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## Overcoming of semantic uncertainty in criterion concepts of a procedural law based on using fuzzy inferences

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### Abstract

The method allowing overcoming the semantic uncertainty in criterion concepts of a procedural law is offered. As an example, it had been chosen the Article 165 – “Violation of the author's or adjacent rights” of Criminal Code of Azerbaijan Republic, which is based on the formalism for the criterion concept "extensive damage" coupled with the applied sanction. For imposition of adequate to criterion concept sentence, it is offered the scale of the possible sanctions obtained based on the description of the correspondent legal norm in terms of fuzzy implicative rules.

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### 1. Introduction

Naturalistic view of the process of cognition, which allows treating the subject of science as objective reality, provides the basis for the legal thinking, where the legal reality is limited by existing legislation, and goals are established based on security of legal practice problems. As I. Malinova1 stated “legal reality is presented as a whole set of legal phenomena: existing legal relationships, legal norms, institutions and legal concepts, as well as phenomenon of legal mentality”. In other words, the legal reality includes the so-called base legal phenomena, such as: “legal norms” (normative theory), “legal relationships” (sociological direction) and “legal emotions” (psychological direction), relative to which the other legal phenomena are derivatives. According to approach of I.A.

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Isaev<sup>2</sup> structural constituents of the legal reality are legal ideology including legal awareness and legal ideas and concepts, views and attitudes; legal norm formally fixed in existing legislation; legal relationships – really emerging legal bonds, various types of realization of the right. At the same time, it is necessary to take into account that these specified elements of legal reality should be considered in its historical development, and the field of the conducted research is bounded by relevant information, its goals and objectives. As in other social sciences, in the process of legal research partial science methods to study the legal reality are developed and used, such as the method of comparative jurisprudence, the method of interpretation (or explanation) and technical method. However, at the present stage of legal studies it cannot be limited to these methods. Even legal scholars consistently defending the status of dogmatic jurisprudence recognize that the application of these methods, for all their virtues, sets the restrictive limits in understanding the practical operation of positive law and the originality of its theoretical vision<sup>3</sup>. Nevertheless, the application of these methods in the study of legal reality allows drawing a conclusion about general progress trends of *criterion concepts* that are fundamental to the law of civil procedure. The term “*concept*” even from the point of view of classical formal logic can have different meanings, as in logic it is identified ambiguity, inaccuracy of content and scope of certain forms of human thought, which are considered as concepts and are not removed from the scope of modern logic. At the same time, like other abstractions, reflecting features (relationships between objects); criterion concepts in the law of civil procedure reflecting the phenomenon cannot be merely features. In particular, in monograph of R.O. Opalev<sup>4</sup> as criterion concepts general, abstract, fuzzy concepts are comprehended, that are expressed in the sources of law governing the civil and administrative proceedings, and are intended to provide law enforcer (in a specific case) the relative freedom of action.

L. Zadeh as a founder of fuzzy logic developed a mathematical apparatus by which it became possible to describe the fuzzy concepts, operated with the fuzzy formalisms, and, as a result, obtained the fuzzy conclusions<sup>5,6,7</sup>. By application of the mathematical apparatus of fuzzy logic one can improve the correctness of legal terminology, in particular, of criterion concepts, which, in turn, one can considerably bring together scientists from different disciplines, increase the dialogic and methodological potential of legal research, and, thus, enhance the status and significance of jurisprudence in whole.

## 2. Problem formulation

Lack of accuracy in the formulations of procedural law is one of the most actual and unavoidable problems of practical jurisprudence. According to K. Zeelman<sup>8</sup> (German legal scholar) the phenomenon of semantic uncertainty of legal norms is known *ab origin* of the legal doctrine. Most clearly, this uncertainty manifests itself in criterion concepts, which are used in law though relatively not long ago, but they have deep enough roots, because have to do with the forms of human thought and means of expression. Most of the phraseology used in the legal theory and legal practice are not artificially created, and are based on natural (literary) language. Moreover, the legal terminology inherently much more incorporates the laws and regularities of natural language, rather than, for example, the system of chemical or physical terms. Language of legal norms has completely inherent properties of natural language systems including such as synonymy and polysemy, which are actually the main sources of uncertainty.

Sometimes (if not often) it is impossible under each common word in the legal statement to imply a strictly defined legal concept with its own specific content. Such it would seem clear *ex facto* the terms as “dispute”, “interest”, “possibility” and even “justice” still have not found a unique understanding in the legal science, as in natural language depending on the context these terms have different values. In addition, the many-valuedness of word and fuzziness of its concept expressed are completely different things. Multivalued word can have simultaneously several well-defined (crisp) concepts. In this case, the uncertainty associated with the response on question: what of the values of word do mean in a given context of the legal wording. Uncertainty immediately disappears if you select an adequate value of alternative synonyms of word. However, when operating with fuzzy concepts of law a completely different factor of uncertainty is appeared, which manifests itself in the framework of a single value (term) of the word as linguistic variable. Thus, the most topical problem is deliverance of the propositions of law and criterion concepts, in particular, from the fuzziness as one of the factors of uncertainties inherent in natural language system. Such uncertainty can be eliminated by contextual environment of “fuzzy word”. However, it is not always possible because descriptive technique of droit is not and cannot a priori be perfect.

Let us choose, for example, the frequently occurring in legislation criterion concepts, such as “*reliable*”, “*with difficulty*”, “*immediately*”, “*basic*”, “*special*”, “*obviously*”, etc. In droit, they have the same meaning as the

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