Leon Henkin on Completeness

María Manzano
Universidad de Salamanca
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Abstract

The Completeness of Formal Systems is the title of the thesis that Henkin presented at Princeton in 1947, and his director was Alonzo Church. His renowned results on completeness for both type theory and first order logic are part of his thesis. It is interesting to note that he obtained the proof of completeness of first order logic readapting the argument found for the theory of types.

In 1963 Henkin published a completeness proof for propositional type theory, A Theory of Propositional Types, where he devised yet another method not directly based on his completeness proof for the whole theory of types. It is surprising that the first-order proof of completeness that Henkin explained in class was not his own but was developed by using Herbrand’s theorem and the completeness of propositional logic.

In the book The Life and Work of Leon Henkin, recently published, there is a complete chapter devoted to this issue, Henkin on Completeness.

References


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