computer programs, preparation of designed material (program description), and additional, ie, accompanying (user) documentation, and potentially other elements. From the point of view of copyright, a computer program and preparatory design material can represent a special type of author's work, provided that they represent

[5] The term *source code* means a computer program expressed in one of the programming languages, while the term *target (executable) code* refers to a computer program converted into a digital machine record that a computer can understand and execute (Marković 2018, 150).

an "individual intellectual creation" in the sense of Art. 4 st. 1 (ZASP BIH 2010). This point of view is supported by the French text of the Computer Program Directive, where the terms computer program and software are clearly distinguished, and protection is provided only to computer programs! Based on the above, we can conclude that the legal term of a computer program includes the technical term of a computer program and accompanying technical documentation (Kunda and Matanovac Vučković 2010, 85–132). Precisely because of this, we can mention the excellent example of Serbia, which, in its Law on Copyright and Related Rights, expands the definition of a computer program as an author's work, and in Art. 2nd st. 2 of the mentioned law stipulates that, among other things, *written works* are considered copyrighted works, i.e., *computer programs with accompanying technical and user documentation in any form of expression, including preparatory material for their creation, etc.* (ZASP RS 2019). Legal experts point out that a computer program, as part of the software, represents *instructions for the computer to carry out the determination of an action in order to solve a problem.* Because there are many stages in the development of a computer program, all elements of a computer program can potentially enjoy copyright protection. Because there are many stages in the development of a computer program, all elements of a computer program can potentially enjoy copyright protection (Lučić 2020, 433).

Analyzing the comparative legislation of Serbia, Croatia, and BiH, we can draw several conclusions. First of all, the ZASP BIH (2010) stipulates that the author's work is an *individual spiritual creation,* and this definition lacks the word *original* in comparison with Serbia and Croatia, where the legislator, when defining the author's work, pointed out that it is an *original spiritual creation* (ZASP RS 2019) or to the *original intellectual creation* of Croatia (ZASP RH 2021). Secondly, the term *computer program* prescribed by the legislators in BiH, Serbia, and Croatia, and on which copyright may exist, should be distinguished from the term *software* in the technical and legal sense. Software is a broader term than a computer program, and can consist of one or more computer programs, preparation of designed material (program description), and additional, i.e., accompanying (user) documentation, and potentially other elements. From the point of view of copyright, a computer program and preparatory design material can represent a special type of author's work, provided that they represent an *original intellectual creation* in the sense of Art. 2nd st. 1 (ZASP RS 2019). Serbia is in Art. 2nd st. 2

(ZASP RS 2019) expanded the definition of a computer program as an author's work.

This solution was adopted by both Serbia and the neighboring countries of Bosnia and Herzegovina and Croatia, with certain differences in the legal regulation of this rule. Article 98, paragraph 4 of the ZASP RS (2019) stipulates: "If the author's work is a computer program or database, the permanent holder of all exclusive property rights in the work is the employer, unless otherwise stipulated by the contract. The author has the right to special compensation if this is provided for in the contract." It is also necessary to apostrophize co-authored works related to computer programs that are regulated in Article 10, paragraph 3 and 4 of the ZASP RS (2019) as follows: "If the co-authored work is a computer program or database, the copyright on such a computer program or database belongs to all co-authors. For the exercise of copyright and the transfer of that right, the consent of all co-authors is necessary." Regarding the contract on the order of the author's work, Article 95, paragraph 3 of the ZASP RS (2019) prescribes the following: "If a computer program is created on the basis of the contract on the order of the author's work, the client acquires all rights to use the computer program, unless otherwise stipulated by the contract."

Finally, we have the situation of regulating the collective author's work related to computer programs. Thus, in Article 97, paragraph 1 of the ZASP RS (2019), the following is prescribed: "An author's work created by merging the contributions of a number of authors into one whole (encyclopedia, anthology, computer program, database, etc.) is considered a collective author's work."

ZASP BIH (2010) and ZASP RH (2021) have somewhat different legal solutions regarding computer programs created in the employment relationship and on order. The legislator in Bosnia and Herzegovina, unlike the legislator in Serbia, has regulated computer programs created in an employment relationship and by order in one legal provision. Thus, Article 103 of the Law on Copyrights and Related Rights (ZASP BIH 2010) states: "If a computer program is created by an employee in the performance of their duties or according to the instructions of the employer, or if it is created by an author based on an order contract, it is considered that all copyright property rights to such a program are exclusively and entirely transferred to the employer or the purchaser, unless otherwise stipulated by the contract."

The legislator in the Republic of Croatia has regulated the computer program created in an employment relationship with a specific provision. Thus, Article 100, Paragraph 6 of the Copyright and Related Rights Act (ZASP RH 2021) states: "When a computer program is created by an employee in the performance of their obligations under the employment contract, the employer has all exclusive rights to exploit that computer program, without content, temporal, or spatial limitations, unless otherwise determined by the employment contract." Regarding contracts for the creation of a work upon order, there is no specific provision for computer programs, so a general provision for all commissioned works applies. Article 96, Paragraph 3 of the ZASP RH (2021) states: "Unless otherwise provided by the contract for the creation of a commissioned work or by this Law, it is assumed that the client has acquired exclusive copyright property rights to exploit the commissioned work created, to the extent necessary for the realization of the activities they perform, without spatial and temporal limitations."

Analyzing the positive legislation of Serbia, BiH, and Croatia mentioned above, we can state that there are two cases that are regulated. The first situation is if the author's work is a computer program or a database, in which case the permanent holder of all exclusive property rights in the work is the employer, unless otherwise specified in the contract. Under copyright property rights is meant the author's right to "the economic exploitation of his work, as well as the work created by the processing of his work, and for any exploitation of the author's work by another person, the author is entitled to compensation," unless otherwise stipulated by the ZASP RS or by contract, and all in the sense of Article 19 (ZASP RS 2019). The property rights of the author in particular include "the right to reproduction, the right to put copies of the work into circulation, the right to lease copies of the work, the right to perform, the right to present, the right to transmit the performance or present, the right to broadcast," etc., and all in terms of ZAPS RS (2019). What is important to note is that the employee and the employer can contract and dispose of copyright property differently by contract. However, the legislator in Serbia also clearly mentions the database that represents the author's work, which is also based on a legal assumption that exclusive copyright property rights belong to the employer. The legislator in Serbia even goes a step further and prescribes a special compensation if it is stipulated in the contract, while the legislator in the Republic of Croatia (ZASP RH 2021) points out that the mentioned exclusive rights are

transferred to the employer "without content, time and space limitations, unless the employment contract stipulates otherwise." ZASP BIH (2010) does not even mention the database when dealing with acts arising out of an employment relationship.

As for author's moral rights, they are non-alienable and non-transferable, the author can only be a natural person, i.e. a worker who has moral rights that include the right of paternity (the right to be recognized as the author of his work), the right to indicate the name, the right to publish, the right to protect the integrity of the work, the right to oppose unworthy exploitation of the work, all in the sense of ZASP RS (2019).

The situation is different if the *computer program was created by the author on the basis of an order contract; it is considered that all copyright property rights on such a program are exclusively and entirely transferred to the customer.*[6] It is also important to note that in the Anglo-Saxon legal tradition, in the case of works created to order, i.e., in an employment relationship, there is an exception to the rule that the original copyright holder is considered to be the author, i.e., the person who actually created the work. If the work was created in an employment relationship or by order, the employer or the customer (natural or legal entity) is considered the author, regardless of the fact that the work was essentially created by an employee or a contractor from the work order contract (Živković 2020, 631).

We can conclude that Serbia and Croatia, unlike Bosnia and Herzegovina, have regulated in separate articles the author's work that was created in an employment relationship and on order, even if the legal assumption for both works is the same, the employer or the client remains the holder of the author's property rights in the event that the contract does not stipulate otherwise. It is certainly necessary to apostrophize that the legislator in Serbia prescribed the assumption that the author's work on the database also belongs to the employer, unless otherwise specified in the contract. This kind of solution is very important, especially because often computer programs are connected

[6] For example, if the customer hires a certain software company to create or program a computer program for him, unless otherwise stipulated in the contract, all copyright property rights belong to the customer. However, if the executor of the work is a natural person as a developer, he retains copyright moral rights that are non-transferable and inalienable, and he can retain copyright property rights (both natural and legal person) only if he so agrees with the client (Hasić i dr. 2023, 299).

to the database that makes up the information system. Therefore, the author proposes, as a *de lege ferenda*, that the legislators in Bosnia and Herzegovina and Croatia, following the example of Serbia, introduce a legal presumption in favor of the employer and for copyrighted works on databases.

Finally, we will note that there is a legal presumption of the transfer of copyright property rights to the employer, the legislator in Croatia, where it is prescribed that such transfer is without content, time and space limitations, which is a solution that should certainly be considered as a good solution as a proposal *de lege ferenda* for legislators in Serbia and Bosnia and Herzegovina. What could still cause confusion is the statement that the wording in the ZASP RH (2021), "unless otherwise determined by the employment contract," in which case the question arises as to what happens to those situations when the employer hires workers outside of the employment relationship.[7]

NEW RIGHTS OF WORKERS AND A NEW WAY OF WORKING IN THE DIGITAL AGE

Positive legal regulations in the field of employment relations, which include classic work in an employment relationship (on the basis of an employment contract for an indefinite period of time, employment contract for a fixed period of time, trial work and on professional training and development for an internship) and work outside the employment relationship (contract on work outside the employment relationship, contract on temporary and occasional jobs and supplementary work) are facing a great challenge in how to regulate all forms of new worker rights and new ways of working brought about by the digital age, as the third industrial revolution in the form of digital transformations, as well as the fourth industrial revolution in terms of artificial intelligence.

The most significant novelty is that in all sectors where workers do their jobs via computers, i.e., laptops, where they provide essentially intellectual services as forms of work, with the development of information and communication technologies, work from home is more than represented, which has several modalities: 1) Home based work – "workers whose main place of work is their own home;" 2) Remote work

[7] For example, on the basis of a work contract, a contract on additional work, or a contract on temporary and occasional jobs.

– "remote work that includes all places that are not on the employer's premises, including employees' homes;" 3) Telework from home – "a modality of remote work that is carried out at the worker's home," with the specificity that the independent worker provides information and communication tools for work.[8] This represents a type of flexible work brought about by digital technologies, where work tasks can be regularly performed outside the employer's headquarters or outside the worker's home, supported above all by the Internet, i.e., information and communication technologies, in addition to establishing online access to the employer's computer systems (employer's server). *Cisco Webex, Skype, Google Meet*, and file-sharing sites such as *Google Drive, Google Docs, Dropbox,* and *Slack* are used as instruments for virtual collaboration.[9] In practice, especially in one of the fastest-growing industries, the IT industry, *remote work* is predominantly applied, i.e., work at a distance where the worker chooses from which place to perform work tasks, where the means for work are usually provided by the employer (in the sense of a laptop).

In Europe, new forms of work have been identified and published by the European Foundation for the Improvement of Living and Working Conditions as early as 2015 in the Study on New Forms of Work. The first one most often mentioned in the literature is *employee sharing,* the second is *job sharing*, the third is *voucher-based work*, then we have "mobile work based on information and communication technologies, interim management, casual work, portfolio work, collaborative employment and work on digital platforms" (Urdarević and Antić 2021, 158–161).

The first, *employee sharing*, refers to situations in which one worker is hired by two or more employers at the same time, but at most up to the worker's full time (Urdarević and Antić 2021, 159). When we analyze *the sharing of employees* as an institute, we can easily conclude that the very title of this work negates the basic postulates of the employment relationship, which implies a legal relationship between one employee and one employer. As far as the comparative legal analysis is concerned, certain legislations have followed the trend of new business and decided

[8] In the literature, the aforementioned is referred to as the concept of mixed work from home (Misailović 2025, 280–281).

[9] This type of work, in most cases, qualifies as remote work. What is important to note is that it is necessary to distinguish *remote work* from *work through platforms* (*platform work, crowd work*) (Kovačević 2024, 102).

to regulate *the sharing of employees* by labor law regulations. Others, on the other hand, decided not to regulate this institute with legislative amendments or new laws, but to leave it unregulated, and to bring it under some of the already regulated relationships that are established by contracts, such as part-time work, agency employment, or employment contracts using the existing instruments of employment flexibility with all the risks they bring. Viewed in a broader sense, and observing the practice that has developed in European countries, under *the sharing of employees*, as a form of work, it is understood that a labor contract is concluded between the worker and a group of employers, and the group of employers becomes the formal employer of the employee. Apart from this contract that is signed with the employee, the group of employers concludes another, separate contract, in which it more closely regulates the relations between the group of employers itself, such as specifying the payment of contributions by each employer within the group.

In the literature, there are examples of France, Germany, and Hungary that, in practice, recognize this type of contract, conceptually assimilating it with regular employment contracts. One of the employers is usually perceived as the main one and is identified as the representative of the "employer group" and thus takes responsibility for paying wages and respecting workers' rights. Here we can see similarities with the group of so-called bidders (a consortium and a representative of a group of bidders in terms of regulations governing public procurement). It is important to note that, for example, in Hungary, the employment contract explicitly mentions which of the employers will pay the employees' taxed wages, as well as a clear amount of the part of the wages paid to the joint employee by each of the employers. As regards social and health insurance obligations paid by employers forming a group, Hungarian legislation stipulates that employers inform the tax authority of the specific employer responsible for paying tax and social and health insurance obligations (Misailović 2025, 350–352).

The second modality is designated as *work sharing* and implies that one employer establishes a working relationship with two or more workers in order to work together on a specific job. In practice, this would mean that the employer has one systematized workplace, where a large number of part-time executors can work, while the workers themselves can be of different ages and skills (Urdarević and Antić 2021, 159). With this modality, it is obvious that it is a part-time employment relationship, the purpose of which is to ensure that work obligations can always

be fulfilled, and which is shared by two or more workers as a group formed by the employer. Workers who are employed by an employer are not able to arbitrarily constitute a group that would share a specific job, but it is necessary that such a work organization be determined by the employer. In some legal systems, workers who share the work have their own individual employment contracts, but the amount of salary and other monetary income, as well as the extent of individual rights, are realized on a pro rata basis, that is, according to the share of each worker in the performance of specific work obligations. Other countries regulate work sharing as a modality of work in which an employment contract details the relationship between the employer on the one hand, and on the other hand, the rights and obligations of the workers who share the work (Misailović 2025, 381). In contrast to the *sharing of employees, the sharing of work* is also in the positive legislation of the Republic of Serbia Labor Law (Zakon o radu Republike Srbije 2005), but also in the neighboring legal systems such as the Republic of Srpska (Zakon o radu Republike Srpske 2016). In Bosnia and Herzegovina it can easily be covered by fixed-term employment contracts for, say, 20 hours a month for two workers who would cover one job and who together have a full-time working time of 40 hours a month.

The third modality of new forms of work, which is somewhere between employment and self-employment, is *work based on vouchers*, where employment and earnings are based on a voucher instead of a classic employment contract. In other words, the employer pays for services with vouchers that he buys from an authorized organization that covers wages and social security contributions of workers. This modality of work has come to life on the labor market of many countries as a suitable tool for the cooperation of states and employers in order to support the employment of the population, especially in sectors characterized by a large number of workers who work "on the black market," low incomes, and low levels of qualifications required for performing work. It should be emphasized that this modality of work is the rarest form of employment that is present in Europe.[10]

[10] The reason for the low presence of this type of work in Europe can be found in the fact that the establishment of this type of work requires the establishment of a special policy, which is not the case with other new forms of work. Finally, we can point out that work voucher systems are present in the household and agriculture sector for the reason that employers most often hire workers without a legal basis in these sectors (Misailović 2025, 438–439).

In terms of new work patterns, that is, new ways of doing work, the European Foundation for the Improvement of Living and Working Styles includes the following work modalities: 1) mobile work based on information and communication technologies; 2) temporary management; 3) casual work; 4) portfolio work; 5) collaborative employment and 6) work on digital platforms. Work based on information and communication technologies represents a type of remote work that was discussed in the introduction of this chapter, but unlike it, the worker does not work in a specific location, but even more flexibly, in different places, or while on the road, so the team itself constitutes a type of mixed remote work (Urdarević and Antić 2021, 159). In terms of legal qualification, ICT workers, when working off-premises (from home or remotely), may find themselves in a position similar to that of on-call workers. However, one of the most represented and significant works through ICT is the legal qualification popularly called *a freelancer*. *Freelancers* usually offer their services to a number of employers simultaneously or successively, without a permanent work commitment. If the freelancer is a natural person, the legal basis of their engagement is usually a work contract, a copyright contract,[11] but it can also be a contract for additional work, that is, a contract for temporary and occasional jobs. In practice in the ICT industry, freelancers are most often registered as entrepreneurs, and then the classic form of self-employment occurs.

Temporary management (Interim) represents a special type of employment in which the employer temporarily hires an expert or a highly qualified worker in order to overcome a certain managerial or technical problem that has arisen in the working environment. If the need for such a worker is greater, it is not disputed that they can be hired on the basis of a fixed-term employment contract, but since it is often a matter of narrowly specialized experts, it is more often necessary to hire them on a temporary basis (Urdarević and Antić 2021, 159). It is important to note that contracts outside the employment relationship, such as a contract for work, a contract for temporary and occasional jobs, as well as a contract for supplementary work, can cover this type of work.

Casual work is a special form of employment in which the employer is not obliged to give the worker regular work and can call

[11] Freelancers are traditionally accessible among artists, writers, programmers, and they are determined by their entrepreneurial spirit and communication (Misailović 2025, 431–432).

him on request, that is, when he needs him. This group usually includes seasonal jobs or on-call work. This type of work can also be performed on the basis of a zero-hour contract, in which case the minimum working hours are not specified, but the worker works only when the employer calls them.[12] Although it is not directly regulated, this casual work could also be brought under either a work contract or a contract on temporary and occasional jobs as a form of work outside the employment relationship.

Portfolio work refers to a form of work where several employers use a self-employed individual or freelancer to perform minor business tasks for each employer individually. The self-employed enjoy freedom in choosing the time and place of work. This form of work is mostly used in creative activities and the media industry (jobs of journalists and translators). Then, *collaborative employment* refers to the effort of self-employed persons, as well as small and medium-sized companies, to work together in order to overcome the limitations they face in the market. Finally, we have *work on digital platforms* (*Platform work*), which is not a new form of employment, but a new form of organizing work, where instead of tasks being assigned to one worker, they are assigned to a large number of "virtual workers," that is, workers on the platform (Urdarević and Antić 2021, 159).

The new rights of workers and the new way of working in the digital age are characterized by new, more flexible ways of working and ways of employment, some of which are more favorable for the employer and some more favorable for the worker, which is influenced by the labor market. The current positive legislation in the field of labor relations, although it can bring some of these forms of work under the current framework, especially under contracts related to work outside the employment relationship, is still facing a big challenge because it is expected to regulate new types of work brought about by the digital economy, following the example of developed EU countries.

[12] In this case, the position of the worker is characterized by (legal) insecurity, bad economic situation, instability, and increased stress because he never knows when he will work and how much, which is why some countries have banned this work (Urdarević and Antić 2021, 160–161).

CONCLUSION

With the arrival of the fourth industrial revolution, (generative) artificial intelligence enters every pore of society and social processes, which presents a challenge for legal sciences and legislators to legally regulate the aforementioned activity. As artificial intelligence itself is most often developed by large companies, the application of artificial intelligence both by the employee and by the employer, and the legal protection of artificial intelligence in the employment relationship leaves many open questions in which labor law and intellectual property law are intertwined. To understand artificial intelligence, it is important to note that it owes its development to the third industrial revolution, which includes digitization characterized by computers, computer programs, or, in a broader sense, software, databases, computer networks, and information systems. Precisely sophisticated information systems represent (generative) artificial intelligence.

One of the most complex issues is how to regulate artificial intelligence in the workplace. The first proposal of the author of *de lege ferenda* is to expand the definition of computer programs in positive legal solutions to accompanying technical and user documentation in any form of their expression, including preparatory material, as well as design material where the ZASP RS (2019) is the closest to the definition of a computer program that would be equivalent to the technical term software. The second proposal of the author of the *de lege ferenda* is that the information system in the following amendments and additions to the ZASP RS (2019) is defined as one or more computer programs (software) together with a database in order to explain the completeness of this system and to show that there can be multiple copyrighted works on the computer program, database structures, as well as the special right of the database manufacturer. The third proposal *de lege ferenda* is in the ZASP RS (2019) to define the term artificial intelligence, especially from the aspect of intellectual property law and labor law, taking into account the new EU regulation (2024/1689) on determining the conformity of the rules on artificial intelligence. The fourth proposal *de lege ferenda* is that ZASP RS (2019) regulates the rights of authors of computer programs in a separate article in order to describe the specificity of these rights in the best possible way.

With regard to *the use of artificial intelligence by the employer*, it should be demarcated here to what extent the employer may use

artificial intelligence in order to monitor the productivity of workers, without thereby infringing the constitutional right of workers to work, the right to privacy, and, first of all, respecting the regulations governing the protection of personal data. Also, it is important to note that the employer would have the obligation to notify the workers in case they use certain software applications to monitor the work of the workers, and on the other hand, the use of these software applications would be well regulated by positive legal regulations so that they do not violate the privacy of the workers.

Finally, *new forms of work* brought about by the digital economy are represented in the EU, where some new rights of workers can be brought under our positive legislation that regulates labor law. However, some new rights, such as sharing of workers, when one worker is hired by one or more employers, negate the basic tenets of the employment relationship, which implies a legal relationship between one worker and one employer. Following the example of EU countries, Serbia is faced with the challenge of adapting its positive legislation in the field of labor relations to all new forms of work.

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ПРАВНА ЗАШТИТА РАДНИКА И ПОСЛОДАВЦА ПРИЛИКОМ ПРИМЕНЕ ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У РАДНОМ ОКРУЖЕЊУ***

Резиме

Примена вештачке интелигенције у радном окружењу од стране како радника, тако и послодавца представља садашњост у којој се остварају многа питања радног права, а која посредно утичу како на привредно право, тако и на право интелектуалне својине. У дигиталном добу, у којем се налазимо, радници остварују нова права и нове облике и начине рада који представљају изазов за радно законодавство, док послодавци могу да користе алате (генеративне) вештачке интелигенције приликом запошљавања и контроле радника где се отварају бројна питања из области етике, остваривања основних права радника и заштите података о личности. Отворено је питање правне заштите вештачке интелигенције развијене од стране радника у радном односу код послодавца. Полазећи од хипотезе да је рачунарски програм основа развоја вештачке интелигенције, аутори предлажу детаљније регулисање појмова софтвер, информациони систем, вештачка интелигенција и посебно регулисања развоја вештачке интелигенције у радном односу где се као lex specialis примењују прописи из области права интелектуалне својине, а све наведено у духу нове уредбе ЕУ 2024/1689 о утврђивању

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*** Овај рад је резултат истраживања у оквиру пројекта „Прилагођавање правног оквира друштвеним и технолошким променама са посебним фокусом на вештачку интелигенцију“ који је 2025. године спровео Институт за упоредно право уз финансијску подршку Министарства за науку, технолошки развој и иновације (број уговора 451-03-136/2025-03/200049).

усклађености правила о вештачкој интелигенцији. Први предлог аутора *de lege ferenda* јесте да се дефиниција рачунарских програма у позитивним правним решењима прошири на пратећу техничку и корисничку документацију у било ком облику њиховог изражавања, укључујући припремни материјал, као и дизајнерски материјал где је ЗАСП РС (2019) најближи дефиницији рачунарског програма која би била еквивалентна техничком термину софтвер. Други предлог аутора *de lege ferenda* је да се информациони систем у наредним изменама и допунама ЗАСП РС (2019) дефинише као један или више рачунарских програма (софтвера) заједно са базом података како би се објаснила потпуност овог система и показало да на рачунарском програму може бити више ауторских дела, структура базе података, као и посебно право произвођача базе података. Трећи предлог *de lege ferenda* је у ЗАСП РС (2019) да се дефинише појам вештачке интелигенције, посебно са аспекта права интелектуалне својине и радног права, посебно узимајући у обзир нову уредбу ЕУ (2024/1689) о утврђивању усаглашености правила о вештачкој интелигенцији. Четврти предлог *de lege ferenda* је да ЗАСП РС (2019) регулише права аутора рачунарских програма у посебном члану како би се на што детаљнији и јаснији начин (*lex certa*) описала специфичност ових права.

Кључне речи: радно право, право интелектуалне својине, радник послодавац, вештачка интелигенција, нове врсте рада

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HOW TO RESPOND TO THE CHALLENGES OF ARTIFICIAL INTELLIGENCE: A COMPARATIVE ANALYSIS OF REGULATORY APPROACHES OF THE EUROPEAN UNION, CHINA, AND THE UNITED STATES***

Abstract

The rapid development and implementation of artificial intelligence technology in various spheres of social activity confronts legal systems with the challenges of defining the protection of fundamental rights, liability for damage, and managing an acceptable level of risk to stimulate innovation. In the era of digital transformation, technology has become a new arena in which the interests of great powers are weighed and the contours of future global power are shaped. The regulation of artificial intelligence reflects the value, (geo)political, and (geo)economic priorities of prominent actors in this domain. The subject of the paper is a comparative analysis of the regulatory approaches of the European Union, the People's Republic of China, and the United States of America.

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The paper employs a qualitative study of the content of relevant strategic and normative documents to interpret the fundamental principles that underpin the selected regulatory frameworks. The main differences between them are identified, which point to internal socio-economic priorities, but also similarities that reveal global ambitions. The focus is on institutional dynamics, legislation in force, and ethical guidelines to overcome general comparisons dominant in contemporary public discourse. It is necessary to critically examine the overly simplistic view that the European approach to artificial intelligence places the protection of fundamental rights at the center stage; the American approach is dominated by the private sector and market dynamics, with excessive commercialization; while the Chinese approach is characterized by strong state control and strategic planning, along with the development of controversial surveillance systems. The implications of the observed divergent interests for the future of the ethical application of ubiquitous artificial intelligence are discussed, as well as the possibilities for eventual reconciliation of differences in order to achieve international harmonization of rules. By analyzing the specificities, but also the contradictions, of AI governance in large jurisdictions, the authors offer a rounded judgment on the (in)compatibility of value-based regulation with the pragmatic need to achieve technological supremacy. This allows for a deeper understanding of the positioning of great powers and European states embodied in the supranational Union in the global technological architecture, as well as contributing to the discussion on contemporary social challenges brought about by the seemingly unstoppable development of advanced technologies.

Keywords: EU, China, USA, artificial intelligence, regulatory approach, EU AI Act, Executive Order on Artificial Intelligence, Next Generation Artificial Intelligence Development Plan, technological race

INTRODUCTION

Since the public release of an advanced artificial intelligence (AI) large language model, or colloquially a Chatbot, by the American company *OpenAI* in November 2022, the rapid pace of application development and improvement, their easy accessibility, and widespread

use have confronted policymakers with serious challenges in attempting to respond to the many issues that have emerged. By all accounts, the socio-economic transformation that ChatGPT has merely hinted at is already underway (Luknar 2025; Luknar 2024). The most powerful artificial intelligence models are now capable not only of processing and generating natural language but also of creating visual, audio, and video content, as well as computer code. The greatest hopes are placed in the potential revolutionary achievements in the field of medicine. For instance, Delphi-2M, an artificial intelligence model developed by British and German research teams that aims to predict more than 1,000 diseases, including Alzheimer's and cancer, by analyzing health data (trained on UK Biobank data and tested on Danish health records), has demonstrated promising predictive capabilities (*The Economist* 2025). The advanced performance of such systems has further fueled the ambitions of the world's leading research laboratories to focus their efforts on achieving what is referred to as "Artificial General Intelligence" – a model capable of performing a wide range of cognitive tasks at or above human capacity.

For America, artificial intelligence represents a new arena in which its global technological dominance is being contested. While both the previous and current administrations have used a range of assertive regulatory and policy instruments to impede Chinese technological breakthroughs and uphold U.S. competitive edge, China has, in turn, mobilized significant central authority and state resources in an effort to narrow the gap. Concurrently, Europe seeks to avoid being overshadowed by either of the two technological superpowers. It strives to develop its own approach, grounded in European specificities – that is, to position itself as an autonomous regulatory and technological pole. The regulation of AI thus reflects the value-based, (geo)political and (geo)economic priorities of the prominent actors in this domain. The subject of this paper is a comparative analysis of the regulatory approaches of the European Union (EU), the People's Republic of China, and the United States of America (USA), as the three leading global actors.[1]

[1] In the paper, the concept of regulation is understood in a broad sense, encompassing not only various forms of control but also the guidance of behavior and practice. Accordingly, the emphasis is placed not solely on regulation through formal and binding acts backed by state authority (regulation in the narrow sense), but also on international standards and so-called soft law instruments. These include principles (e.g., the OECD Principles on AI), recommendations, guidelines, as well as the

The first part analyses the distinct institutional and normative models of the examined actors. It explores the European approach, which emphasizes preventive regulation, strives for comprehensiveness in the function of protecting fundamental rights, but does not neglect the current momentum and disruptive changes in the international order; the American approach, characterized by sectoral and decentralized regulation and by a dominant role of the private sector in standards-setting; as well as the Beijing strategy that integrates a strong central government role into broader developmental and geopolitical plans and ambitions. The second part of the paper is dedicated to identifying and critically examining the legal and ethical challenges in the formulation of an appropriate governance model from a comparative and international perspective, with particular attention to pressing ethical dilemmas.

DIFFERENT APPROACHES TO THE REGULATION AND GOVERNANCE OF ARTIFICIAL INTELLIGENCE

The European approach[2]

The EU lacks a sufficient number of large companies (mature, consolidated, and profiled towards international markets) with the economic resources and talents necessary to rival the USA and China in the field of advanced technologies.[3] However, this has not prevented the EU from positioning itself as what is commonly referred

concept of industrial self-regulation, such as codes of ethics and codes of practice adopted by business entities. Although not legally binding, such instruments play a significant role in shaping policies and practices. This understanding brings the concept of regulation closer to that of governance. It should therefore be noted that the paper does not insist on a strict distinction between the regulatory and governance framework for AI technologies in the analyzed countries, or in the case of the supranational EU.

2 The title of the first subchapter is formulated as "The European Approach" rather than "The EU Approach," to emphasize that, in the field of AI, the EU acts as a single regulatory and political entity whose measures have a supranational character and apply uniformly across all member states.

3 Here we will mention two notable exceptions, although there are more. The French company Mistral AI has rapidly evolved into one of the leading start-ups in the field of generative artificial intelligence, attracting significant global public and investor attention and reaching the status of a European technology export brand. Likewise, the Dutch company ASML currently occupies a strategically irreplaceable position derived from its near-monopolistic status in the production of extreme ultraviolet lithography machines, without which the manufacture of the most advanced microchips is practically impossible.

to as a regulatory power in the digital sphere, which, through the implementation of norms and standards, seeks to shape global flows in desired directions. The effectiveness of this approach – that is, whether the reduced competitiveness and innovative potential of European economies is an unwanted consequence of a higher level of protection of European citizens – remains a subject of debate in European studies. Nevertheless, certain indicators relevant to this research should not be overlooked. Namely, it is undisputable that international companies take into account the stricter regulations that apply in the European market when planning their business operations. Economists refer to the phenomenon of standards and rules established in Brussels spreading beyond the borders of the European market as the "Brussels effect" (Bradford 2020), whereas many political scientists may prefer the term "normative power," which conveys an affirmative understanding of the Union's global actorship (Dabić 2025a, 248). In 2021 alone, the EU imposed 514 fines on companies that violated the provisions of the European General Data Protection Regulation (GDPR), worth more than one billion euros (precisely € 1.3 billion), with the largest fines issued to Amazon, Meta, and WhatsApp, respectively (Prenga 2024, 137). It is anticipated that, in the coming years, the implementation of the European Artificial Intelligence Act, through a combination of extraterritorial reach and financial sanctions, will yield similar benefits for the Union, at least in terms of projecting its influence as a regulatory power.

The EU, or more precisely, the European Commission acting on its behalf, has in recent years adopted a more centralized style of managing innovation and funding in the field of new and disruptive technologies at the supranational level. The arguments in favor of such a "top-down" approach rest on the high costs of research and innovation, the shortcomings of the European system of technological incentives in rationalizing efforts and achieving the expected economic impact, as well as the fragmentation of public and private research activities between member states and the EU (Milutinović 2024, 285).

The Union has developed a normatively grounded regulatory model, embodied in the Regulation laying down harmonized rules on artificial intelligence (hereinafter: the Regulation or AI Act), which entered into force in August last year. It represents the most ambitious attempt to manage AI undertaken anywhere in the world to date (Dabić 2025a, 257). Its objective is to improve the functioning of the internal market by establishing a uniform legal framework for the development,

placement on the market, and use of AI, in accordance with the values of the Union – that is, a high level of protection of health, safety, fundamental rights, and democracy. The Regulation is directly applicable in the Member States. However, it does not cover the use of artificial intelligence for military purposes, as this area falls within the competence of the Member States.

The main feature of the European model is its risk-based approach. Four levels of risk are established based on the potential impact on health, safety, and fundamental rights. AI systems and models are accordingly divided into four categories: prohibited (Regulation 2024/1689, Art. 5),[4] high-risk (for instance, those used in medical diagnostics or biometric identification systems for airport border control), limited-risk (including most generative AI applications such as the popular ChatGPT and most virtual assistants), and minimal-risk (e.g., AI in video games or applications that recommend products in e-commerce). Systems deemed to pose an unacceptable risk are prohibited altogether, while those classified as high risk are permitted only under strictly defined conditions and are subject to compliance requirements. Systems presenting a limited risk must meet transparency obligations, whereas those of minimal risk are merely encouraged to adhere to codes of practice. Violations of the provisions of the AI Act may result in high financial penalties of up to 7% of annual global turnover, or €35 million, whichever is higher (Regulation 2024/1689, Art. 99.3). This is the most stringent sanction, applying to the use of prohibited systems (Dabić 2025a, 256). A study conducted by the Applied AI Institute for Europe analyzed more than one hundred AI systems. The results showed that 18% were classified as high risk, 42% as minimal risk, while for the remaining 40%, it was not possible to determine whether they belonged to the high-risk category (Liebl and Klein 2023, 4). Only one system was found that could potentially meet the criteria to be banned (Liebl and Klein 2023, 4).

[4] These include: AI systems that use behavioral imitation, manipulation or exploitation of users' vulnerabilities in order to alter their behavior in a way that may cause physical or psychological harm; biometric facial categorization systems for the purpose of identifying persons based on sensitive characteristics such as race, religion, sexual orientation, or political beliefs; systems that perform so-called social scoring for use by public bodies to rank the behavior or personal characteristics of individuals in a way that may lead to discrimination or unfair treatment; and real-time remote biometric identification in public spaces when used for law enforcement purposes, except in very limited and clearly defined cases.

The European AI Act establishes a specific and complex multi-level governance system. National competent authorities will oversee the implementation of the rules at the national level, while the newly established European Artificial Intelligence Office will ensure coordination at the European level. The Office has already been established. As one of the first bodies worldwide to implement binding rules on AI, it is expected to become an international reference point (Cancela-Outeda 2024). Its position will also be strengthened through its connection with other new EU bodies entrusted with roles and tasks in the field of AI governance under the Regulation, to be specific: the European Artificial Intelligence Board, the Advisory Forum, and the Scientific Panel of independent experts. Through their composition, these bodies contribute to the integration of the socio-economic and technical dimensions in the decision-making process, while ensuring the representation of the relevant interests of industry, the scientific community, civil society, and other stakeholders (Dabić 2025b, 235).

The EU's activism in the field of artificial intelligence, embodied in its emerging role as a common regulator acting on behalf of the member states, serves as a catalyst for further centralization processes within the European legal and institutional system. Each new step towards institutional refinement or functional upgrading of the internal market inevitably contributes to the consolidation of supranational structures, a development often justified by officials as necessary to ensure the greater efficiency and effectiveness of European multi-level governance (Dabić 2024). Consequently, the space for autonomous policy-making within the European individual states is narrowing. With the rise of AI, this dynamic gains new momentum. The supranational Union not only becomes a pioneer of regulation but also introduces a comprehensive and binding legal framework based on a horizontal approach, insisting on universal applicability for all types of AI, irrespective of the industry or sector concerned (finance, health, transport, education, etc.). Regulation thereby becomes an instrument for reinforcing the institutional legitimacy of the European Commission and deepening integration. In this sense, the governance of AI within the European context constitutes not merely a technological regulatory effort – aimed at maximizing benefits and minimizing risks for European citizens – but also a means for strengthening supranational capacities, fostering a sense of European identity, and advancing the centralization of the legal order. At the same time, the issue of AI is increasingly coming to the forefront in light of

the Union's new geostrategic ambitions, both in terms of economic competitiveness and security – two interrelated elements that shape its evolving strategic approach (Stanković 2024, 132).

The United States Approach

At present, the US lacks comprehensive federal legislation or regulations governing the development and application of AI, as well as rules that would restrict or prohibit its use. Within the US legal system, executive orders constitute a key instrument in shaping policies, particularly during periods of political transition when a new administration takes office. They are perhaps the most important factor in understanding the US regulatory approach to AI. Their scope extends beyond the mere administrative guidance of federal agencies; rather, they serve as a key means of articulating the president's and the administration's broader vision regarding how development, application, and oversight of this advanced technology should be understood, evaluated, and directed. As the literature highlights, former President Biden's Executive Order "articulated a vision for ethical, safe, and trustworthy AI development" (Pernot-Leplay 2025, 268). It emphasized core values such as privacy protection, civil rights and liberties, and the need for greater transparency and accountability of developers, and required federal agencies to adopt guidelines for implementing responsible and trustworthy solutions (Pernot-Leplay 2025, 268). However, President Donald Trump revoked this order within days of his inauguration. He signed a new executive order announcing to the world that he intended to repeal all policies related to artificial intelligence that "act as barriers to American AI innovation" (Pernot-Leplay 2025, 268). This move by the new president sends a clear signal that the US does not intend to adopt strict or restrictive regulations that establish detailed rules or subject American technology giants to oversight in terms of risk control in the development and application of AI, or at least not during the current administration. Although executive orders in the American legal system carry the force of law, one of their defining characteristics is their susceptibility to amendment or repeal, especially after a change of administration in the White House. This, however, is not the case with regulations issued by federal agencies based on the authority derived from statutes enacted by Congress (Prenga 2024, 134).

The US maintains a decentralized AI framework, characterized by a combination of federal and state-level regulatory initiatives. Federal agencies oversee particular applications of AI, based on their mandate. For example, the Food and Drug Administration regulates medical devices, while the National Highway Traffic Safety Administration is responsible for autonomous vehicles. At the state level, Colorado became the first U.S. state to pass a comprehensive AI law, followed by Utah. In contrast, the case of California – a state traditionally at the forefront of technology regulation – illustrates the legislature's failure to adopt safety standards for AI models, not for high-risk systems as in the EU, but for high-cost ones. In 2024, the governor of California vetoed the proposed bill, endorsing the arguments advanced by the influential Silicon Valley technology sector and segments of the academic community that raised their voices against the draft, arguing that the proposed measures could stifle innovation (Pernot-Leplay 2025, 268).

Recent federal initiatives indicate a growing need for clearer regulatory guidance. In 2023, the National Institute of Standards and Technology released the AI Risk Management Framework, providing voluntary standards intended to assist organizations in identifying and mitigating risks associated with AI use. Likewise, the Blueprint for an AI Bill of Rights, issued under the previous administration, set out five guiding principles accompanied by recommended practices for the design, use, and implementation of automated systems. Principles such as fairness, privacy, and transparency are highlighted. However, its current status is unclear. Although the aforementioned Trump's executive order did not invalidate the principles set forth in the Bill, their future implementation and development under the Trump administration remain uncertain (White & Case 2025). While these initiatives indicate a growing awareness of the societal implications of the pervasive use of AI, the US regulatory landscape remains fragmented. Market participants continue to operate in an environment characterized by legal ambiguity, limited predictability, and insufficient certainty, as there is no central regulatory authority or universally applicable set of rules.

The regulatory model chosen by the US is commonly defined in the literature as a market-driven model. Main drawback of this model – often colloquially referred to as the "cowboy" approach – is that it relies primarily on practice rather than formal legal rules. At the same time, its principal advantage lies in its capacity to respond rapidly and effectively to the needs of the AI market (Ćeranić i Mišan 2025, 21). From an

economic perspective, regulatory flexibility encourages and stimulates innovation, attracting substantial investments, yet it also increases the risk of market concentration and the accumulation of systemic financial vulnerabilities.

In essence, the US seeks to project itself as a leading advocate of democracy and a promoter of free markets and technological innovation. However, our analysis shows that the US strategy for global leadership in the field of AI relies heavily on an offensive external approach (export bans on critical components, the imposition of tariffs, and a dismissive attitude towards regulatory initiatives originating from Brussels or multilateral fora), coupled with a consolidation of power within the executive branch, manifested in the growing concentration of authority in the White House, on the internal front.

China's Approach

China's strategic orientation in the field of AI was formally set out in the State Council's New Generation Artificial Intelligence Development Plan of 2017. The document is best known for declaring China's ambition to become an AI superpower by 2030. It outlines a set of ambitious geopolitical, fiscal, legal, and ethical objectives, alongside a phased roadmap for achieving the set goals in terms of governance of this advanced technology. By 2025, these early measures are expected to evolve into the initial adoption of laws and regulations, ethical norms, and policy systems, including the development of institutional capacity for safety assessment and oversight. By 2030, China is projected to have built a fully developed legal and regulatory framework, supported by mature ethical guidelines and established policy mechanisms.

Where does China stand now in terms of meeting the timelines mentioned above? While there is widespread public perception that the EU is the global pioneer in constructing a legislative framework for AI, it is in fact China that adopted the first binding regulations between 2021 and 2023. These early measures address data protection, algorithmic transparency, and generative AI systems, thereby laying the foundation for future binding nationwide regulation. In the process, China has introduced several new bureaucratic and technical instruments, including data publication obligations, model verification mechanisms, and technical performance standards. Arguably, the most significant among them is the algorithm registry – an online database in which

developers are required to enter data on how their algorithms are trained and implemented. This registry will allow Chinese regulators to acquire practical expertise and institutional know-how. Neither the EU nor the US currently possesses a comparable instrument. Various applications are possible for the aforementioned instruments, ranging from authoritarian online content control to democratic oversight of automated decision-making systems (Sheehan 2024).

Interestingly, some authors argue that – at least on paper – China may have the strictest regulatory requirements for advanced AI models (specifically large language models and generative AI) among the three jurisdictions examined (Chun, Schroeder de Witt, and Elkins 2024, 11). These rules include, among other things, mandatory model registration, data management obligations, and provisions for continuous compliance monitoring. The registration procedure, in particular, exemplifies the highly centralized nature of China's regulatory approach. Before being made publicly available, AI models must undergo a compliance check conducted by the Cyberspace Administration of China in coordination with other competent bodies. Once approved, they must be registered for public use (licensing procedure). In sensitive sectors such as healthcare, finance, and security, additional authorization from sectoral regulatory bodies is also required (Chun, Schroeder de Witt, and Elkins 2024, 12). On the other hand, researchers specializing in Chinese technology regulation point to distinctive features in the implementation phase. Thus, while the "national champions" (such as Baidu, Tencent, Alibaba, to name just a few) are expected to demonstrate full compliance with regulations due to their dominant market position and influence, "small giants" (small and medium-sized enterprises recognized as a significant source of innovation in the technology domain) are reportedly afforded greater informal flexibility. This regulatory leniency is intended to prevent overly rigid enforcement that could stifle their innovative potential (Zhang 2024).

The Cyberspace Administration of China has played a central role in shaping the country's regulatory framework to date. However, despite the appearance of centralized state control, the governance of AI in China has evolved through an iterative process involving a wide range of stakeholders, including mid-level bureaucrats, representatives of academia (notably Tsinghua University), major technological corporations, start-ups, and research centers (Sheehan 2024).

The content analysis of the ethical postulates of the Chinese approach highlights the concept of "harmony." Whereas the European value framework encompasses the protection of fundamental rights, transparency, accountability, and related principles, the Chinese framework introduces an important, yet insufficiently defined category that is absent from European ethical guidelines. For example, the "Governance Principles for the New Generation Artificial Intelligence" promote harmony between man and machine, reflecting the aspiration that technological development should contribute to the common good of humanity, while safeguarding social stability and respecting fundamental rights. Similarly, the "Beijing AI Principles" expand the notion of harmony to include cooperation across disciplines, sectors, organizations, and regions, with the aim of preventing a destructive arms race and affirming the idea of "optimized symbiosis" (Roberts *et al.* 2023, 87–88). That said, Chinese policy documents do not present harmony as a clearly defined legal, ethical, or operational standard; rather, as a philosophical ideal that serves to legitimize China's broader vision of the role of technology in society.

Considered as a whole, the Chinese approach to AI regulation is based on a system of innovation incentives directed at both public and private entities, while relying on *ad hoc* corrective measures to mitigate harmful consequences once they emerge (Roberts *et al.* 2023, 85). It shares certain similarities with both previously analysed models, yet there are also notable differences. Similar to the EU, China employs a centrally steered regulatory process. By contrast, whereas European legislation adopts a horizontal approach, applying generally across all sectors, Chinese legislation is presently vertical, i.e., sector-specific, resembling the US approach in this respect. Moreover, unlike the fragmented and, under the Trump administration, US approach, which is fragmented and, with Trump's coming to power, one could even say reactive rather than strategic, the Chinese approach is phased and gradual. Whether this trajectory will ultimately culminate in a comprehensive law, comparable to the EU AI Act, as proclaimed by the officials, remains to be seen.

Finally, it should be noted that, regarding the Chinese approach, "international commentary often falls into one of two traps: dismissing China's regulations as irrelevant or using them as a political prop. Analysts and policymakers in other countries often treat them as meaningless pieces of paper" (Sheehan 2024, 7). In other words, the point is made that the actual content and scope of Chinese regulations

are frequently overlooked. As a result, in scholarly discussions, they are often either lightly dismissed as insufficiently significant for the "Western" context, or instrumentalized for political purposes – that is, deployed as an argument in broader ideological or foreign policy antagonisms.

LEGAL AND ETHICAL CHALLENGES OF GOVERNING ARTIFICIAL INTELLIGENCE IN A COMPARATIVE AND INTERNATIONAL PERSPECTIVE

As shown in the previous section, when confronting the challenge of governing AI technology, states – or, in the case of the EU, a supranational union – face similar dilemmas, yet offer different responses. A targeted lexical analysis of the most relevant regulations in force in the EU, the USA, and China as of late 2024 offers additional insights.[5] As expected, it reveals differing strategic orientations and interests among the actors: the EU directs regulation towards preserving market stability and consumer protection; in the USA, the emphasis lies on preserving technological supremacy and safeguarding national security; whereas China approaches AI primarily as a vehicle for stimulating innovation and development under strong state leadership (Prenga 2024, 131–158).

Although European leaders emphasize the need for value-based regulation of AI, particularly the protection of fundamental rights and democratic principles, a critical examination of institutional dynamics, existing legislation, legislative proposals, and political discourse reveals that, in practice, the aim of enhancing technological capacity is increasingly taking precedence. The language of recent policy initiatives reflects an economic and competitive rationale, affirming leadership, development of strategic capacities, market power, and the importance of

[5] This is an analysis of three legislative documents (the European AI Act, Biden's Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, and the Interim Administrative Measures of the People's Republic of China on Generative Artificial Intelligence Services) with the application of natural language processing (NLP) techniques to obtain lexical and semantic information through statistical analysis. Two remarks should be made regarding the research: first, the aforementioned executive order, issued during the Biden administration, was revoked with the change of power in the White House; and second, its author highlights the circumstance of the unequal size of the analyzed language corpus, where the European regulation is far longer than the Chinese counterpart (EU 88,814 tokens, USA 22,081 tokens, China 1,901 tokens). For details, see: Prenga 2024, 139–142.

innovation. At the same time, statements by European statesmen and EU officials express growing concerns that excessive regulation could lead to further economic decline. By promoting its ambition and self-perception of a "global leadership in ethical AI," the Union not only engages in self-affirmation and reinforces supranational features within its internal governance structure, but also seeks to demonstrate to the international community that it is capable of reconciling a value-based approach with geopolitical realities and geoeconomic interests in advancing its own vision of the digital future (Dabić 2025a, 260).

Furthermore, while the EU and, to some extent, China have developed relatively stable governance frameworks, the political dynamics in the USA suggest an intensifying debate over the future direction of regulatory efforts. Given both the volatility and particular traits of the technology itself, the delayed regulatory response of the US may be interpreted as a strategic choice aimed at securing a competitive advantage over its main competitors. In this sense, U.S. regulatory authorities appear to be closely observing which solutions within European and Chinese legislation would prove effective, and which should be rejected as ineffective or counterproductive.

On the ethical level, similar core issues are identified across all approaches: how to determine the appropriate threshold of acceptable risk (both individual and collective), how to ensure transparency and explainability of algorithmic decisions,[6] how to prevent discrimination and bias in automated decision-making, and finally, from the perspective of regulators, arguably the most important question possible – how to define and delineate responsibility between technology creators (tech companies), users (citizens), and the state. The analysis shows that no universally acceptable solution exists. Present regulatory models fall along somewhere in a spectrum between two poles (ideal types): from the self-regulation of market actors to a fully developed normative-regulatory approach that protects (supra)national norms and principles. All of them ultimately strive to balance the incentives for innovation with an acceptable level of risk. A clear contrast emerges between the EU's top-down regulatory model, grounded in attempts to quantify and

[6] For example, the EU AI Act requires "explainability" for high-risk systems and models. However, implementing this requirement in practice can be technically and operationally challenging and imposes additional regulatory costs on businesses. This can discourage innovation among small and medium-sized enterprises, which are a key pillar of the European economy.

manage risks, and the US approach, which is largely market-driven and, with certain exceptions, can be said to align with the regulatory culture that prioritizes bottom-up initiatives. Positioned between these two models is the Chinese approach, which outwardly appears as a centralized regulatory system but, in practice, leaves considerable room for decentralized innovation, regional competition, and local-level economic development (Chun, Schroeder de Witt, and Elkins 2024, 3).

The observed differences in approach reflect the deeper institutional and normative structures of the analyzed regulatory and governance regimes. China proceeds from the primacy of domestic economic development, having created a stimulating environment for technological progress, where regulatory intervention typically occurs only subsequently, once risk or social harm has already materialized. Such a model enables scientific breakthroughs and the rapid adoption of new technologies in both the public and private sectors, but entails the risk of delayed responses to threats to individual rights, as well as to ethical, social, and security concerns. The EU, on the other hand, is guided by a preventive logic: establishing an extensive regulatory framework that incorporates ethical norms represents an attempt to create a safe and socially acceptable space for the development and application of AI systems and models. Although frequently criticized for discouraging innovation and imposing excessive bureaucratic requirements, this approach seeks to enhance the legitimacy of the European technological paradigm while ensuring the protection of fundamental rights and the integrity of the internal market. Support is provided to Member States and their companies for developing and deploying AI applications within predetermined legal and ethical parameters. It includes measures such as dedicated European funding instruments, isolated regulatory experimental environments ("regulatory sandboxes") at the Member States' level in which innovative solutions may be developed and tested under controlled conditions in the absence of a complete regulatory regime, exemptions and privileges for small and medium-sized enterprises, and so forth.

A practical example clearly illustrates the difference between these approaches. The EU tends to pursue a cautious course in the adoption of AI tools in medical diagnostics and treatment. Although healthcare is widely recognized as a field in which AI has the potential to generate far-reaching positive effects, its widespread application still carries significant risks to patient safety, privacy, and dignity. Accordingly,

its introduction is subject to strict oversight and control. Under the EU AI Act, systems and models used in healthcare are classified as high-risk. In practical terms, this means that manufacturers and service providers are required to conduct extensive testing, clinical evaluation, and certification procedures before placing such systems on the market. Unlike this, China is trying to encourage wider use of AI in healthcare as a means of addressing the shortage of medical professionals, especially in rural areas. In light of the previous discussion, a partial outlook on future EU-China relations can be discerned through the lens of AI, a domain where economic competitiveness, technological sovereignty, and security imperatives intersect (Stanković 2022, 52–54).

Overall, the approaches to AI innovation and regulation observed in the three major jurisdictions are expected to influence each other, the wider international community, and future regulatory trajectories more generally. The establishment of an effective international governance framework will be possible only through sustained dialogue, cooperation, and coordination between different approaches, while taking into account their respective socio-economic, political, and legal particularities. Only in this manner can AI technologies be directed toward serving general societal progress, while simultaneously minimizing risks to fundamental rights and humanistic values. Special attention should be devoted to a category of risks that remains unrecognized as such. These are the risks arising from geopolitical competition in the technological sphere, including a potential regulatory "race to the bottom" aimed at securing competitive advantages, externalities, and, more broadly, the unintended and undesirable consequences of an unrestrained race for innovation in dual-use technologies and artificial general intelligence. Contemporary geopolitical rivalries not only erode transnational cooperation but also divert attention from pressing challenges that require resolution on a global scale. Consequently, debates over the "best" governance model and the pursuit of national interests have overshadowed the most important question – the role and value of humans in a world increasingly shaped by AI – which has a universal character and significance, even in countries with different political systems (Cheng and Zeng 2023, 810). In other words, in the years to come, the primary focus of multilateral regulatory efforts should be concentrated on technological anthropocentrism and the ethics governing the human-AI relationship in terms of preserving and affirming human dignity, rather than on the currently dominant debates

over the inputted ideological values, or the censored content applied to chatbots and robots.

CONCLUSION

Viewed in the broadest sense, all the AI regulatory regimes analysed here share a common goal: to prevent the risks and misuse of this advanced technology without undermining the space for innovation.

From a scientific standpoint, when the Chinese approach to AI is predominantly analyzed through the lens of state control, censorship, and mass surveillance, other aspects, also worthy of attention, are often overlooked. It is important to underscore that China applies its own ethical norms – rooted in a collectivist value orientation, as opposed to the individualism characteristic of liberal democracies – such as the significant, albeit insufficiently developed, principle of harmony. Then, Chinese engineers contribute to the open-source community and help disseminate knowledge beyond national borders. Furthermore, the Chinese regulatory framework emphasizes corporate social responsibility, showing a greater willingness than the US to exert pressure on its "technological champions" in relation to ethical issues (e.g., consumer protection) that do not conflict with the views of the Communist Party. The overall conclusion is that, in both technological superpowers, ethical principles and the safety of citizens from risks are ultimately subordinated to geopolitical priorities. For the time being, the EU constitutes a third pole. However, given the current moment marked by a major global geopolitical and geoeconomic shift to which Europe is no exception, alongside American pressure to ease digital regulation in favor of its corporate interests, in addition to internal divisions that hinder consensus on a unified approach, it remains uncertain whether the EU will be able to maintain its current course.

Finally, it is essential for state actors to systematically monitor the dynamics of AI development in order to identify, in a timely manner, those areas in which breakthroughs or significant advances are likely. Such monitoring mitigates epistemological uncertainty and enables informed political decision-making regarding which development opportunities, but also challenges and risks, should be prioritized, and which shortcomings in national systems require intervention. This, in turn, provides the basis for thoughtful guidance of innovation flows and the shaping of regulatory and investment pathways that not only

support sustainable technological progress but also ensure that the global application of AI proceeds in accordance with ethical principles and the public interest.

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КАКО ОДГОВОРИТИ НА ИЗАЗОВЕ ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ: УПОРЕДНА АНАЛИЗА РЕГУЛАТОРНИХ ПРИСТУПА ЕВРОПСКЕ УНИЈЕ, КИНЕ И СЈЕДИЊЕНИХ АМЕРИЧКИХ ДРЖАВА***

Резиме

Брзи развој и имплементација технологије вештачке интелигенције у различитим сферама друштвеног деловања, суочава правне системе са изазовима дефинисања заштите основних права, одговорности за штету и управљања прихватљивим нивоом ризика не би ли се стимулисале иновације. У ери дигиталне трансформације, технологија је постала нова арена у којој се одмеравају интереси великих сила и обликују контуре будуће глобалне моћи. Регулација вештачке интелигенције одражава вредносне, (гео)политичке и (гео)економске приоритете истакнутих актера у овом домену. Предмет рада је компаративна анализа регулаторних приступа Европске уније, Народне Републике Кине и Сједињених Америчких Држава. У раду је примењена квалитативна анализа садржаја релевантних стратешких и нормативних докумената, ради интерпретације основних принципа који обликују издвојене регулаторне оквире. Идентификоване су главне разлике које постоје међу њима, које упућују на унутрашње социо-економске приоритете, али и сличности које откривају глобалне амбиције. Фокус је на институционалној динамици, законодавству на снази

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и етичким смерницама у циљу превазилажења начелних поређења присутних у савременом јавном дискурсу. Потребно је критички сагледати упрошћено виђење по коме у европском приступу вештачкој интелигенцији централно место заузима заштита основних права, у америчком приступу доминира приватни сектор и тржишна динамика, уз претерану комерцијализацију, док кинески приступ карактерише снажна државна контрола и стратешко планирање уз развој контроверзних система надзора. Разматрају се последице уочених дивергентних интереса по будућност етичке примене свеприсутне вештачке интелигенције, али и могућности за евентуално помирење разлика како би дошло до хармонизације правила на међународном плану. Кроз анализу специфичности, али и противречности управљања вештачком интелигенцијом у великим јурисдикцијама, ауторке нуде заокружени суд о (не) компатибилности вредносно утемељене регулације и прагматичне потребе за досезањем технолошке супрематије. Тиме се омогућава дубље разумевање позиционирања великих сила и европских држава оличених у наднационалној Унији у глобалној технолошкој архитектури, као и доприноси расправи о савременим друштвеним изазовима које доноси наизглед незаустављиви развој напредних технологија.

Кључне речи: ЕУ, Кина, САД, вештачка интелигенција, регулаторни приступ, Европска уредба (акт) о вештачкој интелигенцији, Извршна председничка уредба о вештачкој интелигенцији, План развоја вештачке интелигенције нове генерације, технолошка трка

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Српска политичка мисао
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ARTIFICIAL INTELLIGENCE AND ENVIRONMENT PROTECTION – LEGAL ASPECTS[***]

Abstract

Society is undergoing rapid transformation, posing significant challenges to legal systems worldwide. A central aspect of this transformation is the development of artificial intelligence (AI). At the same time, the right to a healthy environment, guaranteed by the constitution worldwide, is a fundamental human right and concerns all citizens, because everyone affects the state of the environment. The authors in this paper, after introducing the concept of artificial intelligence itself, first deal with the current normative state of the art in this area, both at the level of international public law and at the level of domestic legal orders. After that, the importance of environmental protection, the legal framework for its protection, and the norms regarding the use of artificial intelligence in environmental protection are presented, with an appropriate conclusion.

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Keywords: healthy environment, artificial intelligence, international public law, constitutional law, protection, legal framework

ON ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) is not a new phenomenon, because its notion stems back from the work of Alan Turing and John McCarthy in the mid-20th century (Jade Lovel 2024, 23). Artificial intelligence is increasingly affecting significant developments in various aspects of human lives (Kartskhiya and Makarenko 2019, 21; Stanić and Tintor 2024). As Quintavalla and Temperman (2023b, 569) claimed, almost all domains of human life are touched by the use of artificial intelligence in a very broad and serious manner. For example, medicine, law, the sports industry, and a range of other industries throughout the world are affected, and among them is also the area of environmental protection (Muller 2020, 3). At the same time, during that process, artificial intelligence is without doubt able to improve the capabilities of humans to do something better or to make better decisions during work and in everyday life as well (Al-Taj, Polok, and Ahmed Rana 2023, 94). We could say that it could be used to bring automation in the process of work and thinking of humans in order to achieve goals or to solve problems. Practically, it would be rather difficult or maybe impossible without artificial intelligence used to describe computerized abilities to solve problems and achieve goals, by learning and understanding very complex external data and imitating the way of thinking of humans (Rohit, Kennedy, and Corbett 2020, 6). Furthermore, it has three key advantages for humanity: firstly, it makes the automation, saving time in this manner; secondly, it unlocks hidden insights of data for humans, and thirdly, integrating thousands of data in order to solve even the most complex problems (Rohit, Kennedy, and Corbett 2020, 2).

Despite its expanding presence across numerous aspects of our lives, there is no extensively accepted definition of artificial intelligence (Reddy 2022, 1–44). As mentioned, John McCarthy and colleagues first coined the term “artificial intelligence” in 1956. They described it as follows: “An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves. [...] For the present purpose the artificial intelligence problem is taken to be that of making a

machine behave in ways that would be called intelligent if a human were so behaving" (Lee 2022, 6; Singh and Singh 2025, 169; Stanić and Tintor 2024). The Oxford Dictionary defines AI as "the theory and development of computer systems able to perform tasks normally requiring human intelligence" (Lee 2022, 1). Nicolau (2019, 64) stated that artificial intelligence is an independent digital system, which develops its own methodology when it comes to learning and understanding of collected data, even using its own communication independently of humans. As a result, the artificial intelligence functions as an autonomous decision maker, able to fulfill almost all tasks and to predict their outcomes (Nicolau 2019, 64).

We have a similar definition by some other authors (Muller 2020, 3), with the distinction that he emphasizes the fact that artificial intelligence is a system created by humans in order to serve them in achieving complex tasks. In other words, despite being controlled by humans, its capacities far exceed human capacities, even though humans must control it (Muller 2020, 3). OECD defines an artificial intelligence system as a machine-based system that is designed to operate with varying levels of autonomy and that can, for explicit or implicit objectives, generate output such as predictions, recommendations, or decisions influencing a physical or virtual environment (Krivokapić and Nikolić 2022, 95; Stanić and Tintor 2024).

Artificial intelligence (AI) can be broadly classified into two categories. The first is narrow AI that is designed to carry out specific tasks or functions. The second is general AI that is capable of performing any intellectual task that a human can do. General AI is still a hypothetical, whereas narrow AI is already a reality, and it is used in various areas of human life (Singh and Singh 2025, 170). The transition from narrow AI to artificial general intelligence (AGI), also known as strong AI, is a significant leap, which includes questions of responsibility, liability, and the potential need for new legal categories and structures (Jade Lovel 2024, 24; Stanić and Tintor 2024).

REGULATION OF ARTIFICIAL INTELLIGENCE IN THE INTERNATIONAL PUBLIC LAW

The impact of artificial intelligence on society is both useful and dangerous. That is the reason why mankind has to react in order to establish a proper legal framework regarding AI. As some authors say,

the legal regulation of AI requires the hard work of legal systems both at the global and regional levels (Martsenko 2022, 317). It goes without saying that international public law faces numerous challenges when it comes to artificial intelligence. It is a new matter, a relatively unknown though, which needs to be regulated appropriately in order to achieve the greatest possible degree of legal certainty (Lane 2022, 918, 927; Stanić and Tintor 2024). Within international fora, pioneering benchmarking has gradually commenced in the form of guidelines and recommendations at both international and regional levels (Quintavalla and Temperman 2023a, 4). Before that, discussions related to the impact of AI on human rights have been present in global forums for many years. In 2021, the UN Commissioner for Human Rights said countries should expressly ban AI applications that do not comply with international human rights law (Al-Taj, Polok, and Ahmed Rana 2023, 97; Stanić and Tintor 2024).

Bakiner (2023, 4) emphasises the fact that, regardless of the necessity to create an appropriate legal framework, perhaps as expected, there have been no legally binding agreements within public international law for a long time, but only a series of non-binding acts, such as recommendations and resolutions. The United Nations system offers a broad range of applicable, if vaguely defined, rights that can be interpreted as AI-relevant (Bakiner 2023, 4; Stanić and Tintor 2024). The International Covenant on Civil and Political Rights comes closest to an international treaty capable of anticipating some of the concerns around today's new and emerging technologies, AI included (Bakiner 2023, 4). UN Educational, Scientific and Cultural Organization (UNESCO) appointed a group of 24 experts to draft a Recommendation on the Ethics of Artificial Intelligence, in order to produce "an ethical guiding compass and a global normative bedrock allowing to build a strong respect for the rule of law in the digital world" (Lane 2022, 930). After receiving input from various stakeholders on earlier drafts, the final text of the Recommendation was adopted in November 2021 (Lane 2022, 930; Stanić and Tintor 2024).

At the regional level, the European Union (EU) is a leader in making an adequate legal framework regarding artificial intelligence. Therefore, in Resolution 2015/2103 (INL) of the European Parliament, which is not a legally imperative act, it is underlined that at this level of technology development, artificial intelligence should be recognized as an equal subject (Martsenko 2022, 322). As a matter of fact, at the level of the European Union, the Ethics Guidelines for Trustworthy Artificial

Intelligence were adopted. The High-Level Expert Group on Artificial Intelligence, which was established by the European Commission, was in charge of accomplishing this job. The mentioned Act set out seven requirements for trustworthy artificial intelligence (Roumate 2021, 6; Lane 2022, 932; Gerke, Minssen, and Cohen 2020, 299; Stanić and Tintor 2024). Respectively, a very important step was taken in April 2021 when the European Commission published the draft Artificial Intelligence Act. As in life, this act relies on the previously mentioned legal acts and certainly represents a very important step in the adequate legal regulation of this area. (Roumate 2021, 6; Lane 2022, 932; Bakiner 2023, 4). The aim is clear: to prepare the states of Europe for every possible impact of artificial intelligence to come, while ensuring a proper ethical and legal framework. Within the framework of the Council of Europe, the Protocol amending the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data is very important. Although this act is not solely or merely dedicated to artificial intelligence, like the famous GDPR, to some extent, it will have an influence on the regulation of artificial intelligence (Roumate 2021, 6; Lane 2022, 932; Bakiner 2023, 4). The Protocol takes the approach typical of the Council of Europe in placing positive obligations on State Parties, which include the obligation to ensure the protection of individuals from violations by the private sector (Lane 2022, 935; Stanić and Tintor 2024).

Most recently, on March 13, 2024, the European Union (EU) passed the AI Act – the world's first set of basic rules for artificial intelligence management. The Act takes a risk-based approach, meaning that the higher the risk, the more strictly it will be managed, depending on the risk that AI poses to society (Linh Chi, Minh Hang, and Viet Vuong 2025, 126). Recently, the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law was adopted on 17 May 2024 by the Committee of Ministers of the Council of Europe at its 133rd Session held in Strasbourg, and will be opened for signature on the occasion of the Conference of Ministers of Justice in Vilnius on 5 September 2024 (Council of Europe 2024).

LEGAL RESPONSES OF STATES TO ARTIFICIAL INTELLIGENCE

As some authors say, new technologies have always challenged, if not disrupted, the social, economic, legal, and, to a certain extent, ideological status quo. Such transformations impact constitutional values, as the state formulates its legal response to new technologies based on constitutional principles that meet market dynamics, and as it considers its own use of technologies in light of the limitations imposed by constitutional safeguards. The same authors state that the nature of the constitution as a legal act is such that its basic function is the organization and limitation of state power (Pollicino and De Gregorio 2021, 5). In this context, the issue of the limitation of state power is much more important because, in the era of technological progress, certain classical concepts of constitutional law are fundamentally changing. In what sense are the aforementioned concepts changing? Namely, in the era of the digital world, the threat to the adequate functioning of the state apparatus, and especially to human rights, does not come only from state power, but from developed technologies. Therefore, the task of the state, and of theory, is to reexamine certain traditional concepts. In order to chart the right path, modern technologies, including artificial intelligence, should be brought under control (Pollicino and De Gregorio 2021, 6; Stanić and Tintor 2024). In that interim period, it should be emphasized that an extremely important and active role can be expected from the courts, especially the constitutional courts, which should set clear boundaries.

The European Commission encouraged all EU Member States to develop a national AI strategy, and several states have already released one, such as the United Kingdom (UK) and Germany (Gerke, Minssen, and Cohen 2020, 299). A number of countries have now adopted national strategies concerning AI, and some of these have adopted legislation. However, some instruments include more general references to the protection of human rights, such as in Australia, New Zealand, and Germany, which also contain standards that can have an impact on the protection of human rights without being framed as such (Tzimas 2020, 549; Lane 2022, 940; Stanić and Tintor 2024). Other states, such as the United States, China, and the United Kingdom, are also working on regulatory frameworks, though without having produced coherent legal frameworks so far. Private institutions have contributed to the gradual formation of more decentralized regulatory schemes, although

they cannot be substitutes for fully elaborated legal schemes (Tzimas 2020, 549; Lane 2022, 940; Stanić and Tintor 2024). Other legislative initiatives have been taken at the subnational level, such as legislation adopted in Washington State in the US regarding governmental use of facial recognition and a bill concerning discrimination and the use of automated decision-making (Tzimas 2020, 549; Lane 2022, 940; Stanić and Tintor 2024). Overall, many countries are making strides in the introduction of legislation or regulation concerning AI, including through the adoption of national AI strategies, and non-binding national measures sometimes reference the broad range of human rights found at the international level. Nonetheless, there are some positive contributions that enhance legal certainty for both states and businesses in the national initiatives (Tzimas 2020, 549; Lane 2022, 940; Stanić and Tintor 2024).

In Serbia, the importance of artificial intelligence is recognized at the state level. In this sense, significant steps are being taken in order to keep pace with world and European trends. The Working Group for Drafting the Artificial Intelligence Law of the Republic of Serbia was formed. The formation of the Working Group marks the beginning of a significant process in drafting the Artificial Intelligence Law. The Working Group comprises representatives from various government bodies, the scientific and professional community, law firms, and business entities involved in the field of artificial intelligence. The participation of a large number of experts from diverse fields aims to ensure a comprehensive view of all aspects of AI regulation (National AI Platform 2024; Stanić and Tintor 2024).

GENERALLY ON LEGAL ENVIRONMENTAL PROTECTION

Undoubtedly, health as a value is inviolable and priceless. Certainly, there is no health without a healthy environment, which is a prerequisite for its existence and maintenance, both for each individual and for society as a whole (Galić and Stanić, 2025). Environmental protection, "due to its threat and damage caused by cross-border action and consequences that are felt at the global level, is the subject of many normative acts of international organizations, including the most important ones, such as the United Nations (UN) and the Council of Europe, and numerous declarations, protocols, guidelines, conventions, directives, regulations and other acts, make it a factual fact that almost

1/3 (one third) of all regulations of the European Union (EU) refer to the regulation of relations related to the environment" (Tintor 2022, 313–332). Although not explicitly stated in the European Convention for the Protection of Human Rights and Fundamental Freedoms, the right to a healthy environment is considered a third-generation human right. In the final Declaration of the United Nations conference on the human environment, which was held in Stockholm in 1972, it was mentioned for the first time that basic human rights are freedom, equality, and adequate living conditions in the environment, the quality of which enables the dignity and well-being of humans (Matić Bošković and Kostić 2023, 77–78). Also, article 37 of the European Charter on Human Rights provides that a high level of environmental protection and environmental improvement must be part of the Union's policies, as well as that it must be ensured in accordance with the principle of sustainable development (Matić Bošković and Kostić 2023, 77–78). Although the aforementioned Charter contains a special provision on the environment, according to the views of some authors, it is formulated in such a way that it cannot be interpreted as a guarantor of the right to a healthy environment, because it only defines the general goals and obligations of competent entities (Matić Bošković and Kostić 2023, 77–78).

From a constitutional point of view, in comparative law, environmental protection is one of the more recent substantive elements of constitutional texts (Mikić 2012, 212; Mikić 2022). With the exception of Denmark, Ireland, Iceland, and Monaco, environmental protection is a constitutional matter in all European countries. Constitutions prescribe the role of the state and its obligations in terms of environmental protection, as well as the obligations that all have regarding it. They recognized the right of citizens to a healthy environment and to be informed about its condition. The constitutions also established the division of competences in this area between different bodies of public authority. This constitutional category (or some of its constituent elements) was introduced into constitutions most often through amendments, bearing in mind that it is a newer materia constitutionis (Mikić 2022, 207; Galić and Stanić, 2025).

In accordance with these trends, the right to a healthy environment is protected by the Constitution of the Republic of Serbia from 2006 (Galić and Stanić, 2025). Like most modern constitutions, this Constitution deals with human rights and freedoms in a special part, and the environment is the subject of several articles of the constitutional text.

Article 74 of the Constitution (Constitution of the Republic of Serbia, art. 74) prescribes that "everyone has the right to a healthy environment and to timely and complete information about its condition." Paragraph 2 of the same article (Constitution of the Republic of Serbia, art. 74 par. 2) stipulates that "everyone, especially the Republic of Serbia and the autonomous provinces, is responsible for environmental protection." About the importance of constitutional protection of the environment, two more articles of the Constitution can be used, from which it can be concluded that the environment, as a protective object, occupies a special and important place, and in such a way that other rights that are also guaranteed by the Constitution can be limited in order to protect the environment. Thus, the freedom of entrepreneurship is also guaranteed by the Constitution by its article 83 (Constitution of the Republic of Serbia, art. 83) and represents one of the important achievements of economic freedoms and rights, but the Constitution prescribes that it "can be limited by law, for the sake of protecting health, the environment and natural resources, and for the sake of the security of the Republic of Serbia."

Also, although the Constitution provides and guarantees by its article 88 (Constitution of the Republic of Serbia, art. 88) that "the use and disposal of agricultural land, forest land and urban construction land in private ownership is free," already in the second paragraph of the same article (Constitution of the Republic of Serbia, art. 88 par. 2), it leaves the possibility to limit this right in the case "to eliminate the danger of causing damage to the environment." From the mentioned constitutional provisions, the will of the constitution maker to provide special protection to the constitutional right to a healthy environment is clearly expressed. This constitutional right is closely related to the constitutional right to health care, which is proclaimed by Article 68 paragraph 1 (Constitution of the Republic of Serbia, art. 68 par. 1), and states that "everyone has the right to the protection of their physical and mental health." For example, currently, the issue of a doctor's obligation to inform a patient about the state of the environment from the perspective of medical ethics is such that it is not addressed by positive legal regulations. However, in the future, such an obligation may be established, given the importance of the matter. In this, also in the constitutional and legal sense, we can expect an increasing role in the future of the European Court of Human Rights in Strasbourg, which was established with the idea of ensuring the highest possible degree of compliance with the obligations from the

European Convention on Human Rights and Fundamental Freedoms (Kostić 2023).

HEALTHY ENVIRONMENT AND ARTIFICIAL INTELLIGENCE – LEGAL FRAMEWORK

A strong consensus exists in the international community on how artificial intelligence can be of such importance for all environmental issues. It is already mentioned and we should be aware at the same time that the unstoppable development of artificial intelligence creates not only benefits, but also legal challenges for environmental protection (Singh and Singh 2025, 165). In other words, it is certain that by using all the innovations, which are by hand, it could only be useful in order to protect the environment in a proper way, but we should be cautious, because all these tools and AI also have the potential to complicate all challenges (171). Allowing artificial intelligence to work on its own without any control by humans is nothing but unaccountable and could soon put the whole planet in front of serious problems in the protection of the environment (Linh Chi, Minh Hang, and Viet Vuong 2025, 125). There is no doubt that the scientific community must cope with all these challenges (Pachot and Patissier 2022, 6). Therefore, we should look at artificial intelligence in environmental protection, nothing more, as a new challenge that has a multiplier effect (Kartskhiya and Makarenko 2019, 20).

That is the reason why it is necessary to take well-considered and coordinated measures. In the legal science, there is now no classification of the main areas of the digitalization of environmental protection (Anisimov and Ryzhenkov 2021, 112). However, it is completely logical that law is necessary as a means of defense against the negative effects of artificial intelligence, but also as a means to enable its further development for the benefit of humanity as a whole. Of course, the keyword in this kind of action is balance. On the one hand, the development of cutting-edge technologies must be enabled, because it is definitely a necessity. On the other hand, this first goal cannot be at the expense of the imperative of environmental protection. (Linh Chi, Minh Hang, and Viet Vuong 2025, 125). Further, in practice, the law will enable interested parties to clearly understand their rights and obligations when it comes to the application of artificial intelligence and the measures that need to be taken to prevent environmental damage. In this way, artificial intelligence will serve to

protect the environment, but a healthy environment will also be the basis for the further development of artificial intelligence (Linh Chi, Minh Hang, and Viet Vuong 2025, 125). For this reason, the law eliminates or reduces harmful consequences, and contributes to and protects not only the right to a healthy environment, but the entire spectrum of human rights (Linh Chi, Minh Hang, and Viet Vuong 2025, 125).

When looking at the concrete steps that have been taken, we need to be aware of several facts. First, the legal regulation of artificial intelligence is still in its infancy. Understandably, this also applies to the regulation of artificial intelligence in various areas of social life. However, given the importance and necessity of environmental protection and the importance of artificial intelligence in this regard, it was clear that legal challenges had to provide a quick response. In this sense, the first steps have been taken at the European Union level. The European Commission's High-Level Expert Group on Artificial Intelligence – which was created by the European Commission in 2018 and is also the steering group for the European AI Alliance – made the Ethics Guidelines in April 2019, which contain seven key requirements that Artificial Intelligence has to fulfill in order to be trustworthy. Two of them are very important for our topic. Namely, artificial intelligence must in any case meet the condition of environmental and societal well-being, and accountability (Gerke, Minssen, and Cohen 2020, 299). Basically, these are principles that are actually the prism through which it will be observed whether artificial intelligence meets the goals set for it in environmental protection.

More concretely, the aforementioned acts of the European Union are the beginning of the process of forming an adequate legal framework in order to control the misuse of artificial intelligence, especially in terms of environmental protection. Above all, laws governing the control of the negative impacts of AI must include provisions to prevent such effects. Legal provisions must address the control of environmental pollution caused by AI. The goal of pollution control regulations is to protect human health and biodiversity (Linh Chi, Minh Hang, and Viet Vuong 2025, 126). Legal frameworks addressing the protection of natural resources have a few elements. These are: principles of natural resource protection, pollution control, and defining the field of responsibility to relevant subjects with necessary penalties in case of breaching the norms. We have to say that "the establishment of such legal provisions is essential to mitigate the environmental consequences of AI operations

and ensure the sustainable use of natural resources" (Linh Chi, Minh Hang, and Viet Vuong 2025, 126). Understandably, it is possible that at first glance, such normative activity seems insufficient. However, it seems to us that this is only at first glance. Namely, it is clear that the European Union, as a powerful international organization, provides a clear direction for action in this area. Practically, it is a matter of time before the legal regulation of the use of artificial intelligence in environmental protection will be extended specifically to the member states themselves. We have seen that, in general, the subject of legal regulation of artificial intelligence is slowly making its way into the legal systems of individual states. It is clear that law must always follow the dynamics of social relations. Therefore, it is only a matter of time in the near future when a whole set of legal norms regulating this legal area within domestic legal systems will be quite common, especially when we have environmental protection in mind.

CONCLUSION

On one hand, when we talk about the legal steps, one must consider that the enactment takes many years. This is alarming considering the fact that over the course of a decade, two entire technological generations can pass. As a matter of fact, the pace of regulatory change is too slow to keep up with that of technology (Cataleta 2021, 9). Therefore, the transformation of the law should not be delayed any further (Lee 2022, 261). More concretely, artificial intelligence bears huge potential for mankind, but at the same time poses a lot of risks to environmental sustainability. First of all, legal provisions must address the control of environmental pollution caused by artificial intelligence, in order to achieve the goal of pollution control regulations, which is to protect the good quality of the environment. It is evident that operating AI models contributes to changes in environmental components, and without legal provisions to control pollution resulting from AI, irreversible environmental degradation may occur (Linh Chi, Minh Hang, and Viet Vuong 2025, 126).

As a matter of fact, at the operational level, especially when we talk about advanced models, we should keep in mind that these models require a lot of technological infrastructure, because these devices rely on critical raw materials. It is logical and expected that the operation of that kind of model can result in significant negative impacts on

the environment and severely deplete natural resources, particularly nonrenewable ones (Linh Chi, Minh Hang, and Viet Vuong 2025, 126). Legal frameworks dealing with the protection of the environment include a few, but very important principles: protection and management, planning and regulation, conservation of biodiversity and exploitation of resources, responsibilities of the subjects, and penalties for breaching the legal norms. The establishment of such legal provisions is necessary to mitigate the environmental consequences of artificial intelligence and ensure the sustainable use of natural resources (Linh Chi, Minh Hang, and Viet Vuong 2025, 126).

Moreover, artificial intelligence is not able to operate without humans, who establish, improve, and apply it; it cannot function without human-led research, development, and application. Bearing that in mind, legal norms must underline the responsibility of all who use artificial intelligence in order to ensure that organizations comply with technical and environmental standards with the sole goal of achieving sustainable environmental development (Linh Chi, Minh Hang, and Viet Vuong 2025, 126).

We should not be so frightened by the technology, and we should look at it as an opportunity. Of course, at the same time, we should keep in mind the pros and cons of modern technologies and be aware that it is not a one-step journey. On the contrary, we will have a lot of challenges in front of us. Two key words are adaptation and cooperation. Legal systems should be able to adapt as soon as possible, with awareness that they should act in such a manner continuously. Also, legal systems of all levels should steadily cooperate. In the end, everything has to be with one purpose, the well-being of humanity, of our planet. Artificial intelligence and a proper legal framework are parts of one chain, which should lead us to a healthy environment. Exactly that should be the leading principle when we think about legal aspects of artificial intelligence and environmental protection. In the end, the authors have one message. Namely, artificial intelligence should be viewed like any other intelligence. It can have different properties, some useful, but also some destructive. The fact is that human intelligence created it and must always control it. Otherwise, we will expose ourselves to a whole series of unforeseen scenarios in the future. In this sense, creating an adequate legal framework proves to be a necessity, not only for the sake of protecting the environment, but also humanity as a whole. We have to be aware that this is a gradual process, within which a compromise

needs to be reached. On the one hand, we must not hesitate, while on the other hand, we must not rush too much. Of course, the current legal framework, or rather its principles, must serve as a basis for the further development of appropriate legal regulations.

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ВЕШТАЧКА ИНТЕЛИГЕНЦИЈА И ЗАШТИТА ЖИВОТНЕ СРЕДИНЕ – ПРАВНИ АСПЕКТИ***

Резиме

Сведоци смо да се друштвени односи изузетно брзо мењају у последњих неколико деценија, што поставља бројне изазове пред правне системе. Један од тих аспеката је развој вештачке интелигенције. Аутори у овом раду, након представљања самог концепта вештачке интелигенције, баве се, најпре, тренутним нормативним стањем у овој области, како на нивоу међународног јавног права, тако и на нивоу домаћих правних поредака. Јасно је, а имајући у виду релативно скорију појаву вештачке интелигенције, да је досадашњи нормативни оквир недовољно развијен. Стога, задатак је како науке тако и праксе да открију одговарајућа решења на основу којих би требало да буде саздан. Истовремено, право на здраву животну средину, загарантовано уставима широм света, основно је људско право и тиче се свих грађана. У складу са тим, представља се значај заштите животне средине, те правни оквир за њену заштиту. Свакако, незаустављиви развој вештачке интелигенције и њена примена у заштити животне средине пружа бројне изазове пред бројне научне области које се баве заштитом животне средине, па и пред право. Аутори констатују да су вештачка интелигенција и одговарајући правни оквир делови једног „ланца", који би требало да нас доведе до здраве животне средине. Управо

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*** Овај рад је настао као резултат истраживања у оквиру пројекта „Прилагођавање правног оквира друштвеним и технолошким променама са посебним освртом на регулисање вештачке интелигенције" који у 2025. години спроводи Институт за упоредно право уз финансијску подршку Министарства науке, технолошког развоја и иновација (евиденциони број: 451-03-136/2025-03/200049 од 4. 2. 2025).

би то требало да буде водећи принцип када размишљамо о правним аспектима вештачке интелигенције и заштите животне средине. На крају, аутори имају једну поруку. Наиме, вештачку интелигенцију би требало да посматрамо као и сваку другу интелигенцију. Она може имати различита својства, нека корисна, али и нека деструктивна. Чињеница је да ју је створила људска интелигенција и да увек људска интелигенција мора да је контролише. У супротном, изложићемо се читавом низу непредвиђених сценарија у будућности. Стога, стварање адекватног правног оквира показује се као неопходност, не само због заштите животне средине, већ и човечанства у целини.

Кључне речи: здрава животна средина, вештачка интелигенција, међународно јавно право, уставно право, заштита, правни оквир

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THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN HEALTHCARE: DIAGNOSTIC POTENTIAL, LEGAL FRAMEWORK AND ETHICAL CHALLENGES***

Abstract

Artificial intelligence (AI) has assumed an increasingly significant role in contemporary society, particularly within the healthcare sector. While the medical community was initially hesitant to embrace advanced technologies, recent years have witnessed a rapid expansion in the integration of AI into clinical practice. This development has the potential to fundamentally reshape the ways in which diseases are diagnosed, treated, and predicted. Given that the fight against malignant diseases constitutes one of the European Union's central health policy priorities, as articulated in the strategic document *Europe's Beating Cancer Plan*,

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this paper explores the potential of AI to advance the objectives of that agenda, with particular emphasis on enhancing screening programmes and fostering the development of personalised therapeutic approaches. The paper is organised into three thematic sections. The first section adopts an empirical approach to investigate the potential of AI in a clinical context, with a particular focus on improving diagnostic accuracy and advancing predictive analytics. The second section employs a comparative legal methodology to analyse the regulatory frameworks governing the application of AI in the healthcare systems of the Republic of Serbia and the Republic of North Macedonia. The third section addresses key ethical challenges, including the protection of patient privacy, the mitigation of algorithmic bias, and the safeguarding of informed consent in a technology-mediated medical environment. The methodological framework of this paper is primarily grounded in qualitative analysis, encompassing both legal instruments and relevant professional and academic literature, while incorporating quantitative evidence to the extent that it is available through existing medical research.

Keywords: artificial intelligence, screening program, personalized treatment, patient informed consent, patient data protection

INTRODUCTION

The term *Artificial Intelligence* (AI) was first introduced by John McCarthy at a conference held at Dartmouth College in 1956 (Prlja, Gasmi, i Korać 2021, 58). On that occasion, McCarthy defined artificial intelligence as the capacity of a computer to perform specific tasks and objectives through various learning and programming mechanisms (McCarthy 2007, 1176–1177). In other words, artificial intelligence denotes the advancement of technology to a level at which it can independently carry out certain functions traditionally associated with human intelligence (Sovilj i Stojković-Zlatanović 2023, 225; Stjepanović 2024, 186). AI thus seeks to replicate human cognitive processes in order to address complex problems. Within decision-making, it engages in data processing tasks that closely resemble those employed by human cognition (Scherer 2016, 359–362). Processes such as logical reasoning, problem-solving, learning from prior experience, and even natural

language interpretation form part of the algorithmic framework that underpins AI-based decision-making (Andonović 2020, 113).

From its inception to the present day, artificial intelligence has evolved at an extraordinary pace, becoming an integral component of numerous domains of contemporary society. Among these, medicine represents a field in which AI has exerted a particularly profound influence. While the integration of AI into healthcare systems promises significant advantages, enhancing efficiency, diagnostic precision, and the delivery of personalised treatment, it simultaneously generates complex legal and ethical challenges. As Wohlthat (2020, 20) observes, AI may affect healthcare in four principal areas: diagnostics, the automation of medical tasks (including robot-assisted procedures), therapeutic decision-making, and biopharmaceutical innovation. In practice, AI applications are already evident in clinical diagnostics and auxiliary healthcare processes, such as patient triage, appointment scheduling, medical record management, and postoperative monitoring.

The application of artificial intelligence in medicine is particularly significant in oncology, given the complexity of malignant diseases and the imperative for rapid and precise diagnosis. Recognising cancer as a major public health challenge, the European Union has adopted the strategic document *Europe's Beating Cancer Plan*, which encourages Member States to advance early detection and treatment initiatives and to ensure equitable access and outcomes for patients (Vukadinović Marković 2024, 482–483). Within this framework, AI is emerging as a pivotal tool capable of supporting early disease detection, personalised therapeutic strategies, and more effective patient monitoring. Among its earliest and most successful applications is diagnostic radiology (Gulshan *et al*. 2016, 316). AI systems can analyse thousands of magnetic resonance, CT scans, and mammography images in a fraction of the time required for human assessment, while demonstrating the capacity to detect even the smallest anomalies across extensive datasets. This capability underscores the enormous potential of AI in identifying early-stage pathological changes associated with melanoma (Srinivasu *et al*. 2021, 2852) and prostate cancer (Saha *et al*. 2024). Particularly encouraging outcomes have been observed in the application of AI to the early detection of breast cancer (Vulli *et al*. 2022, 2988; Shah *et al.* 2022; Ahn *et al*. 2023).

Breast cancer remains one of the leading causes of mortality among women in the European Union, accounting for approximately

85,000 deaths annually. Studies indicate that AI software can interpret mammograms up to 30 times faster than human radiologists, achieving 99% accuracy and significantly reducing both false positives and false negatives in mammography screening. Given that Serbia exhibits an exceptionally high incidence of breast cancer, around 4,000 new diagnoses per year, and that the disease is often detected at advanced stages, specific measures must be implemented to ensure earlier detection (Miljuš, Živković-Perišić, i Božić 2022, 15). With current waiting times for mammography and magnetic resonance imaging extending up to six months, the deployment of AI could substantially reduce these delays. Where double reading of mammograms is required, AI can serve as a secondary reader, which is of critical importance in settings experiencing shortages of trained radiologists (Griffiths 2016). Moreover, AI technologies integrated with advanced deep learning models can further enhance the detection of ductal breast carcinoma, improving both the accuracy and reliability of image interpretation (Praveen *et al*. 2022). Beyond imaging, AI is increasingly applied to the analysis of genomic, histopathological, and clinical data, facilitating more precise tumour classification and enabling the prediction of patient-specific responses to the prescribed therapies.

Precision Medicine and AI-Driven Predictive Medical Analytics

Precision medicine represents a key domain in which AI is extensively applied, as it enables personalised healthcare and clinical decision-making tailored to patients' unique genetic, biochemical, and psychological profiles. In this context, clinicians first analyse the results of patients' genetic tests, which may be facilitated by AI, and subsequently employ algorithms to determine the most effective therapeutic strategy based on individual characteristics. This approach allows for the provision of so-called personalised therapies, which are particularly crucial in oncology (Kraft 2019, 30). Personalised therapy involves the use of drugs specifically designed to act in a targeted manner, taking into account the patient's genetic predisposition, thereby enhancing therapeutic efficacy while reducing the risk of adverse effects (Johnson *et al*. 2021).

Predictive testing further enables the assessment of disease risk, supporting the implementation of individualised preventive

interventions. Liquid biopsy, a non-invasive diagnostic technique that analyses circulating DNA in the blood to detect early signs of malignant disease recurrence, occupies a prominent place in contemporary oncology (Gentile and Malara 2024).[1] Early detection of disease facilitates timely intervention, improves treatment outcomes, and significantly reduces overall healthcare costs.

AI also contributes to the monitoring of therapeutic regimens. For instance, applications that track medication adherence by transmitting images when doses are taken can verify correct administration and enable immediate intervention in the event of non-compliance (Kostić, Pavlović, and Živković 2019, 131).

Beyond its role in monitoring therapeutic regimens, AI is increasingly being applied to predictive modelling. For the first time in the Macedonian healthcare system, a predictive model has been developed that employs artificial intelligence to anticipate complications following stem cell transplantation. This model, intended for integration into future clinical practice, holds the potential to markedly reduce transplantation-related mortality. In particular, it is designed to estimate the risk of acute graft-versus-host disease (GvHD) after allogeneic haematopoietic stem cell transplantation through the application of machine learning techniques. The project is being carried out by a team of three Macedonian researchers: two physicians based in Macedonia and a professor from the United States (Здравковска 2025).

Allogeneic haematopoietic stem cell transplantation has been part of the Macedonian healthcare system for 25 years. It represents one of the most complex biological interventions in human medicine, involving the replacement of a patient's own cells with those of a healthy donor. The primary objective of this procedure is the treatment of severe conditions such as leukaemia, multiple myeloma, lymphomas, aplastic anaemia, and myeloproliferative disorders.

Acute GvHD remains among the most frequent and severe complications of allogeneic haematopoietic stem cell transplantation. It

[1] The introduction of liquid biopsy has significantly advanced the field of oncological surveillance, enabling highly precise and synchronised monitoring of carcinoma initiation and progression. This development has redefined the conceptualisation of cancer risk, which was traditionally attributed to an interplay of favourable and adverse lifestyle factors. Within the contemporary paradigm of biological safety, however, such risk is increasingly quantified through the analysis of biomarkers reflecting cellular injury.

arises when the donor's immune cells (the graft) mount an attack against the recipient's tissues (the host), perceiving them as foreign. While transplantation provides the patient with a "new immune system," this system does not always align with the host body. The spectrum of disease severity ranges from mild manifestations to life-threatening forms. Epidemiological data indicate that acute GvHD develops in 30–50% of patients undergoing allogeneic transplantation, particularly in cases where the donor is unrelated.

Modern medicine relies on immunosuppressive therapy treatments that dampen the immune response to prevent or alleviate the onset of GvHD. Yet, such interventions inevitably heighten vulnerability to infections and other complications. The present project seeks to develop algorithms grounded in clinical data, genetic markers, and transplantation-specific characteristics, with the goal of generating an individualized risk profile for each patient. These predictive models are expected to facilitate timely intervention and substantially reduce mortality associated with transplantation.

Beyond the context of transplantation, artificial intelligence also holds significant promise for patients living with chronic diseases, supporting more independent management of their health. This is of exceptional importance for every cancer patient, both medically and sociologically (Vukadinović Marković, Radomirović, i Stjepanović 2025). Systems such as patient support tools, digital assistants, and predictive applications for symptom monitoring enable patients to play a more active role in managing their health. However, it is important to emphasise that digitising healthcare should never replace the traditional doctor–patient relationship, which is based on trust and empathy. In addition to ethical dilemmas, the application of AI in medicine raises a whole host of legal issues. These range from protecting privacy rights and addressing algorithmic bias and oversight to determining liability for wrong decisions resulting from AI recommendations (Sovilj 2023, 16; Stjepanović 2025, 189).

LEGAL REGULATION OF AI IN HEALTHCARE

The deployment of artificial intelligence in medicine gives rise to a broad spectrum of legal and regulatory challenges, necessitating the development of robust governance frameworks. In 2021, the World Health Organization (WHO), as the leading international health

authority, adopted the *WHO Guidelines on Ethics and Governance of Artificial Intelligence for Health* (Ethics and Governance of Artificial Intelligence 2021). These guidelines emerged from an 18-month consultative process involving experts in ethics, technology, law, human rights, and healthcare. They identify the principal ethical challenges and risks associated with AI and articulate six fundamental principles for its responsible use in healthcare. Furthermore, the guidelines provide recommendations for the establishment of effective management systems that ensure accountability while safeguarding the rights of both healthcare professionals and patients. A significant milestone in the regulation of artificial intelligence at the European Union level was reached on 24 January 2024, when the European Commission established the European Artificial Intelligence Office. This Office is tasked with overseeing the development of AI models, including general-purpose models, and fostering collaboration with scientific and professional communities. It will also engage in research and testing, ensure compliance with legal regulations, and operate with a view toward global standards (Dabić 2025, 221). The Office is expected to serve as a central hub of AI expertise within the Union and to lay the groundwork for a unified European system to govern this technology (Dabić 2025, 226).

Shortly after its establishment, on February 2, 2024, the Council of the European Union unanimously adopted the Regulation on the Harmonisation of Rules on Artificial Intelligence (commonly referred to as the Artificial Intelligence Act), thereby initiating the final stage of the legislative process (Regulation 2024/1689). The Regulation entered into force on August 1, 2024, and is scheduled to become operational 36 months later, on August 2, 2027.[2] Under the AI Act, AI systems are categorised according to risk level, ranging from unacceptable and high to limited and minimal, establishing the highest global standards of protection (Schneeberger, Stöger, and Holzinger 2020, 212).

Additionally, the Regulation on the European Health Data Space (Regulation 2025/327), which entered into force on March 26, 2025, merits particular attention. Its objective is to create a secure, interoperable, and ethically designed framework for the exchange of health data within the European Union.

[2] This primarily refers to Article 6, which categorizes high-risk artificial intelligence systems, including, among others, healthcare, and establishes strict requirements concerning conformity assessment, risk management, transparency, human oversight, and data quality (Regulation 2024/1689, Art. 6).

Building on the aforementioned European Union regulations, the governance of artificial intelligence in healthcare also relies on other key EU instruments, such as the General Data Protection Regulation (Regulation 2016/679), the Data Protection Act (Regulation 2022/868), and mechanisms safeguarding privacy and patient rights.

Regulation of Artificial Intelligence in the Republic of Serbia

The regulatory framework for artificial intelligence in the Republic of Serbia is gradually evolving in alignment with international standards. The *Strategy for the Development of Artificial Intelligence in the Republic of Serbia (2020–2025)* (Strategija za razvoj veštačke inteligencije u Republici Srbiji za period 2020–2025 [SRVIRSP 2020–2025] 2019), adopted by the Government of Serbia in December 2019, constituted the foundational policy document in this domain. It delineated the objectives and actions aimed at promoting the development and application of AI, while also establishing the groundwork for a future AI-specific legal framework. In January 2025, the Government adopted the new AI strategy, extending the development plan for artificial intelligence in Serbia for the period 2025–2030.

The 2020–2025 Strategy outlines measures designed to facilitate the safe implementation of artificial intelligence in accordance with internationally recognised ethical principles (Nikolić Popadić i Sjeničić 2024). The 2025–2030 Strategy explicitly provides that "the measures include special support for the application of artificial intelligence solutions in the fields of health and biotechnology" (SRVIRSP 2025–2030 2025, mera 6.7). The preceding 2020–2025 guidelines had already identified healthcare and medicine as priority sectors within the public domain, although they did not provide a detailed analysis of AI applications in these areas. According to these guidelines, "in the healthcare system, artificial intelligence can significantly enhance early diagnosis, ensure improved accessibility to resources and equipment, optimise their utilisation, and contribute to the overall quality and efficiency of healthcare services" (SRVIRSP 2020–2025 2019, čl. 3–4).

Further steps towards the effective implementation of artificial intelligence in Serbia are reflected in the *Ethical Guidelines for the Development, Application, and Use of Reliable and Responsible Artificial Intelligence*, adopted by the Government of Serbia in February 2023 and formalised by a special conclusion in March of the same year (Zaključak

o usvajanju etičkih smernica za razvoj, primenu i upotrebu pouzdane i odgovorne veštačke inteligencije [ZUESRPUPOVI] 2023), hereinafter referred to as the "Guidelines." The Guidelines seek to establish a regulatory framework that promotes the responsible development of AI and introduces mechanisms to ensure compliance with the highest ethical and safety standards. Although the Guidelines do not focus exclusively on the healthcare sector, they recognise healthcare as a high-risk domain (ZUESRPUPOVI 2023, čl. 2–3). While the use of AI is not inherently detrimental, its potential impact on fundamental human rights necessitates special oversight and a comprehensive impact assessment prior to implementation.

In the context of processing patient data, ensuring compliance with the provisions of the Law on the Protection of Patients' Rights (Zakon o pravima pacijenata 2019) is of particular importance. Article 11 (čl. 11) of the Law guarantees patients the right to be informed about their health status and the healthcare services available to them, including information on how to access these services. It also ensures patients' right to access all information derived from scientific research and technological innovations. Furthermore, Article 14 (čl. 14) guarantees the confidentiality of information entrusted by patients to healthcare professionals, including details concerning diagnosis and therapy. Such information may not be disclosed to third parties without the patient's explicit consent.

Given the increasing integration of AI technologies in healthcare, it is imperative to review existing legal provisions, particularly those relating to informed consent, and to adapt them to address contemporary challenges arising from the digitalisation and automation of medical practice.

Regulation of Artificial Intelligence in North Macedonia

In September 2021, at the initiative of the Fund for Innovation and Technological Development (FITR), the leading government institution supporting start-ups and innovative companies in the Republic of North Macedonia, a working group was established to develop the country's first National Artificial Intelligence Strategy, bringing together both domestic and international experts. However, since its inception, the group has convened only once. The strategy is envisaged as part of North

Macedonia's broader economic development agenda and is aligned with the National Development Strategy 2021–2041.[3]

The State Audit Office (DZR), in its June 2025 performance audit report *Opportunities for the Use of Artificial Intelligence in the Public Sector* (Конечен извештај за извршена ревизија на успешност на тема *Можност за употреба на вештачка интелигенција во јавниот сектор* 2025) concluded that North Macedonia lacks a strategy, legal framework, and adequate infrastructure for the application of artificial intelligence in the public sector despite the pressing need for them.[4]

In 2024, the Ministry for Digital Transformation was established as the successor to the former Ministry for Information Society and Administration. One of its first tasks has been to revive the initiative for a National Artificial Intelligence Strategy and to oversee the rapid adoption of the Strategic Action Framework for the Use of Artificial Intelligence. This framework is envisioned as a government resolution, setting out concrete tasks and activities across various sectors and institutions, including education, healthcare, technology, and others, where AI tools may be applied.

Within the broader context of digital transformation and the national strategy for the development of information and communication technologies, the use of artificial intelligence in healthcare is particularly emphasized. Anticipated applications include the modernization of the healthcare system through algorithms for early diagnosis, automated analysis of medical imaging (such as X-rays and MRIs), the development of personalized treatments, AI-based healthcare assistants, and the optimization of hospital and healthcare resource management.

Nevertheless, the Minister for Digital Transformation and the Government have taken the position that there is currently no need for specific legislation governing artificial intelligence in North Macedonia, despite this being one of the observations and recommendations made in the report of the Digital Transformation Agency. The justification

[3] In terms of innovation, the government launched *ADA* in 2023, the first AI-powered digital assistant in the public sector, designed to enhance transparency and provide information on investment opportunities. Despite an investment of €150,000 in its development and maintenance, the tool has since been discontinued (Digital Public Administration Factsheets – North Macedonia 2024).

[4] Between 2018 and 2023, FITR co-financed 48 projects worth a total of €6.11 million, none of which were implemented within state institutions. As a result, the public sector has derived no tangible benefit from these investments (Annual Report on performed audits and operations of the State Audit Office 2024 2024).

offered is that AI remains a highly dynamic and relatively unpredictable technology, still in exponential development.

For now, the regulation of artificial intelligence is seen as a global challenge for both science and policy experts. Accordingly, the state's priority should be to actively monitor international developments, align with global trends, and gradually transpose international legal instruments into domestic law. In the interim, the emphasis should be placed on establishing robust ethical standards for AI use, safeguarding personal data, and promoting digital skills.

In terms of patient data processing, the Law on the Protection of Patients' Rights in North Macedonia is aligned with the GDPR (Закон за заштита на правата на пациентите 2015). The Law regulates the collection of personal data, specifically medical data relating to a patient's health through the creation of a medical dossier. Such data includes information on the patient's medical history, diagnosis, prognosis, and treatment, as well as any other information directly and closely linked to their health.

Patients are guaranteed the right to confidentiality of both personal and medical data, which must remain protected even after their death, in line with data protection provisions. Disclosure of patient data is permitted only under limited circumstances: with the patient's written consent; where necessary for medical intervention in another institution; where required by law for processing by a healthcare institution providing services to the patient; or for historical, scientific, research, or educational purposes, provided that the patient's identity remains undisclosed. Patient data must be stored in accordance with the provisions on the protection of professional, business, and personal data confidentiality. Its processing is carried out in line with the applicable personal data protection framework (Закон на заштита на личните податоци 2021).

In light of contemporary challenges, including the ongoing digitalisation of healthcare and the increasing integration of artificial intelligence, it is crucial that existing legal provisions are updated to align with global developments. This entails the careful transposition of the latest European and international legal frameworks governing the application of artificial intelligence in healthcare.

ETHICAL ASPECTS OF ARTIFICIAL INTELLIGENCE

While the integration of artificial intelligence into modern medicine offers a host of new opportunities, it simultaneously raises important ethical questions. Some observers express concern that AI could replace medical professionals (Sharma 2024). Yet, a comparable resistance arose in the mid-20th century with the advent of computers, which were initially perceived as a potential threat to established professions. Historical experience demonstrates that digital technologies have ultimately conferred far greater benefits than harm. Within this context, it is reasonable to anticipate that AI will, in the long term, enhance the quality of healthcare, benefiting both medical practitioners and patients.

The doctor-patient relationship, grounded not only in professional expertise but also in trust, empathy, and dedication, remains a cornerstone of ethical medical practice (Ćirić 1991, 12–13). This relationship is defined by the patient's confidence in both the attending physician and the healthcare system of a given country. Foundational ethical principles: beneficence, non-maleficence, autonomy, and justice retain central importance in clinical decision-making, particularly amid the rapid digitalisation of healthcare. The application of these principles ensures a careful balance between individual rights, societal responsibility, and the preservation of professional integrity within medicine (Radenović 2012, 20–25).

Respect for human dignity, as an inherent value of every individual, lies at the core of all ethical principles and should serve as the foundation for the development of ethical guidelines governing the use of artificial intelligence in healthcare. A central concern is the preservation of patient autonomy. Traditional medicine often relies on a one-size-fits-all approach. By contrast, artificial intelligence is driving the shift toward precision medicine, in which treatments are tailored to the genetic, environmental, and lifestyle factors of individual patients. Machine learning models analyse genetic and clinical data to predict patient responses to specific medications, thereby reducing reliance on trial-and-error prescribing.

In this context, artificial intelligence offers tools that can tailor treatments to the individual characteristics of each patient, moving beyond the limitations of traditional medicine. This approach is particularly promising in oncology, where machine learning based tools

assist oncologists in selecting the most effective therapies for patients with complex cancers. Drawing on large datasets ranging from clinical trials and historical medical records to laboratory results, machine learning can efficiently classify patients, enabling more targeted and effective treatment. It can also generate unbiased, data-driven prognoses regarding treatment outcomes.

Perhaps the greatest advantage of personalised medicine lies in its ability to simulate multiple scenarios and identify the strategy that best aligns with a patient's unique genetic profile. In the context of AI-assisted early diagnosis, it is crucial that systems operate under adequate human oversight. Otherwise, they may inadvertently limit patients' control over the decision-making process. Valid informed consent, therefore, requires patients to be thoroughly informed about how algorithms function, the data they use, and the potential consequences of their application.

The deployment of AI in clinical practice may lead to situations in which decisions are generated exclusively by machines or algorithms. Respecting autonomy requires that such systems do not diminish the control of patients and healthcare professionals over diagnostic and therapeutic processes. Systems should be developed exclusively as decision-support tools, not as substitutes for human decision-making. This entails an accompanying obligation to protect patient privacy, uphold confidentiality, and ensure that consent is both valid and fully informed.

Furthermore, critical ethical issues arise regarding decisions made solely on the basis of automated data processing. These challenges must be carefully addressed to safeguard the integrity of clinical judgment and the rights of patients.

Even when the law permits automated decision-making through AI systems, implementing the safeguards necessary to ensure patient safety often proves challenging. Most healthcare professionals lack sufficient training to fully understand the functioning of algorithmic models and are therefore unable to provide patients with accurate, comprehensible explanations. Consequently, a key element of informed consent is frequently absent (Đurđević 1997, 31), rendering patients unable to give valid consent to a particular medical intervention. In practice, valid consent requires that patients be adequately informed about their health condition, the proposed treatment options, potential outcomes, and available alternatives, with the information carefully tailored to the individual patient.

These challenges are particularly pronounced when employing robotic systems. Patients with lower levels of education may react with fear or distrust at the mere prospect of robotic involvement in medical procedures. Discovering that the physician's role is minimal or virtually absent in certain procedures may provoke discomfort, anxiety, or even panic (Kačer i Kačer 2019, 82).

Fear of dehumanisation in healthcare, where machines, rather than humans, make critical decisions, raises profound philosophical questions about the very nature of medical care. The role of healthcare professionals must therefore evolve to integrate the analytical capabilities of artificial intelligence with empathy, ethical reasoning, and moral judgement, which remain uniquely human qualities.

A further major challenge is the problem of bias in machine learning systems. Biased datasets containing structural imbalances or underrepresentation directly undermine the accuracy and fairness of algorithms trained upon them. For instance, if a medical image dataset disproportionately reflects one demographic group, diagnostic models trained on such data may produce unreliable or inaccurate results when applied to patients outside that group. This risks misdiagnoses or ineffective treatment pathways for entire populations.

Since artificial intelligence systems learn from data, they inevitably absorb the prejudices of their creators as well as societal biases embedded in the training material. Instead of correcting these tendencies, AI can perpetuate and even institutionalize them. When algorithmic decision-making occurs with minimal human oversight, responsibility may be displaced through an overreliance on computer-generated recommendations, a phenomenon often described as automation bias.

Ultimately, biased AI systems can generate algorithmic discrimination, producing inequitable outcomes or discriminatory behaviours. Moreover, if an AI model trains on historical datasets shaped by discriminatory decisions, it may reinforce those very patterns through a feedback loop, thereby jeopardising patients' rights and undermining trust in healthcare systems (Камбовски и Стојановска 2024, 21).

Meanwhile, the fundamental question of responsibility remains unresolved. When AI systems participate in medical decision-making that results in harm, the question arises as to who bears liability: the software developer, the healthcare institution, the attending physician, or the system itself? This dilemma becomes particularly pronounced as AI systems gain greater autonomy. In conventional healthcare settings,

accountability typically rests with the medical institution. To prevent the diffusion of responsibility where "everyone is responsible, but ultimately no one is held accountable," it is essential to establish a robust model of collective responsibility encompassing all stakeholders involved in the development and deployment of AI technologies. Such a framework promotes responsible and ethical conduct by all parties, with the overarching aim of minimising risk and harm. Developers of artificial intelligence, as well as medical professionals utilizing these technologies, must remain fully aware of their responsibilities. They should receive proper training, comply with ethical standards, and be prepared to assume accountability for any potential adverse outcomes.

Another critical ethical challenge in the application of AI in healthcare is the protection of patient privacy and the confidentiality of medical data. Digital technologies, including electronic health records (EHRs), facilitate the rapid and virtually unlimited replication and dissemination of sensitive information. This amplifies the risk of data being accessed by unauthorised entities, such as government agencies, employers, or insurance companies. Breaches of confidentiality can have numerous adverse consequences for patients, ranging from feelings of shame and stigmatisation to discrimination in employment or unjustified increases in insurance premiums (Glintić and Bezbradica 2025).

Despite the growing integration of AI in healthcare, the fundamental value of the healthcare system continues to be the trust-based relationship between doctors and patients, which rests on mutual respect, empathetic communication, and collaboration. Patients rely on the professional expertise of physicians, while doctors depend on accurate and truthful information from their patients (Goold and Lipkin 1999, 26).

The introduction of AI into medical practice presents an opportunity to redefine the traditional doctor-patient relationship. Moving away from a paternalistic model, participatory medicine is increasingly emphasised, whereby patients actively engage in decision-making and acquire a deeper understanding of their own health status. While this shift offers significant benefits, it also presents challenges in maintaining the delicate balance between technological assistance and the human dimension of care (Floridi and Cowls 2022, 535–545).

The principal challenge for modern medicine lies not only in the effective implementation of AI technologies but also in safeguarding the core values of the medical profession, where clinical experience and

patient relationships remain indispensable. Regardless of technological advancement, direct interaction and mutual trust between doctors and patients are essential for the provision of quality healthcare. Accordingly, artificial intelligence should be regarded solely as a supportive tool that aids physicians in the decision-making process, rather than as an independent entity capable of replacing them. The ultimate responsibility for all medical decisions must rest with the physician, who remains accountable for the outcomes both professionally and ethically.

CONCLUSION

The integration of artificial intelligence into medical practice represents a pivotal development in the evolution of contemporary healthcare. This transition redefines the traditional doctor-patient relationship, facilitating a shift from a paternalistic model to participatory medicine, and thereby creating new opportunities to enhance the quality of care. AI applications have the potential to substantially reduce the workload of healthcare professionals by automating routine and repetitive tasks, allowing clinicians to focus on complex patient care and improving the overall accessibility of healthcare services.

Nonetheless, the deployment of AI in healthcare raises significant legal and regulatory challenges, particularly concerning data protection, liability for clinical applications, algorithmic oversight, and the mitigation of potential decision-making biases. The development of AI models often relies on sensitive health information, the misuse of which may infringe upon patients' rights to privacy. Moreover, questions of liability remain unresolved when algorithmic systems generate incorrect or harmful clinical recommendations, highlighting the need for clear legal frameworks and robust oversight mechanisms.

Although artificial intelligence has yielded promising results in diagnostics and therapy, particularly in oncology, radiology, and preventive medicine, it has the potential to exacerbate existing social inequalities if developed or deployed without due diligence and responsibility. Biases present in input data can be encoded into algorithmic models, potentially resulting in discriminatory outcomes based on ethnicity, race, nationality, or other personal characteristics. Such consequences may have far-reaching implications, including unequal access to healthcare and potential violations of fundamental human rights (Reddy *et al*. 2020, 491–497).

Accordingly, the development and implementation of AI in healthcare must be guided by ethical, fair, accountable, and transparent principles, underpinned by clearly defined legal frameworks and robust patient protection mechanisms. While artificial intelligence should serve as a supportive tool rather than a replacement for physicians, the role of the clinician must remain central to all aspects of clinical decision-making. In many respects, the growing integration of artificial intelligence in medicine exemplifies the boundless potential of human ingenuity. By harnessing the capabilities of AI, we not only push the frontiers of scientific knowledge but also reaffirm our dedication to the core tenets of medicine: preventing disease, alleviating suffering, and protecting the dignity of human life.

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ПРИМЕНА ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У ЗДРАВСТВЕНОЈ ЗАШТИТИ: ДИЈАГНОСТИЧКИ ПОТЕНЦИЈАЛИ, ПРАВНИ ОКВИР И ЕТИЧКИ ИЗАЗОВИ[***]

Резиме

Улога вештачке интелигенције (ВИ) све је израженија у савременом друштву, укључујући и сектор здравствене заштите. Иако је медицина иницијално показивала одређену резервисаност према примени напредних технологија, у новије време бележи се убрзан раст интеграције ВИ у клиничкој пракси, с потенцијалом да темељно трансформише начине дијагностиковања, лечења и предикције болести. Имајући у виду да је борба против малигних болести један од кључних приоритета здравствене политике Европске уније, артикулисан кроз стратешки документ Европски план за борбу против рака (*Europe's Beating Cancer Plan*), овај рад се бави анализом потенцијала ВИ у остваривању циљева поменуте агенде, са посебним освртом на унапређење скрининг програма и развој персонализованих терапијских приступа. Рад је структуриран у три тематске целине. У првом делу се, кроз емпиријски приступ, разматра потенцијал ВИ у клиничком контексту, нарочито у домену унапређења дијагностичке тачности и предиктивне аналитике. Други део фокусиран је на правни оквир примене ВИ

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у здравственим системима Републике Србије и Републике Северне Македоније, при чему се користи упоредноправна метода. Трећи део посвећен је анализи етичких изазова, као што су заштита приватности пацијената, алгоритамска пристрасност и комплексност остваривања информисаног пристанка у технолошки посредованом медицинском окружењу. Методолошки, рад се ослања претежно на квалитативну анализу правних аката, стручне и научне литературе, док се квантитативни налази интегришу у мери у којој су доступни кроз већ спроведене медицинске студије.

Кључне речи: вештачка интелигенција, скрининг програм, персонализовани третман, информисани пристанак пацијента, заштита података пацијента

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SURROGATE MOTHERHOOD – ABUSE OF FINANCIAL (IN)ABILITY OR SOCIALLY ACCEPTABLE FAMILY PLANNING METHOD

Abstract

Surrogate motherhood, as one of the most sensitive and controversial issues not only in the field of contemporary family law, but also in the field of human rights law in general, has its foundations both in medical advancements and achievements and in the evolution of legal and societal awareness. Surrogacy, as an important family-building pathway, is primarily driven by a profound desire of intended parents for parenthood and the fulfillment of the most important role in life. In this paper, the author will analyze surrogate motherhood, especially focusing on the proposed legal framework of altruistic-gestational surrogacy within the Pre-draft of the Civil Code of Serbia. Using normative and axiological methods, it is questionable whether and which type of surrogacy should be understood as an abuse of rights and medical achievements. Having in mind numerous advantages of precise and restrictive provisions of surrogate motherhood as proposed in the Pre-draft of the Civil Code, it would be preferable to consider surrogacy, established as a method of female infertility treatment, a socially acceptable method of family planning.

Keywords: surrogate motherhood, family planning, female infertility treatment, surrogation, biomedically assisted reproduction,

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intended parenthood, assisted parenthood, third-party reproduction

SURROGATE MOTHERHOOD – DEFINITION AND TYPES

First of all, in the introductory part of this paper, the author will briefly define the main types of surrogate motherhood in order to contribute to a better understanding of both surrogacy and the eternal ethical dilemmas regarding its (un)justifiability and the need for legal regulation. Although surrogate motherhood has both its advocates and strong opponents, it is of the utmost importance to present certain facts before drawing a valid conclusion on the necessity of its legal regulation.

The term "surrogate" originated from the Latin word *subrogare*, meaning "to substitute," which in this context refers to the replacement of one person by another or "appointed to act in the place of" (Patel *et al*. 2018, 212). Surrogate motherhood can simply be defined as giving birth on behalf of another person(s). Surrogacy practically represents an arrangement whereby a surrogate mother agrees to carry and give birth to a child for another person or couple, subsequently transferring the child to the intended parent(s), who thereby become the legal parents of the child with all parental rights and obligations (De Groot 2025).

In legal theory, distinctions between surrogate motherhood are made concerning the method of conception and financial compensation (*Gender.Study* n.d.). Regarding the method, i.e., the genetic connection between the child and the intended parents, two basic types are distinguished: traditional and gestational surrogacy. The traditional concept of surrogacy involves the surrogate mother also being a genetic mother (*Europa.eu* n.d.; *Gender.Study* n.d.), meaning her egg is used for fertilization, usually via *in vivo* fertilization, i.e., artificial insemination with the sperm of the intended father or a donor. This type of surrogacy is considered the least desirable, given that the biological connection between the surrogate mother and the child may have significant psychological and emotional implications, potentially leading the surrogate mother to reconsider the arrangement in order to keep the child, which could create legal difficulties and challenge the parental rights of the intended parents. In contrast to traditional surrogacy, gestational surrogacy involves a child whose genetic material does not come from

the surrogate mother but from the intended parents or a donor. In this case, the surrogate mother is the woman into whom an embryo, created via *in vitro* fertilization, is implanted (Pascoe 2018, 456–457). In this type of surrogacy, the child is always genetically related to at least one of the intended parents, or possibly both.

Regarding financial arrangements, compensation, and motives of the surrogate mother, a distinction is made between altruistic and commercial surrogacy. In the case of altruistic surrogacy, the surrogate mother does not receive any financial compensation beyond reimbursement for necessary medical and related expenses arising from the pregnancy. In this case, the surrogate mother is motivated primarily by altruistic reasons, such as the desire to help those who cannot otherwise become parents, and this fact provides her with sufficient satisfaction. On the contrary, commercial surrogacy involves the payment of financial compensation to the surrogate mother in addition to covering all associated medical expenses. This form may be more attractive to some women, but it is also the most criticized in public discourse due to concerns over potential abuse and reproductive exploitation of women in vulnerable financial or socio-economic situations.

In general, surrogate motherhood can be defined as a means of creating a family for infertile heterosexual couples who have often undergone long and painful IVF treatments and/or repeated miscarriages, for homosexual couples, for single individuals, as well as for women rendered infertile by cancer treatment or born with certain congenital conditions that prevent them from carrying a pregnancy (Horsey 2024, 2). Based on the previously outlined fundamental differences between the types of surrogate motherhood, the most acceptable type appears to be altruistic-gestational surrogacy. It should also be noted that indications of surrogate motherhood can be traced back to the Code of Hammurabi and the Old Testament (Kaur 2021, 15–16; Patel *et al*. 2018, 213; Boruta Krakowski 2019, 134). However, what is common to all the aforementioned types of surrogacy is that the surrogate mother must freely consent to such an arrangement, although the motives and reasons for which she would agree to carry a child for another person(s) may differ.

SURROGATE MOTHERHOOD – A METHOD OF FAMILY PLANNING OR MISUSE OF BIOTECHNOLOGICAL PROGRESS

In this part of the paper, various aspects of surrogate motherhood will be analyzed in order to clarify the eternal moral dilemma of whether surrogacy constitutes a method of family planning or, rather, an abuse of scientific achievements, primarily in the fields of medicine and embryology, and an exploitation of the poorest and most socio-economically vulnerable female members of society. Depending on the type of surrogate motherhood adopted, the reasons that could socially justify the legal regulation of surrogacy will also vary.

Like any legal institution, surrogate motherhood, as a particularly complex issue, can always be observed in multiple ways, depending on the position of the analyst and his/her perspective. Therefore, surrogate motherhood can be seen positively, as a method of family planning for childless individuals and couples who face difficulties and cannot otherwise become parents, most often due to medical reasons, or negatively, as an abuse of advances in medical science, practice, and achievements in the field of biomedical assisted reproduction. Both perspectives exist among legal scholars as well as medical professionals. The aim of this paper is to analyze the positive and negative aspects of different types of surrogate motherhood and to perceive the essence of such arrangements.

The commercial concept of surrogacy has the fewest supporters. Cammu and Vonk particularly emphasize that surrogacy is closely associated with global inequality, human trafficking, and exploitation, especially in the context of transnational surrogacy. They also note that the ethical and legal challenges related to surrogacy, as well as the ways in which different jurisdictions have addressed these challenges, regardless of the preferred regulatory model, whether prohibitive, permissive, or free-market, clearly demonstrate the lack of consensus within Europe and beyond (Cammu and Vonk 2024, 14). Some authors emphasize that there is a broad consensus that additional payments to a surrogate mother beyond actual and necessary expenses should not be high, so as not to constitute undue inducement, whereby "women who are financially vulnerable may feel pressured into a surrogacy agreement they would not voluntarily enter if they had other options" (Writing Group on behalf of the ESHRE Ethics Committee *et al*. 2025, 422).

Regarding the ethical and moral issues of surrogacy, Harleen Kaur indicates that "surrogacy arrangements may have an ill effect on the matrimonial life of the surrogate mother as well as on the life of the commissioning parents," because "the husband may feel emotionally attached with the surrogate mother, who" (Kaur 2021, 29), unlike his wife, can fulfill his desire for offspring. On the other hand, Kaur highlights that at the same time, "surrogacy often acts as a factor which ultimately saves the institution of marriage" (Kaur 2021, 29) while also fulfilling the desire of a childless couple to have a child.

Some authors emphasize the importance of surrogacy as a significant "fertility treatment, wherein advent of *in vitro* fertilization (IVF), has made motherhood possible for women without uterus, with uterine anomalies preventing pregnancies, with serious medical problems, or with other contraindications for pregnancy, to achieve motherhood through the use of embryo created by themselves or donor and transferred to the uterus of gestational carrier" (Patel Nayana *et al*. 2018, 212). The same authors note that surrogacy "has also made it possible for gay couples and single men to achieve fatherhood by having embryo created with their sperm and donor oocytes" (Patel Nayana *et al*. 2018, 212).

Regardless of the surrogacy concept, it is of paramount importance that surrogate mothers are thoroughly informed about all potential medical, health, psychological, legal, and other risks and consequences associated with entering into a surrogacy arrangement. This ensures that consent is given based on informed consent, which should reduce potential abuses, as in all other areas of law and human relations. The cases of human trafficking, rape, or the coercion of women into the role of surrogate mother constitute criminal acts rather than freely given consent, and such practices are clearly unacceptable,[1] requiring stricter control over institutions and individuals involved in the whole process of surrogacy. If we consider surrogate motherhood as a legitimate method of family planning, then we must also acknowledge that it is necessary to make an exception to the universally accepted legal presumption and maxim *mater semper certa est*, which must be interpreted in light

[1] Pascoe mentions the notorious "Baby 101" case in which "a surrogacy clinic in Thailand called Baby 101 trafficked at least 13 Vietnamese women to Thailand, where they were imprisoned, and impregnated with genetic material supplied by commissioning parents," but "in some cases, the method of impregnation was rape by the would-be father" (Pascoe 2018, 462).

of changing societal relations and circumstances, requiring new and modified legal solutions (Cvejić Jančić i Jančić 2021, 23).

SURROGATE MOTHERHOOD – VIOLATION OF WOMEN'S AND CHILDREN'S HUMAN RIGHTS AND DIGNITY, OR PROTECTION AND GUARANTEE OF THE RIGHT TO PARENTHOOD

When discussing surrogate motherhood, the debate often begins with the assumption that it is inherently harmful and undermines the dignity and bodily integrity of women who choose to act as surrogate mothers. Those who advocate the prohibition of the legalisation of surrogacy often position themselves as defenders of women's human rights, insisting that surrogacy constitutes a violation of human rights, particularly women's dignity. According to Patel *et al*: "The prime ethical concern raised in the whole system of surrogacy is regarding the concern about exploitation, commodification, and/or coercion when women are paid to be pregnant and deliver babies, especially in cases where there are large wealth and power differentials between the intended parents and the surrogates" (Patel *et al*. 2018, 215). Some authors argue that surrogacy violates women's human rights and inherent dignity regardless "of whether money is exchanged for the service or not," emphasizing that the argument portraying surrogacy as "an empowering experience shall be dismantled, given that consent is never a justification for the abuse of human rights and that the inherently exploitative nature of surrogacy can easily create conditions of coercion" (Mclathcie and Lea 2022, 1). According to the Writing Group on behalf of ESHRE Ethics Committee: "Concerns arise about the potential impact on women who are financially vulnerable and may feel pressured into a surrogacy agreement they would not voluntarily enter if they had other options," which "is oftentimes expressed as an infringement on human dignity, exploitation of (the body of) vulnerable women, an instrumentalization of the female body, or commodification of reproduction" (Writing Group on behalf of ESHRE Ethics Committee *et al*. 2025, 422–423). One may partially agree with this perspective, but it is important to acknowledge that many workplaces already involve conditions that may violate human dignity or pose health and bodily risks, yet individuals perform such work because they are "forced" by financial and existential circumstances, often for much longer than the nine months of pregnancy. Some authors highlight

that "a gestational surrogate mother sells her reproductive capacities much as one sells bodily sexual function in prostitution," emphasizing the dual dynamic in which "the poor will need money, and the rich can offer to pay" (Callahan 2014, 90).

It can also be argued that surrogacy "is no different from other instances of labor agreements that entail physical risks and burdens" (Writing Group on behalf of ESHRE Ethics Committee *et al*. 2025, 422). Surrogacy also raises the question of a woman's right to enter into a contract and to make decisions regarding her own body (Patel *et al*. 2018, 215). The leading motives and reasons for making such a decision may vary for each woman, as with other personal choices and issues regarding her and her body. If we argue that potential abuse of law is possible, then no personal decision or legal action could ever be taken, as there is always the possibility of misuse. Thus, the legislator must approach surrogacy issues carefully, precisely regulating surrogacy and the control system over agencies and healthcare facilities licensed to operate in this field.

In the literature, one can read about the recent case of a young surrogate mother, who fainted and experienced convulsions during a routine eighth-month prenatal examination. The clinic performed an emergency cesarean section, resulting in the birth of a healthy boy, before transferring the mother to another hospital where she eventually died (Laufer-Ukeles 2013, 1268). This illustrates the risk posed when clinics prioritize the interests of intended parents and their own profit over the surrogate mother's life and well-being. However, this case primarily raises questions of medical liability and professional ethics regarding the (non)implementation of medical measures, which is exclusively a matter of the medical profession and professional medical ethics. Unfortunately, surrogate motherhood is not the only situation in which pregnancy, childbirth, and postpartum complications due to professional medical errors and unethical conduct result in maternal death.

Considering the motives that lead a woman to accept the role of a surrogate mother, one could conclude that poverty emerges as the major problem, as individuals who are financially vulnerable may engage in actions they would otherwise avoid, such as criminal activity, prostitution, taking loans, or becoming vulnerable to human trafficking, even though such acts are illegal and constitute serious criminal offenses. Despite the prohibitions of such criminal activities, these actions continue to occur, so banning surrogacy would not prevent illegal practice when there is

no control, and the risks to health and body are far greater. Instead, the legislator should approach these issues seriously, with careful regulation of the most acceptable solutions to protect all parties involved, ensuring high levels of control over institutions and individuals.

While some authors who equate surrogacy to "selling of one's body for the temporary job or to renting of one's womb for nine months" argue "that economic pressures might tantamount to duress, wherein the surrogate might be coerced into consenting to the process, the prosurrogacy group is of opinion that it should not be viewed as intrinsically coercive as no one would do it unless driven by poverty" (Kaur 2021, 29).[2] Although women primarily choose surrogacy for the financial benefits and "because it provides a better economic opportunity than alternative occupations," Kaur argues that they also "enjoy being pregnant and the respect and attention it draws" (Kaur 2021, 29).

However, the most vulnerable party in the surrogacy arrangement is not only the surrogate mother but also the child born through surrogacy. Therefore, regulation must always prioritize the fundamental family-law principle of the best interest of the child. Regarding this principle, supporters of surrogacy ban emphasize the prenatal mother-fetus bond, saying that it is well documented in the medical literature that maternal-child bonding begins *in utero* and is biologically and psychologically significant, even in the case of gestational surrogacy. They argue that the only person a newborn initially recognizes is the mother who gave birth, as the baby does not know the origin of the genetic material used for conception (Lahl 2016, 294).

The cases of international surrogacies may be particularly problematic due to potential exploitation, difficulties in establishing legal parentage, and uncertainties regarding the child's legal status, which can lead to legal battles and emotional distress for all parties involved. According to Pascoe: "The international nature of commercial surrogacy, often taking place in locations without regulation or/and poor law

[2] In her paper, Kaur gives an interesting example of a race-car driver or stuntman: "Does anyone think that they are forced to perform risky activities for money? They freely choose to do so, is not it? Don't they do it because they enjoy their work, and derive satisfaction from doing it well? Of course they '*do it for the money*' in the sense that they would not do it without compensation; though a few people are willing to work '*for free.*' But the element of coercion is missing, because they enjoy the job, despite the risks, and could not do something else if they chose. Such should be the perception about the surrogates as well" (Kaur 2021, 29).

enforcement, provides parents with a back-out option if they change their mind, a crude 'returns policy' where the unwanted child is abandoned or left behind when the commissioning parents return to their home country" (Pascoe 2018, 465).[3] While such cases do occur, it is important to be aware of the fact that children are also abandoned upon birth (or later) by biological parents or mothers outside of surrogacy. Thus, such rare abuses would never justify the prohibition of the right to motherhood and parenthood. Even under the most just regulations providing adequate protection for surrogate mothers, many women will not choose and agree to act as surrogates, not even with additional compensation, given that pregnancy is one of the most complex and uncertain conditions, entailing constant stress and fear until childbirth.

SURROGATE MOTHERHOOD IN SERBIA – AN OVERVIEW OF THE CURRENT SITUATION

Within the normative framework of the Republic of Serbia, a distinctly negative and restrictive stance has been adopted toward surrogate motherhood. Currently, the Law on Biomedical Assisted Fertilization, adopted in 2017, explicitly prohibits any type of surrogacy and prescribes imprisonment as a penalty.

However, there have been efforts within national legislation to legalise surrogate motherhood. The Commission of the Government of the Republic of Serbia, established to draft the Civil Code for the purpose of re-codifying civil law, proposed provisions regarding surrogacy within the fourth book, which addresses issues of family law and family relationships.

For the first time in Serbia, legalisation of surrogate motherhood was proposed by the Pre-Draft of the Civil Code (PDCC) as an altruistic-gestational surrogacy. In cases of surrogacies, a woman who, according to the surrogacy agreement, had an intention to raise a child, regardless of whether her reproductive cells were used or not, would officialy be considered the mother of a child (intended mother), and the husband or cohabiting partner of the intended mother would be considered a

[3] In his paper, the author mentioned the example of an Australian couple who "commissioned a child through surrogacy in Thailand. When the surrogate mother developed twins and one twin is revealed to have Down syndrome, the couple abandoned the child with Down syndrome and returned to Australia with his sister only" (Pascoe 2018, 465–466).

father (intended father) (PGZ 2015, čl. 2176, st. 1. i 2). Thus, surrogacy would be carried out through a surrogacy agreement. The parties to the agreement must be adults with full legal capacity: on one side, the woman who will carry and give birth to the child (the gestational carrier) and on the other, either married or extramarital partners (intended parents), or a single woman (intended mother) who lives alone or a single man (intended father) who lives alone, if they are capable of exercising parental rights and duties and are in a psycho-physical condition that allows the expectation of acting in the child's best interests (PGZ 2015, čl. 2177, st. 1. i 2; čl. 2180, st. 2. i 3). In case the intended mother is a single woman who lives alone, the surrogate must be fertilized with the intended mother's oocytes. If the intended father is a single man who lives alone, the surrogate must be fertilized with the intended father's sperm and donated oocyte (PGZ 2015, čl. 2180, st. 2. i 3). Besides being married or cohabiting partners, intended parents must meet certain health and medical conditions in order to enter into a surrogacy agreement. Therefore, it was suggested that surrogacy agreement could be concluded only if the intended parents obtained medical evidence that natural conception or conception by biomedical assisted reproduction were not possible, or if such methods of conception were not desirable because of the serious danger of transmitting a severe hereditary disease to the child (PGZ 2015, čl. 2177, st. 1. i 4). There are also certain conditions that should be met by a gestational carrier, who is obliged to meet medical guidelines and prove she is suitable to carry and deliver a child, while both parties of the surrogacy agreement must provide evidence of attending counseling for psychological preparation for surrogacy (PGZ 2015, čl. 2177, st. 4).

By the provisions of the Pre-Draft, it was regulated who cannot act as a gestational carrier and which additional conditions should be met for the validity of the surrogacy agreement. Therefore, if the gestational carrier is married or in a cohabitation, the consent of her spouse or partner is required for the contract to be valid (PGZ 2015, čl. 2177, st. 3). In addition, the gestational carrier must have previously given birth, and it is forbidden to use her reproductive cells for fertilization (PGZ 2015, čl. 2179, st. 2. i 3). Instead, reproductive material from at least one of the intended parents or both must be used for conception, while kinship between the gestational carrier and the intended parents does not impede

the conclusion of the agreement, allowing surrogacy arrangements between relatives (PGZ 2015, čl. 2180, st. 1; čl. 2179, st. 1).[4]

What makes the surrogacy agreement altruistic rather than commercial is that only reasonable expenses related to childbearing may be covered, such as lost wages, medical costs, transportation, accommodation, and nutrition for the surrogate mother, as well as a moderate fee that would be paid monthly or in a lump sum (PGZ 2015, čl. 2183). Therefore, the payment of the additional moderate fee is optional, and it was not intended to commercialize surrogacy, but rather to provide a minimal incentive. There are authors who argue that jurisdictions sincerely seeking to remove financial incentives for surrogacy should prohibit any payments not related to medical expenses (Field 1990, 22). Although the additional remuneration to a gestational carrier is strongly opposed, a surrogate mother makes not only a significant personal sacrifice but also does one of the most important things in a person's life, which is giving birth to a child for another childless couple/person.

For the validity of the surrogacy agreement, it is required that the participation of a state authority be obtained, making it a strictly formal contract. The surrogacy agreement must be certified by a judge, who is obliged to determine whether medical and other conditions for surrogacy had been met, and whether the contracting parties attended counseling, and to warn them of the consequences of such an agreement, particularly that the gestational carrier will not be considered the child's mother (PGZ 2015, čl. 2178, st. 1. i 2). If the judge finds that conditions have not been met or that the contracted reimbursement or reward is disproportionate, certification of the agreement would be denied (PGZ 2015, čl. 2178, st. 3). Given that the child's best interest includes the right to know his/her origin, which contributes to the stability of family life, intended parents are obliged to inform the child about the method of conception and his/her origin, at the latest when the child began attending school (PGZ 2015, čl. 2185). Such a provision would be in accordance with the Constitution of the Republic of Serbia, guaranteeing the child's right to know its origins (Ustav Republike Srbije 2021, čl. 64, st. 2).

Although the work on the Civil Code was suddenly and unjustifiably terminated, many family-law provisions, particularly those concerning surrogacy, are a significant novelty for which Serbian society

[4] The rights and duties within the surrogacy agreement are regulated by the Article 2181 of the Civil Code Pre-Draft.

and political milieu were evidently unprepared, despite all the benefits for childless individuals and couples, supporting positive population policy. Through surrogacy, many couples unable to conceive naturally or through currently legally permitted biomedical assisted procedures could become parents, although not all would necessarily enter the surrogacy arrangement in order to become parents (Jančić 2021, 432). Moreover, the provisions of the Pre-Draft are a valuable initiative for potential future legal regulation of surrogacy in Serbia, for which I truly believe it would be incorporated into the domestic legal system.

On one hand, by the Law on Biomedical Assisted Fertilization it is explicitly prohibited to involve, in the biomedical assisted reproduction process, a woman who would give birth to a child for a third party, with or without payment, as well as offering surrogacy services, with or without payment (ZBMPO 2017, čl. 49, st. 1, tač. 18). Surrogacy is, therefore, not only prohibited in Serbia but also criminalized and punishable by three to ten years of imprisonment (ZBMPO 2017, čl. 66, st. 1).[5]

On the other hand, the law permits biomedical assisted fertilization procedures using the reproductive cells of both married and extramarital partners, while the use of donated reproductive cells is allowed if it is not possible to use the reproductive cells of one of the partners, or in the case of a single woman who lives alone, as well as the use of a donated embryo from another married or extramarital couple is allowed if they do not wish to use it for their own fertilization (ZBMPO 2017, čl. 29).[6] Access to biomedical procedures is, thus, granted to married and extramarital partners and, exceptionally, to a single woman who lives alone and is capable of performing parental duties and is in such a

[5] If the criminal offense is commited against a minor, the punishment is prison from three to twelve years (para. 2). If the act causes serious injury to a donor of reproductive cells or embryos, the punishment shall be imprisonment from five to fifteen years (para. 3). If the death of the donor occurs, the punishment shall be imprisonment of no less than fifteen years (para. 4). If a person repeatedly engages in the commition of these criminal offenses, or if the offense is committed by an organized group, the punishment shall be imprisonment of no less than ten years (para. 5) (ZBMPO 2017, čl. 66).

[6] Paragraph 1 of this Article states: "When, in the procedure of biomedical assisted reproduction, it is not possible to use the reproductive cells of one of the spouses or cohabiting partners because the conception is not achievable or other methods of BAF have failed, or when it is necessary to prevent the transmission of a serious hereditary disease to the child, donated reproductive cells may be used in the procedure of biomedical assisted reproduction" (ZBMPO 2017, čl. 29, st. 1).

psychosocial condition that it can reasonably be expected that she would be able to exercise parental responsibilities in accordance with the law and in the best interests of the child (ZBMPO 2017, čl. 25, st. 1. i 2). Regarding the reproductive cells of a single donor or donated embryos from a married or extramarital couple, these may be used in biomedical assisted fertilization procedures for one married or extramarital couple, as well as for a single woman who lives alone (ZBMPO 2017, čl. 30, st. 1).

The Law on Health Insurance of the Republic of Serbia regulates that insured persons are fully provided with examinations and treatment related to family planning from mandatory health insurance funds (ZZO 2023, čl. 131, st.1, tač. 1, alineja 2), which includes infertility treatment through biomedical assisted fertilization. In December 2022, the Republic Fund of Health Insurance issued Guidelines for the Implementation of Infertility Treatment through Biomedical Assisted Fertilization funded by mandatory health insurance, providing detailed criteria for inclusion in infertility treatment and specifying what the right to infertility treatment entails (Republički fond za zdravstveno osiguranje [RFZO] 2022). The right to infertility treatment also includes three stimulated biomedical assisted fertilization procedures using donated sperm and three cryo-embryo transfers using donated sperm for women up to 45 years who are single and do not have children.

However, it raises the question of whether, from an ethical perspective, the provisions prohibiting surrogacy and favoring the position of a single woman accessing biomedical assisted fertilization using donated sperm are equally socially acceptable or whether they are highly controversial. It is worth questioning how society has reached such level of awareness where biomedical assisted fertilization procedures using donated oocytes, donated sperm, or even a donated embryo from another couple (in which case neither parent is genetically related to a child) are socially and legally acceptable, without considering the potential for abuse, while the procedure of biomedical assisted fertilization (BAF) through surrogacy, in which case both intended parents are also genetic parents, is considered controversial and absolutely unacceptable under the excuse of moral reasons and the protection of woman's rights and dignity. Particularly given that the need for a surrogate mother typically arises solely due to the health and medical condition of a woman unable to carry a pregnancy (e.g. woman without a uterus, who is able to produce oocytes), whereas the use of donated sperm may be based on

social reasons, such as a perfectly healthy single woman not having or not wanting to have a partner. From this perspective, a single woman who lives alone and wishes to raise a child may be in a more favorable position than a couple who are having difficulties conceiving a child and are unable to have one (naturally or through biomedical assisted reproduction) due to medical reasons but wish to have one to whom they could also be genetically related (e.g., when a woman has no uterus congenitally or due to surgery).

This issue raises concerns regarding the principle of the best interest of the child, as it questions whether it is in the child's best interest to live from birth only with the mother (when the father may not be identified) or with both parents, who are also fully genetically related. From the very liberal point of view, this could be considered discrimination based on health status, explicitly prohibited by the Law on the Prohibition of Discrimination (ZZD 2021, čl. 2, st. 1, tač. 1). The purpose of comparing these cases was not to criticize the normative framework established by the Law on Biomedically Assisted Fertilization, but rather to draw a parallel and highlight the lack of substantiation in the reasons and arguments advanced by opponents of the legalisation of surrogacy, particularly in the cases of intended parents being also genetic parents, as proposed in the Pre-Draft Civil Code.

As far as health and bodily risks for women are concerned, some authors emphasize that in the case of surrogacy, these risks are considered very high, whereas in the case of oocyte donation, they are rarely addressed, despite the risks associated with oocyte retrieval. This procedure of oocyte donation, too, could be considered exploitation of women and their reproductive organs, yet for some reason it has become legally permitted and socially acceptable. Callahan argues that "when young persons sell their eggs and sperm, they are selling the unique genetic identity inherited from their own parents and grandparents," which "is not like donating a kidney, because sperms and eggs contain the unique information and inherited generative potential that is basic to identity, one's own and a future other" (Callahan 2014, 90).[7]

The arguments presented in this paper regarding surrogacy reflect a society in which the principle of equality is interpreted inconsistently

[7] She argues that "an egg donor is selling the reproductive capacities of the eggs that she inherited from her mother while still in her mother's womb" (Callahan 2014, 90).

and restrictively, with a significant degree of hypocrisy and resistance to the unfamiliar, the new, and the evolutionary development of both society and the individual. There are authors who emphasize that history and empirical studies demonstrate the benefits of surrogacy, as do the thousands of personal success stories, with litigations being rare and general satisfaction high among both commissioning parents and surrogate mothers (Laufer-Ukeles 2013, 1278). Some authors emphasize that, in order to achieve a balance between fundamental human rights and the moral framework protecting all parties' rights, the only type of surrogacy that should be considered is the surrogacy that does not support a consumerist society, in which everything can be sold, bought, or rented, under the excuse of the protection of the right to family planning (Čović 2023, 664). Nevertheless, the law should follow social trends and rapid daily changes and provide relevant legal responses that consider all circumstances, and offer a generally acceptable legal framework. However, ignoring societal changes, evolving needs, and global awareness could have far-reaching consequences for both individuals and society. According to Boruta Krakowski: "What is natural in a given society is the collective social consciousness undergoing changes in the historical process of changes in customs, norms, and cultural perspectives" (Boruta Krakowski 2019, 140). Bearing in mind that before the Pre-Draft of the Civil Code there have been no serious attempts to legalise surrogacy in Serbia, the provisions of the Pre-Draft hold significant historical-legal importance as an attempt to expand not only the means of becoming a parent but also the scope of persons entitled to the right to parenthood, while respecting all fundamental legal principles and human rights of all parties involved in the surrogacy arrangement.

CONCLUSION

Technological and medical achievements, notably through surrogacy, have significantly contributed to enabling childless couples and individuals to become parents in circumstances when natural conception or biomedical assisted reproduction would not be possible. What remains particularly problematic and controversial is the fact that access to these technologies for the treatment of male infertility encounters almost no opposition or disputable arguments, enjoying broad societal approval and being regarded as a fully legitimate method of family planning. This, however, is not the case when it comes to

female infertility and access to all medically possible and available methods, which further demonstrates that we live in a world where male supremacy, primarily heterosexual, is still prevalent. This can also be interpreted as indicating that the right to equality is not equally accessible to all, as it is interpreted differently and quite restrictively, in ways that serve certain social structures in positions of power. Although surrogacy presents certain risks of abuse, legal difficulties, and challenges, I argue that the possibility of its regulation and incorporation into the national legal system should not be automatically excluded. On the contrary, it is essential to analyze and study in detail how the issue of surrogacy can be regulated, as the law cannot entirely prevent abuses but can significantly reduce the potential for misuse and manipulation. A legal vacuum regarding surrogacy or its prohibition can have multiple harmful consequences. Couples and individuals may seek solutions abroad, exposing themselves to higher costs, potential abuses, and additional risks, while parental relationships established through surrogacy arrangements abroad are recognized in Serbia and recorded in the civil registry. Therefore, the provisions of the Pre-Draft Civil Code regarding surrogacy provide a solid starting point for establishing parentage.

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СУРОГАТ МАТЕРИНСТВО – ЗЛОУПОТРЕБА ФИНАНСИЈСКЕ (НЕ)МОЋИ ИЛИ ДРУШТВЕНО ПРИХВАТЉИВ МЕТОД ПЛАНИРАЊА ПОРОДИЦЕ

Резиме

Сурогат материнство представља једно од најосетљивих и најконтроверзнијих питања и института не само у области савременог породичног права, него и права људских права уопште. Овај институт има своје темеље како у напретку и достигнућима у области медицине и биомедицинских технологија тако и у промени правне и друштвене свести о значају права на родитељство водећи се изузетно великом жељом за родитељством и остварењем у најважнијој животној улози. Институт сурогат материнства омогућава паровима и појединцима да се остваре у родитељској улози у случајевима када то није могуће природним путем, али истовремено отвара бројна етичка, правна и друштвена питања која захтевају пажљиво разматрање. У раду је анализиран институт сурогат материнства са посебним детаљним освртом на предложено нормативно решење у оквиру Преднацрта Грађанског законика Републике Србије, а које је превасходно алтруистички конципирано. Применом нормативног и аксиолошког метода у раду је истражено да ли и који вид сурогат материнства треба посматрати као злоупотребу права и напретка медицинских достигнућа. Истраживање је показало да је приступ биомедицински потпомогнутој оплодњи у циљу лечења мушке неплодности у потпуности друштвено и правно прихватљиво, док лечење женске неплодности путем сурогат материнства изазива бројне моралне, етичке и правне дилеме и контроверзе, што указује на постојање дубоко укорењене родне неједнакости и рестриктивно тумачење начела једнакости. Посматрано са моралног аспекта, сурогат материнство у нашем друштву још

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увек изазива отпор услед традиционалних схватања породице и улоге жене. Међутим, етички приступ заснован на универзалним принципима људског достојанства и права на родитељство, налаже потребу преиспитивања таквих тренутно владајућих ставова. Сходно томе, етичка аргументација у корист нормативног уређења сурогат материнства може допринети смањењу дискриминације и афирмацији једнаког приступа биомедицински потпомогнутој оплодњи. Иако постоји известан простор за злоупотребе, правне потешкоће и етичке дилеме, рад указује да сурогат материнство не би требало аутоматски искључити из националног правног система. Напротив, потребно је детаљно и прецизно регулисати овај институт како би се смањио ризик од злоупотреба и омогућило контролисано и транспарентно спровођење сурогат аранжмана, уз истовремено поштовање људског достојанства и заштиту права свих учесника, посебно уважавајући и начело најбољег интереса детета. Потпуно одсуство правне регулативе или рестриктивна забрана сурогат материнства могу произвести штетне последице, пре свега у виду тражења решења, односно услуга сурогат мајке у иностранству, што доприноси додатним трошковима, ризицима и правној несигурности. Имајући у виду бројне предности рађања за другог чије је нормативно решење пажљиво и рестриктивније предложено у Преднацрту Грађанског законика, пожељно је да сурогат материнство које је успостављено као вид лечења женске неплодности посматрамо као друштвено прихватљив метод планирања породице и заснивања родитељства у Републици Србији.

Кључне речи: сурогат материнство, планирање породице, лечење женске неплодности, сурогација, биомедицински потпомогнута оплодња, намеравано родитељство, асистирано родитељство, рађање за другог

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LEGALIZED EUTHANASIA: A HUMAN RIGHTS AND BIOMEDICAL ETHICAL DIAGNOSIS

Abstract

Euthanasia has been the subject of much legal, religious, moral, and human rights debate in recent years. At the center of this debate is how to reconcile competing values: the wish of patients to choose to die by waiving their right to life through voluntary consent, and the necessity to uphold the inviolable right to life of every person, as recognized by Article 6 (1) of the ICCPR. Even though euthanasia is mostly illegal, there is an ever-increasing drive towards legalization. As more States begin to re-examine and, in some instances, rescind their bans on euthanasia, the international human rights legal community needs to re-examine and reconfirm its viewpoint on the utmost essential human right, that is, the inviolable natural law right to life. By validating euthanasia through national statute, the fundamental human right to live is *de facto* nullified for many more people than the few whose assumed right to die is compromised. Regrettably, illogical arguments based on obscure and fictional rights, such as "the right to die with dignity," largely go unopposed, while insistence on respect for true natural law and fundamental human rights, as well as established international *jus cogens* norms, including the right to life, are negated. The key medical moral criteria – autonomy, beneficence, non-maleficence, and justice – are characterized and illuminated in the context of euthanasia to provide

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a general, ethical, and moral analytical framework that aids policymakers in making ethically sound judgments.

Keywords: biomedical ethics, euthanasia, international human rights law, natural law, informed consent, *jus cogens*, fiduciary criterion of morality

INTRODUCTION

The theological, ethical, and juridical discourse relating to the right to end one's own life is as old as civilization itself. Thomas Aquinas (1225–1274), in his *Summa Theologiae* (1265–1274), examines the moral dilemma of ending one's own life to escape life's despairs and concludes that to kill oneself is altogether unlawful for three reasons: First, it is inimical to the natural disposition as it contradicts the natural law. Second, it harms the community, and third, it is a sin as only God should decide when the gift of life comes to an end (Aquinas 1702; May 2015).

Over the past two decades, legislation permitting assisted suicide and voluntary euthanasia has been enacted in an increasing number of States across the globe. Since it was first legalized in the Netherlands in 2002 (Rietjens *et al.* 2008), several States in the United States of America, Australia, Belgium, Canada, Colombia, Ecuador, Portugal, Luxembourg, New Zealand, and Spain have enacted legislation legalizing euthanasia or assisted suicide (Colombo and Gianpiero 2024). Following the implementation of its euthanasia law in 2016, euthanasia has now become a leading cause of death in Canada (Raiken 2024). In May 2025, lawmakers in France voted to legalize assisted dying for some terminally ill residents in the final stages of life (Corbet 2025). Most statutes share key eligibility criteria: patients must be adults, residents of the sanctioning state, mentally competent, diagnosed with a terminal illness causing pain and suffering, make voluntary requests, and give informed consent. Typically, eligibility in the final instance is confirmed and approved by two independent medical practitioners.

Initially, euthanasia applied only to consenting adults of sound mind with a terminal illness; however, its extent and application expanded over time to now include children, dementia patients, the mentally ill, those with psychiatric conditions, and anyone who is in a hopeless medical

condition. In 2014, Belgium became the first nation to make legal child euthanasia (Deak and Saroglou 2017; Reingold 2020). In 2022, the Canadian parliament expanded euthanasia to include the mentally ill (Douthat 2022). In 2023, the Netherlands amended regulations to include the euthanasia of children under 12 without their consent (Maisonneuve 2023). Euthanasia is now a disturbing practice that violates legal and ethical boundaries, compromising medical practitioners' moral duty to heal and not harm.

Whether national legislation should allow euthanasia is one of the most contentious subjects facing progressive liberal democracies. Globally, the main obstacle to legalization has proved to be the valid disputation that, even if morally acceptable in narrowly defined cases, euthanasia could not be efficiently regulated and monitored to prevent abuse of the most vulnerable, and humanity would slide down a slippery slope to practices that most societies would agree to be ethically intolerable (Lewis 2007; Pollard 2001). In particular, it is argued that euthanasia legislation does not and cannot prevent the unlawful death of vulnerable patients who did not make a legitimate and genuinely free and properly informed voluntary request, or for whom appropriate palliative treatment would have offered a feasible option (Keown 2018).

Authorizing euthanasia by national statute raises ethical, academic, and theological concerns, in addition to the juridical standing of such legislation in terms of natural law and International Human Rights Law (IHRL) (Zdenkowski 1997). The focus of this article will be on the central question of whether the right to life can be waived in terms of natural law and IHRL through the voluntary consent criterion that is seen as a *conditio sine qua non* in all euthanasia legislation. The cornerstone medical moral rudiments – autonomy, beneficence, non-maleficence, and justice – are also characterized and illuminated in the context of euthanasia to provide a general, ethical, and moral analytical framework that aids policymakers in making ethically sound judgments.

DEFINING EUTHANASIA

The word "euthanasia" originates from the Greek words *eu*, meaning "good," and *thanatos,* which means "death" (Shala and Kilda 2016; Jakhar *et al.* 2021). Generally, it describes the procedure of purposefully ending a person's life prematurely to alleviate their pain and suffering (Knoetze and De Freitas 2019). Bluntly put, legalized

euthanasia presents killing with intent as an acceptable and routine medical treatment and management option (Finnis 1997).

Euthanasia in this article means "active voluntary euthanasia," which requires the person seeking euthanasia's prior voluntary consent with a physician either directly or indirectly administering the deadly substance (Finnis 1997; Knoetze and de Freitas 2019).

INTERNATIONAL HUMAN RIGHTS LAW

The International Covenant on Civil and Political Rights

The legally binding International Covenant on Civil and Political Rights (ICCPR 1966), ratified by 174 States Parties, requires that States implement laws and regulations that honor their international legal obligations as set out in the ICCPR.

Article 6 (1) of the ICCPR (1966) that deals with the Right to Life provides as follows: "Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life."

Using the declaratory present tense "has" as a substitute for "shall have" is important. The intent of the United Nations General Assembly was, ostensibly, to embed the natural law origin of the absolute right to life. Consequently, the essential character of the right to life and the measure of significance it is given by relevant judicial treaty monitoring bodies seeking to interpret it means that the fundamental right to life should not be narrowly interpreted (Nowak 1993).

The fundamental right to life is of the utmost importance, given that the existence and substance of all additional human rights are rooted in the adequate juridical protection of the natural law right to life. Dinstein (1981, 114) appropriately notes that: "Civilized society cannot exist without the protection of human life. The inviolability or sanctity of life is, perhaps, the most basic value of modern civilization. In the final analysis, if there were no right to life, there would be no point in the other human rights."

Its prominence is further emphasized by being included in Article 4 (2) of the ICCPR (1966), as one of the fundamental human rights that cannot be derogated, irrespective of a national emergency that poses a threat to the life of the nation. The fundamental and inviolable right to life is also recognized in Article 4 of the African Charter on Human and

Peoples' Rights (ACHPR 1981), Article 4 the American Convention on Human Rights (ACHR 1969), Article 2 of the European Convention on Human Rights (ECHR 1950), and Article 3 of the Universal Declaration of Human Rights (UDHR 1948).

Duty of the State to Protect the Right to Life

The ICCPR (1966) Article 2 denotes that: "Each state party to the present Covenant undertakes to respect and to ensure to all individuals within its territory and subject to its jurisdiction the rights recognized in the present Covenant, without distinction of any kind, such as race, color, sex, language, […] or other status."

Reference to "or other status" obviously includes the status of being terminally ill and in a state of chronic pain. Article 6 (1) further specifically states: "This right shall be protected by law." Article 2 and Article 6 impose on States Parties the legal duty and responsibility to provide statutory safeguarding of the fundamental right to life. States Parties, therefore, need to refrain from legislative action that may lead to a violation of the right to life (Zdenkowski 1997).

Some legal scholars correctly point out that the specific language used in Art 6 (1) places a positive legal duty of protection on national legislatures (van Aardt 2004). International law demands that the fundamental human right to life should be shielded by national legislative provisions instead of being infringed or violated by statutes, as is currently occurring in the case of euthanasia-permitting laws and regulations.

Scope and Application of Article 6 (1) of the ICCPR

Article 6 (1) of the ICCPR (1966) further expressly determines that "No-one shall be arbitrarily deprived of his life." The legal defense against the "arbitrary" dispossession of the right to life is consequently of crucial significance.

Important questions that arise are whether any procedures authorized by national legislation may be seen as "arbitrary," given that the right to life is a vital standard of IHRL, and whether certain meticulously crafted exceptions can be allowed if regulated by national legislation? Within the bounds of Article 6 (1), the phrase "no arbitrary deprivation" signifies exemptions to the right to life with the objective

of requiring the highest possible degree of protection of the fundamental right to life and to constrain permissible deviations therefrom to the most extreme limits, such as justifiable homicides, self-defense, and capital punishment for serious offenses (Ramcharan 1993; Zdenkowski 1997).

If one accepts that national legislation and its practical ramifications might be "arbitrary" – and rationally, this seems to be the case from laws enacted in Nazi Germany and many other unprincipled governments over the centuries – then it follows that even if permitted by national legislation, euthanasia still could amount to a violation of Article 6 (1) of the ICCPR (1966).

No Legal Right to Die in terms of IHRL

There is a common misconception that there is a 'right to die,' in the sense of a legal, ethical, and moral right to decide the manner and time of one's death, and that a demand for this legal right will be adequate ground for decriminalizing active voluntary euthanasia (Bartels and Otlowski 2010). There is a moral right to die in the sense of being permitted to die when a person dies, if it is in that person's best interest to die by ending or not initiating unwanted or useless medical therapy.

There is, however, no legal right to die in terms of the natural law. The right to be killed on demand has also never been recognized in IHRL as a legal right. Its assumption conflicts directly with the fundamental human right to life, recognized and protectively articulated in Article 6 of the ICCPR (1966). A right to die directly contradicts and violates the right to live. It is a *contradictio in terminus* to argue for the equal protection of both rights at the same time. A right to die on request, at the hands and subjective discretion of another, conflicts with and nullifies the judicial principle that human life that presents no threat to another is sacred and that protection for all innocent life is needed (Flemming 1996; Pollard 1998).

While IHRL has not established a "right to die," many legally binding international covenants, such as the ICCPR (1966), ECHR (1950), and ACHR (1969), contain explicit protections of the right to life. Under IHRL, the right to life creates both positive and negative legal obligations for States Parties. Put differently, States Parties must not only avoid taking actions that infringe the right to life, such as euthanasia legislation leading to arbitrary decisions by medical professionals that cannot be effectively prohibited or monitored, but also act in a positive

way to create conditions required to protect this imperative IHRL norm (Reingold and Mora 2019).

WAIVING THE RIGHT TO LIVE

The presence or absence of informed, voluntary consent differentiates active voluntary euthanasia from active non-voluntary euthanasia or murder. Critical legal questions to consider are: whether the consent of the patient is legally valid and whether the consent of the patient renders null and void what would otherwise represent an apparent breach of the ICCPR's Article 6 (1) (1966). Put differently: Can a human being waive his or her fundamental human right to life?

The right to life is an absolute natural law right incapable of legal waiver

It is crucial to determine whether the right to life is a mandatory absolute human right or a discretionary relative human right in terms of natural law. If absolute and mandatory, the right to life is immutable and consequently not capable of legal waiver, notwithstanding the demands or desires of the legatee of the right (Flemming 1996). If the right to life is relative and discretionary, the person entitled to the right would be able to waive the right. The classification of the right to life as relative and discretionary or absolute and mandatory has been labeled as the root of the issue with legalized euthanasia (Ramcharan 1993; Zdenkowski 1997).

In terms of the Social Contract philosophy, when a civilized community is established to gain the benefits of alliance with other people, the benefits are positive in nature. One of the most important benefits is the protection of one's fundamental human rights by the State. Sir William Blackstone (1723–1780) writes the following on the: "For the principal aim of society is to protect individuals in the enjoyment of those absolute rights, which were vested in them by the immutable laws of nature" (Blackstone 1979, 120).

Protection of one's fundamental human rights, such as the right to life, is thus a positive legal claim and entitlement against the State. This encompasses a positive legal duty of protection not only from State repression and tyranny but also from private acts of aggression and exploitation. The government observes its positive duty of security via

the enactment of various just, reasonable, and rational laws that regulate society, and by respecting and effectively protecting fundamental human rights (van Aardt 2004, 41).

Blackstone's interpretation of the common law, which he defined as common due to its application to both the king and his subjects, differentiated two types of substantive human rights, "relative rights" and "absolute rights" (Blackstone 1979, 119). "Relative rights" protected individuals in their different dealings with one another as members of a community. "Absolute rights" were rights that belonged to persons in a state of nature. According to Blackstone, the essential and greater purpose of all government statutes was to safeguard people in the full and unfettered possession and mastery of their natural law, absolute natural law rights (van Aardt 2004, 40). The safeguarding of relative rights had a lesser and subordinate objective. Absolute rights, *inter alia*, were defined as the rights to personal security, which were seen as an individual's right to legitimate and continuous mastery of body, life, and well-being. Personal security was distinguished not simply as a negative legal prerogative, but as a positive legal prerogative to protection by law. The absolute rights to personal security, which included the right to life, were protected by the law, which had as its principal aim the safeguarding of basic human rights (van Aardt 2004, 43).

Statutory provisions allowing for the voluntary request and consent to be killed by another with final, irreversible life-ending consequences, that are in the final instance subject to the arbitrary, subjective discretion of others, brutally interrupt the enjoyment by an individual of "his life, his limbs, his body, his health" and as such violate the social contract (Blackstone 1979, 125).

Flemming (1996, 47) correctly points out that "fundamental rights are inalienable as well as inviolable. These are rights of which I may not be deprived and of which I may not deprive myself. To deprive myself of these rights threatens the rights of others."

A right to die on request would nullify the principle that the gift of life is inviolable and that protection of the right to live against predation is needed. If the natural right to life is truly innate and inalienable, that is simply not possible (Pollard 1998).

The right to life is a non-derogable *jus cogens* norm

International law encompasses various sets of international laws that protect essential human rights, including human rights law, humanitarian law, and the different laws governing states of disaster. Contained in this legal frame, there are certain norms, such as the proscriptions against the deprivation of life, enslavement, capricious imprisonment, and medical practices and procedures devoid of free and informed consent, which are observed as peremptory norms that entail mandatory rules not permitting any derogation (Criddle and Fox Decent 2016b, 208; van Aardt 2022b; Yarwood 2010, 61–68). It specifies *jus cogens* IHRL norms that are binding and mandatory in nature. It originated from ancient Roman jurisprudence that there are edicts that cannot be renounced or waived, due to the essential and imperative moral principles they uphold (Lagerwall and Carty 2015; van Aardt 2022).

Natural law peremptory norms have been integrated into contemporary International Law by the International Law Commission, which was dedicated to codifying and developing the legal structure applicable to international treaties. This effort culminated in the ratification of the Vienna Convention on the Law of Treaties (1969). Article 53 explicitly renders null and void any agreement that violates a *jus cogens* norm (Bianchi 2008, 496; van Aardt 2022a, 63).

This means that a State Party cannot release itself from the positive legal duty mandated by the peremptory norm, also not through an international contract nor by enacting national legislation. Consequently, it is a mandatory norm of general international law creating a crucial constraint on a State's executive and legislature not to breach *jus cogens*. (Yarwood 2009). Any State action or statute that violates a mandatory norm of IHRL is rendered illicit in terms of the doctrine of *jus cogens* (Orakhelashvili 2008; van Aardt 2022b). Peremptory norms therefore, limit the state's ability to only craft national legislation that respects and protects peremptory norms (Koji 2001; van Aardt 2022a, 65).

A number of international agreements determine governments' protective legal duties to protect their citizens' basic human rights. The most important presupposition underlying universally recognized human rights is that they are: a) permanent and unassailable; b) universal in application (including to persons in pain at the end of life); and c) co-dependent, commanding respect for specific individual rights as mutual reinforcement for respect of all rights (Farer 1992).

The ICCPR's Article 4 identifies several basic human rights that can never be violated or derogated, which include the fundamental human right to life (1966). A person cannot lawfully waive his right not to be murdered in violation of Article 6 of the ICCPR (1966), just as a person cannot legally consent to be tortured or waive the legal right to not be subjugated to medical experimentation in violation of Article 7 of the ICCPR (1966). A person can also not waive their right to freedom and sell himself or herself into slavery in violation of Article 8 of the ICCPR (1966) and established *jus cogens* norms.

Active voluntary euthanasia violates Article 6 (1) of the ICCPR (1966) irrespective of the absence or presence of the patient's authentic informed consent authorizing his own death, given that consent cannot legally be provided. Any law authorizing the waiver of the right to life ought to be regarded as an arbitrary deprivation of the fundamental and inalienable right to life.

The fiduciary criterion of legitimacy

The government's principal obligation is to govern through administration, laws, and regulations that are ethical and that ultimately protect and respect fundamental human rights (Zenović 2012; Johnson 2018, 340). In order to verify whether governmental activity is lawful or not, the "fiduciary criterion of legitimacy" test must be analyzed (Fox-Decent and Criddle 2018). The underlying idea is that the norms of IHRL and *jus cogens* originate from a fiduciary relationship between the state and individuals subject to its powers (Fox-Decent and Criddle 2016a, 4). Fox-Decent and Criddle (2018, 765) clarify: "The fiduciary criterion of legitimacy is a standard of adequacy for assessing the normative legitimacy and lawfulness of the actions of international public actors. The criterion demands that public actions have a representational character in that, for them to be legitimate and lawful, they must be intelligible as actions taken in the name of, or on behalf of, the persons subject to them."

By their very nature, *jus cogens* IHRL norms prohibit illicit public policies and national statutory provisions that infringe basic human rights, which could never be reasonably understood to be implemented in the name of the persons subject to them. Statutory provisions that allow for the arbitrary deprivation of life, consent to slavery, torture, cruel, inhumane, and degrading treatment, and conducting medical

experimentation lacking voluntary and educated consent are not reasonably coherent as actions that can be implemented "in the name of, or on behalf of," their targets (van Aardt 2022b). By distinction, statutory provisions and government regulations that sensibly restrict human rights for reasonable, intelligible reasons, such as statutes relating to motor vehicle seatbelts or the proscription against purchasing or trading narcotics deemed unsafe, are comprehensible as legislative requirements that can be implemented in the name of, and on behalf of, the persons subject thereto (Criddle and Fox-Decent 2016b).

In the case of IHRL peremptory norms such as the right to life, no such justification is permissible given that any violation of these norms (such as the infringement through euthanasia laws decriminalizing death on demand at the hands and subjective discretion of another), constitutes a unlawful infringement of the absolute non-derogable natural law right to life, and therefore cannot rationally and judiciously be viewed as an legal action "taken in the name of, or on behalf of," the individuals made to endure the ultimate infringement.

EUTHANASIA AND THE VOLUNTARY CONSENT STANDARD

Legal informed consent means that the person involved: a) should have the legal capacity to give consent, b) should be able to exercise free power of choice, without the intervention of any element of duress, or coercion; and c) should have sufficient comprehension of the subject matter involved as to enable him to make an enlightened decision (Hospers 1980, 259–264).

Three necessary markers are required to determine that a decision has been made voluntarily: I.) No Intimidation and Coercion, II.) Educated and informed consent and III.) Sound Psychological State of Mind (Hospers 1980; van Aardt 2022).

No intimidation and coercion

The patient's consent cannot be labeled as voluntary when any degree of intimidation is present. The extreme example of intimidation is one in which the Government apprehends an individual, and state physicians inoculate him with a deadly substance against his will. More often, intimidation consists not of brute force but of the threat of it or

another undesirable consequence for non-acquiescence: Such as not being able to contribute to your family and being in a bedridden state, is not a life worth living, and is unfair to your family. Contrasting the first example, in cases threatening undesirable consequences, there is a choice. But getting a lethal injection to save your loved ones from financial ruin or the burden to take care of you is not a choice the person would have made except for euthanasia-based coercion. The patient was compelled to make a decision that they would not have made willingly. Any coercion or force set on a person inhibits and, consequently, nullifies the voluntary element of the consent provided (Hospers 1980, 264).

Educated and informed consent

Given the practice to allow minors and dementia patients to provide consent to euthanasia, the principle of informed consent relating to children, the mentally impaired, and the sedated needs some exposition. If consent is not fully informed, it cannot be voluntary. Generally, to be held to a contractual agreement, an individual must have the legal capacity to conclude a contract in the first instance, referred to as the capacity to contract. An individual who is incapable, due to mental impairment, sedation, or age, of comprehending what he or she is doing when signing an agreement lacks the capacity to contract. For example, a mentally disturbed person under guardianship totally lacks the capacity to contract. Any agreement signed by such a person is void *ab initio* (van Aardt 2022). In terms of the law of contract, a minor cannot form an enforceable contract. Even if the child narrates all the possible statutory eligibility criteria for euthanasia, the youngster is not able to grasp the complicated consequences of his or her euthanasia consent. Children lack the psychological, practical, and intellectual fortitude to appreciate the potential ramifications of such a decision (Hospers 1980, 263). To contend that a 5-year-old or 17-year-old child possesses the capacity to discern the legal concept of euthanasia and appreciate its various dimensions, and that such a child can give informed voluntary consent to euthanasia that has inevitable fatal and final consequences is ludicrous on any view and ridicules basic medical ethics and the rule of law (Hospers 1980, 263; van Aardt 2022).

A sound psychological state of mind

A human being may not be intimidated and coerced and may well be fully informed, and yet may provide consent in an irrational emotional state of mind. A schizophrenic may be psychologically disturbed, but apart from this extreme, an individual may be psychotic, unhinged, ambivalent, confused, intoxicated, in chronic pain, under severe mental stress, or severely depressed. Usually, when a patient is in such a position, he or she can't be categorized as "fully informed." Circumstances may also arise where a patient is not coerced, all of the relevant details and required information are in the open, and yet, the patient is not able to make a rational decision, due to his or her emotional and mental condition. A human being in a manic-depressive or psychotic condition may be utterly aware of all the relevant information, yet a presentation of normally shocking facts, including his or her own imminent demise, may well not move him. When a person is in such a psychological state, his choices cannot be depicted as entirely voluntary (Hospers 1980, 264; van Aardt 2022). Given the mental state of such a person, one obviously cannot judiciously describe the consent given as voluntary. The argument that an individual at the end of life, in a state of severe distress and mental anguish, while being subjected to sedatives, in one of the most vulnerable states of human existence, is in a healthy state of mind is not a rational contention.

BIOMEDICAL ETHICAL DIAGNOSIS

Judging medical interventions such as euthanasia through biomedical ethical optics delivers a plain, easy, understandable, and apolitical basis to find morally acceptable and virtuous solutions to guide prudent governmental action in a health care legal environment (van Aardt 2021). Moral laws differ from laws relating to science. Moral laws are rigid, conscientious, and righteous, dictating and prescribing what is the morally upright thing to do. Moral laws are also standardizing, in nature, establishing guidelines and doctrines that need to be adhered to (Beauchamp and Childress 2001).

The four core ethical criteria of Beauchamp and Childress – autonomy, beneficence, non-maleficence, and justice – have been highly instrumental in the sphere of biomedical moral rectitude and are central for appreciating the contemporary methodology to moral

judgment in medical care (Mandal *et al.* 2017). The four cornerstone criteria provide the most universal and complete norms intended to guide morally acceptable medical ethical standards (Beauchamp and Childress 2001, 2019; Gilon 1994, 2015; Levit 2014).

If any one of the principles is violated, the medical intervention would be deemed unethical and immoral.

Autonomy

Autonomy is the patient's ability to act of their own free will (Beauchamp and Childress 2001; Levit 2014). Personal autonomy refers to self-governance, which is free from both intimidation and coercion by others, as well as from cognitive limitations, due to mental impairment or age, that prevent one from comprehending what they are doing and thereby hindering informed consent (Iserson 1999, 524). Regard for autonomy entails the moral responsibility of physicians to regard and value the freedom and autonomy of their patients (Beauchamp and Childress 2019; Gilon 2015; Varkey 2021).

Advocates of euthanasia argue that there is a moral right to determine how, when, and where one should exit this life, centered on the notion of autonomy and self-rule (De Beaufort and van de Vathorst 2016, 1464; Clarke 1999; Jost and Cox 2000). However, if a patient is persuaded through duress, intimidation, or impairment of the patient's own will, then autonomy has been violated (Sneddon 2011, 105). Legitimate concerns exist regarding extremely vulnerable patients, such as the incurably sick, the psychologically impaired, and the frail patients advanced in years. Autonomy in biomedical ethics is built into the legal standard of 'informed consent,' which requires that patients are of sound mind and able to provide informed consent that is legally binding.

John Stuart Mill (1806–1873), in his *On Liberty* (1859), asserts that the right to autonomy prohibits the intentional termination of the state of affairs needed to maintain autonomy, which would transpire by terminating life through euthanasia (Beauchamp and Childress 2001). Mill asserts that: "By selling himself for a slave, he abdicates his liberty; he foregoes any future use of it beyond that single act. He therefore defeats, in his own case, [...] the principle of freedom cannot require that he should be free not to be free. It is not freedom to be allowed to alienate his freedom" (Mill 1859, 194). Similarly, with active voluntary euthanasia, a person defeats, in his own case, the purpose of autonomy.

The criterion of freedom does not involve the right to die. Freedom does not entail being authorized and empowered to permanently forsake freedom through death.

Jean-Jacques Rousseau (1712–1778), in his famous *Social Contract* (1762), considers similarly unenforceable a contract by which a person commits to sell himself as a slave, as trading yourself into slavery denies you the prospect of exercising your free will, as it denies all your actions of your own moral character. To Rousseau, the fact that a contract to self-enslavement contains no mutuality and is wholly to the advantage of one party and wholly to the detriment of the other party, such an agreement is "null and void, not only as being illegitimate, but also because it is absurd and meaningless" (Rousseau 1762, 5–8). The agreement nullifies and defeats the slaves' fundamental human rights. It is *in toto* to his detriment and disadvantage. Legalized euthanasia depends entirely on the subjective judgment of medical practitioners and is, in the final instance, not the decision of the patient. Consent to euthanasia by terminally ill patients has been observed as hardly ever autonomous, as many critically ill people are not in a sound psychological state of mind (Pereira 2011). To respect self-governance and autonomy is to duly appreciate the patients' unique circumstances, perceptions, and capabilities (Beauchamp 2007). An individual who is incapable of comprehending what he or she is doing when signing an agreement due to coercion, mental impairment, or age lacks the capacity to contract and therefore cannot consent to euthanasia (Hospers 1980). From a medical ethical perspective, the modern-day practice of euthanasia without consent or to obtain informed consent from individuals incapable of providing such consent is a total perversion of the legal informed consent criterion and therefore unethical.

Beneficence and Non-Maleficence

The Hippocratic apothegm to medical doctors – *bring benefit and do no harm* – conveys the criteria of beneficence ("bring benefit") and non-maleficence ("do no harm") (Beauchamp and Childress 2001). This Hippocratic maxim has been a rudimentary criterion of morally upright medical practice.

Beneficence

Beneficence in biomedical ethics describes the principle that medical interventions should be done to the patient's benefit (Levit 2014). This limits permissible medical interventions to include only those that benefit the patient.

Supporters of euthanasia contend that relieving a patient from their discomfort and anguish will do more good than harm. They claim that the essential moral values of empathy and compassion necessitate that no human be allowed to suffer debilitating pain, and that doctors should be allowed by law to end a patient's life (Ebrahimi 2012). The principle of beneficence, however, emphasizes the obligation to defend and protect the human rights of others. In terms of the principle of beneficence, a medical professional must prevent evil or harm; a medical professional must remove evil or harm, and a medical professional must do or promote good (Beauchamp and Childress 2001).

The principle of beneficence encourages several more specific moral rules that include:

- Defending and protecting the rights of others.
- Preventing injury or harm from happening to others.
- Eliminating conditions that will cause harm to others.

It is self-evident that "active voluntary euthanasia," which has as its prominent and leading actor a physician, not preventing evil and harm but committing the ultimate evil and harm by directly or indirectly taking the life of a human being proactively violates the right to life and the ethical principle relating to beneficence.

Non-maleficence

The criterion of non-maleficence denotes the obligation to abstain from injuring or harming patients. It is expressed in the basic guideline to medical practitioners *Primum non nocere* ("Above all do no harm") (Beauchamp and Childress 2001; Gilon 1994; Iserson 1999, 526; Varkey 2021). The principle of non-maleficence exclaims *one ought not to inflict evil or harm* on another (Levit 2014). The principle of non-maleficence also includes several other detailed ethical guidelines that include that a physician shall not, by any means, murder, disable, or dispossess patients of the conveniences of life.

The established ethical obligation of medical treatment is to provide net benefit to those being treated, causing little or no harm. In practical terms, this means that physicians should balance the benefits of treatment against the burdens of the treatment and abandon those treatments that are potentially inappropriately burdensome (Beauchamp and Childress 2019; Varkey 2021; van Aardt 2021).

From a net benefit perspective, euthanasia provides the ultimate harm with maximum injury resulting in death, clearly violating the ethical principle relating to non-maleficence.

Justice

The criterion that justice should be administered stems from Aristotle's (384–322 BC) theories relating to justness, fairness, and egalitarianism, and contains elements of legal justice, corrective justice, and distributive justice. Justice demands that others be treated fairly and that their fundamental human rights be respected and protected.

Justice in health care demands reasonable, just, and fair-minded treatment of patients or, as Aristotle stated, "that which is equal or fair" (Rackham 1926). It is unjust when patients are denied a benefit to which they are entitled, or when patients are unjustifiably burdened (Levit 2014). Imposing the burden on the most vulnerable and terminally ill to decide to accept euthanasia as a means to relieve loved ones from the financial and emotional stress is clearly an example of a burden that is imposed unjustifiably. Aristotle further argued that dispensing justice goes beyond egalitarianism (Rackham 1926). Patients can be dealt with unjustly despite being dealt with the same. It is of crucial importance to deal with *equals equally and to treat unequals unequally* in relation to their ethically appropriate disparities and weaknesses (Beauchamp and Childress 2001). To attribute the same cognitive ability of the healthy and sound mind to children, the mentally ill, and the vulnerable under severe mental stress is unjust.

Undermining and violating the fundamental human right to life of the most vulnerable patients is the ultimate injustice. Accommodating policies that could potentially allow patients with diminished capacity due to age or mental state to accept euthanasia is unethical.

CONCLUSION

Proponents of the legalization of euthanasia by voluntary consent to die depend on claims of an alleged autonomous right to die. My response is fourfold. Firstly, those States that enacted euthanasia legalization have evaded their rudimentary responsibility to rationalize the origins of the so-called right to die and outline its limits as a right assumed to trump the natural law fundamental human right to live. Secondly, they have neglected to adhere to their indisputable IHRL legal obligations as set out in Article 6 (1) of the ICCPR (1966). In other words, they are disregarding essential non-derogable *jus cogens* norms and obligations *erga omnes* with a flagrant disregard for the constitutional limits to their policymaking. Third, they proceed on an incorrect conception of the nature of the right to life as an absolute natural law fundamental human right incapable of waiver. Finally, they rely on a perverted prognostication of autonomy and voluntary consent, which should be rejected for the same types of reasons that lead us to reject as a matter of law the right of the mentally ill or the underage to contract and the right to free oneself from the economic burdens of life by selling oneself as a slave (Finnis 1997).

From an IHRL and natural law perspective, the right to life is an inalienable, absolute, fundamental human right and *jus cogens* norm that transcends the individual. Human life remains intrinsically inviolable and sacrosanct even when the condition of one's existence is adversely affected by discomfort, agony, and infirmity.

Through the legalization of active voluntary euthanasia, the natural law right to life and not to be subjectively and capriciously denied the right to live is *de facto* nullified for many more people than the few whose assumed right to die is compromised. Regrettably, illogical arguments for obstruse and fictional rights, such as "the right to die with dignity," largely go unopposed, while insistence on respect for actual natural law, fundamental human rights, and established international *jus cogens* norms, such as the right to life, are negated (Pollard 1998; Finnis 1997).

Fleming (1996, 44) correctly asserts that: "The State cannot allow or tolerate euthanasia because it violates international law, and constitutes a threat to the social contract whereby the ruler is bound to secure the right to life of the citizenry." Any law authorizing active voluntary euthanasia is a violation of the social contract, the natural

law, and Article 6 (1) of the ICCPR (1966) as legislative safeguards. A patient's consent simply does not warrant that the denial of the right to live is not random and arbitrary. Legalized active voluntary euthanasia represents the statutory deposition of the natural law and IHRL and a breach of the line between aiming to take life and aiming to cure, remedy, relieve, palliate, and compassionately care (Pollard 1998).

Every single one of the ethical criteria is to be regarded as a basic requirement that needs to be satisfied. Notwithstanding their viewpoint, theories, fiscal interests, moral convictions, or subjective opinions, government officials must commit to upholding and adhering to the four cornerstone biomedical ethical criteria. Regulations that accommodate and encourage active voluntary euthanasia are unethical, measured against the four moral criteria applicable to autonomy, beneficence, non-maleficence, and formal justice.

States should respect the internationally recognized right to life, consistent with the natural law basis of human rights (Fontalis, Efthymia, and Kulkarni 2018). The various illicit regulations that violate IHRL and ethical norms and Standards again highlight the prerequisite for governments to adhere to universal ethical guiding principles and normative standards in relation to the formulation and implementation of public health policies. Normative IHRL, the natural law, medical ethics, and morality determine that national legislators ought not enact legislation facilitating euthanasia.

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ЛЕГАЛИЗОВАНА ЕУТАНАЗИЈА: ДИЈАГНОЗА ИЗ УГЛА ЉУДСКИХ ПРАВА И БИОМЕДИЦИНСКЕ ЕТИКЕ

Резиме

Еутаназија је последњих година била предмет многих правних, верских, моралних и расправа о људским правима. У средишту ове дебате је како помирити супротстављене вредности: жељу пацијената да изаберу да умру одричући се свог права на живот кроз добровољни пристанак и потребу да се одржи неповредиво право на живот сваке особе, како је признато чланом 6 (1) МПГПП (1966). Како све више држава почиње да преиспитује, а у неким случајевима и укида своје забране еутаназије, међународна правна заједница за људска права мора да преиспита и поново потврди свој став о најважнијем људском праву, односно неповредивом природном праву на живот. Валидацијом еутаназије кроз национални закон, основно људско право на живот је *de facto* поништено за много више људи него за оне малобројне чије је претпостављено право на смрт угрожено. Нажалост, нелогични аргументи засновани на нејасним и измишљеним правима, попут „права на достојанствену смрт", углавном остају без отпора, док се инсистирање на поштовању истинског природног права и основних људских права, као и утврђених међународних норми jus cogens, укључујући право на живот, негира. Основно право на живот је од највеће важности, с обзиром на то да су постојање и суштина свих додатних људских права утемељени у адекватној правној заштити природноправног права на живот. Члан 2 и члан 6 МПГПП (1966) намећу државама потписницама законску обавезу и одговорност да обезбеде законску заштиту основног права на живот. Државе потписнице стога морају да се уздрже од законодавних мера које могу довести до кршења права на живот. У оквиру члана 6 (1), израз „нема произвољног

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лишавања" означава изузећа од права на живот са циљем захтевања највишег могућег степена заштите основног права на живот и ограничавања дозвољених одступања од њега на најекстремније границе. Не постоји законско право на смрт у смислу природног права. Право на убиство по захтеву, такође, никада није признато у МПЉП као законско право. Његова претпоставка је у директној супротности са основним људским правом на живот, признатим и заштитно артикулисаним у члану 6 МПГПП (1966). Тврдити да постоји једнака заштита оба права истовремено је *contradictio in terminus*. Право на смрт на захтев, од руке и субјективног нахођења другог, сукобљава се са и поништава судски принцип да је људски живот који не представља претњу другом свет и да је потребна заштита свих невиних живота. Право на живот је апсолутно право природног закона којег се не може законски одрећи. Законске одредбе које дозвољавају добровољни захтев и пристанак да неко буде убијен од стране другог лица са коначним, неповратним последицама које у крајњој инстанци подлежу произвољној, субјективној дискрецији других, крше друштвени уговор и МПЉП. Право на живот је такође норма jus cogens од које се не може одступити, а која је обавезујућа и императивна по природи. То значи да држава потписница не може да се ослободи позитивне правне дужности коју прописује императивна норма, чак ни доношењем националног законодавства. По самој својој природи, норме jus cogens МПЉП забрањују националне законске одредбе које крше основна људска права, за које се никада не би могло разумно схватити да се примењују у име лица на која се односе. Свако кршење императивних норми МПЉП, као што је право на живот (кроз законе о еутаназији који декриминализују смрт по захтеву од стране и по субјективном нахођењу другог), представља незаконито кршење апсолутног, неотуђивог, природног права на живот и стога се не може рационално посматрати као правна радња „предузета у име или за рачун" појединаца који су приморани да трпе коначно кршење. Правни информисани пристанак значи да укључена особа: а) треба да има законски капацитет да да пристанак, б) треба да буде у стању да користи слободну моћ избора, без интервенције било каквог елемента принуде или наметљивости; и ц) треба да има довољно разумевања предметне материје како би могла да донесе информисану одлуку. Сагласност за еутаназију терминално болесних пацијената је изопачење критеријума правног информисаног

пристанка, јер многи критично болесни људи нису у здравом психолошком стању и нису способни да дају законски пристанак. Са становишта медицинске етике, савремена пракса еутаназије крши сваки од четири кључна медицинска морална критеријума – аутономију, доброчинство, ненаношење штете и правду – и стога је неетичка. Са становишта МПЉП, право на живот је неотуђиво, апсолутно, фундаментално људско право и jus cogens норма која превазилази појединца. Људски живот остаје суштински неповредив и свет чак и када су услови нечијег постојања негативно погођени нелагодношћу, агонијом и немоћу. Било који закон који одобрава активну добровољну еутаназију представља кршење друштвеног уговора, природног права и члана 6 (1) МПГПП (1966). Сагласност пацијента једноставно не гарантује да ускраћивање права на живот није случајно и произвољно. Легализована активна добровољна еутаназија представља законско поништавање природног права и међународног права за људска права и кршење границе између циља да се одузме живот и циља да се излечи, лечи, ублажи, палијативно ублажи и саосећајно негује.

Кључне речи: биомедицинска етика, еутаназија, Међународно право људских права, природно право, информисани пристанак, *jus cogens*, фидуцијарни критеријум морала

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SEX IN RECENT GENDER POLICIES: INTERDISCIPLINARY REFLECTIONS ON THE X V. NORTH MACEDONIA CASE BEFORE THE ECTHR

Abstract

This article was initially prompted by the inconsistent use of the terms *sex* and *gender* in the landmark case X v. the Former Yugoslav Republic of Macedonia (now Republic of North Macedonia) before the European Court of Human Rights (ECtHR). Although the judgment was delivered several years ago, national legal implementation remains incomplete and, to some extent, problematic. This topic remains timely more broadly, given the limited engagement of English legal discourse with the ECtHR's evolving approach to gender recognition. The authors investigate why a seemingly straightforward legal adjustment, such as introducing a gender marker on birth certificates, has proven so contentious. Their inquiry revealed that the term *gender*, originally introduced to distinguish from *sex*, has been increasingly subsumed into the concept of *sex*, often being used interchangeably. The Court's judgment reflects this conflation: at

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times it refers to *sex*, at others to *gender*, and frequently to both (e.g., *sex/gender*) without clear differentiation. This raises critical questions, foremost among them: Why was there such a concerted effort to establish *gender* as distinct from *sex* when some of the same actors now assert that the two are effectively synonymous? While the X v. North Macedonia judgment marks a significant step in affirming transgender rights, it also exposes the ECtHR's ongoing terminological ambiguity. In the absence of clear and consistent language, and in pursuit of fulfilling human rights obligations, particularly under articles 8 and 14 of the ECtHR, a legal compromise has emerged: recognizing *gender identity* as a fundamental aspect of personal identity, protected under the right to respect for private life.

Keywords: birth register, sex, gender, gender identity, gender policies

INTRODUCTION

This paper analyses the case of X v. North Macedonia in the light of the recent ruling of the European Court of Human Rights (ECtHR) and investigates why a seemingly straightforward legal adjustment, such as introducing a gender marker on birth certificates, has proven to be very contentious. Our analysis found that the term *gender*, originally introduced to distinguish an individual's psychosocial experience from the individual's biological sex, has been increasingly subsumed into the concept of sex and is often used interchangeably in social and biological/medical literature as well as in the media. The judgment of the ECtHR reflects the melting of these two distinct concepts, at times making a reference to *sex*, at others to *gender*, and frequently to both (e.g., *sex/gender*) without clear differentiation, reinforcing a terminological ambiguity, notwithstanding the legal compromise of recognizing *gender identity* as a fundamental aspect of personal identity, protected under the right to respect for private life.

The manuscript starts by describing the Case of X v. North Macedonia, then focuses on the historical emergence and use of the two terms, particularly in the legal arena, and discusses the implications of the ruling for the legal system and practices in North Macedonia, including the adoption of sex and gender as legal terms. In the end, the manuscript puts the investigated issue from the social/legal into the

context of the biological science, calling for a collaboration between the social and natural sciences in clarifying the correct use of the terms sex and gender.

THE CASE OF X V. NORTH MACEDONIA

X, who is transgender, complained that no adequate laws or remedies existed to enable legal gender recognition and that the authorities imposed an unreasonable and unjustified obligation to undergo genital surgery before permitting a change of sex/gender in official documents (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 3). At birth, X was registered as female, with a traditionally feminine name and a personal identification number reflecting female sex. The applicant stated that from an early age, he identified as male. Unable to access appropriate medical care in North Macedonia, in 2010, X used specialist clinical care in Belgrade, Republic of Serbia, where a psychologist and sexologist diagnosed him with "transsexuality." A medical certificate dated 20 September 2010 recommended that he begin hormone therapy in preparation for possible genital reassignment surgery. Subsequently, X used hormone treatment to raise his testosterone levels (para. 7). A request to change both his first and family names was submitted by X on 1 June 2011. The Ministry of the Interior in North Macedonia approved this request on 7 June 2011, and shortly thereafter, the applicant received a new identity card reflecting his updated name. However, the sex designation and personal identification number on the card remained unchanged, continuing to indicate female sex (para. 8). For context, the personal identification number consists of thirteen digits, some of which encode the individual's sex, while currently no indication of a person's gender exists in the personal identification number (Закон за матичен број на граѓанинот 1992, чл. 2). On 5 July 2011, the applicant requested a change in the sex marker and personal identification number on his birth certificate to reflect his male sex (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 9). The Civil Status Registry, a body within the Ministry of Justice, rejected this application on the grounds that "no certificate [has been] issued by a competent authority [attesting to the fact] that [the applicant's] sex [had] been changed" (para. 10). The applicant appealed, contending that sex reassignment surgery was unavailable in North Macedonia and further, that it was unjustified in his case, given that it would force him to undergo unwanted medical

treatment and sterilization, in violation of his rights. He argued that his diagnosis of transsexuality should suffice for legal gender recognition.

From this point onward, the ECtHR's discussion begins to interweave the concepts of sex and gender. Under Article 8 of the Convention, the applicant complained about the lack of a regulatory framework that would recognize his gender identity and about the requirement, unsupported by domestic law, that he undergo genital surgery to have his male gender legally acknowledged. Under Article 13, he alleged the absence of an effective remedy (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 36). The ECtHR noted the applicant initiated lengthy proceedings in order to obtain redress that had been pending for over seven years, with no foreseeable conclusion. Psychologists reported that the prolonged delay and lack of legal recognition had caused long-term negative effects on his mental health (para. 22; 41).

It was observed that the applicant faced no practical barriers in bringing his claim to the national authorities, which twice upheld his claim and remitted it for reconsideration. Initially, the authorities based their findings on section 22 (2) (formerly section 23) of the Law, citing the absence of documentation proving a factual change of sex (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 51). The applicant maintained that no legal procedure or established judicial practice existed for altering the sex/gender marker in the civil status register, and that the law did make a distinction between rectification and alteration of public records. Consequently, there was no "quick, transparent, and accessible" legal process for gender recognition in North Macedonia.

Moreover, the authorities had arbitrarily imposed a requirement for genital surgery. The position of X relied on the precedent set in the case of A.P., Garçon and Nicot v. France (*A.P., Garçon and Nicot v. France*, 79885/12, 52471/13 and 52596/13), and argued that forcing him to undergo genital surgery was a violation of his rights in respect to private life under Article 8. That case established that transgender individuals should not have to make a choice between bodily integrity and legal recognition of gender identity. In contrast, he had been compelled to undergo surgery without a statutory basis or justification (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 56).

From the authors' perspective, it is understandable that the Court acknowledged the practical implications of "complete sex reassignment

surgery," noting that it cannot be considered entirely arbitrary under law (*X v. the former Yugoslav Republic of Macedonia*, 29683/16, para. 58). It is also clear that while Article 8 primarily protects an individual against arbitrary interference by public authorities, it imposes positive obligations on the State to ensure effective respect for these rights (para. 63). However, the ECtHR also highlighted that domestic law contains no explicit provision allowing a change in a person's sex/gender marker, unlike the right to change a personal name (para. 26–28), and that no formal procedures or conditions have been established for such changes (para. 67). The terminology regarding sex and gender remains somewhat ambiguous, leaving open the question of whether the terms are identical or distinct in meaning. Namely, how can a State introduce a procedure for the change of sex (similar to the change of name) when such a change of sex cannot be done (according to the laws of biology)?

According to the European Union Commission's Research Executive Agency, sex refers to biological characteristics (including genetic, hormonal, physiological, and anatomical) that distinguish between male, female, and intersex (in humans) or hermaphrodite (in non-human animals) (European Research Executive Agency [EREA] 2023). The World Health Organization (WHO) offers a similar definition of sex, as referring to "the different biological and physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs" (World Health Organization [WHO], n. d. a.). The definitions of other medical professional organizations, such as the Australian National Health and Medical Research Council, the Canadian Institutes of Health Research, and the UK National Health Service, are in line with these definitions (Australian Government 2024; Canadian Institute of Health Research, n.d.). From this consensus on the definition of sex, it follows that change of sex cannot actually be achieved even by medical interventions – since sex is not just a combination of the mere appearance of one's genitalia and type/level of sex hormones which can be altered medically, but also a set of genetic (chromosomal and gene level) characteristics present in each cell within the individual from the moment of conception, which can *not* be changed.

Therefore, what the respondent State could introduce is probably a new graph indicating gender. This point is not contested anywhere in the case, including in the dissenting opinions of Judges Pejchal and Wojtyczek. Their disagreement with the majority centers solely on two issues: (i) the admissibility of the application, given that proceedings

before the national authorities are still ongoing, and (ii) whether there has been a violation of Article 8 of the Convention due to the absence of a regulatory framework safeguarding the applicant's right to respect for private life, invoking the principle of subsidiarity.

Since this case ruling uses the terms sex and gender in a very confusing way, the question of whether there is a difference between the terms sex and gender and whether they could be used as if they were synonyms had to be searched elsewhere. In the aftermath of the case, the Action Plan (Action plan for X v. North Macedonia 2020) stated that the Government adopted a decision, instructing the Civil Status Registry to render a decision in this matter upholding the applicant's request to effect a change on the latter's sex/gender marker on the birth certificate and the personal identification number, as soon as possible (Action plan for X v. North Macedonia 2020, 6). However, the Civil Status Registry repeatedly rejected the applicant's request, declining its jurisdiction on the account of a lack of legislation regulating legal gender recognition (Action plan for X v. North Macedonia 2020, 9). Regarding legislative measures, the Government set up a task force to prepare the draft amendments to the Law on Civil Status Registry in line with the Convention requirements on legal gender recognition, accompanied by several other activities. However, there was a significant public resistance regarding the introduction of such changes (Funa 2023), which eventually resulted in the *status quo* on the matter. Another updated Action Plan followed (Action plan for X v. North Macedonia 2023) in which the State informed the Committee of State Ministers that the Civil Status Registry has finally changed the sex/gender marker in the official book records, while the Ministry of the Interior issued a new personal identification number for the applicant corresponding with the new sex/gender marker (in fact the sex marker was legally changed, in a person diagnosed as transexual, with chromosomes and intact genitalia corresponding to the original sex marker) (Action plan for X v. North Macedonia 2023, 12). Regarding legislative measures, a draft proposal for a law was made, which was never passed in the Parliament, with the excuse of the pending change of the Government in the respondent State (Action plan for X v. North Macedonia 2023, 28). Avoiding further infringements and legal gaps, the Government Agent recommended that the Higher Administrative Court gives full effect to the judgment in similar cases (Action plan for X v. North Macedonia 2023, 36). The draft proposal of the new law stipulates "in

the proceeding for legal recognition of the gender, each person should be able to change the sex marker in the register, which should provide that person with acknowledgement of their gender identity." To date, the draft Law has not been considered and passed in the Parliament, due to anti-gender movements in the respondent State. According to the lawyer who represented the applicant, some progress has already been made, given that so far 18 or 19 persons have changed their sex/gender marker (asking for Birth certificates' revisions due to errors). The lawyer believes that a new law should drastically facilitate the procedure (Трајаноски 2023).

THE LINGUISTIC PARADIGM – SEX AND GENDER LOST IN TRANSLATION

According to the World Health Organization, sex refers to "the biological characteristics that define humans as female or male. While these sets may not be exclusive (because there are individuals who possess both), they tend to differentiate humans as males and females" (WHO 2021; WHO, n. d. b.). The working definition of WHO for sexuality is: "[…] a central aspect of being human throughout life. This encompasses sex, gender identities and roles, sexual orientation, eroticism, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, behaviors, practices, and relationships. It is much influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, religious, and spiritual factors" (WHO 2021; WHO, n. d. b.). According to the current working definition of WHO, sexual and reproductive health is: "[…] a state of physical, emotional, mental and social well-being; it is not merely the absence of disease, dysfunction or infirmity" (WHO 2021; WHO, n. d. b.). According to this definition, sexual and reproductive rights are legal rights and freedoms related to sexuality, reproduction, and reproductive health. They include the freedom to choose about one's body and life and are uplifted in many international documents, the most important being: the UN Declaration on Growth – 1968 (first official document of that kind), the International Convention on Population and Development, Cairo – 1994, the World Conference on Women, Beijing – 2005 and the UN Convention for Elimination of all Forms of Discrimination against Women, New York – 1979. Sexual and reproductive rights include: the rights to equality and non-discrimination

(this also means equal access to ART), the right to be free from torture or to cruel, inhumane or degrading treatment or punishment, the right to privacy, the right to marry and to found a family, the right to decide the number and spacing of one's children, the rights to information, as well as education, the right to access healthcare, the rights to freedom of opinion and expression, and the right to an effective remedy for violations of fundamental rights (WHO 2021; WHO, n. d. b.). For women and girls, the capacity to exercise control over their own bodies, sexuality, and reproductive choices, free from discrimination, coercion, or violence, is fundamental to their empowerment and equality. Reproductive rights include access to abortion and contraception, protection against coerced sterilization or forced contraceptive measures, the right to high-quality reproductive healthcare, and the opportunity to receive education that enables free and informed decision-making regarding reproduction. The realization of these rights is essential not only for personal autonomy but also for the broader exercise of self-determination in other areas of life. When women's and girls' sexuality and reproductive choices are controlled or restricted, it leads to systematic violations of these rights, including forced marriage, domestic violence, femicide, female genital mutilation, and other harmful practices that undermine their dignity, safety, and agency. In these terms, sexual and reproductive rights are very closely related to sex and its male/female categories. Even more, it seems like the distinction is beneficial for providing protection for girls and women. However, in some languages in which the term gender does not exist, 'biological sex' is usually used to refer to 'sex,' and 'cultural and social sex' to refer to 'gender.' Nevertheless, even when the two distinct terms exist in the language, 'sex' and 'gender' are often used interchangeably (CE, n.d.). The European Institute for Gender Equality also provides very extensive definitions of sex and gender (European Institute for Gender Equality [EIGE], n.d.).

It seems like the differentiation of the terms sex and gender disappears, especially in specific fields of studies such as Gender studies, Women studies, Feminist studies, Queer studies, and more recently in Legal studies. In the work "Translating Gender," a group of authors has worked on the translation of the word gender in the languages of European countries (for Slavic languages see: Bahovec 2002, 30 cited in: Braidotti 2002). They noted that even what they considered a simple and straightforward term, Women's Studies, seems not to be so simple anymore because they could meet it in different titles such as Feminist

Studies, Feminine Studies, Sex Roles, or even Gender Studies. The authors rightly observe that "this semantic euphoria that stresses the term Women's Studies was never more than a compromise solution, revealing the depths of hesitation surrounding the very signifier 'woman'" (Braidotti 2002, 6). While they acknowledge that the central concern of such studies is women's emancipation, they also accept the use of alternative terminology, such as Gender Studies, to describe the same field. In this context, their working definition of gender encompasses the "many and complex ways in which social differences between the sexes acquire meaning and become structural factors in the organization of social life" (Braidotti 2002, 7). They further emphasize that "gender is a cultural and historical product, as opposed to an essentialist definition of the physical differences between sexes" (Braidotti 2002, 7).

Although the authors argue that gender primarily refers to women, they recognize that it also includes men. To clarify the concept, they adopt the classification system proposed by feminist epistemologist Sandra Harding, which frames gender in three dimensions: (i) as a dimension of personal identity, reflecting the inter-personal process of self-consciousness; (ii) as a principle organizing social identity, evident in the foundations of social institutions – from family and kinship to the division of labor across economic, political, and cultural spheres; and (iii) as the basis for normative values, embedded in identity-giving norms structured in a binary system that informs the distribution of power (Braidotti 2002, 7). From this perspective, gender research primarily seeks to improve the status of women in society.

The authors also explored the translation of sex and gender across European languages, noting that such comparisons are challenging because the two concepts are often expressed by a single term. Where distinctions exist, they frequently do not align with English usage. For example, in Slavic languages, the word "(s)pol" (sex) denotes both the biological characteristics of maleness or femaleness and grammatical gender (masculine, feminine, neuter), whereas "rod" (gender) relates to concepts such as childbirth, offspring, crops, nationhood, and blood relatives. The etymology of "sex" in various Slavic languages traces back to the Old Slavic term "(s)pol," meaning "half," derived from "(s) pholu-," signifying something that has been divided or cut into two (Braidotti 2002, 8; Bahovec 2000, 28; Bahovec 2002, 30–32).

Among the many texts examining the distinction between sex and gender, historically and in contemporary scholarship, the work considered

most explanatory by the authors of this text is *Distinguishing Between Sex and Gender: History, Current Conceptualizations, and Implications* (Muehlenhard and Peterson 2011). Although the paper primarily draws on psychological literature, it effectively traces the evolution of the terms over time and demonstrates how the perceived differences between them have become less pronounced and less meaningful.

Historically, the distinction between sex and gender in psychology began with John Money and his colleagues in the 1950s (Money, Hampson, and Hampson 1955). They used "sex" to refer to individuals' physical characteristics and "gender" to denote psychological traits and behaviors. In that way, John Money separated the biological structures, such as sex chromosomes, from psychological concepts, like gender identity. This distinction was crucial in recognizing that biology is not destiny, highlighting that some observed differences between women and men might be socially constructed rather than innate (Crawford 2006, 26).

Twenty years later, Rhoda Unger argued that the widespread use of "sex" implied biologically determined differences and reinforced the idea that distinctions between men and women are natural and immutable. She proposed using "gender" to describe culturally ascribed traits deemed appropriate for women and men, encompassing assumptions about sex differences: "those characteristics and traits socio-culturally considered appropriate to males and females" (Unger 1979). Unger also introduced the concept of gender identity, defining it as "characteristics an individual develops and internalizes in response to the stimulus functions of biological sex," noting that gender identity may be a stronger predictor of behavior than biological sex (Unger 1979, 1086).

Anthropologist Gayle Rubin was another early proponent of distinguishing sex from gender. She defined sex as the biological body into which one is born, while gender represents the socially imposed division of roles: "Gender is a socially imposed division of the sexes" (Rubin 1975, 179). According to Rubin, gender serves to enforce "obligatory heterosexuality" and societal expectations regarding labor divisions, such as men's role in providing and women's role in childcare.

Later scholarship shows that this distinction gradually led to a broader conceptual shift from sex to gender. For example, Basow found that in several psychology textbooks focusing on women, the term "sex" in early editions was replaced by "gender" in subsequent editions (Basow 2010). Muehlenhard and Peterson note that in the era before

and during the 1960s, the term "sex" appeared in textbooks over 200 times more frequently than "gender," whereas by the 2000s, "gender" had become the more commonly used term (Muehlenhard and Peterson 2011, 795 cited in: Haig 2004).

More recent uses of the terms "sex" and "gender" reveal considerable inconsistency. Scholars attempting to clarify their usage have found it challenging to establish common ground, as many authors offer their own definitions of sex and gender, along with related concepts, including sex/gender differences, roles, or identities. For instance, some authors use "female" and "male" to denote sex, linking these terms to biological characteristics, while reserving "women" and "men" for gender, associated with social or cultural factors (Glasser and Smith 2008). Others, however, reverse this usage, highlighting the lack of consensus even within the academic literature (Helgeson, Balhan, and Winterrowd 2025, 25).

Muehlenhard and Peterson categorized the various definitions of sex and gender. For some authors, "sex" refers to biological categories based on chromosomes, hormones, and reproductive anatomy, distinguishing male from female, while "gender" differentiates men from women in social or cultural terms. Others use "sex" more broadly, to describe sexual behavior or traits that arise from biological origins (Muehlenhard and Peterson 2011, 796–797).

Definitions of gender are more diverse. Scholars have conceptualized gender as maleness or femaleness, as social groups or categories, as traits or characteristics shaped by social origins, as stereotypes or societal expectations assigned to women and men, or as the performance of socially prescribed roles – often referred to as "doing gender." The latter approach has gained widespread acceptance. For example, sociologists West and Zimmerman described gender as "a routine accomplishment embedded in everyday interaction," with day-to-day behaviors constituting the ongoing performance of gender (West and Zimmerman 1987).

Philosopher Judith Butler, in her influential work *Gender Trouble*, further developed this perspective by framing gender as performative: "Gender proves to be performative, that is, constituting the identity it is purported to be. In this sense, gender is always a doing" (Butler 1990, 33). Butler argued that individuals can enact different genders at different times, emphasizing that gender is not a fixed attribute but an ongoing set of practices. She critiques traditional feminist uses of sex and gender, aiming to decouple the two so that both gender and desire

can be "flexible, free-floating, and not caused by other stable factors" (Butler 2004; Buchanan 2010). According to Butler, the conventional distinction between biological sex and socially constructed gender is misleading: sexed bodies cannot signify without gender, and the perception of sex as preexisting and independent of cultural discourse is itself an effect of gendered practices. According to Butler, sex and gender are both constructed, interpreting the notorious Simone de Beauvoir quote that a woman is not born but becomes one as if no one is really gender from the start, instead, becomes one over time (De Beauvoir 1949, cited in: Butler 2004). Consequently, many authors came closer to such ideas, claiming that not only gender but sex too is not a mere matter of biology: both sex and gender are largely the product of the complex interaction of social processes and categories, and our concepts of them are shaped by social meanings (Casetta and Tripodi 2012). The notion of identity as fluid and gender as performative, rather than innate, has become a cornerstone of queer theory. Matlin observes that "the phrase doing gender emphasizes that gender is an active, dynamic process rather than something that is stable and rigid" (Matlin 2008, 4). Rosenblum and Travis define gender as "the culturally and historically specific acting out of 'masculinity' and 'femininity'" (Rosenblum and Travis 2003, 23).

Lorber and Moore describe gender display as "the presentation of self as a gendered person through the use of markers and symbols, such as clothing, hairstyles, and jewelry" (Lorber and Moore 2007). Similarly, Golden characterizes gender as an "accomplishment," a form of self-presentation that individuals consciously or unconsciously strive to perform (Golden 2008, 142).

However, there are also authors who use both terms interchangeably. Glasser and Smith wrote, "because consensus on the meaning of gender remains elusive in education research (beyond, at best, its social and cultural basis), we recommend that researchers acknowledge this reality and clearly state their meaning if they want to use the term" (Glasser and Smith 2008, 349). However, the more recent trend indicates that sex and gender come closer, and an increasing number of authors seem to identify them. For example, Yoder acknowledges the existence of biological bodies, including chromosomes, hormones, and genitalia, while arguing that biological sex may not be as fixed as traditionally assumed. She points to growing evidence that biology influences behavior, but experiences also shape biology, illustrating what has been termed the "principle of reciprocal determinism" (Yoder 2003, 17).

This perspective supports viewing sex and gender as inseparable and intertwined, suggesting that a comprehensive understanding of women, men, girls, and boys must consider both biology (sex) and the cultural meanings ascribed to biological differences (gender) (Yoder 2003, 17). Muehlenhard and Peterson align with Yoder, proposing that as research advances, the distinction between sex and gender may become increasingly less significant or meaningful (Muehlenhard and Peterson 2011, 796–797).

Overall, it seems that the working definitions that distinguish between sex and gender are outdated in the humanities. Is it possible that the humanities and natural sciences differ so much? Isn't it that science should be complementary, evolving in facts, not in ideologies? If a sex and gender are inseparable or not very different, and the definition of gender is elusive, given its psychosocial subjective nature, a geneticist would argue that we are then left with the more objective term sex as the only objective definition of the sexual dimorphism in humans, that is the sum of the biological, endocrine, genital and genetic characteristics of an individual. A lawyer, however, especially more recently, would argue that gender identity is a part of personal identity, therefore part of a person's private life as protected by human rights treaties.

INTERNATIONAL LEGAL DOCUMENTS AND THEIR ACCEPTANCE OF THE CONCEPTS OF GENDER AND SEX

Sex and gender seem to have appeared in human rights treaties in the second half of the twentieth century, starting with the United Declaration of Human Rights in 1948. It was followed by the International Covenant on Civil and Political Rights from 1976, which recognized equal civil and political rights to men and women in its Article 3. These rights were further developed by the UN Convention on the Elimination of All Forms of Discrimination against Women from 1979. Several other key documents followed, such as the documents from the International Conference of Population and Development in Cairo in 1994, as well as the conclusions from the Fourth World Conference on Women in Beijing in 1995 that envisioned the idea that women's rights are human rights, featuring discussions on sex, sexuality, and sexual health. They linked reproductive health and women's human rights to the WHO's overall definition of health as "a state of complete physical, mental, and

social well-being and not merely the absence of disease or infirmity" (WHO, n. d. a.). Gender rights sprouted from women's rights with their joint concern regarding recognition of the inherently political nature of the "private" lives of women, including domestic lives, religious beliefs and practices, as well as sexualities (Gurr and Naples 2013, 21). In Europe, the Convention on Preventing and Combating Violence Against Women and Domestic Violence aims to prevent gender-based violence, protect victims of violence, and punish perpetrators (Council of Europe [CE], CETS No. 210). Under the Convention, "violence against women" is recognized as both a human rights violation and a form of discrimination. It encompasses all acts of gender-based violence that cause, or are likely to cause, physical, sexual, psychological, or economic harm or suffering to women. This includes threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private spheres (Art. 3a). Meanwhile, gender is defined as the "socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for women and men" (Art. 3.c). Furthermore, "gender-based violence against women," is defined as "violence that is directed against a woman because she is a woman or that affects women disproportionately" (Art. 3.d), while the term "women" includes girls under the age of 18 (Art. 3.f). Furthermore, Article 6 encompasses the commitment that Parties should "undertake gender-sensitive policies to include a gender perspective in the implementation and evaluation of the impact of the provisions of this Convention and to promote and effectively implement policies of equality between women and men and the empowerment of women" (Art. 6). This means that women's rights are not only in the category of gender rights, but they are gender rights, even more, they include girls, i.e., children, therefore are not only human rights but also children's rights.

In the practice of the ECtHR, several cases are considered the pioneers in appreciation of the human rights of trans people, such as Christine Goodwin v. United Kingdom, Y.Y. v. Turkey, Van Kück v. Germany, and Schlumpf v. Switzerland, in which the Court found a violation of Article 8 (private life) of the ECtHR due to different infirngements done by the related State (*Schlumpf v. Switzerland*, 29002; *X v. the former Yugoslav Republic of Macedonia*, 29683/16; *Y.Y. v. Turkey*, 14793/08; *Van Kück v. Germany*, 35968/97). The Committee of Ministers adopted Recommendation to Combat Discrimination on the Grounds of Sexual Orientation and Gender Identity in 2010 that states:

"Member states should take appropriate measures to guarantee the full legal recognition of a person's gender reassignment in all areas of life, in particular by making possible the change of name and gender in official documents in a quick, transparent and accessible way; member states should also ensure, where appropriate, the corresponding recognition and changes by non-state actors with respect to key documents, such as educational or work certificates" (Committee of Ministers of the Council of Europe [CMCE], CM/Rec(2010)5). The European Parliamentary Assembly adopted Resolution 2024 on Discrimination against Transgender People in Europe in 2015 that states the following in its paragraph 3: "The Assembly is concerned about the violations of fundamental rights, notably the right to private life and to physical integrity, faced by transgender people when applying for legal gender recognition; relevant procedures often require sterilization, divorce, a diagnosis of mental illness, surgical interventions and other medical treatments as preconditions (Parliamentary Assembly of the Council of Europe [PACE], Doc. 13742). In addition, administrative burdens and additional requirements, such as a period of "life experience" in the gender of choice, make recognition procedures generally cumbersome. Furthermore, a large number of European countries have no provisions on gender recognition at all, making it impossible for transgender people to change the name and gender marker on personal identity documents and public registers" (PACE, Doc. 13742).

The Yogyakarta Principles on the Application of International Human Rights Law in Relation to Sexual Orientation and Gender from 2007, with additional changes from 2017, strengthen the right to legal recognition by stipulating: "Everyone has the right to legal recognition without reference to, or requiring assignment or disclosure of, sex, gender, sexual orientation, gender identity, gender expression or sex characteristics. Everyone has the right to obtain identity documents, including birth certificates, regardless of sexual orientation, gender identity, gender expression or sex characteristics. Everyone has the right to change gendered information in such documents while gendered information is included in them" (Yogyakarta Principles 2017).

Compared to Europe, there is a trend among the Member States of the Council of Europe in legal recognition of sex/gender without compulsory sterilization or other medical preconditions, such as in Ireland, Denmark, Malta, Norway, the Netherlands, Sweden, Croatia, Portugal, etc. North Macedonia is one of the ten member countries of the

Council of Europe where the legal gender recognition is not available (in this category also belong Albania, Andora, Ermenia, Cyprus, Georgia, Lichtenstain, Monaco, San Marino and Serbia) (Закон за изменување на Законот за матичен број [ЗИЗМБ] 2024, чл. 1).

In order to understand how the early debates that resulted in certain legal changes occurred elsewhere (in the USA), an example will be taken from the City of New York between 1965 and 2006 as depicted by Moore and Currah (Moore and Currah 2009). The City of New York faced the challenges of sex/gender reassignment policies a long time ago. However, while the debates were precisely over their dichotomy, the final societal compromise equalized them. Moore and Currah elaborate that the designation of sex in the birth certificates evolved from the initial notion of "fraud" to the more recent (at that time – in 2006) "permanence" as a measure of authenticity. They cite Caplan, who explains that the sex designation on a birth certificate, together with the date and place of birth and parentage (when known), serves as a fundamental classificatory element of the "accurate description" intended to create a lasting correspondence "between a person and a set of signs" (Caplan 2001, 50 cited in: Moore and Currah 2009, 114).

This set of taxonomies is used to classify individuals in many categories, such as race, sex, or national origin. At the beginning, the sex designation on the birth certificates of transsexuals reprised assumptions about genitals and gender identities as accepted by the state institutions. The New York Academy of Medicine in 1965 concluded that "the desire of concealment of a change of sex by the transsexual is outweighed by the public interest for protection against fraud" (New York Academy of Medicine and New York Academy of Medicine Committee on Public Health [NYAM] 1965; NYAM 1966). The Committee concluded that an individual's status as a transsexual should be recorded for the protection of the general public. Their reasoning was based on the premise that individuals who transition retain the chromosomes of their original sex. Consequently, to prevent potential fraud, birth certificates should not be amended to reflect a change in sex. These arguments were frequently cited in court cases denying transgender individuals' requests for legal sex reclassification, at least until 2002.

For example, the highest court in Texas held that certain aspects of sex cannot be altered by will or medical intervention, stating that a physician cannot change a person's gender through surgery, medication, or counseling (*Littleton v. Prange*, 04-99-00010-CV). In 1971, the New

York City policy inclined towards a new policy that would eventually leave an empty box for sex designation for persons with petitions to change their sex. However, in order to be eligible for this "no-sex" certificate, transsexual men and women had to prove they had undergone "convertive" genital surgery, interpreted by the Department of Vital Statistics as phalloplasty or vaginoplasty. However invasive this might have seemed, the mere absence of a sex designation was a sign that the person underwent a procedure for transiting to the other sex. In this way, the absent box was speaking louder than the existing one. Between 2002 and 2006, transgender rights advocates began promoting the idea that legal sex designation should be based on gender identity rather than surgically altered genitalia, marking a significant shift in policies regarding birth certificate changes. During this period, nearly all U.S. jurisdictions, except Idaho, Ohio, and Tennessee, permitted amendments to sex on birth records (Moore and Currah 2009, 121–122). Advocates argued that legal recognition of sex should reflect an individual's gender identity, consistent with the *International Bill of Gender Rights*, which asserts that it is "fundamental that individuals have the right to define, and to redefine as their lives unfold, their own gender identities, without regard to chromosomal sex, genitalia, assigned birth sex, or initial gender role" (International Conference on Transgender Law and Employment Policy [ICTLEP] 1990). The transgender community proposed an "ideal policy" in which no sex marker would be assigned at all, effectively removing the state from defining sex. A more practical approach, which was eventually widely accepted, was to eliminate the requirement for surgical or other bodily modifications, allowing petitions for legal sex change to be supported solely by medical expert affidavits. Transgender healthcare advocates emphasized that transition is highly individualized, with multiple possible pathways, and argued that mandating genital surgery was excessive, as most transgender individuals do not undergo it. A key concern, however, was the perceived permanence or temporality of gender identity, with medical professionals worried that legal recognition might later require multiple revisions, potentially creating additional hardships.

In July 2005, the Committee recommended that medical and mental health professionals, considered the most knowledgeable about transgender health, should determine whether an individual is living fully in their acquired gender. The proposed policy required affidavits from two U.S.-licensed experts: one board-certified physician and one

mental health professional, each confirming the individual's intention for a permanent transition. Additionally, the individual had to be at least 18 years old and demonstrate that they had lived in their acquired gender for a minimum of two years. This policy proposal was perceived as a victory by the transgender advocates because it shifted transsexual people from "frauds" to ones in which the new sex of individuals could be listed on their birth certificates, even without surgery. The advocates had begun the process of renegotiating the birth-certificate policy with two goals: first, that re-issued birth certificates list the reassigned sex; second, that the requirement for "convertive surgery" be eliminated. The policy proposal was meant to accomplish both goals. In the conclusions, Moore and Currah described that the period of change in the legislation was characterized by governmental anxieties to secure the relationship between identification and identity, to ensure, in short, that someone *is* who they say they are (Moore and Currah 2009, 130).

From the described legislation development, it could be concluded that the initial conflict over the dichotomy of sex and gender slowly but surely disappeared in the public arena, being replaced with other concerns, such as the permanence or temporality of the situation, the necessity or not of medical intervention, etc. The more recent tendencies discard the later concerns too, since sex and gender are increasingly seen as interconnected, interdependent, and fluid.

NATIONAL LEGAL ADAPTATION OF THE CONCEPTS OF GENDER AND SEX FOLLOWING THE CASE X V. THE NORTH MACEDONIA

The text moves to the aftermath of the lost case in front of the ECtHR and the legal consequences for North Macedonia. What happened after the judgment in the case of X v. the former Yugoslav Republic of Macedonia?

The person concerned in the case received a new sex marker and personal identification number after 9 years of pending procedures. While this individual measure was taken (even though it took too long) as part of the State's obligation imposed by the ECtHR, the State's intentions to avoid future infringements were not successful. The authorities initiated proceedings for legislative changes in a form of amendments to the existent Law on Civil Status Registry (ЗИЗМБ 2024) that envisaged that everyone over 18, who is legally capable and unmarried, has the

right to legal recognition of their gender (пара. 19а). It was meant for the procedure to be initiated by a request filed by the person to the Civil Status Registry, together with a copy of their ID card and notarized statement, taking full material and criminal responsibility that their gender identity does not correspond to the sex given at birth and that the change is not requested for the purpose of avoiding a contractual or legal obligation, as well as executing of a sentence imposed by a competent domestic of foreign court (пара. 19в). Based on a final decision that legally recognizes the new gender (by changing the sex marker), the Civil Status Registry would have to change the sex data in the birth certificate and send a request for annulment of the personal identification number to the Ministry of the Interior (пара. 19ѓ). A new birth certificate would then be issued without any note of sex change, while the information regarding the change should remain secret (пара. 19е). The legal recognition of the gender was defined as a process in which an individual could change the sex marker in the Register as a way for the State to recognize their real gender (чл. 2). This is in contrast with the definition of "sex" and "gender" in the very same draft law that considers sex as a physical characteristic of the individual (reproductive system, chromosomes, hormones) according to which the sex is ascribed, while gender is considered as societally constructed roles, behaviors, and attributes that a certain society considers appropriate for women and men. This is also in contrast with other definitions of sex as an objective biological reality, some of which can be 'doctored' (appearance of genitalia, type and level of hormones), but some of which can't be changed (chromosomal makeup) and gender as a subjective psychosocial construct. On the other hand, gender identity is defined as "internal and individual experience of gender which may or may not correspond with the sex ascribed at birth, including the personal feelings about one's body and other manifestations of the gender, such as name, outfit, speech and manners" (чл. 1–8). Again, the main question in this research pops out – why the trouble of defining, therefore distinguishing sex and gender when they are later treated as if they were the very same?

However, in 2022, the government withdrew the draft amendments from parliamentary proceedings under the premise that they would produce a new and updated Law on Civil Status Registry, including the suggested amendments. This was criticized by the Committee of Ministers in December 2022 (CMCE, CM/Del/Dec(2022)1451/A2a). There was another attempt to bring the amendments in front of the Parliament in

June 2023 that also turned out not to be successful. These amendments, together with the newly suggested Law on Gender Equality, brought a heated debate over the concept of gender, especially contested by the Church and other civil society representatives, resulting in a similar fate of failing to progress. The Commission for Human Rights of the Council of Europe called upon the Parliament of North Macedonia to adopt the amendments concerning legal gender recognition, as an important step towards execution of the judgment X v. North Macedonia in July 2023 (Commissioner for Human Rights Council of Europe [CHRCE], 08-3221/1; Funa 2023).

The last time the Committee of Ministers examined the execution of this case was in September 2024, when the Committee reiterated "with grave concern that further to its withdrawal from the Parliament by the Government in March 2022, the draft text of the new Law on Civil Status Registry has still not been finalized, even though the previously envisaged deadline for adoption of this legislation has expired" (CE – Execution Department, 004-52421; *X v. the former Yugoslav Republic of Macedonia*, 29683/16). Even though the Committee noted positive developments of the domestic practice regarding changes of records in official documents, including the consolidation of the administrative practice of the State Commission, allowing legal gender recognition, on the basis of self-determination and without imposing any medical treatment as a condition to legal gender recognition, it gave a new deadline to the new Government formed on 23 June 2024 to fully and effectively execute the judgment in terms of the legislative changes. The draft version of the Law on Gender Equality defines gender as a societal construction – societal characteristics and possibilities that are connected with being a male or female, relationships between women and men, girls and boys, as well as relationships between women themselves and men themselves (Предлог закон за родова еднаквост [ПЗРЕ] 2021) and defines sex as biological and *psychological* characteristics based on which persons can identify as women or men (ПЗРЕ 2021). This extraordinary extension of the definition of sex to include *psychological* characteristics is unparalleled and may be a linguistic error in the draft, using *psychological* instead of *physiological*, which would be in line with the literature. The same draft defines gender identity as the inner and individual feeling of one's gender that could, but also does not have to, comply with the sex assigned at birth, as well as a personal experience of one's body and different expression of the gender, including name,

dress, speech, etc. (ПЗРЕ 2021). It remains unclear what the difference between sex, gender, and gender identity is; that is, can they actually be different, given that all reside in the psychosocial arena? Furthermore, the draft defines a person with versatile gender identities if the person does not identify themself(ves) in the binary identities of women and men, including also transgender persons, transsexuals, inter-sexuals, and non-binary persons (ПЗРЕ 2021). It is unlikely to be used in a Law a provision that treats children up to 18 years as women, men, and persons with versatile gender identities, especially if the country is a state party of the Convention on the Rights of the Child (ПЗРЕ 2021). Furthermore, the Law clarifies that the terms women and men should also apply to transgender persons who identify as such (ПЗРЕ 2021). The draft version of the Law on Gender Equality also aims to improve the position of women (which could be seen from numerous provisions that are appointed towards women primarily, for instance Art. 16, par. 1 that stipulates especially encouraging measures that give priority to women when in the same or similar conditions as men (ПЗРЕ 2021, чл. 16, пара. 1). Despite the fact that there is already a Law on Equal Possibilities for Women and Men (Закон за еднакви можности на жените и мажите 2012), the Law on Gender Equality has been promoted in the public as if its main purpose is to improve the equality of women and men (*Сител Телевизија* 2023; Закон за изменување и дополнување на Законот за еднакви можности на жените и мажите 2014). Actually, this is an ancillary purpose, while the main is to introduce gender sensitive policy in the society, which after all should be appreciated, instead of being hidden. The Law on Prevention and Protection from Violence against Women and Domestic Violence also uses the term gender-based violence in its text (from Art. 1 onwards) to describe violence against women (Закон за спречување и заштита од насилство врз жените и семејно насилство 2021). It can be concluded that in more recent times, the term gender is used often instead of sex and woma(e)n in international documents, comparatively, and in the Macedonian legislation.

COLLABORATION BETWEEN HUMANITIES AND NATURAL SCIENCES – IS THERE A UNIFORM TRUTH OR PARALLEL REALITIES?

Natural sciences appear to be more coherent in comparison to the humanities (Wizemann and Pardue 2001). A male organism is the sex that produces the mobile small gamete, sperm cell, while a female organism is the sex that produces the immobile large gamete, oocyte. A male cannot reproduce sexually without access to at least one ovum from a female. Healthy humans have 46 chromosomes in the nucleus of every cell of the body, containing the genes, two of which are the sex chromosomes, or gonosomes, which contain the genes that determine the sex of a healthy individual. Male humans (men) have one X and one Y sex chromosome (46, XY), while female humans (women) have two X chromosomes (46, XX), and this is how the sex dimorphism is coded in our genes. Men inherit an X chromosome from their mother and a Y chromosome from their father, while women inherit one X chromosome from their mothers and one X chromosome from their fathers. When the gametes are produced, the number of chromosomes is halved, and gametes have 23 chromosomes. Consequently, all oocytes women produce contain an X chromosome (23, X), whereas half of the sperm cells produced by men contain an X (23, X) and half a Y chromosome (23, Y), and therefore it is the sperm cell (or men) determining the sex and a 1-to1 *probability* that *assigns* sex *from the moment of conception* (Science of Bio Genetics 2023) or shortly after conception takes place (Erickson 1997). It follows that the very zygote (the product of fusion of the sperm cell and the oocyte) has (genetic) sex, as does every cell of the developing embryo and foetus. At the time of birth, the baby has had a sex (detectable prenatally by genetic tests or ultrasound) for approximately 9 months, and at birth, the medical profession merely recognizes the sex based on the appearance of external genitalia and records it in the medical and legal documentation. Therefore, the commonly used phrase "sex assigned at birth" is a misnomer, given that the biological reality is one of sex actually being assigned at conception.

In rare cases of about 1 in 500–1000 people there is a variation on the number of sex chromosomes resulting in sex chromosome aneuploidies associated with certain medical conditions such as Klinefleter syndrome (47, XXY – male) (Los *et al.* 2023), Jacobs syndrome (47, XYY – male) (Sood and Clemente Fuentes 2024), Turner syndrome (45,XO – female)

(Sharma and Shankar Kikkeri [2023] 2025), triple-X syndrome (47, XXX – female) (Tartaglia *et al.* 2010), etc. In other, extremely rare cases (1 in 5000–50000 people), there could be a reversal of the sex determining chromosomes and the sex, such as 46, XY female (Meyer *et al.* 2019; Singh and Ilyayeva 2023), Swyer syndrome (Meyer *et al.* 2019) and Androgen insensitivity syndrome (Singh and Ilyayeva 2023) or 46, XX male and certain intersex conditions, due to gene level genetic changes. While these genetic conditions present exceptions to the usual dichotomy of chromosomal sex determination, XX female and XY male, they do not disprove or alter the biological reality of the sex binary in healthy individuals – sperm cells producing males and oocytes producing females. Most such conditions affect the reproductive ability, with only a few case reports of preserved fertility described in the medical literature, for example, a livebirth from a predominantly 46, XY female (mosaic 80% 46, XY and 20% 45, XO) (Dumic *et al.* 2008). While an increasing number of pregnancies are tested with non-invasive prenatal tests for common aneuploidies that detect the sex of the developing baby, chromosome analysis is not a routine test performed in each newborn. Instead, the physical appearance of the baby's external genitalia is the main indicator for recognizing and recording the sex at birth (or "assigning the sex" at birth). In situations where the baby has mixed sex characteristics, persons were categorized in the past as hermaphrodites or are categorized today as intersex, third gender, etc. (Vilain *et al.* 2007). Transgender people are people who have a gender identity or gender expression that differs from their sex (trans-men and trans-women). Some transgender people seek medical treatments such as hormone replacement therapy, sex reassignment surgery, etc. Not all transgender people desire these treatments, and some cannot complete surgery for medical reasons.

According to natural sciences, sex is determined at the time of conception and is a result of a specific chromosomal makeup of the zygote (46, XX or 46, XY). If sex is defined as a sum of the biological characteristics of an individual, including their chromosomes (and genes), then the fact that sex is established from the moment of conception should be a concept easy to understand by geneticists and physicians, but also by non-medical professionals. However, the most commonly used phrase about the origins of sex among gender theorists and activists is that "sex is assigned at birth." Surprisingly, the genetic and medical professions seem not to be completely immune to the

pressures of identity politics – leading to revision of the standardized pedigree nomenclature by the National Society of Genetic Counsellors to include sex and gender inclusivity in 2022 (Bennett *et al*. 2022). This influential publication that sets the standards for the practice of the genetic counselling profession, uses the word "assigned" in the context of *sex assigned at birth* 33 times, and differentiates sex from gender in the following way: "Broadly speaking, sex is defined by morphology or biology (phenotype, karyotype, etc.) while gender refers to social constructions of roles, behaviors, expressions, and identities of men, women, boys, girls, and gender diverse people" (Bennett *et al*. 2022, 1239). The authors define sex as "a category often assigned at birth based on biological attributes (e.g., the appearance of genitalia or secondary sex characteristics)" – although secondary sex characteristics (for example menstruation in girls and sperm production in boys) are not present at birth and develop *during* puberty (Krishna and Witchel [2000] 2024). The standard pedigree symbol for male sex is a square, and for female sex, a circle. Of note, this new revision of the practice guidelines calls for a new practice of using a circle in the case of a transgender female person that was "assigned male at birth" with the use of the acronym AMAB ("assigned male at birth") under the circle and using a square in case of a transgender male person that was "assigned female at birth" with the use of acronym AFAB ("assigned female at birth").

Parents could find out the sex of their embryo after prenatal screening, and some others even by blood sample after the 10th week of pregnancy. Moreover, sex could be traced even with pre-genetic tests on an embryo in a laboratory prior to its implantation in the woman's womb. Even though sex selection is a commonly forbidden practice, in most national legislations (including North Macedonia), it is allowed to choose the sex of the embryo in circumstances when there is a known possibility for a genetically transmitted disease (since some diseases could be transmitted only to a certain sex, not to the other). Therefore, the sexes are very separate and distinguished not only by their physical appearance (certain genitals), but also by their functioning and reacting to certain traits. Those parents who opt to know their embryo's sex are not going to be surprised by their child's sex after delivery. On the contrary, they know their embryo's sex from the time they examined their genetic construction, and some even prior to the embryo's implantation in the woman's womb. Therefore, their child's sex is not "ascribed at birth"

voluntarily, by disposition, or by other indicators by the obstetrician or by other administrative bodies. Instead, it is a simple *reflection of a fact*.

Recent trends suggest that the interchangeable use of sex and gender is now interpreted as evidence of collaboration among law, science, and the humanities. Legal and academic frameworks increasingly treat sex and gender as complementary: *sex* refers to biological classification, while *gender* pertains to identity and social roles (Sharpe 2018, 23–29). This approach challenges the notion that legal definitions must be based on medical or biological criteria. On the contrary, recent trends suggest that that human rights law is an evolving concept that should not be confined by biologically deterministic definitions. In this line, the ECtHR in the case of X v. North Macedonia has rejected definitions of gender identity limited to biological criteria, favoring a more generous, case-by-case assessment.

In biological sciences, *sex* typically denotes biological characteristics–such as chromosomes, reproductive anatomy, and hormone profiles–used to classify individuals as male, female, or intersex (Fausto-Sterling 2000, 3–8). In this domain, *gender* is either peripheral or used in sociobiological contexts to describe observable behaviors. By contrast, in the humanities and social sciences, *gender* is understood as a socially and culturally constructed identity encompassing roles, behaviors, and identities that extend beyond the male/female binary. Furthermore, even *sex* is critiqued as a concept not solely grounded in biology but shaped by social perception and discourse (Butler 1990). In this line, Fausto-Sterling claims that "labeling someone a man or a woman is a social decision. We may use scientific knowledge to help us make the decision, but only our beliefs about gender (not science) can define our sex. Furthermore, our beliefs about gender affect what kinds of knowledge scientists produce about sex in the first place" (Fausto-Sterling 2000, 3).

In legal contexts, particularly international and human rights law, *sex* has traditionally been used in anti-discrimination provisions (e.g., ECHR 1950, Art. 14). However, *gender* and *gender identity* have more recently emerged as distinct legal categories. This evolution recognizes that a person's self-identified gender may not align with their assigned sex and that both categories warrant legal protection (Yogyakarta Principles 2017). Contemporary human rights law seeks to reconcile these perspectives by affirming gender identity while acknowledging biological realities, without reducing one concept to the other or

imposing additional requirements for recognition. This is evident in the evolving jurisprudence of bodies such as the ECtHR or CJEU, which, despite occasional inconsistencies in terminology, increasingly affirm the legal relevance of gender identity alongside traditional sex-based categories (e.g., *Christine Goodwin v. the United Kingdom*, 28957/95; *Identoba and Others v. Georgia*, 73235/12; A.*P., Garçon and Nicot v. France*, 79885/12, 52471/13 and 52596/13; *X v. the former Yugoslav Republic of Macedonia*, 29683/16; Court of Justice of the European Union [CJEU], 34/35).

CONCLUSION

The judgment in X v. North Macedonia marks a significant advancement in affirming the rights of transgender individuals in the country, but it also highlights the ECtHR's ongoing terminological inconsistency. The ECtHR stated: "The applicant alleged that the absence of a clear legal framework for gender recognition violated his right to respect for private life under Article 8 of the Convention" (*X v. the former Yugoslav Republic of Macedonia*, 29683/16). Elsewhere, it noted: "[…] the Civil Status Registry ("the Registry") – a body within the Ministry of Justice ("the Ministry") dismissed the applicant's application, stating that "no certificate [has been] issued by a competent authority [attesting to the fact] that [the applicant's] sex [had] been changed, the application having been corroborated only with a certificate that gender reassignment surgery [was] in preparation, which cannot be regarded as proof that it [would] take place" (*X v. the former Yugoslav Republic of Macedonia*, 29683/16). This dual usage of *sex* and *gender*, without clear differentiation, reflects a conflation of the two concepts. The ECtHR frequently uses *sex* and *gender* interchangeably throughout the judgment, which contributes to the conceptual ambiguity. The applicant's gender identity (male) and his legal sex designation (female) were treated as interchangeable, owing to several factors. First, terminology varies across Member States. Many, including North Macedonia, use only the term *sex* in civil status law and lack distinct legal provisions for gender or gender identity. The ECtHR's language often reflects the terminology used in domestic law (Holzer 2022), as well as precedents from earlier cases, such as Christine Goodwin v. the United Kingdom, where the ECtHR referred to changes in "sex" while addressing the right to gender recognition (*Christine Goodwin v. The United Kingdom*, 28957/95). Second, linguistic issues

arise from the ECtHR's bilingual (English and French) jurisprudence. The French word *sexe* can refer to both biological sex and gender identity, leading to ambiguity in translation and interpretation. Third, the ECtHR tends to prioritize substantive human rights protection over semantic precision. In X v. North Macedonia, the central question was whether the applicant's inability to legally affirm his gender identity constituted a violation of Article 8, not the specific language used to describe his identity.

Nevertheless, the interchangeable use of *sex* and *gender* risks diminishing the distinct and lived nature of gender identity. From a rights-based perspective, clarity in legal language is not a mere academic concern – it directly impacts the articulation of rights claims, the understanding of discrimination, and the coherence of state obligations. Notably, in Identoba and Others v. Georgia, the ECtHR recognized discrimination based on gender identity under Article 14, even though that article only explicitly references "sex" (*Identoba and Others v. Georgia*, 73235/12, para. 96). Though the ECtHR has not formally defined *gender identity*, it has consistently treated it as a protected aspect of private life under Article 8 (*Christine Goodwin v. The United Kingdom*, 28957/95). This recognition signals a gradual but significant shift toward a more inclusive and precise legal lexicon. However, the judgment in X v. North Macedonia demonstrates the continued need for conceptual clarity, especially as gender identity becomes an increasingly central issue in human rights litigation.

Regarding the use of *sex* and *gender* at the intersection of law, science, and the humanities: while disciplinary approaches differ and tensions do exist, these differences are increasingly viewed as complementary rather than conflicting. Challenges arise particularly in politicized or policy-heavy domains, such as healthcare (e.g., eligibility for medical screenings), sports (e.g., participation in gendered events), and legal documentation (e.g., criteria for changing legal sex or gender). These debates often blur disciplinary boundaries, such as the (mis)use of biological claims in discussions of gender identity rights.

In conclusion, the legal recognition of gender identity as a core component of personal identity is occasionally linked to the recognition of sex in official state records, particularly in systems where no separate gender marker exists. This linkage aims to fulfill the obligations under Articles 8 and 14 of the ECtHR. However, it represents a compromise: a pragmatic solution driven by linguistic limitations and the diversity

of national legal systems. Whether this compromise is appropriate, or whether it constitutes an overextension of the Convention's scope as a "living instrument," remains a subject of ongoing debate (Financial Times 2025).

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ПОЛ У САВРЕМЕНИМ РОДНИМ ПОЛИТИКАМА: ИНТЕРДИСЦИПЛИНАРНА РАЗМАТРАЊА О СЛУЧАЈУ X ПРОТИВ СЕВЕРНЕ МАКЕДОНИЈЕ ПРЕД ЕВРОПСКИМ СУДОМ ЗА ЉУДСКА ПРАВА

Резиме

Овај чланак је првобитно подстакнут недоследном употребом појмова *пол* и *род* у пресуди у предмету X против Републике Северне Македоније пред Европским судом за људска права (ЕСЉП). Иако је пресуда донета пре неколико година, њена имплементација у националном праву и даље је непотпуна и, у одређеној мери, проблематична. Тема остаје актуелна и у ширем смислу, имајући у виду ограничено интересовање англофоног правног дискурса за развој приступа ЕСЉП-а у погледу правног признања рода. Аутори разматрају због чега се наизглед једноставна правна реформа – увођење родног обележја у матичне књиге рођених – показала толико спорном. Анализа указује на то да је појам *род*, који је првобитно уведен ради разликовања од *пола*, постепено потчињен појму *пол*, те да се ова два термина све чешће користе као синоними. Пресуда Суда одражава ову терминолошку нејасноћу: час се позива на *пол*, час на *род*, а понекад и на оба (нпр. *пол/род*), без доследног разликовања. Ово отвара важна питања, међу којима и оно кључно: због чега је постојала потреба да се *род* успостави као засебан појам у односу на *пол*, када сада поједини актери тврде да су та два појма суштински истоветна? Иако пресуда у предмету X против

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Северне Македоније представља значајан корак у афирмисању права трансродних особа, она истовремено разоткрива трајну терминолошку двосмисленост у пракси ЕСЉП-а. У одсуству јасног и доследног језичког разликовања, а у настојању да се испуне обавезе из области људских права, нарочито према члановима 8. и 14. Европске конвенције о људским правима, обликовао се правни компромис: признавање *родног идентитета* као суштинског аспекта личног идентитета, заштићеног правом на поштовање приватног живота.

Кључне речи: матична књига рођених, пол, род, родни идентитет, родне политике

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ESSAYS AND STUDIES

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THE ANATOMY OF VETTING – BETWEEN LAW AND POLITICS

> *[T]here wants a known and indifferent judge, with authority to determine all differences according to the established law. For … men being partial to themselves, passion and revenge is very apt to carry them too far, and with too much heat in their own cases, as well as negligence and unconcernedness, make them too remiss in other men's.*
>
> John Locke

Abstract

The paper examines the phenomenon of vetting in the judiciary in Albania, Bosnia and Herzegovina, and Serbia, as post-communist countries in the European Union accession process. Vetting is not a uniform concept, and it appears in several forms, such as review, reevaluation, and re-election (reappointment) of judges. There is no unique vetting model because it is impossible to apply it to different socio-political contexts. The author of this paper approaches vetting as an anti-corruption instrument useful in systems in which the rule of law is systematically and continuously violated, as well as the independence of judges and public prosecutors

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is violated. Vetting as a personnel reform programme in the judiciary should be agreed upon by a broad consensus (social, legal, and political actors) based on the constitutional and international norms. As a form and the cornerstone of administrative justice, vetting paradigm experienced a Copernican turn from transitional regimes to weak democracies. In the first case, it was a transitional justice mechanism, while in the second case, it was an instrument of recovery and strengthening the rule of law.

Keywords: vetting, lustration, rule of law, judiciary, judicial independence, corruption, Serbia, Albania, Bosnia and Herzegovina

INTRODUCTION

Vetting procedures as a form of transitional justice in post–communist countries (i.e., Third Wave Democracies) was a mechanism for rebuilding state capacity and restoring trust in the state and its institutions (Mayer–Rieckh 2007). The United Nations defined vetting as a process of "assessing integrity to determine suitability for public employment" (2006, 4), in order to "exclude from public service persons with serious integrity deficits to reestablish civic trust and re-legitimize public institutions and disable structures within which individuals carried out serious abuses" (2006, 9). Vetting as a form of judicial lustration was applied in the Czech Republic, East Germany, and Poland, under the supervision of international organizations, such as the United Nations (UN), the Council of Europe, and the Organization for Security and Co-operation in Europe (OSCE). The aim of this work is to determine, by applying a comparative method, whether vetting is an attack on the professional identity of judicial officials or whether it is a mechanism for strengthening their integrity and independence. For the purposes of the analysis, Albania, Serbia, and Bosnia and Herzegovina were chosen as post-communist states with the highest levels of corruption in Europe and the lowest indices of the rule of law. In addition, the commitment to European integration is another common characteristic of the selected countries. On a theoretical and empirical level, in most post-communist countries, it often came to the conceptual equating of vetting with lustration. At this point, it is necessary to make a historical review of the concept of lustration in order to avoid confusion.

LUSTRATION *VS.* VETTING

The feeling of historical injustice caused by decades of communist torture, in the new democracies, required the implementation of lustration as a mechanism for dealing with the past and holding to account the regime's culprits who ignored human rights and *res publica*. The critical reaction aimed at the communist legacy included restitution, prosecution of members of the former regime, opening of secret police files, and lustration. Of all the mentioned mechanisms, the most controversial and most prone to political deflection is lustration, which implies moral condemnation with a disqualifying political logic. According to credible scientific sources, "lustration is the process of narrowing the field of public influence and political competition by scrutinizing individuals who had been associated with the former regime and by limiting their degree of participation in the new political and civil service positions" (Rožič 2012, 1).

Lustration does not represent a primordial historical measure of institutional purification. Historical counterparts to lustration have always appeared in circumstances when the new elite is not capable of implementing institutional reforms with old personnel solutions. A radical historical example is Sula's proscriptions, in which his ideological-political opponents were sentenced to death on the basis of his orders, i.e., without conducting court proceedings. Sulla's personal purge did not result in real reform, so in the historical sense, Sulla was repeated with more success by political allies from the Second Triumvirate (Octavian, Antony, Lepidus). The Roman and Spanish Inquisitions represent an institutional purification, in the first case of heretics, and in the second of Muslims and Jews as religiously unfit, or as expressed by contemporary discourse – Others. The institutions of Jacobin terror are remembered for their harsh methodology of dealing with opponents of the Jacobin regime (emigrants and Vendée insurgents) who were sentenced to death without trial. In the spirit of Jacobin terror, the proceedings against the accused were reflected in the establishment of his identity and the death sentence.

The creation of the post-war European space was accompanied by Allied denazification as a purification measure, but at the same time, as a criminal law measure. Denazification was intended to remove the Nazis from German public life and to accelerate its transition to a stable liberal-democratic state. In the American occupation zone, the first phase of denazification was being carried out, and the Americans insisted on

involving in it all those who were in any relationship with the Nazi regime, which meant almost the entire adult population (Zidar 1996, 231–233). The aforementioned model of denazification was problematic from a methodological and legal point of view. In a methodological sense, cooperation with the Nazis was determined by filling out questionnaires (*Fragebogen*) in which respondents incriminated themselves. Second, the burden of proof is on the accused, not the prosecutor, which is the biggest legal shortcoming of denazification.

Lustration is exclusion or suspension from the most important public functions of detected individuals who were connected with the previous regime, especially those who professionally and politically demoted themselves in the judiciary and the bureaucratic apparatus (Morgan 2020, 60). Lustration understood in this way is essentially administrative justice, and it is terminologically wrong to equate vetting with lustration of the third branch of power, i.e., lustration of judicial officials. For some authors, there is a "gray area" between these two concepts, because "vetting can potentially blur into purge" (Horne 2017, 428) and become instrumentalized by politics, as happened in the de-Ba'athification case and in lustration practice in the Balkans. The jurisprudence of the European Court of Human Rights is full of judgments confirming the violation of the rights guaranteed by the European Convention on Human Rights due to inadequately implemented lustration regulations. For example, in the case of Sidabras and Dziautas v. Lithuania, the Court found that the discriminatory treatment of former KGB agents, as applicants, led to a violation of Article 14, which prohibits discrimination based on political opinion. The court reasoned that "restrictions imposed by the state on the employment of a person in a private company for reasons of disloyalty to the state cannot be justified from the perspective of the Convention in the same way as if it were to mediate employment in the civil service, regardless of the importance of the private company to the economic, political or security interests of the state" (ECHR, 55480/00, par. 58).

Also worth mentioning is the case of Trendafil Ivanovski, the former president and judge of the Constitutional Court of Macedonia, who was dismissed based on the implementation of the lustration procedure. Namely, Judge Ivanovski was the first subject of lustration in Macedonia, and he was labeled by the media as an alleged collaborator of the secret services (based on the knowledge of the lustration commission, although the procedure was strictly confidential). The aforementioned

lustration procedure was full of legal inconsistencies, and the Court took the position that in this particular case, the right to a fair trial was violated due to the overall unfairness of the lustration procedure (Article 6 of the ECHR). In addition to this, Ivanovski's right to respect for private and family life was also violated (Article 8 of the ECHR) since, by the decision of the lustration commission, he was forbidden to be employed in the civil service or the academic community for a period of 5 years. The possibility of employment in the private sector in accordance with his qualifications was significantly reduced since he was subject to the ban on being a lawyer (ECHR, 29908/11, par. 177). In the European jurisprudence, the Adamsons v. Latvia case represents a precedent that introduces the conditions that the lustration process must fulfill from the aspect of the application of the ECHR. The first condition is the principle of legality, that is, accessibility and predictability of the lustration law. The second condition is related to the principle that the punishment could not be the only purpose of lustration logic. The following condition implies the principle of individual (instead of collective) responsibility while guaranteeing procedural assumptions (ECHR, 3669/03, par. 116).

In order to prevent vindictive scenarios, Horne identified (Horne 2017) "clear process with transparent and legitimate vetting criteria, limiting the procedures in advance of their commencement, basing the process on reliable and verifiable information, and cleaving to the rule of law practices" (428–429). This explanation is partially correct since lustration *per se* is not supposed to be revenge, as evidenced by the legislator's intention expressed in Resolution No. 1096 (1996) of the Parliamentary Assembly of the Council of Europe on the Measures for the Dismantling of the Former Totalitarian Communist System. The purpose of lustration in the spirit of the Resolution is not to pronounce criminal charges against presumed responsible persons, but the protection of new democracies. In short, revenge must not be the *ratio legis* of lustration laws and lustration practice (Perić Diligenski 2023, 320). Lustration, either legislative or executive decision, consists of the following components: 1) suspicion of "alleged" disputed engagement in the past, conceived on collective responsibility for abuses determined under one's lustration program; 2) existence of protected current or future public functions; 3) applying specific screening methods like removal or public exposure (Rožič and Nisnevich 2016, 263).

Since the fall of communism, there is no uniform vetting logic, but forms have changed for political and legal reasons. Originally,

vetting was focused on the previous communist regime and its harmful consequences. In the last two decades, some authors rightly understand vetting as a tool for achieving the rule of law and preserving judicial independence (Miljojkovic 2024, 102). The rule of law as a modern Anglo-Saxon political-legal concept involves: separation of powers, an independent judiciary from political influence, judicial review, equality before the law, right to a fair trial, as well as protection of fundamental human rights (Perić Diligenski 2024, 392). There is consensus in the literature about core principles of the rule of law, which are: superiority of the law, separation of powers (law-making and law-applying institutions), predictability, equal application, just laws, robust and accessible enforcement, independent judiciary, and the right to participate. Additional criteria which complement the theoretical determination of the rule of law are: protection of persons and property, understandable by ordinary persons, resolving disputes without excessive costs and delay, an independent legal profession, and an emerging international rule of law (Stein 2019, 192–201).

In summa, vetting as a form and cornerstone of administrative justice experienced a Copernican turn from transitional regimes to weak democracies. In the first case, it was a transitional justice mechanism, while in the second case, it was an instrument of recovery and strengthening the rule of law. There are opinions in literature that vetting is a suitable mechanism for "democracy with a systemic deficiency" in which "institutions are regularly seen as unable to tackle infringements, due to corruption, unwillingness, institutional weakness, or lack of necessary capacity" (Ioannidis and Bogdandy 2014, 73).

Vetting is not a uniform concept, and it appears in several forms, such as review, reevaluation, and re-election (reappointment) of judges. There is no unique vetting model because it is impossible to apply it to different socio-political contexts. The aim of a review process is to remove judicial officials from public office because of a lack of integrity or capacity, based on the conducted screening (McAllum 2016, 169). The most famous historical review example was undertaken in 1974, in Greece, after the collapse of the right-wing military junta. The review did not give the desired results since "most middle and high–ranking judges were exempted from the screening and remained untouched" (Sotiropoulos 2007, 133). A reappointment process starts from the opposite logic because all employees are first disbanded, then required to reapply for their positions. The main purpose of reappointment is the

selection of quality personnel rather than the removal of individuals (McAllum 2016, 169).

For the author of this paper, vetting is an anti-corruption instrument useful in systems in which the rule of law is systematically and continuously violated, as well as the independence of judges and public prosecutors is violated. Vetting as a personnel reform programme in the judiciary should be agreed upon by a broad consensus (social, legal, and political actors) based on the constitutional and international norms. Also, it should be clear and precise in order to establish legal certainty and avoid ambiguity and political interference (OHCHR Rights 2006, 10).

In transition states that have conducted vetting, there were detailed international guidelines so that the process would not be arbitrary. Global guidelines formed vetting hexagon consisting of: 1) political conditions (the existence of political will to implement vetting); 2) institutional framework (defining which state institutions need to be vetted); 3) mapping of actors that should be subject to vetting; 4) determination of actors who will conduct the vetting; 5) provision of resources necessary for vetting; 6) adjustment of vetting to other social and political processes (UNDP 2006, 11–14). According to UN standards, the process of vetting is in direct correlation with integrity as a crucial determinant for public engagement. Integrity implies someone's adherence to relevant standards of human rights and professional conduct, including their financial propriety (UNDP 2006, 9).

Vetting of judicial officials is a legally and politically sensitive matter due to the constitutional and international principles that guarantee judicial independence, especially the principle of irremovability of judges. Like appointment, dismissal, and disciplinary responsibility, so irremovability should not be understood as Holy Writ, as evidenced by the attitude expressed in the Universal Declaration on the Independence of Justice that "a judge shall not be subject to removal except on proved grounds of incapacity or misbehavior rendering him unfit to continue in office." Judicial independence considers that in performing their duties, judges are free from pressure or influence from other state authorities. Appointment and promotion procedures and dismissals of judges, mandates of judges, and other guarantees that protect against external pressures are barriers against pressures on the third branch of government. *Exempli causa*, the independence of judges is undermined when members of the executive branch seek to directly intervene or

influence the outcome of the proceedings before the court, which was confirmed by jurisprudence of the European Court of Human Rights (ECHR 48553/99, par. 37).

Judiciary is an autopoietic system, based on its own logic and methodology instrumentation. Judicial officials, like all other members of society, have different social roles, preferences, and values, but in their professional activity of interpreting and applying the law, they should be politically blind. Nonpartisan and nonpolitical behavior is an important determinant of courts' legitimacy. Judicial officials, especially judges, must not be "politicians in robes," and once they join the bench, as long as they are the dispensers of justice, they must not favor a political side (Green and Roiphe 2024, 185).

THE VETTING PARADIGM IN ALBANIA

The aim of vetting is personnel cleansing of the judicial system of judges and prosecutors prone to corruption and informal institutional arrangements. This moral, legal, and institutional step, supported by an international commission review, was undertaken in Moldova, Albania, and Ukraine. Political elites of Georgia, Kosovo*[1], and Northern Macedonia are considering reviewing the finances and integrity of judicial officeholders. Under the influence of the EU's conditionality mechanism, which implies certain benefits (primarily financial aid) and an obligation to fulfill specific policies and normative and institutional reforms (Becker 2025, 402), the Albanian Parliament in 2016 adopted the vetting law with the 17th Constitutional amendment aiming to enforce professionalism across the sector, promote the values of independence and impartiality, and increase public trust in the judiciary. The vetting law was adopted by the absolute consensus of all 140 members of parliament as a result of long-term political negotiations between three main political leaders with the political "blessing" of the international community (precisely the "Collective West"). The intention of the legislator was to check the moral integrity and independence of Albanian judicial officials as well as the level of their independence from informal institutions, i., organized crime, corruption, and political influence (Stojkova–Zafirovska, Hadji–Zafirov, and Sopronov 2018, 8).

[1] This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

Although sharp vetting measures could have disturbed judicial independence, the Venice Commission gave the green light to Albania due to widespread corruption in the judiciary. In *Amicus Curiae brief for Constitutional Court*, which refers to the Vetting law, Venice Commission gave opinion on key concerns such as: conflict of interest, respecting the principle of separation of powers, respecting the right to a fair trial (Article 6 of the ECHR) as well as respecting private and family life (Article 8 of the ECHR) (VC 868/2016, 3). Conceptually, Venice Comission marked vetting as transitional, not anti-corruption re-evaluation of judges and prosecutors, which is closer to the original understanding of vetting as a transitional justice mechanism. In Albania, since the start of the vetting process, more than a hundred judges stopped performing judicial duties (lost their jobs) and 110 judicial officials resigned. When it comes to the Albanian Constitutional Court, five judges were dismissed and three others resigned. Jurisprudence of the ECtHR in case Xhoxhaj v. Abania took a strong anti-corruption attitude and denied protection under the ECHR to those actors (judicial officials) who are violating human rights and abusing power for lucrative gains while protecting the status quo of corruption. Unexplained wealth and ethical misconduct are guidelines for determining someone's unworthiness to perform public office (ECHR 15227/19).

At the end of the vetting ballad, the European Union evaluated this process positively because it identified and removed unworthy judicial officials from public space and verified the integrity and professional capacities of new candidates. In literature, one can also find the views that vetting is efficient "only when the legislative and the executive bodies, as the two other pillars of state power, are perceived by the public as bodies free of corruption" (Stojkova–Zafirovska, Hadji–Zafirov, and Sopronov 2018, 17).

JUDICIAL VETTING IN BOSNIA AND HERZEGOVINA

In a deeply divided and politically polarized post-Dayton Bosnia and Herzegovina, vetting programs were shaped and implemented under the influence of international factors. The United Nations was the key initiator and monitor of the vetting programs, which, as a generic term, included many sectors: security, intelligence services, the judiciary, and police. In short, the Bosnian vetting model was primarily focused on the coercive apparatus, along with the dealing with the past narrative, and

closer to the transitional justice concept. *Ratione personae*, this type of vetting included members of the police forces, judicial officials as a guardian of human rights and freedoms, army generals, and candidates for ministerial positions. The Bosnian-specific post-war context demanded that the aforementioned circle of persons be checked for war crime records, moral integrity, capacity, competence, and ownership. For the purposes of this paper, only the process of re-appointing judicial officials in the period 2002–2004 will be discussed here. *Differentia specifica* of the Bosnian judicial vetting paradigm was insisting on the ethnic composition of the judiciary, which could improve the public perception of judicial independence and impartiality. It was necessary because in the post-Dayton milieu, "judicial system all too often depended on an individual's national identity" (Mayer–Rieckh 2007, 190), and it caused failure in putting into the re-evaluation process the serving unworthy judges and prosecutors.

Due to this, international intervention was necessary, and the Independent Judicial Commission (IJC) decided to replace the ongoing re-evaluation process with a reappointment, which considered that judges and public prosecutors re-applied for their (public) office. Additionally, the reappointment logic of re-election was equally related to the professionalization of the judiciary and to redefining the court system, primarily reducing its size and ensuring ethnic representation (Trajanovska and Miska 2022). The constitutional design of entities was changed in order to eliminate the legal possibility of life tenure for judges. The reappointment process started by announcing vacancies for judicial and prosecutorial positions, and all professional lawyers could apply in an open competition, while sitting judges and prosecutors could reapply for any open position. From a statistical point of view, for 953 positions, 2.000 candidates applied. The public had the opportunity to come forward with incriminating information against judicial officials. Due to the abundance of compromising material, it was not possible to conduct a comprehensive review of conflict-related activities for all candidates (Stojkova–Zafirovska, Hadji–Zafirov, and Sopronov 2018, 21). It was unrealistic to expect that all the rotten apples in the judiciary will be removed or as the Venice Commission pointed out "it would have been unrealistic to have insisted on immediate full compliance with all international standards governing a stable and full-fledged democracy in a post-conflict situation such as in BiH following the adoption of the Dayton Agreement" (VC, CDL–AD (2005) 004, 23).

THE SERBIAN VETTING EXPERIENCE

If one were to take a historical step back, one would come to the conclusion that Serbia inherited a short history of the rule of law (from the 1870s until the fall of the first Yugoslavia). The historical periods that followed are depicted in the communist regime, then in the authoritarian populism (hybrid regime), the procedurally democratic regime, and the re-actualized authoritarian one. In all the mentioned periods, the Serbian being rejected the rule of law as a foreign body. There have always been tendencies to circumvent the law, to derive benefits from it, and at the same time to avoid obligations. This attitude towards the state and its laws stems from centuries of Ottoman repression that collected taxes from the subjects. After the struggle for liberation, the state in the historical context had a national and ideological, and not a legal feature. Legal nihilism is the most accurate theoretical term that could be used to describe the legal state of affairs in Serbia. Legal nihilism is reflected in distancing, relativizing, and negating the values incorporated in legal norms (Perić Diligenski 2020, 346).

In Serbia, the rule of the people has always been overshadowed by the rule of law. In other words, the rule of law is a hard-to-achieve ideal even though it represents a constitutional category. According to the Constitution of Serbia, the rule of law is realised through free and direct elections, constitutional guarantees of human and minority rights, separation of powers, independent judicial authority, and obedience of the authorities to the Constitution and the law (Article 3). Partocratic state, abuse of power and law for private purposes, dysfunctional judicial and administrative mechanisms that would prevent the usurpation of power, represent the main obstacles to strengthening the rule of law. Weakly developed legal awareness combined with parochial political culture and tolerance of citizens towards informal institutional arrangements make Serbia a state of lawlessness.

The judicial reform in Serbia (2008–2012) was designed and implemented in order to fulfill the conditions of the EU integration process. The EU promoted the necessity of establishing the Serbian judiciary as independent and continuously identified its weaknesses (Resende and Gomes 2017, 331). Serbian legislator never used the judicial vetting term, which is the crowning evidence of non-lustration intention. Serbian vetting model, according to its anatomy, was closer to the model of "defective democracies" than to the transitional justice

model. The legislator has focused on the general election paradigm (general reappointment), which implied calling for elections for judicial office based on predefined criteria and measures for assessing expertise, competence, and worthiness. For Serbian judicial reform, the re-election concept was used colloquially, though it implies a casuistic approach, taking into account disciplinary or criminal liability of each judge (Perić Diligenski and Mladenović 2012, 51). Inconsistent judicial reform has resulted in further politicization, and consequently, judicial officials were the only lustrated officials. The legal and historical paradox is the fact that they were lustrated by unlustrated authority (MPs of the Socialist Party of Serbia were part of the ruling majority). The main difficulty of this reform was its unconstitutional character since the hierarchy of legal acts was not respected. The Constitutional Law was given supraconstitutional power, which caused a violation of the constitutional principles of permanence and independence of the judicial function. Judges with this inadequate legal logic were equated with legislative and executive public officials, who are periodically subject to democratic legitimacy checks (Perić Diligenski and Mladenović 2012, 50). Gross violations of procedural safeguards have led to the weakening of the rule of law instead of its consolidation, which is noted in the literature as "traumatic experience" (ICJ 2016, 4).

When it comes to the constitutionality of judicial reform, the role of the Constitutional Court of Serbia was more peacemaker and diplomatic than formal-legal. The argumentation of the Constitutional Court was going in the direction of subtly motivating the executive branch to correct the mistakes made. Statistically summarized, 1.531 judges were reappointed, and 837 non-reappointed judges used an appeal to the Constitutional Court. The entire process was politically determined, as can be seen in the inertness of the CC in dealing with these cases. In 2010, the year after the implementation of the judicial reform, only two judgments were issued (the Saveljic and the Tasic case).[2] The actions of the Constitutional Court in the "vetting epopee" conceived as promoting the rule of law, rather than removing unfit personnel, is proof that this institution is a political actor and not an impartial guardian of constitutionality and legality.

[2] Case Saveljic, VIIIU-102/2010 of May 28, 2010, and case Tasic, VIIIU-189/2010 of December 21, 2010.

CONCLUSION

Analyzed negative experiences with the implementation of vetting show that strengthening the rule of law should be a national priority in each country separately, and the core of value gathering of citizens. Far-reaching and radical changes are necessary for establishing the rule of law as a normality, instead of writing various strategies, proclamations, action plans, and empty reforms. This primarily refers to the establishment of the true independence of the third branch of government from political influence, the implementation of lustration as a moral condemnation, the merciless fight against corruption as the most dangerous social deviation and political pathology. This is a prerequisite to create an environment that guarantees equality before the law and the unhindered enjoyment of human rights and freedoms, be they political, religious, or personal. After this step comes the consolidation of democracy, restoring trust in the state and its institutions (Perić Diligenski 2024, 398).

In order to eliminate legal uncertainty and introduce a precise vetting procedure, it is necessary to enact a Law on vetting, which involves checking the assets and income of judicial officials and persons closely associated with them, their possible connections to criminal structures, and an assessment of their professional (in)performance. *De lege ferenda* vetting model would be conducted by an independent body that would examine three key elements: 1. the assets of judicial officials (whether they have increased, whether they have reported them to the competent institution and whether they can prove their origin); 2. connections with organized crime and 3. professionalism (this also includes dignity, number of resolved cases, indictments, acquittals, etc.). The vetting body would be composed of legal experts who enjoy high professional reputation and who are not members or officials of political parties. The body would not determine the criminal liability of prosecutors and judges, but would decide on their dismissal. The aim of vetting is not to impose prison sentences, but rather to prohibit the further exercise of public prosecutorial or judicial functions due to professional unworthiness. All judicial officials subject to vetting would be guaranteed the right to appeal to a second-instance body. If their unworthiness were established, they would no longer be able to serve as judges and prosecutors, nor would they be able to work as lawyers in the public sector. Persons covered by vetting would have the opportunity to practice law and work in the private sector. If there is any suspicion that the listed

persons have committed criminal acts during their activities, they will be prosecuted and held accountable in accordance with domestic criminal laws. Only when vetting is understood as a credible anti-corruption tool, the end result will not be revenge but a professional, independent, and efficient judiciary.

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АНАТОМИЈА ВЕТИНГА – ИЗМЕЂУ ПРАВА И ПОЛИТИКЕ

Резиме

Рад истражује феномен ветинга у правосуђу, у Албанији, Босни и Херцеговини и Србији, као посткомунистичким земљама које су у процесу приступања Европској унији. Ветинг није јединствен концепт и појављује се у неколико појавних облика као што су: провера, реевалуација и реизбор (поновно именовање) судија. Не постоји јединствени модел ветинга јер га је немогуће применити на различите друштвено-политичке контексте. Аутор овог рада приступа ветингу као инструменту за борбу против корупције, корисном у системима у којима се систематски и континуирано крше владавина права као и независност судија и јавних тужилаца. Ветинг као програм кадровске реформе у правосуђу треба да буде постигнут на темељу широког консензуса (друштвених, правних и политичких актера) и на основу уставних и међународних норми. Као облик и камен темељац административне правде, парадигма ветинга доживела је коперникански заокрет од транзиционих режима ка слабим демократијама. У првом случају то је био механизам транзиционе правде, док је у другом случају био инструмент опоравка и јачања владавине права.

Кључне речи: ветинг, лустрација, владавина права, правосуђе, независност правосуђа, корупција, Србија, Албанија, Босна и Херцеговина

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THE MACEDONIAN QUESTION: BETWEEN WESTERN AND EASTERN CULTURAL MEMORY OF ALEXANDER THE GREAT

Abstract

This paper explores the "Macedonian Question" through the lens of the cultural memory of Alexander the Great. Rather than viewing it solely in political, legal, or geopolitical terms, the study examines the ideological and cultural constructions that shape contemporary understandings of the ancient legacy. Particular attention is given to the difference between Western and Eastern cultural memory: the Western tradition primarily presents Alexander as a conqueror and bearer of imperial order, while the Eastern tradition portrays him as a cultural mediator. The paper demonstrates that these divergent interpretations are not merely academic but carry strong political implications in the present regional and international context. Contemporary Macedonia emerges as a space where these narratives collide, most visibly in the dispute over its name and the Prespa Agreement, but also in broader processes of positioning the Balkans between West and East. Thus, the Macedonian Question today is not only a matter of national identity, but also a field in which global processes of cultural hegemony, ideological construction, and strategic competition are reflected.

Keywords: Macedonian question, North Macedonia, Alexander the Great, Greece, Hellenism, Classicism, cultural memory, Prespa Agreement, strategic culture

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INTRODUCTION

The Macedonian Question, one of the key contentious issues in the Balkans for more than a century, is most often presented in contemporary international discourse as a Greek-Macedonian dispute over the ethnic origins of the ancient Macedonians. Such a framing reduces the problem to a matter of biological descent and implies the conclusion that modern Macedonians, as Slavic people who settled in the Balkans in the 6th century, cannot claim any historical link to the ancient past. This reduction, however, obscures the core of the issue: the dispute is not about biology, but about the "cultural memory" – that is, the ways in which the ancient legacy is interpreted and symbolically appropriated.

In this context, Greek accusations of "stealing history" rest on the claim of an exclusive right to historical memory. Yet, in a broader sense, the Macedonian Question is not merely a conflict between two national cultures of memory, but a clash of two opposing narrative frameworks. While the Greek narrative is rooted in the Western cultural model, the Macedonian relies on the Eastern one. This elevates the bilateral dispute to a global level, reflecting broader ideological and geopolitical processes.

Starting from the theoretical premise that cultural memory is the ensemble of socially constructed and transmitted forms of remembrance through which a community preserves, interprets, and conveys its experience of the past (Assmann 2011), the aim of this paper is to examine how the memory of Alexander the Great is organized, that is, the structure of Western and Eastern narrative frameworks which are subsequently reflected in the development of modern Macedonian statehood. In this context, the Macedonian Question is not approached as a dispute over historical facts, but as a space in which visions of the future are shaped and cultural hegemony is legitimized.

WHY MUST THE ANCIENT MACEDONIANS BE CONSIDERED ETHNIC GREEKS?

Long before formal independence, and especially during the uprising against the Ottoman Empire, Greece drew great attention from the main political centers of Western Europe. At that time, every national movement was seen through the prism of the struggle against the reactionary forces of the Holy Alliance, but the Greek uprising of 1821

was in many ways unique. It was not a revolution of one more "small European nation," but of a people considered direct descendants of Plato, Aristotle, and Socrates, a nation whose "genetic code" was believed to preserve the democratic traditions of antiquity (Spasojević 2021). Called the "cradle of civilization," Greek independence symbolized the rebirth of the entire European continent. This strong symbolic and propagandistic potential was recognized by leading European artists. Eugène Delacroix, Lord Byron, and Jacques-Louis David linked ancient and modern Greece, spreading philhellenism and decisively influencing the fact that Greeks gained independence almost half a century before other Balkan peoples. The first Greek king, Otto Ludwig, heir of the most progressive kingdom of the Holy Roman Empire, opened the way for a redefinition of Greek identity, in which "the place of Orthodox saints was taken by ancient philosophers." During the 19th century, universities studied only classical art, while Byzantium was treated as a relic of the "dark past" (Spasojević 2021). All this contributed to the overnight reorientation of a people who had long been seen as the last bastion of the Eastern Roman Empire, but who now turned to the West. British intelligence reports at the beginning of the 20th century confirm this: "While visiting villages and towns of Macedonia, I noticed that Serbs and Bulgarians were obsessed with the Russian Tsar. Only the Greek people showed feelings of sympathy for the English" (Rastović 2011, 32).

The process of "antiquization" was not only a Greek phenomenon, but a broader European phenomenon. Its roots go back to the 15th century, when the cities of northern Italy saw the Renaissance – a cultural revolution based on the free and rational thought of ancient philosophy, emerging as a reaction to church dogmatism. It reached full momentum in the 19th century with the concept of the "New Age," through which Europe officially renounced the "dark Middle Ages." The main feature of antiquization was the aesthetics of classicism, which permeated almost all spheres of social and artistic life. Triumphal arches, museums, parliaments, and administrative palaces symbolized a universal standard of beauty, harmony, and rationality. After victory over church dogmatism and its Gothic and Baroque aesthetics, classicism began to lose its progressive role. Instead of affirming freedom of rational thought, it increasingly became a guardian of order and discipline, emphasizing the superiority of the European bourgeoisie while suppressing local cultural traditions and the new avant-garde artistic movements of the left.

The most significant aspect of "late classicism" and its extension to modern Greece manifested itself in the sphere of foreign policy and the legitimation of European colonialism. "Classical studies did not represent a mere abstract apparatus detached from state policy, but rather incorporated social and cultural patterns within society as a whole, which were then reflected so as to provide strong support for the idea of Europe's absolute superiority over all other continents, thereby justifying imperialism and neocolonialism as mission civilisatrice" (Bernal 2021, 7). The cited British historian, in his controversial study *Black Athena*, not only analyzes the cultural background of classicism but also its racial component. He observes that European scholarship insists on the theory of an Aryan origin of ancient Greek civilization, excluding its connections with the cultures of ancient Egypt and the Levant. This implied that the ancient Greeks and modern European peoples formed a single "family of nations" of Aryan descent. The background of such historical constructions was social Darwinism and the "eternal principle of racial inequality" (Bernal 2021).

The cultural-racial identification of modern Europeans with the ancient Greeks was especially evident in interpretations of Alexander the Great's campaign to the East, symbolically marked as the "age of Greek domination." In the chapter of the same name in Karl Julius Beloch's book, it is argued that the main motive of Alexander's conquests was the establishment of Greek hegemony over the entire known world (Vujačić 2017). In the new empire, the Greek elite governed administration, science, and art, while the Greek language became the universal language of culture. These were direct analogies to the *lingua franca* and Europe's political-economic dominance at the start of the 20th century: "the history of Alexander the Great remains simply the most important page in the history of mankind (...) they conquer the world because they are morally and intellectually superior" (Beloch 1904, 33). A similar view was expressed by Jacob Burckhardt, the founder of cultural history, who argued that Alexander's campaign marked "the extraction of Eastern peoples from a state of barbarism (...) the higher these peoples were culturally, the more successful Hellenization proved" (Vujačić 2017, 68). For European classicists of the late 19th century, the period after Alexander represented "the next stage" in the expansion of classical Greek civilization. Since they were relatively few, the Greeks could not hold such vast territories and gradually became "incurably decadent, inviting their own downfall at the hand of Rome" (Mommsen 2011).

Where Alexander and his companions stopped, the Romans continued, securing the long-term dominance of the West (civilization) over the East (barbarism). In this classical cultural memory, Alexander had a primarily transitional role, linking ancient Greece and Rome into a single historical continuum.

The phenomenon of Alexander and its racial component also inspired historians of fascist orientation. Thus, Karl Schneider wrote that the success of Greek imperialism lay in the "absence of any contamination, including racial" from Eastern influences (Vujačić 2017). The strength and quality of Greek culture stemmed from Greek distinctiveness, its power of attraction and prestige, but also from resistance to foreign elements. Once the Greeks became tolerant, the vitality of their national culture quickly declined, since, according to fascist doctrine, every mixture or interweaving of cultures led to degeneration and downfall. His colleague, Helmut Berve, claimed that Alexander the Great "deliberately contaminated Greek culture," but only with the Bactrians and Sogdians, peoples of Aryan origin. He recognized in them "racial relatives" (*Herrenvölker*) who, together with the Greeks, were meant to rule over other peoples of the empire, above all the Semites (Berve 1938). Like the classical, the fascist cultural memory also had a direct reflection in international politics, through Hitler's attempts to forge a closer alliance with Persia – renamed Iran in 1935, the land of the Aryans.

These narratives about the ancient conqueror reveal more about the historical periods in which they were produced than about Alexander himself. Contemporary cultural memory has not distanced itself from these representations; rather, it has adopted them as the basis for new constructions. One of the leading living authorities on ancient Macedonia is Robin Lane Fox, both for his distinguished position at Oxford University and because his book on Alexander the Great inspired Oliver Stone's 2004 Hollywood film. At the core of Fox's interpretation lies the conviction that in antiquity, progress was possible only under the influence of the Greek "civilizing mission." This narrative appears from the opening pages of his work, in the description of Macedonia: "life was harsh and unregulated, without any signs of culture." Only after the capital was moved to Pella, close to the Greek poleis, did Macedonians gain the chance to "learn a Greek poem, listen to Greek orators, move among Greek paintings and sculptures, discuss modern strategy and know of its history and theory" (Fox 2004, 48).

According to Fox, the rise of the Macedonian state depended entirely on Greek influence: "Like the warlords of Heian Japan who absorbed all their skills from China, the Macedonian barons owed their broader horizons to Greece" (Fox 2004, 48). In the same way, Fox presents other Oriental peoples as passive recipients of Greek achievements. Even when acknowledging local traditions – mining, irrigation, astronomy – their value is recognized only once "shaped" by the Greek mind. Fox further compares Macedonian-Greek conquests to the "modernization processes of Third World states," and attributes Alexander's failures to the entrenched conservatism of Oriental despots: "The family was the only constant, marked by genealogies and rigid rules of precedence; a culture which spread through cities and administrators could not work down through their looser forms of rural government" (Fox 2004, 530). To align Alexander with late 20th-century liberal sensibilities, Fox also emphasizes the king's homosexual tendencies, portraying him as a "gay icon" (Fox 2004, 530).

In Western cultural memory, alongside the liberal approach, there is also a realist perspective that seeks to demystify Alexander's image, presenting him as an archetypal realpolitician, a Machiavellian figure stripped of idealism and prone to the abuse of power. A typical example of this approach is Peter Green, who dismisses any possibility of "philanthropic idealism," comparing Alexander with historical figures such as Stalin or Pol Pot, and linking his ideology to the racist teachings of de Gobineau and Hitler; "superstitious narcissism easily slid, as unparalleled successes accumulated, into megalomania and delusions of godhead (...) his paranoia about conspiracy increasingly illustrated the old saying that paranoids often have good reason to be paranoid" (Green 2013, 16). In shaping Alexander's mental framework, Greek culture and its greatest thinker, Aristotle, played a decisive role. Aristotle advised the young king: "A hegemon to the Greeks, but a despot to the barbarians – treat the former as friends and relatives, and the latter as animals or plants" (Green 2013, 58). Educated within this Greco-centric culture, Alexander and his closest companions developed an "innate" and entirely "natural sense of superiority." Accordingly, Green concludes that all of Alexander's steps toward racial integration were strictly limited, with immediate and purely practical goals.

The view that Alexander the Great was primarily "pragmatist with a streak of ruthlessness" and only secondarily "enthusiast with a streak of passionate romanticism" was defended by the distinguished Cambridge

scholar (Cartledge 2004, 198). Greek culture and civilization were then at their peak, yet for Alexander they served mainly as "instruments of imperial administration." Paul Cartledge stands apart from other scholars in interpreting Alexander's policies through the lens of the orientalization of classical Greek customs. "What begins as a Panhellenic crusade against Persia ends in the spirit of Orientalism." According to the British historian, this was a reflection of Alexander's realpolitik, not of deeper ideological motives (Cartledge 2004). Thus, the introduction of *proskynesis* – the Iranian custom of bowing before the ruler – was aimed at consolidating authority among his generals. Likewise, by honoring Eastern deities, Alexander sought to win the loyalty of foreign peoples and reduce their resistance. "There is nothing sentimental in these gestures. His overriding aim, as we have seen, was to create an Irano-Macedonian ruling class and to perpetuate his army of empire by tapping the fertility of oriental women" (Cartledge 2004, 177). This compromise view of Orientalism, rare in Western cultural memory, mirrors the "social-democratic" orientation of Tony Blair's New Labour. This "Third Way" ideology, designed at Cambridge University, aimed to overcome the old divide between left and right by creating a "new capitalism" and promoting multiculturalism (Giddens 1998). Despite such nuances, social-democratic cultural memory remains firmly embedded in the Western narrative pattern, since "the Hellenized Near East, created during Alexander's campaigns," was ultimately "the forerunner of what, through conquest, became the eastern part of the mighty Roman Empire" (Cartledge 2004, 224).

Prominent American neoconservatives also developed their own version of the cultural memory of Alexander the Great. It went so far as to equate the U.S. intervention in Afghanistan with Alexander's campaign in Central Asia. Frank Holt employed this analogy in his book *Into the Land of Bones*, arguing that "what George W. Bush called the first war of the 21st century in fact began more than two thousand three hundred years ago, when Alexander the Great launched the initial invasion by a Western superpower to subdue Afghanistan and its warlords" (Holt 2012, 10). According to Holt, Alexander – like the United States – had no initial intention of intervening militarily in Central Asia. Yet instability in the region and the threat posed by fugitive Persian generals, such as Bessus, forced him into action. This pursuit of a "bandit" resembles the American hunt for Bin Laden, the fight against terrorism, and Taliban guerrilla warfare. Holt describes the Central Asian tribes as deeply archaic,

noting that efforts at cultural transformation through the construction of cities, theaters, and gymnasia had little effect on the local population. The Greeks lived in isolation within separate communities, in what might be described as an "early apartheid" (Holt 2012, 158). While not rejecting the legitimacy of the American intervention, Holt – true to neoconservative thinking – warns that it would be more rational to limit its objectives, since cultural backwardness makes the democratization of Afghanistan an almost impossible mission.

Frank Holt's role extended beyond academia. As a leading member of the historian group *Macedonia Evidence*, in 2009, he co-signed a letter to the U.S. President claiming that the link between the modern Macedonian state and ancient Macedonia was "anachronistic and falsified." The letter argued that the term "Macedonian," in its ethnic, linguistic, and cultural sense as used by the "former Yugoslav republic," was a misuse of historical truth. Signed by more than 300 prominent historians from Western universities, the authors can be seen as carriers of a Western narrative framework. Apart from restricting the Macedonians' right to self-determination, this narrative is marked by denying subjectivity to Oriental peoples and cultures, reducing Alexander the Great to nothing more than the culmination of classical Greek culture, its ultimate apologist. Yet the most important dimension of this cultural memory lies in its contemporary function: antiquity is not treated as a closed historical chapter but as the living foundation of European culture and ideology. Through cultural and racial identification with classical Greece, and later with Rome, the collective West constructs an image of the East's eternal subordination, thereby securing symbolic legitimacy for its interventionist ventures.

THE EASTERN CULTURAL MEMORY OF ALEXANDER THE GREAT

A key argument of Western cultural memory is the very name of the historical era that stretches from Alexander the Great's death to Rome's conquest of Egypt in 30 BCE. Derived from the Greek root *Hellen* – Greek, "Hellenism" was taken to mean the spread of Greek culture. Yet when first used, the term had a different meaning: "the dialect of the Greek language spoken by the Jewish community in Egypt, marked by many phrases borrowed from Oriental languages and ideas taken from Asian teachings" (Matter 1820, 203). In this light, when the

famous Prussian historian chose to designate the period after Alexander's death as "Hellenism," he did so to stress its syncretic character – or more precisely, to mark "the end of one period and the beginning of a new era" (Дройзен 2011, 19).

According to Droysen, Hellenism was preceded by a period of weakness and vulnerability in Greek civilization, already evident during the Persian Wars (500–449 BCE), when the cultural center of Miletus was destroyed, followed by the Acropolis in Athens. These shocks, accompanied by deep moral and spiritual decline, the rise of dictatorial regimes, and then decades of the Peloponnesian War, destroyed the last hope that Greek civilization might be renewed. Although Sparta emerged victorious, it was far from the glory of its golden age and its famous ruler Lycurgus: "It was no longer the Sparta where every citizen was at once a soldier, without private property, bound by strict discipline, but rather a society dominated by greed, indulgence, cowardice, and hypocrisy" (Дройзен 2011, 29). The social and political circumstances in Athens were even worse: noble families were plundered and murdered, the educated elite exiled, while political opportunism and mercenary soldiers established the "Thirty Tyrants."

The democratic order of the classical Greek poleis was in deep crisis by the early 4th century BCE. New models of social organization had to be found, and according to Droysen (Дройзен 2011), "Divine Providence" assigned this task to the Macedonians, nomadic tribes from the Rhodope–Dinaric mountains of the Balkans. Their language differed from Greek, and their participation in the Olympic Games was strictly limited because of their "barbarian" origin. Seeking the reasons for their sudden rise, Droysen finds them in their reliance on traditional values, avoidance of Greek innovations, and close ties with Illyrian tribes. Living under constant threat of war, the Macedonians were forced into continual adaptation and military training, maintaining a delicate balance between the progressive South and the conservative North. Harsh social conditions left no room for hedonism but forged an unbreakable character, giving Macedonian soldiers worldwide prestige. Especially famed were the king's "eternal companions" – the celebrated *hetairoi*, whose origins reached back to the epic world of the *Iliad* and the *Odyssey*. In symbiosis with the renowned phalanxes, they formed an irresistible force before which no boundary could stand.

With a disciplined army, the ambitious Philip II found it easy to impose Macedonian hegemony over the divided Greek poleis.

Droysen describes him as a calculating realpolitiker who used the idea of Panhellenism to legitimize his rule. With the support of Aristotle, one of Greece's leading ideologues Philip convinced the Greeks that the Macedonian army would lead the wars of revenge against Persia. After Philip's sudden assassination, power passed to his son Alexander, who formally continued his father's policy. Yet unlike Philip, Alexander was driven not by pragmatism but by idealism. He did not merely seek to revive the glory of the old poleis or surrender to the cult of wine and pleasure, but pursued the ultimate goal – a radical transformation of the known world. Alexander himself had experienced both "Greek arrogance" and "Oriental submission," and he reserved the label "barbarian" only for those who, even after defeat, refused to recognize him as supreme ruler. All others enjoyed equal status: they kept their customs and beliefs, while their leading commanders entered the young king's closest circle of advisers. This magnanimity, in Droysen's view, reflected his "visionary political aims" – the spiritual union of East and West (Дройзен 2011, 170). That the Greek poleis only formally recognized Macedonian authority, while in practice sending mercenaries to fight against Alexander, shows that Athens and Sparta had been pushed to the margins, while the new cultural and economic centers emerged in Alexandria, Babylon, and Al-Haima.

Droysen's view of Hellenism as a synthesis of the Enlightened West and the mystical East strongly reflects the spirit of the age in which it was conceived. As the son of a Prussian clergyman, raised in a conservative monarchist spirit and shaped by the revolutionary upheavals of the early 19th century, he became politically reactionary. In his *History of Hellenism*, his aim was to refute the Enlightenment narrative that portrayed Napoleon as a modern Alexander. Instead, he identified Prussia – the "semi-barbarian" state with Macedonia, and presented the Holy Alliance as a universal empire akin to the Hellenistic one. In this construction, the Romanov dynasty assumed the role of the Achaemenids, while the socio-political crisis of the Greek poleis served as an analogue for the condition of Western Europe. Thanks to such analogies, Droysen became one of the most widely read historians of his time. Yet, as the idea of a "universal empire" and the Holy Alliance gradually gave way to the ideology of German national unification, his historical constructions were increasingly dismissed as romantic.

Although completely abandoned in Europe by the early 20th century, Droysen's *History of Hellenism* found fertile ground in the

"realist" Soviet Union. Drawing on Droysen's authority, Soviet and later contemporary Russian historiography treated Hellenism as an independent historical epoch, separate from both classical Greece and Rome (Климов 2013). Like Droysen, they traced its origins not to the superiority of the Greek poleis, but to their profound socio-political crisis, which could not be overcome either by "the city tyrants with their energetic wars and initiatives, or by the traditional centers of power such as Sparta and Athens." Only Macedonia – "that eternal outsider of the ancient world" – was capable of assuming this role and laying the foundation of a new order (Фролов 2001).

When considering Hellenism, Russian historians focus primarily on art and culture, rather than exclusively on military or administrative categories. In early Hellenistic architecture, sculpture, and statuary, they discern a new aesthetic marked by an interest in detail, in the unusual, in whatever diverges from the norm. "The normativity of the classical style, at that time, provoked if not outright condemnation, then indifference or contempt" (Sokolov 1992, 346). In other words, the central thesis of Droysen is supported by Russian historians above all in the field of art. Instead of the idealized gods and their unattainable virtues that characterized classical Greek culture, Hellenistic culture strove to depict imperfection, the human personality, and individual experience. Rationality gives way to Oriental motifs – religion, mysticism, and exoticism – so that art becomes an expression of a new pluralistic age.

Hellenistic art reveals that Alexander's Orientalism was not the product of realpolitik but part of a broader strategic-cultural vision. When he proclaimed himself pharaoh in Egypt, heir to the Achaemenids in Persia, and appointed Persians rather than Greeks to positions of authority, Alexander established a cultural framework that would shape not only future rulers but also the artists – the carriers of a new epoch. Yet these cultural innovations did not enjoy broad support, especially not among the military veterans. Raised in the spirit of Panhellenism and the dogmatic division between "civilized" and "barbarian," they regarded Alexander's policies as a betrayal. The rebellions within the army, led by the experienced commanders Antipater and Parmenion, can be interpreted as a generational conflict – the struggle between those who sought to preserve the "old order" and the "new generations" who dreamed of social transformation. The unrest within the highest military circles testifies to the fact that the Macedonian king's policy was, to a great extent, revolutionary. Its foundation lay not in the old aristocracy

but in the "Successors" – the children of numerous collective marriages between Alexander's soldiers and women from the East. Therefore, when the phenomenon of Alexander the Great is discussed in Russia, what comes to the fore is his "Oriental ideology" and a "positive model of globalization" that was not based on hegemony.

Reexamining Eastern cultures of memory brings us to India – a civilization that directly experienced the encounter with the Macedonian conquerors. The most significant authority in this field is A.K. Narain, one of the first Indian historians educated in Britain, who specialized in Hellenism and the legacy of the Indo-Greek kingdom. Although studied in the Western academic tradition, he refused to view Alexander through the pragmatic lens of a "Panhellenic war of revenge" instead placing emphasis on the irrational and visionary aspects of his character: "Alexander had neither small nor petty ambitions, nor would he ever have been satisfied with the possessions already won, even had he joined Europe to Asia; he would always have sought the unknown, remaining his own greatest rival" (Narain 1965, 155). Stressing that Alexander's Indian campaign was a military failure, Narain focused on the indirect consequences of the conquest – the creation of the Indo-Greek kingdom in the territories of present-day Afghanistan and Pakistan, a center of interaction between East and West, a place where settlers from the West gradually merged into local cultures. "They had kept their identity as long as they could before they were absorbed in the melting pot of South Asia. They were socially integrated into the caste system of India, they became Buddhists and Hindus, master craftsmen and architects, adopted Indian names and titles, and wrote in Indian script and languages" (Narain 1989, 418). The word "Greek" in "Indo-Greek kingdom" did not refer solely to ethnic Greeks, but also to "Macedonians from Yugoslavia, as well as Libyans, together with Greeks from various cities of Asia Minor who came to the East before, during, and after Alexander's time" (388).

The kingdom reached its peak between 165 and 130 BCE, under the rule of Menander I, who embraced Buddhism. This religious syncretism within the Indo-Greek realm was accompanied by cultural and artistic interweaving in its capital, Al Haimi, which abounded with Indian temples and architectural solutions of Eastern origin (Narain 1987). Since these insights differed radically from Western ones, Narain sought to separate the Indo-Greek kingdom from the "general" history of Hellenism and present it as an independent historical phenomenon. He justified this thesis with the claim: "The Indo-Greeks were more deeply

influenced by Indian religion and thought than any other Hellenistic king was influenced by the faith and ideas of the country he ruled" (Narain 1957, 11). From this assertion arose Narain's famous leitmotif: "The Greeks came, they saw, but the Indians conquered" (11). It is important to note that Narain's position was supported by the future Prime Minister Jawaharlal Nehru, who, in his *Discovery of India,* observed "how the Greeks who reached the frontier adopted Indian characteristics and absorbed Indian culture" (Nehru 1957, 135).

When we place Indian cultural memory alongside the Egyptian, it becomes clear that the Indo-Greek kingdom was not an exception but rather the rule. Egyptian historians strongly emphasize that the Ptolemies, successors of Alexander the Great on the pharaonic throne, were true representatives of Egyptian traditions and, at the same time, "the last dynasty of ancient Egypt". Before Alexander, Egypt had been under Persian rule, during which temples were desecrated, religious rituals abolished, and Egyptian religion mocked (Ismāʿīl 2020). After Alexander, however, came the restoration of political and religious independence, which is why he was celebrated as a "hero and liberator." Since Alexander placed his close childhood friend and loyal general on the throne, the Egyptian people proclaimed Ptolemy I a "protector." For nearly three centuries, the dynasty pursued a policy of cultural fusion: they dressed in pharaonic attire, carried relics, promoted Egyptian deities, and used the ancient Egyptian language in parallel with Greek (Ismāʿīl 2020). Yet reverence for the old Egyptian gods was not the dynasty's only hallmark. Under their rule, Alexandria became the center of Hellenistic trade and learning, proving that during the Hellenistic era, cultural intermingling was the only path to progress. Much like their Indian counterparts, Egyptian historians also have their leitmotif: "The Ptolemies became Egyptians, but we never became Ptolemies" (Hawass 2003).

The emphasis on Alexander the Great's "Oriental ideology," later projected onto Hellenism, is the main reason why his successors (the Diadochi) are not portrayed as foreign colonizers but as an inseparable part of national history. The exception is Iran, where the Seleucid dynasty is viewed as an extension of Greek cultural domination. "Iranians have never considered the Seleucids an Iranian dynasty" – their rule is described as "the Greek occupation of Iran and an era of foreign oppression" (Qadyāni 2017). Rebellions against the Seleucids are interpreted as resistance to discrimination, while the one led by Ashk

became a national myth, with the Parthians celebrated as liberators. Despite this reserved attitude toward the Seleucids, the image of the Macedonian king retained a positive character. Thus, in the *Shahnameh*, one of the most important works of Iranian tradition, Alexander appears as Iskandar, the son of a Persian king and a Roman princess, fully integrated into the Iranian dynastic line. A wise ruler, philosopher, and traveler in search of truth, who respects Iranian customs, law, and culture, he becomes a symbol of cultural synthesis (Firdousi 1984). Another well-known 12th-century Iranian poet went even further, linking Iskandar with the ultimate aspirations of humanity. After many wanderings and conquered lands, the young king would find satisfaction only upon discovering a people among whom equality and general prosperity reigned: "We are equal in wealth, the treasure is shared evenly among us. In this life, we are all equally important, and no one should laugh at another's tears" (Низами 1986).

As a predominantly Muslim state, Iran also transmits Islamic cultural memory, according to which Alexander the Great is identified with a Qur'anic figure under the name Dhul-Qarnayn – "the one with two horns." In this context, the holy book of Islam depicts Alexander's conquest of the East with images of the "sun setting in a murky spring in the West" and "rising over a people without shelter in the East," interpreted as a metaphor for reaching the ends of the world and establishing a universal empire. Along this path, Alexander raises a wall against Gog and Magog, symbols of chaos and destructive forces, thereby becoming the guardian of a new order. Without doubt, Islamic culture profoundly influenced other Muslim communities, above all Ottoman Turkey and the Arab world, further bringing Eastern cultural memories of Alexander closer together.

When it comes to Yugoslav cultural memory, although geographically located in the West, by its content, it belongs to the East. For this reason, certain Serbian historians of antiquity raise their voices, claiming that Serbian conceptions of Hellenism deviate from the "results of modern scholarship" (Vujačić 2017). This professor at the Faculty of Philosophy finds unacceptable domestic textbooks in which Hellenism is defined as "a fusion of Greek and Ancient Eastern cultural traditions," advocating instead for alignment with Western cultural memory, where Hellenism is merely "the next stage in the history of Greek culture, expanding into regions where it had been little or not at all present" (Vujačić 2017, 70). One of the main culprits of this "outdated approach"

is considered to be academician Miloš Djurić, for whom Alexander the Great was a "cosmocrator and ecumenist." Similar to Droysen, the renowned Yugoslav Hellenist situates the young king at the transition from "the epoch of political and cultural primacy of old Hellas to the epoch of a new historical life, the epoch of Hellenism" (Đurić 1952, 1).

The fundamental precondition for such a historical breakthrough was "abandoning the dogma of the opposition of Hellenes to barbarians and the recognition of every nationality, custom, and religion" (Đurić 1952, 20). In this new era, the East was not merely a passive recipient of Western cultural models: "Hellenic science, the Egyptian eternal obsession with the Sun and Death, Chaldean astrology, Babylonian demonology, Semitic apocalypticism, Persian belief in the struggle between good and evil, various mystery cults (…) all of these mutually intermingled and became the common property of all peoples" (43). Hellenism, in this vision, gathers humanity into an organic whole, led by the great Alexander, "the conductor of a multi-ethnic ecumenical orchestra." As the main bearer of Yugoslav cultural memory, Đurić also decisively influenced the formation of Macedonian cultural memory, in which "the figure of Alexander is extraordinary, his youth vibrant and gifted, and his victories brilliant and legendary. (…) His aim was the creation of a world state in which the elements and influences of Hellenism are united with the Oriental political and socio-economic order" (Antoljak 1979, 44).

THE PRESPA AGREEMENT AS A CONCLUSION

In seeking to provide an objective assessment of the opposing narrative patterns, we have attempted to consider a broader view of Alexander's legacy. Yet even at this level, we encounter profound contradictions: for some, the era preceding the Macedonian rise represents the pinnacle of Greek civilization; for others, its final collapse. The gap in interpretations becomes even more pronounced when characterizing what followed: should Hellenism be understood as a mere continuation of Greek culture, or as the beginning of a new historical epoch? All of this leads us to conclude that Western and Eastern cultures of memory are not grounded in historical facts, but in ontological representations.

From the standpoint of academia, this pluralism ought to be regarded as something positive, as it contributes to the expansion of academic debates and interest in the specific period. Yet in practice,

confrontation is almost absent: Western cultural memory insists on exclusivity, which in turn manifests itself as a justification for the flagrant violation of international law. The best example of this is Macedonia, which, under the Prespa Agreement, was obliged not only to change its state name but also to align itself with Western cultural memory. Therefore, in addition to the political and legal aspects of the Prespa Agreement previously addressed by the Serbian author (Janev 2019), we will here focus on its cultural-identity provisions, specifically Article 7 (2), which states that "the entire Hellenic civilization, history, culture and heritage of that region from antiquity to the present day" belong exclusively to Greece (Prespa Agreement 2018). From this article, it follows that every historical figure and every work of art from the Hellenistic period must be designated as part of "Greek heritage," which is why Alexander's monument in Skopje had to be renamed.

Yet what makes the legal labyrinth of the Prespa Agreement particularly striking is the fact that the disputed article, through Article 1 (3) (d), may acquire an *erga omnes* effect. In other words, the agreement itself seeks to elevate the Greek monopoly over the Hellenistic heritage to an international legal level that would also be binding on third parties. A consistent application of this mechanism would enable Greece to object if, for instance, Egypt were to erect a monument in Alexandria to Ptolemy as the founder of the last pharaonic dynasty without emphasizing his "Greek" origin. The same applies to India, Iran, or any other state in the Middle East and Central Asia. All of them are implicitly obliged to treat Hellenism as a kind of "intellectual property" over which, through Greece, Western historical scholarship claims exclusive rights.

Bearing in mind that the monopoly, in itself, is never the ultimate goal, the background of the Prespa Agreement and the enormous pressure placed on the Macedonian nation should not be sought in its concrete provisions, but primarily in the function of cultural memory. Beyond "preserving the past," its essential role lies in constructing the future through meaningful interpretation of prior experiences. By setting desirable models of behavior, role models, and ideals to emulate, cultural memory shapes identity and indicates the path along which a community proceeds (Assmann 2011). In this light, it is far from irrelevant how we remember the greatest figure of the ancient world: as a "racial Greek" who subjugates the "backward peoples of the Orient," or as the bearer of the idea of *homonoia* – the ideal of harmony and unity. Viewed within the framework of a "universal cultural memory," the choice between these

two narrative patterns is directly correlated with the choice of the future international order: either perpetual status quo and struggle for power, or cultural interaction and equality among all nations.

Returning to the Macedonian Question and the criteria for choosing between Greek and Macedonian cultures of memory, it becomes evident that "historical truth" remains buried deep in the past. The only reliable foundation for addressing this issue lies in cultural-strategic visions of the future. In this regard, the great powers, the so-called challengers of Western hegemony, as well as nations that cultivate the Eastern model of cultural memory, should readily find their interest in supporting the cultural self-determination of contemporary Macedonia. Beyond embodying the cradle of Alexander's ecumenical vision of "one state and one people living in equality," the Macedonian identity is crucial because it fundamentally undermines the linear construction of ancient history: it does not see Hellenism as a mere interlude in Greco-Roman domination, but as an independent epoch that could be seen as the precursor of a Greater Eurasian Partnership – a vision of Europe and Asia coexisting in peace and prosperity as a harmonious whole, opening a new chapter in the universal era of world history.

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МАКЕДОНСКО ПИТАЊЕ: ИЗМЕЂУ ЗАПАДНЕ И ИСТОЧНЕ КУЛТУРЕ ПМЋЕЊА АЛЕКСАНДРА ВЕЛИКОГ

Резиме

Рад истражује „македонско питање" кроз призму културе памћења Александра Великог. Уместо да се посматра искључиво у политичким, правним или геополитичким оквирима, студија се усмерава на анализу идеолошких и културних конструкција уз помоћ којих се инструментализује античко наслеђе. Посебна пажња посвећена је разлици између западне и источне културе памћења: прва Александра представља као освајача и утемељивача западног просветитељског империјализма, док га друга види као светског ујединитеља који спаја источни мистицизам са западним рационализмом. Ови различити наративни обрасци, неговани кроз векове, имају конкретну друштвену функцију – конструкцијом одређене слике прошлости они постављају узоре и моделе понашања који одржавају постојећи друштвени систем, али истовремено обликују и визију будућег. Пример културе памћења Александра Македонског јасно показује да интерпретација историјских догађаја пре свега зависи од геостратегије и политике, док се саме историјске чињенице селективно користе у идеолошке сврхе. Тај механизам је посебно очигледан у случају Александра, имајући у виду да су најстарији сачувани извори о његовом животу настали више од три века након његове смрти. Стога, приликом опредељивања за једну од супротстављених страна у грчко-македонском спору, не бирамо само између два наративна обрасца – грчког, укорењеног у западном културном моделу, и македонског, који се ослања на источни – већ се у суштини опредељујемо за одређену визију будућег светског поретка. Тако схваћено, македонско питање превазилази оквир националног идентитета или територијалног интегритета и постаје кључни симбол кроз који се огледају глобални процеси,

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геополитичка надметања и стратешко-културне визије. Македонско питање, и после читавог века, остаје *nervus rerum* Балканског полуострва и један од кључних показатеља односа између Запада и Истока у савременом међународном систему.

Кључне речи: македонско питање, Северна Македонија, Александар Велики, Грчка, хеленизам, класицизам, култура памћења, Преспански споразум, стратешка култура

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REVIEWS

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Review

Српска политичка мисао
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HOW AND WHY BULGARIA MISSED ITS CHANCE TO BECOME AN ENERGY CENTER IN THE BALKANS**

This review analyses why Bulgaria missed a unique opportunity to become the energy centre of the Balkans. It examines the country's strategic position, its natural potential in energy resources, and the reasons for their underutilization due to internal or external political factors. Special attention is given to failed projects such as the Belene nuclear power plant and the "South Stream" gas pipeline. The review demonstrates the interdependence between energy security, political decisions, and external political pressures.

A country's strategic location would be an advantage and a flaw if a weak political class led that state. It would not only fail to take advantage of the geopolitical *status. Still, it would adversely affect ordinary people's lives* for generations. It seemed that the Bulgarian case was precisely the same because, in just two decades, the politicians

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missed the opportunity to turn Bulgaria into an energy centre in the Balkans. The Bulgarian authorities, constructed by all of the major parties in the country, did not even try to manoeuvre before the world hegemon.

Otherwise, the prospects in front of Bulgaria in the energy sector were more than acceptable. Towards the end of the 1980s, Bulgaria began building a second nuclear power plant (NPP) in Belene (Marsteller 1993, 140). By the end of 1989, the site for the NPP had been built, and the Bulgarian state purchased two thousand megawatt reactors from the USSR. A self-contained town was built for the plant staff, including residential buildings, a hospital, a kindergarten, and a school. However, the geopolitical shift that occurred with the fall of the Berlin Wall stopped everything. Mikhail Gorbachev ceded control of Eastern Europe to the West to focus on the difficult economic situation in the Soviet Union and the military conflicts in its territory, such as the Nagorno-Karabakh war. Bulgaria was no exception to Mikhail Sergeyevich's plans (Трайков 1999, 74–79). Thus, Moscow stopped subsidising the Bulgarian economy. Gorbachev disclosed one of the most loyal Soviet allies in the face of Todor Zhivkov (and the Bulgarians). The country no longer received cheap Soviet energy resources, which led to a sharp increase in foreign debt. The economy collapsed for several months. Soon, the Soviet Union collapsed, with its vast market for Bulgarian goods. Gorbachev's deal with the West projected its results in unexpected dimensions for the Western politicians. The USSR and the Socialist Bloc disappeared.

The economic collapse and the severed ties with Moscow predetermined the fate of the Belene NPP. Also, Bulgaria was disclosed by people like Gorbachev (Живков 1997, 638), and the state was dragged into the Western sphere of influence (Чакъров 2001, 130). The West had no interest in Bulgaria being independent in the energy field, primarily through nuclear capacities. This also contributed to the sad fate of the large-scale Belene project. Finally, the power plant's site became deserted, and the billions of levs spent on its construction (with two reactors) ended up in the Danube. The hope that Northern Bulgaria would experience some economic upswing through the construction of the second Bulgarian NPP also disappeared (Pedraza 2015, 479).

Because Bulgaria fell into the sphere of Western influence, the authorities in the country led the Bulgarians towards NATO and EU membership. The Bulgarian army was disarmed, and official Sofia

succumbed to the pressure exerted by Washington, D.C., and Brussels to close the so-called small reactors of Kozloduy NPP (Smilov and Primatarova 2018, 163). All these actions were presented to Bulgarian society to optimise the country's energy capacities (Dolchinkov 2023, 5–7). Thus, Bulgaria lost a capacity equal to the energy capacity of 1.760 megawatts. At the same time, a US-Canadian consortium rapidly developed the Romanian NPP near Chernavoda (Fuhrmann 2012, 116), while the Bulgarian plant remained entirely in the hands of the state.

Bulgaria needed energy capacity, especially after it became clear that the country would become a part of the EU and be bound by the so-called *Green Deal*. The deal was presented as a way to fight global warming. However, this concept was known to a small group at the beginning of the century, and the promise of a clean planet sounded good.

Perhaps part of the *Green Deal* was known by former Bulgarian Monarch Simeon Saxe-Coburg, who in 2001 became Prime Minister of Bulgaria and later signed the treaty for the state's accession to the EU. Familiarised with the circumstances by the experts, Saxe-Coburg-Gotha realised that without nuclear electricity, Bulgaria would experience difficulties, especially since his cabinet agreed to close the small reactors of Kozloduy NPP (Bechev 2010, 123).

Saxe-Coburg-Gotha was also aware of something else. The decision to close the small reactors of Kozloduy NPP was highly unpopular. It was a blow to the authority of the former Monarch inside the country. He announced the Bulgarian state would complete the Belene NPP (Tejada 2005, 80). This was a PR move rather than a serious intention (Bugajski 2014, 362). Soon, he lost the parliamentary elections, although his party remained in the country's government. After the vote in 2005, the Socialists had more power, and their leader, Sergei Stashishev, became Prime Minister.

Under the cabinet of Stanishev, contacts between Sofia and Moscow became more regular, and the idea of completing the Belene NPP gained shape. The interest of Russia was to establish itself as a producer of nuclear capacity in South-Eastern Europe and thus to stabilise its political position in the Balkans. In contrast, Bulgaria's interest was clearly expressed in acquiring new energy capacity that would turn Bulgaria into an exporter of electricity of a serious calibre for the region. And something significant – in 2007, a sociological survey was conducted, which more than clearly showed that the majority of

the Bulgarians (73%) spoke in favour of the completion of the Belene NPP, with the technical and financial support of the Russian Federation (Pedraza 2015, 479). Therefore, in 2008, the Bulgarian and Russian sides signed a memorandum for constructing two reactors in Belene, with a total capacity of 2000 megawatts (Osheyko 2013, 78).

The intentions for the completion of Belene NPP turned out to be short-term. In his turn, Stanishev lost the parliamentary elections in 2009, and a government led by Boyko Borissov came to power (Nikiforov 2024, 202). In 2010, as head of the Russian government, Putin personally visited Sofia to meet Borissov. The Bulgarian Prime Minister promised his Russian counterpart that the Belene NPP would be completed with Russian support. After that, to reassure Putin of his good intentions, Borissov gave him a puppy (Tarasheva 2014, 60), as in the West, this puppy was presented as a gift from "the people of Bulgaria" (Hutchins 2012, 205). This warned the Western audience that the Bulgarians would continue their political-economic ties with the Russians.

Bulgaria was in a geopolitical skirmish between the Kremlin and the White House (and the European Commission). Borissov was probably under severe pressure because, in 2012, he publicly announced that Sofia would abandon the Belene project because it was not profitable (Nosko and Mišík 2017, 214). After all, there were always talks about some advantages around projects such as the Belene NPP. Because of this, Borissov did not want to bury the idea of completing the NPP. An understanding that the construction of the second Bulgarian NPP had to continue was created, but with the participation of Western companies. Borissov also invited other Balkan countries to join the Belene project, which the Bulgarian PM already considered a pan-European project. Then came the Russian special military operation in Ukraine, followed by the Western sanctions against Moscow, after which the two reactors, stored at the Belene site, were put up for sale. Thus, the project for a second NPP in Bulgaria would be completely buried. Moreover, Sofia officially signed a contract with an American company to construct two new reactors at Kozloduy NPP, which would cost the Bulgarian taxpayer 25 billion levs. This decision will cause the Bulgarian people to fall into decades of indebtedness to a private US company.

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During Vladimir Putin's second presidential term, the Russian Federation forced the construction of new routes for the energy resources that Russian companies exported abroad. A part of these initiatives was building a gas pipeline between Burgas and Alexandroupolis. That way, the route of the Russian gas would bypass Turkey and the straits (Kandiyoti 2008, 143). The Bulgarian state initially accepted the proposal, but a complicated circumstance emerged. In practice, Russia and Greece wanted to share the pipeline, leaving the Bulgarian side only 24.5% of the pipe ownership (Stefanov *et al*. 2011, 59). This was not advantageous for Sofia. Under such conditions, the pipeline became unprofitable for the Bulgarian side. The Bulgarian budget profits would be smaller than those of the Russians and the Greeks. In addition, the environmental risks threatening tourism on the Southern Bulgarian Black Sea coast and the investment for the alienation of thousands of acres of land were also raised. Because of that, the official Sofia made another offer. The pipe ownership ratio would be divided into one-third for each party (33.33%), which would justify the Bulgarian investment in the project. Sofia had another argument, asking for the revision of the terms. The massive profit from the project would belong to the Russian and Greek sides, as Russia would sell its gas, and Greece would distribute it throughout the Mediterranean, which meant substantial financial gains. Against this backdrop, Bulgaria would have received a dividend only from transit fees. Therefore, Sofia wanted an equal distribution of the rights over the gas pipe, but Moscow and Athens refused the Bulgarian proposal, which resulted in the project failing. This outcome was disappointing because Burgas would have become an energy hub in the Balkans by the eventual implementation of the gas pipeline with Greece and the intentions to build the Burgas-Vlora oil pipeline (Pekhlivanov 2011, 176). In this situation, the priority for the Bulgarian state was already the European Nabucco project (Bugajski 2014, 362), which was conceived as a competitor to the Burgas-Alexandroupolis pipeline. Subsequently, Nabucco also failed, and Bulgaria suffered double the losses.

However, the idea of building a pipe between Bulgaria and Greece remained. At the beginning of 2023, an agreement was signed between Sofia and Athens to find a way to make an oil pipeline between Burgas and Alexandroupolis (Colibăşanu 2023, 220). Still, the big question remained: where would the oil come from to fill the pipe's capacity,

when Russia is under sanctions? In other words, sanctions against Russia would be circumvented, or oil from Azerbaijan would flow into the pipe (Praussello 2006, 140). Still, would Baku have the necessary resources to fill the pipe?

***

After the Orange Revolution in Kyiv, the Kremlin realised that the route of Russian gas to Europe through the old Soviet pipelines was threatened. Germany, the most solvent Russian customer, suffered from a lack of supplies because of the strained relations between Moscow and Kyiv. Therefore, the plan for constructing the Nord Stream and South Stream appeared. Through the new pipes, the Russian gas route would bypass Ukraine. Nord Stream was quickly built. This was not the case with the South Stream. Moscow offered Sofia perfect conditions for the construction of the project. The Bulgarian budget would receive $ 2.4 billion annually from transit fees, and pipeline ownership would be 50% to 50% (Sanders 2016, 192). Thus, Bulgaria would become a consumer and distributor of Russian gas to Serbia, i.e., Central Europe, and via Greece and the Adriatic Sea to Italy. The politicians in Sofia initially accepted the project, and a company was set up to build the pipeline, with the pipes delivered to the port of Varna. And here came the crude US interference. On the one hand, the Americans pressured Bulgaria through the European Commission, which launched a legal procedure against Sofia (Dralle 2018, 45). Senator John McCain arrived in Sofia (June 2014) and met with Prime Minister Plamen Oresharski, who led a cabinet dominated by the Socialist Party (Подчасов 2023, 92–93). Immediately after the meeting, the head of the Bulgarian government publicly announced that Bulgaria would abandon the construction of South Stream. This new Bulgarian position was wrapped in some "consultations" with Brussels (Foster 2018, 187).

It was well-known that Borissov would soon rule Bulgaria again, and the prominent US Senator also met with him. Again, in his role as head of the Bulgarian government, Borissov met the Secretary of State John Kerry, British Foreign Secretary Philip Hammond, and NATO Secretary General Jens Stoltenberg in Sofia, and they all expressed their hope that Bulgaria would achieve *energy independence from Russia* (Filipova 2022, 278). Behind this diplomatic expression was the clear message of the powerful Western countries – Bulgaria had to abandon

South Stream completely. Thus, the South Stream project, which would bring considerable advantages to the Bulgarian side, was terminated. However, Borissov made some other commitments in front of the Russians because, soon enough, the Turkish Stream project became a fact for convenience. It was called the "Balkan Stream" by Borissov himself, so as not to provoke adverse reactions among Western leaders (MacFarlane 2024, 50).

Finally, Russian gas would flow through Bulgarian territory, but Turkey would benefit from the project. The transit fees for the Bulgarian state were modest, and the Bulgarian gas transmission network was not connected to the Balkan Stream. An advantage in this case was that from the Bulgarian-Turkish to the Bulgarian-Serbian border, the gas pipe was wholly owned by the Bulgarian state. This fact gave Bulgaria an instrument in adverse circumstances, i.e., pressure from the exporter (Russia) or the intermediary (Turkey/Türkiye).

The entire subordination of the Bulgarian energy policy to the West was evident after the start of hostilities in Ukraine. Bulgaria refused to pay for Russian gas in roubles, and Moscow suspended the gas supply to Bulgarian consumers.

The complete subordination of the Bulgarian ruling circles to Western interests would have left Bulgaria with one NPP. The used nuclear fuel remains in Bulgaria, but this would not last forever because the country would be turned into a vast environmental bomb. The two Russian reactors at Kozloduy NPP were switched to US nuclear fuel.

Mistakes made by the Bulgarian political elite allowed Turkey, which already had atomic facilities built by the Russians. Bulgaria remained only a transit point for the Russian energy resource, without even the possibility of using it. The fact that Bulgaria imports electricity from Serbian coal-fired power plants speaks for the complete failure of the Bulgarian energy strategy. The heavy consequences of this policy of the Bulgarian rulers would be on the backs of ordinary Bulgarian citizens (Dolchinkov 2023, 8).

In conclusion, through misguided political decisions and external pressures, Bulgaria has missed the opportunity to establish itself as the energy centre of the Balkans. Today, Bulgaria is an energy-dependent "transit" country, facing significant economic losses and the erosion of its international reputation. The missed opportunities and failed projects in securing energy security will have long-term consequences for Bulgaria's regional role.

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AUTHOR GUIDELINES

The academic journal *Serbian Political Thought* publishes articles that result from the latest theoretical and empirical research in the field of political science. Authors should refer mainly to the results of scientific research published in academic journals, primarily in political science journals.

Manuscripts should be submitted in Serbian (Cyrillic script) with a mandatory English translation, or in English.

The journal is published six times a year. The deadlines for submitting the manuscripts are February 1st, April 1st, June 1st, August 1st, October 1st, and December 1st.

Two consecutive issues cannot contain articles written by the same author, whether single-authored or co-authored.

Papers are submitted to the Editorial Board by uploading them to the CEON platform using the following link: https://aseestant.ceon.rs/index.php/spm/login.

Authors are obliged to submit a signed and scanned declaration of authorship when submitting their works. The declaration form can be downloaded from the journal's website: https://www.ips.ac.rs/en/magazines/srpska-politicka-misao/authors_directions/

All submitted manuscripts are checked for plagiarism or auto-plagiarism. Various forms of chat boxes and other artificial intelligence software cannot be (co)authors of the papers under consideration. These tools can only be used for stylistic language editing, not for writing sections of the paper, and authors who use them are obliged to specify the purpose of using such tools at the point where they are used.

Authors are required to provide their ORCID numbers along with their (preferably) institutional email addresses, which they include in the manuscript text in a footnote alongside their names and surnames.

Research articles can have up to 40,000 characters with spaces, including footnotes. When counting the characters leave out the reference list. Exceptionally, a monographic study can be larger in scope in accordance with the provisions of *the Rulebook on procedure, method of evaluation, and quantitative presentation of scientific research results.*

Reviews can have up to 15,000 characters with spaces.

Book reviews can have up to 10,000 characters with spaces.

CITING AND REFERENCING

The journal *Serbian Political Thought* uses a partially modified Chicago style of citation (17th edition of the *Chicago Manual of Style*), which implies specifying bibliographic parentheses (brackets) according to the author-date system in the text, as well as a list of references with full bibliographic data after the text of the paper.

Data in bibliographic parentheses and the list of references should be written in Latin script.

Below are the rules and examples for citing the bibliographic information in the reference list and in the text. For each type of source, a citation rule is given first, followed by an example of citation in the reference list and bibliographic parenthesis.

The bibliographic parenthesis is usually set off at the end of the sentence, before the punctuation mark. It contains the author's surname, the year of publication, and page numbers pointing to a specifically contextual page or range of pages, as in the following example: (Mearsheimer 2001, 15–17).

Books

Books with one author

Surname, Name. Year of publication. *Title*. Place of publication: Publisher.

Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics*. New York: W. W. Norton & Company.

(Mearsheimer 2001)

Books with two or three authors

Surname, Name, and Name Surname. Year of publication. *Title*. Place of publication: Publisher.

Brady, Henry E., and David Collier. 2010. *Rethinking Social Inquiry: Diverse Tools, Shared Standards*. Lanham: Rowman & Littlefield Publishers.

(Brady and Collier 2010, 211)

Pollitt, Christopher, Johnston Birchall, and Keith Putman. 1998. *Decentralising Public Service Management*. London: Macmillan Press.

(Pollitt, Birchal and Putman 1998)

Books with four or more authors

Surname, Name, Name and Surname, Name and Surname, and Name and Surname. Year of publication. *Title*. Place of publication: Publisher.

> Pollitt, Christopher, Colin Talbot, Janice Caulfield, and Amanda Smullen [Pollitt *et al.*]. 2005. *Agencies: How Governments do Things Through Semi-Autonomous Organizations*. New York: Palgrave Macmillan.
>
> (Pollitt *et al.* 2005)

Editor(s) or translator(s) in place of the author(s)

Surname, Name, Name and Surname, ed. Year of publication. *Title*. Place of publication: Publisher.

> Kaltwasser, Cristobal Rovira, Paul Taggart, Paulina Ochoa Espejo, and Pierre Ostigoy [Kaltwasser *et al.*], eds. 2017. *The Oxford Handbook of Populism.* New York: Oxford University Press.
>
> (Kaltwasser *et al.* 2017)

Chapter in an edited book

Surname, Name. Year of publication. "Title of the chapter." In *Title*, ed. Name Surname, pages range. Place of publication: Publisher.

> Lošonc, Alpar. 2019. "Discursive dependence of politics with the confrontation between republicanism and neoliberalism." In *Discourse and Politics*, eds. Dejana M. Vukasović and Petar Matić, 23?46. Belgrade: Institute for Political Studies.
>
> (Lošonc 2019)

Journal Articles

Regular issue

Surname, Name. Year of publication. "Title of the article." *Journal* Volume, if available (issue): page range. DOI.

> Ellwood, David W. 2018. "Will Brexit Make or Break Great Britain?" *Serbian Political Thought* 18 (2): 5?14. DOI: 10.22182/spt.18212018.1.
>
> (Ellwood 2018)

Newspapers and magazines

Signed articles

Surname, Name. Year of publication. "Title of the article." *Newspaper/ Magazine* Date: page range.

> Clark, Phil. 2018. "Rwanda's Recovery: When Remembrance is Official Policy." *Foreign Affairs*, January/February 2018: 35–41.
>
> (Clark 2018)

Unsigned articles

Title of the newspaper/magazine. Year of publication. "Title of the article." Date: page range.

> *New York Times*. 2002. "In Texas, Ad Heats Up Race for Governor." July 30, 2002.
>
> (*New York Times* 2002)

Corporate Author

Name of the corporate author [acronym if needed]. Year of publication. *Title of the publication*. Place of publication: Publisher.

> International Organization for Standardization ?ISO?. 2019. *Moving from ISO 9001:2008 to ISO 9001:2015*. Geneva: International Organization for Standardization.
>
> (International Organization for Standardization ?ISO? 2019) – *The first in-text citation*
>
> (ISO 2019) – *Second and all subsequent citations*

Legal and Public Documents

Sections, articles, or paragraphs can be cited in the parentheses. They should be appropriately abbreviated.

Constitutions and laws

The title of the legislative act [acronym if needed], "Official Gazette of the state" and the number of the official gazette, or the webpage and the date of last access.

> The Constitution of the Republic of Serbia, "Official Gazette of the Republic of Serbia", No. 98/06.
>
> (The Constitution of the Republic of Serbia, Art. 33)

The Law on Foreign Affairs [LFA], "Official Gazette of the Republic of Serbia", No. 116/2007, 126/2007, and 41/2009.

(LFA 2009, Art. 17)

Succession Act [SA], "Official Gazette of the Republic of Croatia", No. 48/03, 163/03, 35/05, 127/13, and 33/15 and 14/19.

(SA 2019, Art. 3)

An Act to make provision for and in connection with offences relating to offensive weapons [Offensive Weapons Act], 16th May 2019, www.legislation.gov.uk/ukpga/2019/17/pdfs/ukpga_20190017_en.pdf, last accessed 20 December 2019.

(Offensive Weapons Act 2019)

Legislative acts of the European Union

The title of the legislative act, the number of the official gazette, the publication date, and the number of the page in the same format as on the *EUR-lex* website: https://eur-lex.europa.eu/homepage.html.

Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers, OJ L 55, 28.2.2011, p. 13–18.

(Regulation 182/2011, Art. 3)

Web sources

Surname, Name, or name of the corporate author [acronym]. Year of publication or n.d. – if the year of publication cannot be determined. "The name of the web page." *The name of the website*. Date of creation, modification, or the last access to the web page, if the date cannot be determined from the source. URL.

Bilefsky, Dan, and Ian Austen. 2019. "Trudeau Re-election Reveals Intensified Divisions in Canada." *The New York Times*. https://www.nytimes.com/2019/10/22/world/canada/trudeau-re-elected.html.

(Bilefsky and Austen 2019)

Institute for Political Studies [IPS]. n.d. "The 5th International Economic Forum on Reform, Transition and Growth." *Institute for Political Studies*. Last accessed 7 December 2019. http://www.ips.ac.rs/en/news/the-5th-international-economic-forum-on-reform-transition-and-growth/.

(Institute for Political Studies [IPS] n.d.) – *First in-text citation*

(IPS n.d.) – *Second and every subsequent citation*

Associated Press [AP]. 2019. "AP to present VoteCast results at AAPOR pooling conference." May 14, 2019. https://www.ap.org/press-releases/2019/ap-to-present-votecast-results-at-aapor-polling-conference.

(AP 2019)

Special cases of referencing

Citing editions other than the first

Surname, Name. Year of publication. *Title*, edition number. Place of publication: Publisher.

Bull, Hedley. 2012. *The Anarchical Society: A Study of Order in World Politics*, 4th edition. New York: Columbia University Press.

(Bull 2012)

Multiple sources of the same author

1) *Multiple sources by the same author* should be arranged chronologically by year of publication in ascending order.

Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics*. New York: W. W. Norton & Company.

Mearsheimer, John J. 2010. "The Gathering Storm: China's Challenge to US Power in Asia." *The Chinese Journal of International Politics* 3 (4): 381–396. DOI: 10.1093/cjip/poq016.

2) *Multiple sources by the same author from the same year* should be alphabetized by title, with lowercase letters attached to the year. Those letters should be used in parenthetical citations as well.

Walt, Stephen M. 2018a. *The Hell of Good Intentions: America's Foreign Policy Elite and the Decline of U.S. Primacy*. New York: Farrar, Straus and Giroux.

(Walt 2018a)

Walt, Stephen M. 2018b. "Rising Powers and the Risk of War: A Realist View of Sino-American Relations." In *Will China's Rise be Peaceful: Security, Stability and Legitimacy*, ed. Asle Toje. 13–32. New York: Oxford University Press.

(Walt 2018b)

3) *Single-authored sources precede multiauthored sources beginning with the same surname* or written by the same person.

> Pollitt, Christopher. 2001. "Clarifying convergence. Striking similarities and durable differences in public management reform." *Public Management Review* 3 (4): 471–492. DOI: 10.1080/14616670110071847.
>
> Pollit, Christopher, Johnston Birchall, and Keith Putman. 1998. *Decentralising Public Service Management*. London: Macmillan Press.

4) *Multiauthored sources with the same name and surname* as the first author should continue to be alphabetized by the second author's surname.

> Pollitt Christopher, Johnston Birchall, and Keith Putman. 1998. *Decentralising Public Service Management*. London: Macmillan Press.
>
> Pollitt Christopher, Colin Talbot, Janice Caulfield, and Amanda Smullen. 2005. *Agencies: How Governments do Things Through Semi-Autonomous Organizations*. New York: Palgrave Macmillan.

Special cases of parenthetical citation

Exceptions to the rule of placing the parenthetical citation at the end of a sentence

1) If the *author is mentioned in the text*, even if used in a possessive form, the year must follow in parenthesis, and page numbers should be put in the brackets at the end of the sentence.

> For the assessment, see Kaltwasser *et al*. (2017) ... (112).
>
> According to Ellwood (2018) … (7).

2) When *quoting directly*, if the name of the author precedes the quotation, the year and page numbers must follow in parenthesis.

> Mearsheimer (2001, 28) claims that: "...".

3) When *using the same source multiple times in one paragraph*, the parenthetical citation should be placed either after the last reference (or at the end of the paragraph, preceding the final period) if the same page (or page range) is cited more than once, or at the first reference, whereas the subsequent citations should only include page numbers.

Do not use *ibid* or *op. cit.* with repeated citations.

Using brief phrases such as "see", "compare" etc.

Those phrases should be enclosed within the parenthesis.

(see: Ellwood 2018)

Using secondary source

When using a secondary source, the original source should be cited in parenthesis, followed by "quoted/cited in" and the secondary source. The reference list should only include the secondary source.

"Its authority was greatly expanded by the constitutional revision of 1988, and the Court of Arbitration can now be regarded as a 'genuine constitutional court'" (De Winter and Dumont 2009, 109 cited in: Lijphart 2012, 39–40).

Lijphart, Arend. 2012. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*, 2nd edition. New Haven & London: Yale University Press.

Multiple sources within the same parentheses

1) When *multiple sources* are cited, they should be separated by semicolons.

(Mearsheimer 2001, 34; Ellwood 2018, 7)

2) When *multiple sources by the same author*, but published in different years are cited, the name of the author is cited only the first time. The different years are separated by commas or by semicolons where page numbers are cited.

(Mearsheimer 2001, 2010) or (Mearsheimer 2001, 15–17; 2010, 390)

3) When *different authors share the same surname*, include the first initial in the parenthesis.

(M. Chiti 2004, 40), (E. Chiti 2004, 223)

Chiti, Edoardo. 2004. "Administrative Proceedings Involving European Agencies." *Law and Contemporary Problems* 68 (1): 219–236.

Chiti, Mario. 2004. "Forms of European Administrative Action." *Law and Contemporary Problems* 68 (1): 37–57.

TEXT FORMATTING

General guidelines for writing the manuscript

The manuscript should be written in Word, in the following manner:

- Paper size: A4;
- Margins: Normal 2.54 cm;
- Use Times New Roman font (plain letters) to write the text, unless specified otherwise;
- Line spacing: 1.5;
- Footnote line spacing: 1;
- Title font size: 14 pt;
- Subtitles font size: 12 pt;
- Text font size: 12 pt;
- Footnote font size: 10 pt;
- Tables, charts and figures font size: 10 pt;
- Use Paragraph/Special/First line at 1.27 cm;
- Text alignment: Justify;
- Font color: Automatic;
- Page numbering: Arabian numerals in lower right corner;
- Do not break the words manually by inserting hyphens to continue the word in the next line;
- Save the manuscript in the .doc format.

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The manuscript should be prepared in the following manner:

Name and surname of the first author*

* Footnote: E-mail address: The institutional e-mail address is strongly recommended. ORCID:

Affiliation

Name and surname of the second author**

** Footnote: E-mail address: The institutional e-mail address is strongly recommended. ORCID:

Affiliation

TITLE OF THE PAPER***

*** Footnote: if necessary, specify one of the following (or similar) data: 1) the name and number of the project; 2) the proceeding where the manuscript was presented under the same or similar title; 3) statements of gratitude.

Abstract

Abstract, within 100–250 words range, contains the subject, aim, theoretical and methodological approach, results and conclusions of the paper.

Keywords: Below the abstract, five to ten **key words** should be written. Key words should be written in roman font and separated by commas.

The manuscript can have maximally three levels of subtitles. **Subtitles** should not be numbered. They should be used in the following manner:

FIRST LEVEL SUBTITLE

Second level subtitle

Third level subtitle

Tables, charts, and figures should be inserted in the following manner:

- Above the table/chart/figure, center the name of the Table, Chart or Figure, an Arabic numeral, and the title in Times New Roman font;
- Below the table/chart/figure, the source should be cited in the following manner: 1) if the table/chart/figure is taken from another source, write down *Source:* and include the parenthetical citation information of the source; or 2) if the table/chart/figure is not taken from another source, write down *Source: Author*.

Use in-text references according to *Citing and referencing*.

Use the footnotes solely to provide remarks or broader explanations.

REFERENCES

References should be listed after the text of the paper, before the Resume in the following manner:

- the first line of each reference should be left indented, and the remaining lines should be placed as hanging by 1.27 cm using the option Paragraph/Special/Hanging;
- all the references should be listed together, without separating legal acts of archives;
- the references should not be numbered;
- list only the references used in the text.

After the reference list, write the name and surname of the author, the tile of the paper and resume in Serbian in the following manner:

Име и презиме првог аутора*

* Фуснота: Имејл-адреса аутора: Препоручује се навођење институционалне имејл-адресе аутора. ORCID:

Установа запослења

Име и презиме другог аутора**

** Фуснота: Имејл-адреса аутора: Препоручује се навођење институционалне имејл-адресе аутора. ORCID:

Установа запослења

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