



# **RULEMAKING THROUGH ARTIFICIAL INTELLIGENCE: ONTOLOGICAL TRANSFORMATIONS IN THE ESSENCE OF LAW**

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<b>Article history:</b>	<b>Abstract:</b>
<b>Received:</b> 26 <sup>th</sup> February 2026 <b>Accepted:</b> 24 <sup>th</sup> March 2026	This article examines the fundamental transformations in the ontological essence of law resulting from the integration of artificial intelligence (AI) into the rulemaking process. It analyzes the dynamics of the transition from traditional, text-driven law rooted in human values to automated computational law. Using various methodological approaches, the study identifies the "semantic gap," a phenomenon denoting the absence of moral purpose in AI-generated legal norms. Furthermore, drawing on empirical experience from the United States, China, and Latin American nations, the article substantiates the emerging crisis of authorship and democratic legitimacy in the legislative process. To overcome this ontological crisis, the author introduces a novel "Hybrid" model for modern legal norms. Ultimately, the research scientifically grounds the necessity of elevating the "Human-in-the-Loop" principle to the status of a constitutional and legal imperative. This is argued as essential to prevent the dissolution of law within algorithmic mechanisms and to safeguard against technocratic dictatorship.

**Keywords:** *rulemaking; artificial intelligence; ontology of law; computational law; semantic gap; hybrid legal norm; algorithmic governance; human-in-the-loop*

## **INTRODUCTION**

In the fundamental foundations of legal science, law has long been recognized as a formalized product of human will, moral values, and abstract social consensus. From the perspective of classical jurisprudence, lawmaking is a strictly human activity, manifesting as a "text-driven" hermeneutic process of deep understanding and interpretation. In regulating social relations, the legislator expresses purposeful and value-based concepts such as "justice", "reasonableness", and "good faith" through natural language. Hitherto, the ontological essence of law has been inextricably linked to its creation through human consciousness and its subsequent interpretation by humans.

**Technological transformation and the emergence of the problem.** However, in the first quarter of the 21st century, the exponential development of information technologies, particularly Large Language Models (LLMs) and Machine Learning algorithms, is fundamentally altering legal reality. Artificial Intelligence (AI) systems are transcending their status as mere technical tools for searching and systematizing legal data, evolving into active participants capable of independently generating

normative texts, drafting bills, and providing legal conclusions. The deployment of AI systems such as STARA in the US, "Smart Courts" in China, and parliamentary AI platforms in Latin America demonstrates that states are rapidly integrating technological algorithms into the legislative process [1]. In academic terms, this signifies a paradigm shift in law from a text-driven to a data-driven, computational approach.

**The primary scientific problem.** The direct intervention of artificial intelligence in rulemaking precipitates an unprecedented ontological and epistemological crisis for legal theory. The crux of the problem is that generative AI systems rely exclusively on syntax and statistical probability when generating legal texts, rather than on semantics (meaning, values, and human justice). By mathematically analyzing the positional regularities of words within existing normative databases, they produce legal texts that are superficially flawless. However, these texts lack any underlying social purpose, moral reasoning, or vital foundation (a phenomenon termed in academic literature as "Regulatory Legitimacy Without Referents") [2]. Consequently, legal science confronts a



profound paradox: if a legal norm is formulated without conscious human will, based solely on the statistical calculations of machine algorithms, from where does its legitimacy and societal recognition derive? Will a machine-authored law not degenerate into a mechanical algorithm devoid of human values?

**Academic Gap.** In international academic literature, the digital transformation of law has been extensively debated by scholars such as M. Hildebrandt [3], L. Floridi [4], and L. Lessig [5] within the frameworks of concepts like “Code is Law” and the “Infosphere”. Nevertheless, within modern state and law theory, there remains a lack of a comprehensively developed theoretical model that defines the ontological status of norms created with AI involvement, updates the traditional definition of a “legal norm”, and establishes its moral and legal boundaries. Existing research predominantly focuses either on the practical conveniences of utilizing AI or on highly abstract issues such as granting “legal personhood to AI”, thereby neglecting the inherent risks in the rulemaking process.

**Purpose and scope of the study.** Based on the foregoing, the primary objective of this article is to theoretically investigate the transformation regarding the essence of legal norms generated via artificial intelligence and to propose a solution to the “semantic gap” problem. The article deliberately eschews broad global debates, such as granting AI absolute legal status. Instead, the research is strictly confined to the rulemaking scope. It aims to substantiate AI’s role as a functional tool rather than an independent creator, and to introduce the “human-in-the-loop” doctrine as a mandatory theoretical prerequisite to preserve the humanistic essence of laws. This approach establishes a scientific and theoretical foundation for safeguarding the rule of law against technocratic dictatorship.

#### **METHODOLOGY**

Given the interdisciplinary nature of the study, this article employs a cohesive synthesis of classical legal approaches and philosophical informational methods.

- **Formal-dogmatic and logical methods** were utilized to compare traditional concepts of rulemaking with the algorithmic rules of Artificial Intelligence (AI). This approach served to logically substantiate the conceptual divergence between the value-based approach inherent in law and the statistical probability characteristic of Machine Learning.
- **Philosophical-ontological analysis** was applied as the foundational method of the research. Drawing upon the theoretical frameworks of leading legal philosophers, the

dynamics of the mechanization of law were examined, leading to the theoretical identification of the “semantic gap” phenomenon.

- **The comparative-legal (empirical) method** was employed to corroborate theoretical hypotheses with empirical evidence. This involved a systematic comparison of algorithmic practices across jurisdictions from diverse legal families.
- **The systemic-structural approach** was utilized to deconstruct the traditional paradigm of the legal norm as a singular, indivisible entity. Through this method, by conceptualizing the law into distinct components comprising human will and algorithmic code, the “Hybrid norm” model was constructed as a theoretical solution to the ongoing crisis.

Throughout the research, all methods were rigorously applied in strict adherence to the principles of objectivity and scientific consistency.

#### **RESULTS**

As a result of the comprehensive analyses conducted based on the aforementioned methodological approaches, the following fundamental theoretical conclusions regarding the ontological nature of law were obtained:

**The empirical reality of algorithmic rulemaking:** experiences of foreign jurisdictions. Before theoretically evaluating the impact of artificial intelligence on the ontological essence of law, it is essential to empirically observe how this process is unfolding globally. Analyses indicate that foreign states across various legal systems are already rapidly integrating AI into their rulemaking and justice systems, thereby creating a new algorithmic reality of law.

Firstly, the transformation of legal processes into “law as computation” is evident in the United States. Currently, systems such as STARA (Statutory Research Assistant) and GenAI used in U.S. legislation can automatically analyze thousands of pages of legal codes and identify conflicts imperceptible to the human brain [1]. This empirical evidence shows that lawmaking and its analysis have ceased to be exclusively a process of human text comprehension; they are transitioning to the calculation of mathematical correlations and probabilities executed on Big Data.

Secondly, the evolution of AI from a mere assistive tool to an independent decision-maker is evidenced by the People’s Republic of China’s experience with algorithms. China’s “Smart Courts” ecosystem and the “Xiao Baogong” sentence-prediction system propose



sentencing options to judges based on big data [6]. The data obtained reveal that although judges have the right to reject AI decisions, a strong psychological phenomenon known as “automation bias” emerges in practice [7]. Consequently, driven by fear of error, state judges delegate their discretion to the machine, thereby replacing human justice with algorithmic indifference.

Thirdly, as an alternative to this radical technocratization, the parliamentary systems of Latin American countries are shaping a unique democratic practice. The “Ulysses” ecosystem employed by the Brazilian parliament and Argentina’s “DipLab” platform primarily uses artificial intelligence as a technical shell—analyzing tens of thousands of citizen comments and systematizing and grouping draft laws [8]. However, the final evaluation and the approval of the norm remain entirely at the discretion of the human legislator.

This global empirical analysis establishes a solid foundation for the final research results: technological progress is subjugating law not to some supernatural force, but to the regularities of precise computation (USA), the loss of subjectivity (China), and the partial preservation of human guarantees (Brazil/Argentina). It is precisely these trends that lead to a fundamental, ontological transformation in the nature of law (the “Semantic Gap”, discussed in subsequent sections).

**Identification of the “semantic gap” phenomenon and the transition to a computational model of law.** The first and most significant ontological result of the study is the theoretical substantiation of the existence of the “semantic gap” phenomenon in AI-generated legal norms.

In classical jurisprudence, a legal norm is not merely a collection of words; it is a purpose-driven and value-based essence. When writing a law, a human connects concepts within the legal text, such as “fair compensation”, “reasonable time,” or “extreme necessity,” to real-life experience, morality, and social grievances. Analyses have shown that AI systems operating on the basis of Large Language Models (LLMs) function on a completely different, dehumanized mechanism when generating draft laws. AI does not comprehend the social essence (semantics) of legal concepts; relying solely on massive existing databases (Big Data), it merely calculates the probability of which word follows a given legal term.

Consequently, it was determined that a transition from “Text-driven law” to “Data-driven law” is occurring. This theoretical conclusion is directly corroborated by the approach of the renowned legal philosopher Mireille Hildebrandt [3]. As Hildebrandt emphasizes, traditional law has historically been “text-driven”, with its strength

hidden in a specific ambiguity. It is precisely this ambiguity that allows the law-applier to adapt an abstract norm to concrete real-life justice. Algorithmic law, however, disregards this flexibility and transforms law into a rigid code strictly tethered to data. As a result, the law loses its function of justice and shifts solely to an execution function. A machine-written norm appears superficially as a grammatically and legally flawless law; it eliminates conflicts thousands of times better than the human brain. However, within this perfect shell, the human sense of conscience and justice is lost. It was substantiated that, in the academic literature, this can be termed “Regulatory Legitimacy Without Referents”. That is, a law created by AI is the product of computation derived from statistical regularities, rather than a desire to ensure justice.

**The crisis of authorship and subjectivity in rulemaking: AI becoming a quasi-subject.** The second result of the research is the identification of a fundamental alteration in subject-object relations in the rulemaking process.

Up to now, in legal theory, any technology (whether pen and paper, a computer, or a legal database software) was considered a passive object—a “deaf and mute” tool to commit human will to paper. The sole author and creator of the law was exclusively the human legislator. Analyses confirm that the advent of generative artificial intelligence into lawmaking has shattered this traditional approach. AI is no longer a passive tool; it is becoming an active algorithmic agent that independently selects the structure of the legal text, the terminology used, and the logical sequence of normative restrictions. Although the state parliament officially approves the law in the end, the “intellectual architecture” of the law is constructed by the machine. This engenders a highly serious “crisis of authorship and legitimacy” in legal theory: if the text of a law is the product not of an elected deputy but of a closed algorithm created by private corporations, why should the public obey it? Consequently, it has been proven that in the era of AI, the legislator’s intellectual monopoly in text creation has been abolished.

Frank Pasquale explains this legitimacy crisis, triggered by AI becoming an active agent in rulemaking, through his concept of “The Black Box Society” [9]. According to Pasquale, artificial intelligence systems possess deep non-transparency due to their multi-layered neural networks. If the architecture and logical chain of legal norms are created within such a “black box”, based on algorithmic correlations comprehensible only to engineers, the most critical condition of law—the open and democratic justification of a decision—disappears.



This undermines the social contract and the public's trust in the legislator.

**Discovery of the "Hybrid Rulemaking" ontological model.** As the final and most significant concrete scientific solution of the research, a new ontological structure of the modern legal norm—the "Hybrid norm" model—was developed.

Analyses have shown that error-prone humans cannot physically or independently resolve the mutual conflicts of millions of legislative acts in the information age without AI. Therefore, abandoning AI is impossible. At the same time, as demonstrated in the first result, lawmaking cannot be entirely delegated to AI, because it has a semantic gap and lacks a sense of justice. In order to resolve this dialectical contradiction, the article proposes a two-layered hybrid structure of the modern legal norm:

*Moral-teleological layer:* This is the core of the norm, defining the perception of the social problem, society's values, and the law's ultimate humanistic goal. This layer must be formulated exclusively by humans, based on an absolute monopoly.

*Algorithmic-syntactic layer:* This is the shell and legal technique of the norm, ensuring the consistency of concepts, compliance with thousands of other laws, and the precision of the text. The creation and analysis of this layer are completely transferred to artificial intelligence.

The necessity of this two-layered hybrid model is scientifically substantiated by the cognitive limitations in Harry Surden's theory of Computable Law [10]. Surden divides legal concepts into "rules" and "standards". According to him, artificial intelligence is hundreds of times more efficient than humans at handling "rules" based on strict logic (e.g., tax rates, age limits, deadlines). However, AI is ontologically powerless in the face of open "standards" requiring human values (e.g., good faith, reasonable action). It is precisely for this reason that while the algorithmic layer of the norm computerizes rules, maintaining control over its moral-teleological layer exclusively within the human subject ensures the viability of the legal system.

This proven theoretical model demonstrates that, in the era of human-machine collaboration, a legal norm cannot be the product of purely human creation or purely computer code. The traditional concept of the "legal norm" alters its ontological nature, evolving into a hybrid informational construct consisting of an organic synthesis of human value and machine precision.

## **DISCUSSION**

The phenomena identified as a result of the research, such as the "semantic gap" and the "hybrid norm",

present jurisprudence with entirely novel and profound challenges—challenges of an era where humanity's absolute monopoly on creativity has ended. If artificial intelligence (AI) evolves into a quasi-subject that independently formulates the algorithmic-syntactic layer of legal norms, how will this impact the traditional principle of the Rule of Law? In this section, the obtained results are discussed through the prism of international legal-philosophical doctrines, and the necessity of legally institutionalizing the "Human-in-the-Loop" principle to overcome the ensuing crisis is substantiated.

**The absolutization of the "Code is Law" doctrine and the crisis of democratic sovereignty.** The finding advanced in our research—that AI is becoming an active agent in rulemaking—signifies that the "Code is Law" doctrine, formulated by Lawrence Lessig, one of the founders of cyberlaw, has reached a new level [5]. In his foundational works, Lessig warned that human behavior in cyberspace is regulated more by the software and hardware architecture of the network than by state laws. Our research results demonstrate that in the AI era, algorithmic code is not only regulating social behavior but also dictating how the law itself (the legal text) should be written.

This ontological shift poses a direct threat to state sovereignty and democratic legitimacy. If legislative drafting is surrendered to closed, undemocratic Large Language Models (LLMs) created by major technology corporations (Big Tech), the state will be deprived of its most fundamental monopoly: the power to translate the will of the people into law. A machine-authored law, despite being syntactically flawless, will lack democratic legitimacy (the consent of the governed). Thus, we are confronted with the risk of law transitioning from a public (social) nature to a private-technocratic (algorithmic) one.

**The "Legal Protection by Design" approach against the mechanization of law.** The results section of the study substantiated that the algorithmic-syntactic layer of the norm is transitioning to AI. How, then, can the humanistic essence of laws be preserved in this scenario? Can a machine devoid of understanding legal values be trusted?

In discussing this problem, the "Legal Protection by Design" concept by Dutch legal philosopher Mireille Hildebrandt serves as a crucial theoretical anchor [11]. Hildebrandt asserts that when legal systems morph into an "information and communication infrastructure", simply declaring human rights and principles of justice within the legal text is insufficient; these values must be directly embedded into the design of the artificial intelligence architecture as mandatory constraints.



According to our theoretical model, if AI relies solely on the criteria of “efficiency” or “consistency” in drafting legislation, it could easily compromise the interests of socially vulnerable groups. Applying Hildebrandt’s concept to our results, we conclude that AI should only be permitted in rulemaking as a legal text generator if Constitutional values and the primacy of human rights are integrated into its foundational code as baseline metrics. Justice must be inscribed in computer memory, not as a numerical value, but as an imperative rule that limits the system’s operation.

**Solution: Recognizing the “Human-in-the-Loop” doctrine as a legal imperative.** The culminating point of the discussion is to propose a concrete legal solution for bridging the “semantic gap” identified in the research. While technology experts suggest further refining AI to solve the problem, jurisprudence demonstrates the impossibility of this: a machine can never experience moral existentialism.

Therefore, relying on the principles of algorithmic governance advanced by the prominent American legal scholar Cary Coglianese within the framework of legal theory, this article proposes elevating the “Human-in-the-Loop” principle from a mere technical rule to a constitutional-legal imperative [12].

To ensure that the moral-teleological layer of the proposed “Hybrid rulemaking” model remains exclusively in human hands, the following legal mechanism must be theoretically affirmed within the legislative process: Any legal text generated by artificial intelligence, regardless of how logically and syntactically flawless it may be, must undergo a mandatory moral justice review by a human legislator before acquiring official legal force. The human role here is not merely proofreading the text, but rather validating the “moral worth” and social value of the norm proposed by the AI. Consequently, in a post-anthropocentric era where the ontological essence of law has altered, ensuring that the source of legal legitimacy remains rooted in human moral agency—rather than in the algorithmic precision of AI—is the sole theoretical pathway to preserving the rule of law.

## **CONCLUSION**

This research, conducted within the framework of the theory of state and law, allows us to firmly conclude that the integration of artificial intelligence into the rulemaking and law enforcement systems is not merely the next evolution of legal technique, but rather an unprecedented ontological revolution in the very essence of law itself.

Throughout the study, based on the empirical experiences of developed nations and the analysis of

international legal doctrines, it was substantiated that law is transitioning from its millennial traditional form—its “text-driven” nature—to a strictly algorithmized “computational law”. This ontological shift has confronted jurisprudence with its most profound contradiction: the emergence of the “semantic gap” phenomenon. Although artificial intelligence excels at managing syntax (the mathematical probability and logical consistency of words) during norm creation, it is ontologically incapable of comprehending the “teleological (purpose-driven) core” of law, such as human justice, reasonableness, and morality. Ostensibly objective laws written on the basis of “Black Box” logic actually run the risk of degenerating into hollow shells devoid of referents, completely divested of the democratic will of the people.

Leaving this process unaddressed will inevitably lead to the erosion of state sovereignty and the subjugation of the legal system to a covert technocratic governance (a dictatorship of algorithms). To prevent this, modern legal theory must abandon outdated anthropocentric dogmas and embrace new conceptual solutions suited for the post-anthropocentric era. As such, this study theoretically advanced and substantiated the “Hybrid” (two-layered) model of the legal norm. According to this model, the complete rejection of AI is dismissed: it is retained as an instrumental tool to ensure the algorithmic-syntactic layer of legal norms (guaranteeing the consistency and efficiency of rules). However, the moral-teleological layer of the norm must remain entirely within the conscience and consciousness of the human (the legislator) on the basis of an absolute monopoly.

By way of a final conclusion, it must be emphasized that in the era of artificial intelligence, the sole pathway to preserving legitimacy and the rule of law is to elevate the “Human-in-the-Loop” principle from a mere technical rule to the status of a strict constitutional-legal imperative. In today’s context, where the “Code is Law” doctrine prevails, ensuring that law does not lose its status as a social protector requires embedding human rights and principles of justice directly into algorithm design as mandatory constraints. Law must never be allowed to dissolve within a mechanical algorithm; conversely, technological regularities must serve the supreme axiological principles of humanism. Only through this approach can we safeguard jurisprudence from being sacrificed to dry mathematical statistics.

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