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# IN MEMORIAM: LEON ALBERT HENKIN 1921–2006

Leon Henkin was one of the central figures of twentieth century logic. Less widely known to mathematicians were his work in mathematics education, his activities supporting underprivileged and women students, and his extensive service to the University of California, Berkeley; these aspects of his life are not treated in this obituary.

Leon was born in 1921 in Brooklyn, New York. He obtained a B.A. in mathematics and philosophy at Columbia College in 1941, and an M.A. and Ph.D. (under Alonzo Church) in mathematics at Princeton in 1942 and 1945. During World War II he worked on the Manhattan Project. After two more years at Princeton, he moved to the University of Southern California, moving to the University of California, Berkeley in 1953. He was recruited by Alfred Tarski, who was beginning to build a research center in logic which is still active. Leon was promoted to Professor in 1958. He remained at UC Berkeley until his retirement in 1991. During his years in Berkeley he was chairman or acting chairman of the department several times, and also was chairman of the Group in Logic and Methodology of Science twice. On the national level, he was active in the Association for Symbolic Logic, serving as president for three years. He was sole Ph.D. advisor for two students in mathematics, co-advisor for eight more, and sole Ph.D. advisor for five students in mathematics education.

He is best known for his proof of the completeness of first-order logic. This was in his Ph.D. thesis, published in The Journal of Symbolic Logic in 1949; see [2] in the bibliography of this paper. The proof consists in adjoining individual constants to a given first-order language, extending a given set of sentences by using those constants so as to eliminate quantifiers, and then constructing a model whose elements are equivalence classes of terms in the expanded language. This basic idea has been applied in many situations in model theory, by many authors. In particular, Henkin himself applied it to the theory of types [3]. Instead of allowing higher order variables to range over all objects of the appropriate type, one allows the range to be a specified class of such objects. This allows a completeness theorem still to be established. This idea has been important in the theory of higher order logic. He also used the above basic idea to a generalization of $\omega$-consistency


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