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Antonie Cohen

Antonie Cohen, who for many decades, both nationally in the Netherlands and internationally, has played a stimulating and provocative role in the field of phonetics, died in Bilthoven, the Netherlands, on Sunday, 31 March 1996, from the effects of a heart attack, at the age of 73.

Antonie Cohen spent most of the Second World War in the United Kingdom as a voluntary soldier in the Dutch Princess Irene Brigade. After the war he was a student of Daniel Jones in London from 1945 until 1948, when he obtained his BA. He then returned to the Netherlands, where he obtained his doctorate in Amsterdam in 1952. His doctoral thesis *The Phonemes of English*, written under the supervision of Reichling, already showed Cohen's strong conviction that the study of language and the study of speech are inseparable. This conviction has been with him all his professional life. For him, this not only meant that the study of speech should be firmly based in linguistics, but also that the study of language should find its empirical basis in the study of speech. After obtaining his doctoral degree, he gained a Rockefeller Foundation Fellowship, taking him to the United States of America. Most of his time there he spent at MIT working with young researchers such as Morris Halle, Gunnar Fant, and Kenneth Stevens, and obtaining an intimate knowledge of experimental methods in speech research that would serve him well in his later career.



From 1959 to 1967 Antonie Cohen was a research associate of the recently started Institute for Perception Research (IPO) in Eindhoven, a joint set-up of Philips Electronics and the Eindhoven University of Technology. There he initiated a very successful and well-known speech research unit. In 1967 Cohen was appointed Professor of English at Utrecht University, and

in 1972 he also became Professor of Phonetics at the same university. From 1975 onwards, when the Utrecht Department of Phonetics was formed, he left the English Department and fully concentrated on phonetics, until his retirement in December 1987 at the age of 65. His career is notable for at least three reasons: the originality and quality of his own research, his wide-ranging influence as a teacher and thesis supervisor, and his impressive accomplishments as an organizer and a manager.

In 1959, when Antonie Cohen started his job at IPO, most phonetics research in the world was focussed on the production and perception of consonants and vowels within spoken syllables. Cohen carved a niche for himself and his collaborators by moving into a little explored domain of experimental phonetics, the study of intonation. He approached this area with two strong and fruitful convictions. One was that the study of the linguistic functions of intonation should be postponed until one had come to grips with intonational form. The other was that intonational form could best be studied with the method of analysis-by-synthesis. This latter conviction led to the development of an instrument called 'the Intonator' as an important tool for intonation research. This was basically a channel vocoder, in which the original course of pitch was replaced with an artificial, stylized course of pitch. It enabled the researcher to go back and forth between theoretical ideas about the perceptually relevant aspects of intonation on the one hand and audible implementations of these ideas in speech-like signals on the other hand [Cohen and 't Hart, 1967]. This approach led to a 'Grammar of Dutch Intonation', which generates audible standard versions of all and only the admissible speech melodies in the language ['t Hart et al., 1990]. The same approach has been successfully applied to the intonation of British English [Willems et al., 1988], Russian [Odé, 1989], and German [Adriaens, 1991].

Although his investigations of intonation are probably the best known of his scientific endeavours, Antonie Cohen's contributions to linguistics and phonetics are far more numerous and wide-ranging. He worked among other things on the morphonology of the Dutch diminutive suffix, the phonology of Dutch, the structure of Dutch orthography, the relevance of temporal cues to the perception of Dutch phonemes, speech synthesis as a tool in the study of speech perception, the relevance of gating techniques to speech analysis, errors of speech as a window into the mental organization of speech, the use of shadowing as a technique for studying the perceptual processing of speech, the central role of the word as a processing unit in speech perception, the voiced-voiceless distinction in Dutch plosives, the acoustic correlates of Dutch diphthongs, formant discrimination in the auditory system, measuring listening proficiency in second language teaching, and the development of an artificial larynx with controllable pitch. He also was deeply interested in the history of linguistics and phonetics, and stimulated and supervised the writing of biographies of the Dutch linguist and scholar of English studies Etsko Kruisinga [Van Essen, 1983] and of the English phonetician Daniel Jones [Collins, 1988].

Stimulating and supervising younger people was second nature to Antonie Cohen. He supervised about 30 doctoral theses, more than any other dead or living Dutch phonetician. He was thoroughly convinced that his real contribution to the world of science was not so much to be found in his own publications, however numerous they are, but rather in the doctoral theses and other publications of his students. To many of his students he was not only a teacher and supervisor, but also a personal friend with whom they kept warm relations long after they had found their own way in the world. He will be remembered warmly by all his students.

Managing is getting things done through people. Antonie Cohen was a great manager, partly because of his keen interest in people, partly because of his extraordinary sense of responsibility, and mostly because he just loved doing it. This is no place to name all the public functions he ever had, but some of his achievements should be mentioned. He was the initiator and first chairman of the extremely successful Dutch Foundation of Linguistics (now the Foundation of Language, Speech and Logic), that since its start in 1974 has thoroughly changed the scene of linguistics in the Netherlands. He was also the chairman of a national committee on Language and Speech Technology, which in 1984 published an influential report, *Language and Speech Technology in the*

Netherlands. He was the initiator, organizer, and first coordinator of a successful and important national research programme on the Analysis and Synthesis of Speech that ran from 1985 to 1990 [Van Heuven and Pols, 1993]. Many phoneticians in the world will remember Antonie Cohen as the chairman of the Xth International Congress of Phonetic Sciences, that took place in Utrecht in 1983. I have heard it said many times by many people from all over the world that this was the best organized international congress of phonetics they had ever witnessed. If this indeed was so, it was all due to Antonie Cohen's enthusiasm, talent for management, and loving attention to detail. Those who have worked with him will miss him immensely.

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