

Historical-Conceptual Analysis of the Concept ‘formal’

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The concept ‘*formal*’ is central in modern mathematical logic as well as in computer and cognitive sciences. However, there is still some confusion over its meaning. According to C.D. Novaes, ‘*it is essentially a blanket term covering a wide range of related but distinct concepts and phenomena*’. In addition, the difficulties arise because, generally, insufficiently precise, even ambiguous terms and notations are used. This terminology essentially depends on the focuses and interests of the particular authors (computer science, mathematics, mathematical logic, science history, AI, philosophy) and on a scientific school represented by them. The purpose of the talk is to give from a computer scientist's bird's eye view a high-level conceptual overview and to provide a basis for understanding this concept.

As a secondary result, the presentation discusses historical-conceptual analysis as a research method from informaticians’ point of view to conduct historical-analytical or historical-conceptual surveys. The use of this method is inspired by the works of A. Dumitriu, P. Feyerabend, G.E.R. Lloyd, W. Marciszewski and R. Murawski, and C.D. Novaes.

A large part of the results discussed were obtained together with colleagues: Prof. Albertas Čaplinskas of blessed memory and Dr. Jolanta Miliauskaitė.