Abstracts

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DAVID VAN DANTZIG, SIGNIFICS AND THE CULTURAL ROLE OF MATHEMATICS

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DAVID VAN DANTZIG (1900-1959), Dutch mathematician, statistician and mathematical modeller, cofounded the research institute CWI (founded in 1946 as the Mathematical Center). VAN DANTZIG was part of the signific circle, mathematicians, philosophers and linguists discussing signs and communiciations. One may say that significs is a psychological theory of communication, developed in the early deceades of the XXth century in the absence of communication theory. Van Dantzig developed his part of significs to describe the societal, in particular cultural, role of mathematical thought. This is how he got tot his ideas on mathematical modelling.

NEED FOR A NEW LANGUAGE?
Algorithms and Complexity

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Algorithm is one of the central notions in the twentieth-century mathematics. However, the history of algorithm is much longer than the name, coming from the name of an Arabian learned man AL-KHWARIZMI (ca. 783–850 AD). They appeared and continue to appear outside the context of computers and programming languages. They are an intrinsic part of mathematics: apart from providing a general method, they tend not to leave out any alternatives in the solution, which seems to be inherent to all of mathematics. I will try to show that algorithmic thinking need not be supported by formalized programming languages.

HISTORY OF THE SET THEORY AMONG CZECH SCHOLARS UNTIL 1940

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The Set Theory of Georg Cantor faced much opposition from the time it was published. The opposition increased with the discovery of the antinomies. Some mathematicians, however, set to find the solution to the newly found problems.

How did the Czech mathematicians learn about the set theory and what was their reaction to the theory and its problems? There are 11 articles related to the topic in Czech mathematical magazines until 1940. The first one, a translated lecture of Henri Poincaré, appeared in 1909 and contained a few paragraph note about the developments in the field of the set theory - Cantor's work, the antinomies and Hilbert's axiomatic work. An article by J.M. Horák from 1925 provides author's attempt to solve the antinomy problem. In 1931 appeared the first systematic overview of Cantor's theory as an appendix to a book on mathematical analysis. V. Jarnik gives on 70 pages the basics of the theory. Six years later M. Neubauer published an addition to Jarnik's article, providing deeper insight into Cantor's world of alephs and omegas.