



Alan J. Perko

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1922-1990

By Fernando J. Corbató

ALAN J. PERLIS, one of the leading figures in the development of modern computer science, died of a heart attack on February 7, 1990, in New Haven, Connecticut, at the age of sixty-seven.

Perlis was elected to the National Academy of Engineering in 1977. As one of the pioneers in establishing the fledgling discipline of computer science, Perlis made several seminal contributions. He played a major role in establishing the preeminent computer science department at the Carnegie Institute of Technology (now Carnegie Mellon University). He was a leader in the development of early algebraic languages and was a forceful member of the international committee that formulated the influential ALGOL-60 language. He helped establish the Association for Computing Machinery (ACM) as an effective professional society while he served as an early president from 1962 to 1964. He also served as the founding editor of the *Communications of the ACM* (CACM). The common themes throughout all these activities were his great personal impact, his verve in articulating the core of an argument, the pithiness of his remarks, and the courage of his convictions.

Perlis was born in Pittsburgh, Pennsylvania, on April 1, 1922. He received a B.S. in chemistry in 1942 from the Carnegie Institute of Technology. From 1942 to 1945 he served in the U.S. Army Air Force. He received an M.S. and a Ph.D. from the Massachusetts Institute of Technology (MIT) in 1949 and 1950,

respectively. In 1948-1949 he was a research mathematician with Project Whirlwind at MIT. He was a mathematical adviser with the multimachine computing laboratory of the Aberdeen Proving Grounds, Maryland, in 1951-1952. In 1952 he returned again to Project Whirlwind at MIT where he remained until becoming an assistant professor at Purdue University in September 1952.

At Purdue, Perlis formed and headed the institution's first digital computer laboratory. In 1955 he organized the pioneering development of the IT (Internal Translator) language compiler, initially on the Datatron 205.

In 1956 Perlis became an associate professor of mathematics at the Carnegie Institute of Technology and director of the computation center. By November 1956 a version of the IT compiler was operating on the IBM 650, and Perlis with his coworkers went on to develop a succession of algebraic language compilers and assemblers.

In 1960 Perlis was appointed as professor and chairman of the mathematics department at Carnegie Tech while continuing as director of the computation center. By 1962 he became codirector of a graduate program in systems and communication, and in 1965 he became the first head of a graduate department of computer science at Carnegie Tech. During the academic year 1965-1966, Perlis was a visiting professor at the Mathematische Centrum at Amsterdam, Holland. By the late 1960s the computer science department at Carnegie Tech was viewed as one of the top departments in the country.

In 1971 Perlis was persuaded to join the newly established (1969) computer science department at Yale University and become the Eugene Higgins Professor of Computer Science. He played a leading role in building the department and developing innovative computer science courses. He took major responsibility for teaching both at the undergraduate introductory level and at the graduate level. He was department chairman in 1976-1977 and 1978-1979, and acting chairman in 1987. In 1977-1978 Perlis spent the academic year as the Gordon and Betty Moore Professor of Computer Science at the California Institute of Technology.

Although Perlis's interests in computer science were extraordinarily broad, he maintained throughout his career a focus on programming languages. In 1958 Perlis with K. Samelson coauthored the ALGOL-58 report, a first international attempt to develop an algebraic programming language. He was a member of the subsequent committee that published the widely studied and influential ALGOL-60 report. During the 1960s, Perlis was involved in the definition of extensions to ALGOL, such as Formula ALGOL for manipulating formal mathematical expressions, and LCC, a form of ALGOL for interactive incremental programming.

Throughout his career Perlis was a frequent invited lecturer around the globe. He wrote dozens of papers and two books, some individually, some with others, on a variety of topics ranging from the virtues of particular programming languages, and the process of software engineering, to addressing basic questions such as "What is Computer Science?" His publications always got the attention of his peers for he never failed to make an interesting point and expressed himself with vigor.

Perlis was not content to be a builder of two important computer science departments and a leader in the design and study of new computer languages; as mentioned previously, he also played a major role in the formation of the ACM and was the founding editor of the *Communications of the ACM*. In 1966, in recognition of his research and scholarship in computer science, Perlis was the first recipient of the A. M. Turing Award, the highest award of the ACM.

Perlis had great impact on the discipline of modern computer science as it emerged. He received honorary doctor of science degrees from Davis and Elkins College, Purdue University, Waterloo University, and Sacred Heart University. In 1974 he was elected to the American Academy of Arts and Sciences, and in 1984 he received the AFIPS Education Award of the American Federation of Information Processing Societies (AFIPS).

In his work for the National Research Council, Perlis served on the Assembly (1979-1981) and Computational Mechanics Committee (1981-1985) of the Assembly of Engineering, on the Commission (1982-1984) and the Board on Telecommunica

tions/Computer Applications (1987-1989) of the Commission on Engineering and Technical Systems, and on the National Research Network Review Committee (1988-1989) of the Commission of Physical Sciences, Mathematics, and Resources.

Everyone who knew Perlis will realize that the above formal recounting of his career leaves out a crucial aspect. He was a warm and enthusiastic man, with a quick wit and a wonderful ability to turn a phrase or capture the core of an idea. It was a rare committee where he did not make his presence felt by all. He could both persuade and inspire others about the wisdom of following technical paths, and he did it not only by his forcefulness and rational analysis but also by his shrewd use of humor. He was famous for his "one-liners" that epigrammatically made a technical point. His friends used to argue about which one they liked best and compile lists to circulate. For example, he noted the wide disparity of talent among programmers and the near-genius of the elite:

Everyone can be taught to sculpt; Michelangelo would have had to be taught how not to. So it is with great programmers.

Similarly, while acknowledging the value of the research process, he gently mocked the limited accomplishments of contemporary programs that emulate learning:

When we write programs that 'learn,' it turns out we do and they don't.

Perlis in his later years was confined to a wheelchair. He brooked no concern for his condition and, with the help of his devoted wife, Sydelle, maintained an active career at Yale University during the academic years and at Xerox Palo Alto Research Center each summer. He will be remembered for his courage and zest for life as much as for his technical and leadership accomplishments.

