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Original Paper

Evidence for the Scientific Nature of Jurisprudence in the Context of the Philosophy of Science

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Abstract

Given that jurisprudence has long faced accusations of being a "pseudo-science", establishing its scientific nature can provide a genuine justification for "why law deserves people's faith and obedience." The philosophy of science, as a theoretical framework for understanding science, should be applied to examine the scientific character of jurisprudence. Legal research methodologies not only align with the "verification principle" and "paradigm principle," but legal knowledge itself also possesses objectivity and relative stability. Pure rationality and value-neutrality should not be the sole criteria for judging the scientific status of jurisprudence. Rather, jurisprudence is a discipline that integrates scientific rationality with humanistic concerns, and the methodologies of natural sciences do not fully encapsulate the essence of its scientific validity.

Keywords

Jurisprudence, scientific nature, philosophy of science, legal research methodology

1. Introduction

One hundred and eighty years ago, Julius Hermann von Kirchmann's seminal lecture The Worthlessness of Jurisprudence as a Science shattered the seemingly self-evident "common sense" that "jurisprudence is a science," securing his place in intellectual history. Two decades later, Rudolf von Jhering reignited profound skepticism about the scientific nature of jurisprudence with his inaugural address Is Jurisprudence a Science? The Sphinx-like riddle—Is jurisprudence a science?—drew towering figures such as Stammler, Kirchmann, Larenz, Kelsen, Kaufmann, and Geertz into a series of brilliant and contentious debates. Yet, after 180 years, we still lack the most compelling answer to this "ultimate question." We call it the "ultimate question" because answering is jurisprudence a science? First requires resolving two foundational inquiries—one from the realm of jurisprudence and the other from the philosophy of science: What is jurisprudence? and What is science?

2. The Origin, Evolution, and Current State of the Scientific Nature of Jurisprudence

2.1 The Formation of "Legal Science"

In ancient Greece and Rome, jurisprudence bore little connection to science as such. In 198 BCE, the Roman consul Aelius, in his capacity as a secular magistrate, began lecturing on and writing about law, transforming legal knowledge into a worldly discipline. This discipline came to be known as jurisprudentia—a term derived from the Latin prudentia, which itself originates from the Greek φρόνησις (phronēsis), often translated as "practical wisdom" or "prudence." The Roman jurist Ulpian defined it as "the knowledge of things divine and human, the science of what is just and unjust" (Justinian, 1999). By the Middle Ages, however, jurisprudence—having only recently emerged from philosophy—once again lost its autonomy, becoming "the handmaid of theology" (Yan, C. S., 2015). Although modern science had not yet taken shape, the revival of Roman law in the 11th century gave rise to the glossators' school (Glossators), which shaped the fundamental character of medieval and early modern jurisprudence. Its overarching style was that of a "theoretical jurisprudence," increasingly aligning itself with the paradigm of "science" (Lei, L., 2019, pp. 84-104).

The First Industrial Revolution spurred the Enlightenment, which championed reason and freedom. Enlightenment thinkers sought to enhance law's logical rigor and verifiability by applying methodologies from the natural sciences, such as mechanistic cosmology, experimental mathematics, and geometry. For instance: Leibniz attempted to systematize law through definitions, axioms (Merryman, J. H., 2004), and theorems. Pufendorf developed an "architectonic politics," constructing a legal system based on mathematical principles (Masao, O., 1998). By the 19th century, during the era of the Historical School of Law, the German term for jurisprudence evolved into Rechtswissenschaft—a compound of Recht (law) and Wissenschaft (science). Jurisprudence, now abbreviated as "legal science," had fully undergone the transformative influence of modern science.

2.2 The Provocative Thesis

In 1847, the German prosecutor and jurist Julius Hermann von Kirchmann sparked profound skepticism about the scientific nature of jurisprudence through his seminal lecture The Worthlessness of Jurisprudence as a Science, challenging the long-held Enlightenment belief in law as a pure science by arguing that jurisprudence, grounded in the mutable and subjective nature of positive law, concerned itself only with the arbitrary—famously declaring that "three correcting words from the legislator render entire libraries obsolete" (J. H. von Kirschmann, & Zhao, Y., 2004, pp. 138-155)—and was thus theoretically valueless.

A century later, Karl Larenz countered this provocative thesis in his Berlin Law Society address On the Indispensability of Jurisprudence as a Science, asserting that science lies not in outcomes but in the rationally verifiable process of inquiry, with law's mission being the interpretation of legal norms as a fundamentally rational human activity (Karl, L., & Zhao, Y., 2005, pp. 144-155). Rudolf von Jhering further complicated the debate by posing three enduring challenges to law's scientific claims: whether jurisprudence can be falsified, whether it can be scientific when constrained by legislators' views, and

whether its jurisdictional limitations permit scientific status (Jhering, R., 2010), while legal luminaries like Stammler, Larenz, Kaufmann, and Geertz engaged in an epic intellectual clash by variously redefining both "jurisprudence" and "science."

In conclusion, nineteenth-century critiques of law's scientific credentials coalesced around three key arguments: first, law's lack of universality, as Geertz viewed it as local knowledge producing divergent outcomes across legal systems (Liang, Z. P., 1998); second, its methodological unscientific nature, with Stammler insisting that science requires absolute methods and unified concepts absent in legal study, which lacks the immutable laws of natural sciences and deals with inherently unstable positive law; and third, its unfalsifiability, as Popper's criterion that genuine science must be falsifiable highlights law's focus on normative "oughts" rather than empirical facts, making value judgments inherently unverifiable.

2.3 The Development and Current State of Research on the "Scientific Nature of Jurisprudence" in Chinese Academia

The question of jurisprudence's scientific nature began attracting attention from Chinese scholars in the 20th century. In 1983, scholar Wang Chuansheng argued that Marxist legal theory, grounded in historical materialism, could reflect society's fundamental laws and thus constituted a genuine science (Wang, C. S., 1983, pp. 7-12). In 1999, Li Jingbing posited that jurisprudence's ultimate purpose was humanistic concern, making claims about its scientific or unscientific nature reductive (Li, J. B., 1991, p. 77). Scholar Hu Zhou suggested that studying law's scientific character was less about rigid categorization and more about determining the proper intellectual perspective for engaging with legal studies (Hu, Z., 1992, pp. 137-139). In recent years, numerous scholars have sought to affirm jurisprudence's scientific status, with debates between legal dogmatics and social-sciences-oriented jurisprudence in China fueling unprecedented scholarly interest in law as a science (Wang, X. H., 2020, pp. 117-126).

Chinese scholars generally defend jurisprudence's scientific nature through three approaches: (1) Methodological Rigor—Zhao Jing notes that jurisprudence employs rational reasoning, possesses its own conceptual framework, a complete disciplinary system, and a methodology based on normative principles, making it a science despite not being a natural science; (2) Object of Study—Professor Shu Guoying defines jurisprudence as the study of "legal principles," while others argue its fundamental task is to uncover the objective, universal laws governing legal phenomena and explore governance strategies for human welfare; and (3) Universality, Regularity, and Objectivity—Professor Wang Liming maintains that jurisprudence, though serving local legal practice, develops consistent foundational values and conceptual systems, particularly through legal dogmatics, which systematizes and typologizes value judgments, lending them an objective quality in application.

Ultimately, justifying jurisprudence's scientific status hinges on answering two fundamental questions: What is science? and What is jurisprudence? Since the philosophy of science examines scientific activities and theories—addressing the nature of science, the acquisition of scientific knowledge, and

its logical structure—it provides essential guidance for defining science. The following analysis thus explores jurisprudence's scientific character through the lens of philosophical theories on the essence of science.

3. Substantiating the Scientific Nature of Jurisprudence from the Perspective of Philosophy of Science

The Western philosophy of science has undergone an evolutionary process in exploring the essence of science, progressing through stages such as positivism, logical positivism, falsificationism, sophisticated falsificationism, historicism, and anarchism. Later, Lakatos proposed sophisticated falsificationism, arguing that the demarcation between science and non-science lies not in "falsifiability" or "paradigms," but in the ability to predict novel empirical facts. Anarchism, on the other hand, outright denies the necessity of distinguishing between science and non-science, adopting a radically relativistic and irrationalist understanding of science. Surveying the development of Western philosophy of science and analyzing its tenets through the lens of Marxist views on science and technology, while none of these theories provide a perfect answer to the question "What is science?", they offer a higher theoretical perspective for examining the scientific nature of jurisprudence. Accordingly, the following discussion substantiates the scientific character of jurisprudence by integrating insights from positivism, logical positivism, falsificationism, and historicism regarding the essence of science.

3.1 Legal Research Methodology Complies with the "Principle of Verification" and "Paradigm Principle"

Chen Duxiu once asserted: "The unity of all science lies solely in its method, not in its subject matter. What makes science is not the facts themselves, but the methods used to process them" (Chen, D. X., 1920). From this perspective, science is defined not by the knowledge it produces, but by its methodological approach to facts. Francis Bacon, grounded in empiricism, pioneered the scientific inductive method based on practice—observing and experimenting first, then generalizing patterns to derive knowledge. The French philosopher Auguste Comte proposed that the fundamental method for understanding the world is "positivism," characterized as "real, useful, certain, and precise." In summary, science is rooted in empirical facts, relying on observation, experimentation, and logical reasoning (deduction and induction) to generate knowledge that can be tested against reality.

Similarly, legal research adheres to strict rules of argumentation, interpretation, and rational discourse. Precisely because jurisprudence employs multiple rational methodologies, even when judicial decisions reflect judges' value judgments, they cannot devolve into arbitrary rulings. With advances in artificial intelligence, big data technologies now enable the construction of reasoning models. While AI in law cannot yet fully replicate human arguments that balance equity, reason, and law, it can already mimic and replace judges in reasoning through simple cases. This demonstrates that legal reasoning, due to its scientific nature, can be translated into algorithms, and that the scientific rigor of legal methods allows

compatibility with natural sciences (Liu, D. L., 2022, pp. 145-164). Moreover, empiricist philosophy of science requires scientific knowledge to be testable against empirical facts. Legal standards provided to judicial practice must be applied and tested by judges in concrete cases, refining theories and criteria based on their alignment with justice and fairness.

The American philosopher of science Thomas Kuhn introduced the core concept of "paradigm"—a set of fundamental theoretical assumptions accepted by a scientific community during a specific period (Okasha, S., 2013). Only disciplines with shared paradigms qualify as scientific. Does jurisprudence possess such a paradigm?

First, the legal community shares a common worldview and values: the pursuit of justice, fairness, order, and liberty. Second, it embraces foundational theories and doctrines—for example, the principle of legality in criminal law, which remains a cornerstone of legal systems worldwide despite centuries of evolution. Third, the legal community employs agreed-upon research methods. Take statutory interpretation: whether in judicial practice or academic research, the sequence progresses from literal interpretation to logical interpretation. Finally, the community recognizes shared "exemplars" (landmark cases). China's Supreme People's Court, Supreme People's Procuratorate, and administrative agencies issue guiding cases to standardize adjudication and unify legal application. Thus, jurisprudence satisfies Kuhn's "paradigm principle."

3.2 The Objectivity and Relative Stability of Legal Knowledge

Logical positivism posits that science is grounded in empirical evidence and structured by logical tools, asserting that only propositions verifiable through empirical facts qualify as scientific. Its representative philosopher, Rudolf Carnap, argued that metaphysical propositions are neither true nor false—they assert nothing and yield no knowledge, thus warranting exclusion from science. Scholar Fang Kong, in The Principles of Positive Law: Meditations on First Legal Philosophy, vividly illustrates the process of formulating scientific laws through the equation $L = r(z)$, which highlights two essential elements: the objective natural world and human cognitive capacity (Fang, K., 2007, p. 16). Similarly, the creation of law stems from humanity's cognitive engagement with the patterns governing societal existence.

The sole distinction between the genesis of legal knowledge and that of natural scientific knowledge lies in the absence of controlled "experimentation" in the former. Yet, the iterative processes of legal reform, revolution, and legislative activity effectively constitute large-scale "social experiments" that validate the scientific robustness of legal principles. Thus, legal knowledge, too, emerges from empirical observation, quasi-experimentation (through societal practice), and the application of inductive and deductive reasoning, continually refined and tested—rendering it no less scientific in its methodology and evolution.

4. The Scientific Rationality and Humanistic Concern of Jurisprudence

The value-laden nature of jurisprudence constitutes a primary reason for its skepticism as a "pseudo-science." Specifically, the discipline grapples not with quantifiable phenomena but with questions inextricably tied to values and meaning—issues resistant to experimental observation, measurement, or calculation. The inherent character of legal study precludes "value neutrality"; it is neither a rigid exercise in formal logic nor amenable to verification or falsification. Thus, it defies Karl Popper's falsificationist criterion (that only falsifiable theories qualify as scientific) and deviates from the pure rationality emphasized by logical positivism. Yet science itself cannot operate beyond value constraints. While "value neutrality" may grant the scientific community relative autonomy and research freedom, it risks becoming an excuse for evading societal realities and responsibilities. The notion that science should address only objective facts—while excluding values—artificially severs fact from normativity, ignoring that no "pure" science exists in a vacuum. Popper's falsificationism also falters in practice: if theories were abandoned at the first conflict with observed facts, scientific progress would stall. Therefore, pure rationality and value-neutrality must not monopolize the criteria for assessing jurisprudence's scientific status. Law's dual commitment to scientific rigor (in methodical analysis and systematic reasoning) and humanistic concern (in pursuing justice and equity) reflects a higher-order synthesis—one that transcends reductive binaries to affirm its unique epistemic legitimacy.

In his 2022 article "The Genealogical Orientation of Legal Research in the Big Data Era: A Natural Science-Based Jurisprudence?", Professor Zuo Weimin highlighted the growing trend of legal studies becoming "natural-science-oriented" with the aid of internet technology, even giving rise to an emerging field termed "natural science-based jurisprudence" (Zuo, W. M., 2022, pp. 32-43). However, no matter how precise or rational the conclusions derived from natural science methods may be, they ultimately remain confined to the empirical realm of "is," whereas jurisprudence fundamentally concerns itself with the normative world of "ought." If legal issues are reduced to mere problems of natural science—analyzed through theoretical modeling, mathematical computation, or computer programming—debates over justice, fairness, and morality risk losing their significance, potentially succumbing to the pitfalls of "scientism."

Moreover, as an independent discipline, the scientification of jurisprudence must ultimately rely on its own methodological and systemic frameworks. While natural science approaches undoubtedly offer fresh perspectives for legal research, forcibly dismantling disciplinary boundaries to merge the two would inevitably trigger "rejection reactions." Applying natural science knowledge and techniques to legal phenomena may, to some extent, address the excessive abstraction and subjectivity of traditional legal scholarship. Yet, at its core, jurisprudence is the study of humanity—"law cannot be divorced from human sentiment." Its scientification cannot be achieved solely by adopting natural science methodologies. As Professor Zhang Qi aptly observes, legal professionals require training in humanistic jurisprudence—a stance that harmonizes scientific rigor with humanistic values, steadfastly

upholding human dignity as its ultimate purpose (Zhang, Q., 2023, pp. 3-16).

5. Conclusions

Jurisprudence is precisely such a discipline that integrates both scientific rationality and humanistic concern—combining rigorous logical deduction with compassion and warmth for humanity. We must remain vigilant against the risks posed by "scientism" and the "overgeneralization of science," breaking free from blind worship of natural sciences while still establishing jurisprudence's scientific legitimacy. This necessity stems from the fact that since Plato introduced his allegory of the cave, seekers of truth have shared a common faith: to emerge from the cave and pursue a rational world. This holds true for science, and no less for jurisprudence. In their origins, jurisprudence and science bore no connection. Our efforts to endow jurisprudence with scientific attributes are, in essence, driven by the aspiration to construct a research methodology and theoretical system with distinct disciplinary characteristics—one that reflects jurisprudence's unique identity as an independent field. By affirming its scientific nature, we enable legal scholars to adopt a scientific attitude, thereby better grasping the laws governing human societal development. Only then can we formulate laws grounded in "pure rationality" and embodying "transcendent neutrality."

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