
Comparative analysis of quasifunctional Logics

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Quasifunctional (quasi-matrix, nondeterministic, partially deterministic) logic is based on the principle of quasifunctionality. According to the principle functional connections between observable phenomena are (at least) partially nondeterministic in many cases. This logic is a set of logical systems. These systems might differ in types of propositions and relations between their logical forms as well as in types of logical terms included in propositions. Logical systems are constructed semantically. However, they might be also presented axiomatically with the aim of their comparative analysis simplification and practical use. Here the result of a comparative analysis of axiomatically constructed three- and four-valued quasi-matrix logics and their limiting cases — matrix logics is presented.

Keywords: *quasi-function, the principle of quasifunctionality, quasifunctional logic, non-deterministic logic, three-valued logic, four-valued logic*

REFERENCES

- [1] Ivlev Ju.V. *Vestnik Moskovskogo universiteta. Ser. 7: Filosofiya — Bulletin of Moscow State University. Ser. 7: Philosophy*, 1973, no. 6, pp. 51–61.
- [2] Ivlev Ju.V. *Soderzhatelnaya semantika modalnoy logiki* [Contentive semantics of modal logic]. Moscow, MGU Publ., 1985, 168 p.
- [3] Ivlev Ju.V. *Modalnaya logika* [Modal logic]. Moscow, MGU Publ., 1991, 224 p.
- [4] Ivlev Ju.V. Quasi-Functional Logic and Logic of Propositional Attitudes. In: *Filosophie und Logik. Frege-Kolloquien Jena 1989/199*. Berlin, New York, Walter de Gruyter Publ., 1993, pp. 200–204.
- [5] Ivlev Ju.V. *Logic and Logical Philosophy*, 2000, vol. 8, pp. 91–97.
- [6] Ivlev Ju.V. *Journal of Multiple-Valued Logic and Soft Computing*. Old City Publishing, Inc. (United States), 2005, vol. 11, no. 3–4, pp. 239–252.
- [7] Ivlev Ju.V. *Logicheskie issledovaniya — Logical Investigations*, 2013, vol. 19, pp. 281–307.
- [8] Karpenko A.S. *Razvitiye mnogoznachnoy logiki* [The Development of multivalued logic]. Moscow, URSS Publ., 2010, 444 p.
- [9] Kleene S. *Introduction to metamathematics*. New York, Toronto, Van Nostrand, Publ., 1952. [In Russ.: Kleene S. *Vvedenie v metamatematiku*. Moscow, Inostrannaya literatura Publ., 1957, 526 p.].
- [10] Ivlev Ju.V. *Gumanitarnyy vestnik — Humanities Bulletin*, 2016, no. 10, pp. 1–11. DOI: 10.18698/2306-8477-2016-10-391
- [11] Coniglio M.E., del Cerro L.F., Peron N.M. *Journal of Applied Non-Classical Logic*, 2015, vol. 25, no. 1, pp. 20–45.
- [12] Omori H., Skurt D. *IFCoLog Journal of Logics and their Applications*, 2016, vol. 3, no. 5, pp. 815–846.

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