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Synthetic authors and algorithmic expression: the need for a new international treaty on ai and intellectual property

Shokhjakhon Abdusattorov

LL.M. Penn State Law, The Pennsylvania State University, USA, Founder of ZukkoYurist.uz

Shakhriyor Tojiboyev

LL.M. Penn State Law, The Pennsylvania State University, USA

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Abstract: The rapid advancement of generative artificial intelligence has sparked a fundamental shift in how creative works are produced, challenging the very foundation of intellectual property law. As machines now autonomously generate texts, images, music, and designs, the legal concept of “authorship”-traditionally reserved for human creators - is facing unprecedented ambiguity. This article examines the rise of synthetic authorship, where algorithmically produced content lacks a clear human origin, and explores the inadequacy of existing international legal frameworks in addressing this phenomenon. By analyzing case law, policy developments, and international instruments, the paper argues that current treaties, including the Berne Convention and TRIPS Agreement, fall short in offering coherent protection or regulation for AI-generated works. It advocates for the development of a new international treaty specifically tailored to address the authorship, ownership, and enforcement of intellectual property rights in the context of autonomous artificial creativity. Such a treaty must reconcile technological innovation with the preservation of legal certainty, artistic integrity, and global harmonization of IP norms in the age of machine-made expression.

Keywords: Artificial intelligence, synthetic authorship, algorithmic creativity, copyright law, intellectual property, AI-generated content, the Berne Convention, international treaty, authorship doctrine, digital innovation, autonomous systems, and IP harmonization.

Introduction: The emergence of artificial intelligence (AI) as an independent force capable of generating creative and original content has ushered society into an unprecedented legal and philosophical quandary. Historically, the foundations of intellectual property (IP) law rest firmly upon the assumption that creative authorship is an inherently human endeavor. From literature and music to the visual arts and inventions, the law has consistently recognized and protected the rights and interests of human creators. However, the rapid evolution of generative AI technologies—capable of autonomously producing sophisticated works ranging from literary pieces and visual art to musical compositions and innovative technological solutions—has profoundly challenged this traditional understanding.

At the heart of the current debate lies the concept of "synthetic authorship", where algorithms, rather than humans, generate expressive works. AI systems such as OpenAI's GPT series, Stability AI's Stable Diffusion, and Midjourney have demonstrated the capacity to produce content indistinguishable from human creations, raising critical questions about who, if anyone, should hold authorship and ownership rights. Existing international legal frameworks, notably the Berne Convention for the Protection of Literary and Artistic Works and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), remain silent or ambiguous regarding non-human authorship. These treaties, drafted in eras long preceding the current technological landscape, did not anticipate machines participating autonomously in creative processes.

The lack of a clear international consensus on synthetic authorship has led to fragmented national responses, resulting in uncertainty and inconsistency in the global marketplace. Some jurisdictions deny copyright protection entirely to AI-generated content, categorizing such works as being in the public domain. In contrast, others attribute authorship rights to the individuals or entities that deploy or manage AI systems, even in the absence of direct human creative input. Such divergent practices undermine the coherence and effectiveness of international IP law, complicating cross-border commerce and collaboration.

This article contends that the rapidly expanding capabilities of generative AI necessitate a coordinated and comprehensive international response. Specifically, it advocates for the urgent development of a dedicated international treaty that explicitly addresses the intellectual property challenges posed by AI-generated works. This treaty would clarify synthetic authorship, establish guidelines for ownership and liability, and harmonize protection standards across jurisdictions. In doing so, it would foster innovation, ensure fair competition, and protect the interests of creators, businesses, and consumers alike in an increasingly AI-driven global economy.

By examining current legislative shortcomings, analyzing leading cases from multiple jurisdictions, and proposing practical frameworks for future regulation, this article aims to make a meaningful contribution to the ongoing discourse. Ultimately, addressing the question of synthetic authorship is not merely a technical legal challenge but a necessary step toward adapting our legal frameworks to the realities of contemporary technological advancement.

METHODOLOGY

This article employs a multidisciplinary, qualitative legal research methodology, combining doctrinal analysis, comparative legal review, and technology-informed inquiry to examine the legal implications of synthetic authorship within the context of intellectual property law.

First, the doctrinal analysis focuses on reviewing key international legal instruments, including the Berne Convention, the TRIPS Agreement, and WIPO-administered treaties, to assess how current frameworks define authorship and ownership in creative works. It also surveys relevant national legislations and policy guidelines from selected jurisdictions such as the United States, the European Union, the United Kingdom, and China, where legal developments on AI-generated works have begun to emerge.

Second, a comparative legal approach is employed to analyze divergent national interpretations and enforcement practices related to AI-generated content. Notable court decisions and administrative rulings—such as the U.S. Copyright Office's denial of protection for AI-generated artworks or the DABUS patent cases—are studied in detail to illustrate inconsistencies and practical limitations of current systems. This comparative lens reveals both conceptual gaps and jurisdictional challenges that a new international treaty must address.

Third, the research integrates technological context by outlining how generative AI models operate, including how they are trained, how they generate outputs, and what level of human input (if any) is required. This technical background, drawn from AI development literature, provides critical insight into the complexity of assigning authorship to non-human creators and demonstrates why traditional IP doctrines may fall short.

Additionally, the article engages in a policy analysis, examining proposals and position papers issued by international bodies such as WIPO, UNESCO, the OECD, and the Council of Europe. These materials are evaluated for their potential to inform or serve as a foundation for a future multilateral treaty on AI and intellectual property.

Finally, the methodology is guided by principle-based reasoning, identifying core values such as legal certainty, fairness, innovation incentives, and global harmonization. These principles help frame the normative argument for why a new international agreement is not only desirable but necessary in regulating authorship and ownership in the age of autonomous AI-generated expression.

RESULTS

Lack of Explicit Provisions on Synthetic Authorship in International Treaties

The analysis revealed that foundational international instruments such as the Berne Convention and the TRIPS Agreement do not contain explicit provisions addressing works generated autonomously by artificial intelligence. These instruments were conceived in an era where the notion of non-human creativity was inconceivable. As such, they are silent on whether algorithmically generated works qualify for copyright protection or patent attribution. This legal gap leaves synthetic authorship in a gray zone, subject to inconsistent national interpretations (Kaminski, 2022).

Divergent National Approaches as a Challenge to Legal Coherence

Across jurisdictions, national authorities have adopted widely divergent stances. For instance, the U.S. Copyright Office has consistently refused to recognize copyright in works created solely by AI, as evidenced by the denial of registration for artwork generated by Midjourney and the "Zarya of the Dawn" comic bookcase. Conversely, some jurisdictions, such as the UK and Australia, have seen judicial or legislative debates regarding whether AI-assisted works can be granted protection, particularly when human input is deemed "sufficiently creative." The inconsistency in standards leads to fragmented enforcement and legal uncertainty in cross-border IP disputes.

Ambiguity and Resistance in Patent Law

In the realm of patents, the DABUS cases (Device for the Autonomous Bootstrapping of Unified Sentience) have sparked global debate. Courts in the U.S., UK, and the European Patent Office have ruled that only natural persons may be named inventors under current laws. Meanwhile, jurisdictions such as South Africa initially accepted AI as an inventor, only to face criticism for lacking statutory backing. These conflicting approaches underscore the urgency for global harmonization regarding inventorship criteria in AI-driven innovation (U.S. Copyright Office, 2023).

Public Domain Status of AI-Generated Content

Due to the absence of a legal subject to whom authorship can be attributed, AI-generated works are frequently considered unprotectable and placed in the public domain. This has significant economic implications, particularly for companies investing in AI tools to create commercially valuable content. Without enforceable IP rights, such investments may remain vulnerable to free appropriation and unauthorized use.

Emerging Policy Dialogue Amid Absence of Binding Instruments

While organizations such as WIPO, the Council of Europe, and UNESCO have launched policy dialogues and issued guidance documents on AI and IP, no binding multilateral treaty has yet emerged. These efforts reflect a growing awareness, but they stop short of establishing enforceable obligations or coherent definitions that could unify national systems. The lack of binding norms continues to fuel regulatory uncertainty, impeding the development of predictable IP strategies for AI creators and users alike (WIPO, 2023).

Call for Treaty Reform in Legal Scholarship

Academic literature across IP law, digital ethics, and AI governance broadly converges on one point: existing frameworks are ill-equipped to address the scale and complexity of autonomous content creation. Numerous scholars argue that synthetic authorship presents a structural challenge to the anthropocentric foundations of IP law, and that only a new treaty—tailored to the realities of machine-generated expression—can resolve the dilemma.

DISCUSSION

The findings of this study underscore a profound mismatch between the accelerating capabilities of generative artificial intelligence and the slow evolution of intellectual property law. As machines increasingly participate in creative and inventive processes, the absence of a unified legal framework addressing synthetic authorship reveals a critical weakness in the current IP architecture. This disconnect raises several interrelated questions—not only about legal protection and enforcement, but also about the fundamental principles upon which modern intellectual property regimes are based.

The Human-Centric Legacy of IP Law

Intellectual property law has long been predicated on the assumption that authorship, creativity, and inventiveness are uniquely human attributes (Gervais,

2023). This anthropocentric foundation is evident in the language of nearly every major international treaty, from the Berne Convention to TRIPS, which refer explicitly to "authors," "inventors," and "natural persons." However, as AI systems begin to generate expressive works autonomously, this human-centric model becomes increasingly obsolete. Continuing to rely on frameworks that exclude non-human creators fails to reflect the realities of modern technological development, creating a growing category of works that fall outside the scope of legal protection altogether.

Legal and Practical Implications of the 'No Authorship' Approach

Where jurisdictions refuse to recognize any form of authorship in AI-generated content, such works are effectively relegated to the public domain. While this may seem like a pragmatic solution in the absence of a clear author, it can produce perverse consequences. Businesses that invest heavily in training AI systems and developing proprietary models may find themselves unable to claim or enforce any exclusive rights over the outputs of those systems. This undermines the economic incentive to innovate, which is one of the core justifications for IP protection in the first place. Moreover, the lack of authorship complicates questions of accountability when AI-generated works infringe existing rights or produce harmful content (U.S. Copyright Office, 2023).

The Inconsistency of the 'Human Proxy' Approach

Some legal systems attempt to circumvent the authorship dilemma by assigning rights to the person or entity who operates, trains, or prompts the AI system. While this approach offers a practical solution, it presents doctrinal problems. If the human involved has not made a meaningful contribution to the creative aspects of the work, granting them authorship risks diluting the principle of originality and undermining the integrity of the copyright system. This approach also raises questions about how much human input is "enough" to qualify as authorship, a threshold that remains legally undefined in most jurisdictions (Thaler v. Hirshfeld, 2021).

Ethical and Philosophical Dimensions of Synthetic Authorship

Beyond legal mechanics, the issue of synthetic authorship invites broader philosophical reflection. Can machines be creative? Should the law recognize creativity independent of consciousness or intent? While some argue that legal systems must preserve the humanistic ethos of creativity, others advocate for a more functionalist approach, recognizing authorship wherever novel, valuable output is produced, regardless of its source. These debates are not merely academic; they shape the norms and values that underlie future policy decisions (Thaler v. Hirshfeld, 2021).

The Case for an International Treaty

Given the divergent approaches adopted across jurisdictions and the increasingly globalized nature of content creation and distribution, a harmonized international response is both urgent and compelling. A new international treaty should do more than simply "update" existing frameworks. It must articulate a coherent legal stance on synthetic authorship, define ownership and liability standards for AI-generated works, and establish procedural safeguards for enforcement across borders. Importantly, such a treaty must also be technologically informed—reflecting the actual operation of generative models—and flexible enough to evolve with future advancements.

Toward a Balanced Legal Framework

The aim of a new legal framework should not be to grant personhood or moral rights to machines, but to develop pragmatic rules that accommodate AI-driven creativity without destabilizing the core principles of IP law. Possible solutions include a sui generis category for AI-generated content, mandatory attribution requirements for AI-assisted works, and standardized thresholds for human contribution in mixed-authorship cases. These reforms would promote legal certainty, incentivize responsible innovation, and ensure that the benefits of AI are distributed fairly among developers, users, and society as a whole.

CONCLUSION

The unprecedented rise of generative artificial intelligence has placed significant strain on the foundations of intellectual property law, exposing critical gaps and inconsistencies in how authorship, ownership, and protection are conceptualized across jurisdictions. As AI systems become increasingly autonomous and capable of producing content that rivals or even surpasses human creativity in sophistication, the traditional legal assumption that only natural persons can be authors or inventors no longer reflects technological reality.

This article has demonstrated that current international legal frameworks, including the Berne Convention and the TRIPS Agreement, are ill-equipped to address the complexities of synthetic authorship. Their silence on non-human creators has created a regulatory vacuum, forcing individual countries to develop piecemeal solutions and resulting in a fragmented and often contradictory global IP landscape. Such fragmentation not only undermines legal certainty but also inhibits

innovation, cross-border collaboration, and equitable access to the benefits of AI technologies.

The analysis further reveals that neither of the two prevailing approaches —treating AI-generated content as public domain or assigning rights to the nearest human operator —offers a satisfactory or sustainable solution. The former disregards the economic and creative value of AI outputs, while the latter risks diluting the principle of originality and introducing arbitrary standards for human involvement. These limitations highlight the urgent need for a more comprehensive and harmonized response.

A new international treaty on artificial intelligence and intellectual property would provide the clarity and consistency that the current system lacks. Such a treaty should not merely adapt old rules to new technologies but rather reimagine the conceptual architecture of IP law to account for the evolving nature of creativity and agency. It should establish clear criteria for synthetic authorship, define thresholds of human contribution, allocate responsibilities for infringement and misuse, and promote fair commercial practices in the AI-driven creative economy.

Furthermore, the treaty must strike a careful balance: it must respect the foundational values of IP law—such as originality, attribution, and the promotion of innovation—while also recognizing the distinct characteristics of algorithmic creation. Importantly, it should avoid the philosophical and legal pitfalls of attributing personhood or moral rights to machines, focusing instead on pragmatic, enforceable norms that reflect both legal tradition and technological progress.

In an era where machines are not just tools but active participants in the creative process, the law must evolve. If intellectual property regimes are to remain relevant and effective, they must extend beyond their anthropocentric origins and embrace a more inclusive, adaptable, and forward-looking vision. The development of an international treaty tailored to the realities of synthetic authorship is not simply an option—it is a legal, economic, and cultural imperative for the twenty-first century and beyond.

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