



LOGIC AS A SCIENCE AND ITS SIGNIFICANCE FOR LEGAL PRACTICE

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Abstract

This article examines logic as a universal science of reasoning and analyzes its fundamental role in legal practice. It explores the laws, forms, and methods of logical thinking, emphasizing their application in judicial argumentation, criminal investigation, and legal decision-making. The study demonstrates that logical culture is an essential component of professional legal competence, ensuring the validity of definitions, inferences, proofs, and refutations within contemporary jurisprudence and governance.

Keywords: Logic; Legal reasoning; Jurisprudence; Formal logic; Dialectical logic; Legal argumentation; Proof; Inference; Legal culture; Criminal investigation.

Introduction

Logic studies thinking as a means of cognition; its subject encompasses the laws and forms, methods, and operations of thought through which humans comprehend the surrounding world. Questions related to the cognition of reality constitute some of the most fundamental issues in philosophy. Logic, which examines cognitive thinking and serves as a tool of knowledge, originated and developed as a philosophical discipline. Today, it represents a complex system of knowledge that includes two relatively independent branches: formal logic and dialectical logic.

Logic holds particular significance in legal practice. Cicero, when discussing judicial matters, advised orators that whatever case they undertake, they should “examine it carefully and thoroughly.” He emphasized that in the judicial forum documents, testimonies, contracts, agreements, obligations, kinship relations,



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magistrates' decrees, legal opinions, and ultimately the entire life context of those whose case is under consideration must all be analyzed [1]. In this preparatory work, Cicero gave special prominence to the logical dimension of the case: "The argument in which I find more help than harm I plan to use; where I find more harm than benefit, I wholly reject and discard it. Thus, I first consider what I should say, and only then do I say it."

In contemporary legal practice, virtually the entire rich arsenal of logical tools is employed: definition (of legal concepts), division (for example, classification of crimes), subsumption under a concept (such as legal qualification of a specific act), hypotheses in the form of investigative versions, inference (for instance, in an indictment), proof and refutation (for example, during court proceedings), and others [2].

To use the full arsenal of logical tools effectively, one must master them thoroughly. There is no alternative to a deep and thoughtful study of logic—acquiring a substantial body of logical knowledge and developing the corresponding analytical skills and competencies [3]. It can confidently be stated that becoming a truly competent lawyer requires two essential qualities: a high level of legal culture and an equally high level of logical culture. This assertion is by no means an exaggeration.

Transcripts of proceedings from the Constitutional Court illustrate the significance of logic for legal professionals. These records show frequent references to the very concept of "logic," including expressions such as "ordinary logic," "contrary to logic," "cases logically combined," and "logical form of thought." Specialized logical terminology is also widely used, including "definition," "thesis," "proof," "argument," "grounds," and "conclusions." [4] References are made to logical laws and principles: the substitution of a thesis (law of identity), identification of logical contradictions in parties' reasoning (law of non-contradiction), application of the "either-or" requirement (law of excluded middle), and consideration of "sufficient grounds" for conclusions (principle of sufficient reason).

It is evident that a court decision can be considered sound only when not only its legal foundations are correct but also the reasoning process itself is logically



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valid [5]. This constitutes the logical dimension of legal proof and argumentation.

Notably, legal professionals themselves acknowledge the importance of logic in legal practice. For example, the textbook Criminalistics emphasizes that forensic science extensively and creatively draws upon logical principles, particularly such modes of reasoning as analysis, synthesis, deduction, induction, analogy, generalization, and abstraction[6]. The application of logical knowledge has enabled the development of what is referred to as the “logic of investigation” and the “logical foundations of forensic tactics.” In complex investigative situations, success in solving crimes is impossible without knowledge of the laws of formal and dialectical logic, without the investigator’s ability to reason effectively, and without the capacity to formulate probabilistic judgments and hypotheses. Regarding specific investigative cases, it is noted that reliable identification of an object’s properties requires examining its various manifestations, generalizing observations and experimental findings, constructing inferences about the mechanisms of trace formation, and employing other forms of logical activity. With the increasing use of advanced technologies based on mathematical modeling, traditional mathematical and logical symbolism is being adapted for the construction of formalized languages and automated systems designed to collect, store, process, and disseminate legal information, taking into account the specific characteristics of the object under study[7].

Logic plays a crucial role not only in criminalistics but across the entire spectrum of legal tasks, including the regulation of labor, property, and other legal relations, as well as social and legal protection, customs law, and related fields. Under current conditions of national development, the importance of logic for legal professionals continues to grow. The establishment of the rule-of-law state in Russia presupposes the prioritization of legal sciences as a theoretical foundation for regulating the full range of social relations, particularly in the context of transition toward a market economy [8]. Considerable practical efforts are also required to harmonize extensive legislation with the demands of market relations. In this context, the role of logic is strengthened as one of the indispensable theoretical pillars of legal science and practice.



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Logic may be described as a universal science, since its principles extend to virtually all forms of intellectual activity. The laws of logic, regardless of whether the individual engaging in the reasoning consciously recognizes these laws, govern most reasoning on any subject that claims validity or truth.

It should be noted that the logical dimension of any type of activity possesses specific features determined by its substantive content. Depending on the subject matter, adherence to logical laws may be more or less explicitly manifested. Certain areas of reasoning require a particularly high degree of logical precision in constructing inferences; in such cases, logic becomes an integral component of the subject itself. Conversely, other topics may not demand the same level of precision—for example, when conclusions appear self-evident or when the reasoner has limited interest in their rigorous justification [9].

Consider the following example. Ivanov, while visiting Petrov, accidentally took someone else's hat from the coat rack after saying goodbye. For Sidorov, who observed Ivanov's actions, only the fact that Ivanov took a particular item of clothing may be immediately apparent. In this situation, Sidorov's statement, "Ivanov took a hat," may be regarded as true at least from his perspective. He does not engage in any explicit logical analysis to verify the statement; his conclusion rests solely on personal perception.

However, if Sidorov raises the question of ownership whether the hat belongs to Ivanov or to another person answering this question would require a more complex logical construction. Most likely, Sidorov might reason as follows: "I have never seen Ivanov wearing such a hat before; therefore, it probably does not belong to him." This method of inference not only illustrates a reasoning process but also functions, to some extent, as a form of evidence supporting the conclusion. Such reasoning may acquire legal significance, for instance, in the context of an investigator assessing factual circumstances.

Reasoning in this situation may be further complicated by considering additional questions: Did Ivanov realize that the hat he took belonged to someone else? If he did, did he intend to return it to its rightful owner? Addressing such questions affects the interests of Ivanov, the hat's owner, and possibly Sidorov, who may be regarded as a witness. Consequently, the answers require explicit argumentation, which in turn necessitates adherence to proper logical



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procedures. In a legal context, therefore, not only what is affirmed or denied matters, but also how conclusions are reached—that is, the logic of the inference itself becomes crucial.

Thus, logic may be viewed as a science that establishes rules governing the process of thinking so that truth may be reached as efficiently and reliably as possible. It specifies the principles to which reasoning must conform in order to attain valid conclusions.

Through the process of thinking, truth is sometimes achieved and sometimes not. Importantly, the primary aim of logic is not necessarily the discovery of new truths but the justification and verification of truths already identified. Logic provides explicit rules for detecting errors and inconsistencies, thereby helping to avoid mistakes in reasoning.

A well-developed logical culture in argumentative discussion may be regarded as an indicator of a lawyer's professional competence. The principal tasks of logic for legal professionals include applying logical methods and tools to verify the correctness of conceptual definitions, the logical conditions for the truth of propositions, and the validity of proofs and refutations[10].

Contemporary legal scholarship places significant emphasis on the logical foundations of the functioning of legal systems. Current priorities such as strengthening legality, maintaining public order, and reinforcing the legal framework of social life require systematic study of the patterns of reasoning associated not only with lawmaking but also with legal interpretation and law enforcement.

Accordingly, knowledge of logical fundamentals is important for everyone, since all individuals engage in various forms of reasoning. However, in certain professional fields these skills acquire particular importance. Legal practice represents a prominent example, where mastery of logical principles is essential. Modern legal practice frequently employs a broad range of logical tools: definition (of legal concepts), division (for example, classification of criminal acts according to criminal law), subsumption under a concept (legal qualification of a specific act), hypothesis formation in the form of investigative versions, inference (such as in indictments), and confirmation or refutation during judicial



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proceedings. These logical instruments constitute an indispensable component of professional legal reasoning.

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