

## IN MEMORIAM

RALPH L. VANDERSLICE, who contributed to many areas of phonetics, died on 24 August 2008, aged 78, in Portland, Oregon. He was born on 2 January 1930 in South Bend, Indiana. He received his B.A. and his M.Sc. in speech and theatre from Michigan State College (now Michigan State University) in 1951 and 1954, respectively. He subsequently taught at the Universities of Vermont and Hawai'i. He moved to UCLA where, in 1968, he obtained his Ph.D. His dissertation, *Synthetic Elocution* (<http://repositories.cdlib.org/uclalng/wpp/No8/>), was an exploration of the character and some of the specifics of the rules that would be necessary to implement the prosodic aspects of synthesized speech produced by a reading machine. Peter Ladefoged was the chair of his dissertation committee and Victoria Fromkin one of the other members. While still a student at UCLA Ralph Vanderslice was an expert witness testifying against the validity of 'voiceprints' (the use of spectrographic displays of speech to identify suspects in criminal trials). He was very much a 'hands-on' person, skilled in many of the mechanical and electronic arts, one manifestation of this being his invention of the 'crico-thyrometer', a device that could track vertical larynx movement in connected speech. He subsequently taught at City University of New York and Yale University. He published many papers on speech prosody, notably 'Binary suprasegmental features and transformational word-accentuation rules' (1972, *Language*, with Peter Ladefoged). His colleagues, including this author, his office-mate in the UCLA Phonetics Lab, remember him for his erudition, wit, and generosity in helping others with everything from providing references to the seventeenth- and eighteenth-century works on phonetics (which he was steeped in) to repairing a shorted circuit in an amplifier. His salutary influence continues.

**John J. Ohala**

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GUNNAR FANT passed away on 6 June 2009 at the age of nearly 90 years. Born in 1919, he grew up in the Stockholm region in Sweden, where his father served as the mayor of the capital. Gunnar Fant was a pioneer and giant within research about human spoken language.

Fant was trained as an electrical engineer at KTH – the Royal Institute of Technology – in Stockholm, in the early 1940s, and graduated from the Department of Telegraphy and Telephony in 1945. His Master's Thesis was concerned with problems of speech intelligibility in telephone transmission. Fant had his first position at the acoustics laboratory of the Ericsson Telephone Company in the late 1940s. There he was given a free hand to construct speech analysis equipment and made detailed acoustic analyses of Swedish speech sounds and sentences.

For the period 1949–1951, Fant was invited to the USA and Massachusetts Institute of Technology (MIT). His stay in Boston was highly productive. This was a pioneering era in speech research, with input from disciplines as diverse as linguistics, electrical circuit theory, psychoacoustics and information theory. During this time, he established several valuable scientific contacts with, among others, Roman Jakobson, the famous scholar in linguistics and literature science.

Back in Sweden in 1951, Gunnar Fant founded the Speech Transmission Laboratory (STL) at KTH. During this early period of his academic career in the 1950s he was involved in the development of speech synthesis, which was based on his thorough understanding of the speech communication process. He received the degree of Doctor of Science at KTH in 1958 for his pioneering theoretical work on the relationship between speech production and acoustics. During his time as the Head of the Speech Transmission Laboratory between 1951 and 1966, the STL expanded into a world-leading department and scientific milieu dealing

not only with Speech Research but also with Music Acoustics and Hearing Technology. From 1966 until his retirement in 1987, Fant was Professor and Head of the Department of Speech Communication and Music Acoustics at KTH.

As professor emeritus, Gunnar Fant continued to be extremely active in speech research. During this period of nearly twenty years, he still regularly attended conferences around the world. His list of publications contains more than 200 items, 50 of which are from the period 1995–2005.

Gunnar Fant received honorary doctoral degrees from Grenoble University in 1978, the University of Stockholm in 1988, and Trinity College, Dublin in 2006. He received several awards, among them the European Speech Communication Association Gold Medal in 1989, the Royal Swedish Academy Margit Pålson Award for advanced contributions to the Swedish language in 1995, the Swedish Academy of Engineering Science (IVA) Gold Medal, Great Size, in 1998. He also shared the 1985 Ericsson prize in telecommunication with James Flanagan, and the Institute of Electrical and Electronics Engineers (IEEE) James L. Flanagan Speech and Audio Processing Award with Kenneth Stevens in 2004.

Gunnar Fant's visit to New England around 1950 was extremely rewarding. His acquaintance there with Roman Jakobson – originally from Russia, one of the founders of the Prague School of Linguistics, and at the time professor at Harvard – and the young linguist and phonologist Morris Halle had far-reaching consequences for the course of research on human spoken language. The collaboration in America between the two linguists and the Swedish engineer resulted in the pamphlet-like book *Preliminaries to Speech Analysis*, which appeared in 1952. This is one of the landmarks of modern speech science and phonetics, marking a breakthrough in Distinctive Feature Theory. Fant's special contribution to this cooperative effort was his thorough knowledge of speech acoustics, which for the first time made possible definitions of distinctive features in acoustic terms.

Gunnar Fant's research goals were not only focussed on theoretical developments, but he also took a clear interest in the practical applications of his insights and findings. Within the field of speech synthesis, Fant created his first synthesizer in 1953, known as OVE, capable of simulating vowels and voiced sound gestures. OVE II appeared in 1961 and was capable of producing quite natural, unrestricted connected speech. This was still before the computer era. Fant's achievements within formant synthesis generated substantial international resonance.

Gunnar Fant's success in generating natural-sounding synthetic speech was based on the general theory formulated by him, an elaboration of the source-filter theory, accounting for the relationship between speech production and acoustics. His pioneering work in the field of speech science and technology resulted in the doctoral dissertation *Acoustic Theory of Speech Production*, which was published as a book in 1960. It is one of the undisputed milestones of modern speech science. The value and the effects of this scientific achievement can hardly be overestimated.

In his late academic career, Gunnar Fant continued to make remarkable progress within speech science. His modelling of the voice source in speech, known as the 'LF model' (Liljencrants-Fant), has further increased our understanding of human voice production. He also devoted considerable time and effort to the study of speech prosody. His experimentation and modelling here involved both temporal and tonal aspects of spoken language, particularly related to prediction of stress degrees and prominence in prose reading.

The scientific milieu at STL has fostered a number of speech scientists who have had leading roles in the development of phonetics and speech technology. Among phoneticians who started their career at KTH can be mentioned the names of Björn Lindblom and Sven Öhman. Rolf Carlson, Björn Granström, Johan Sundberg and Arne Risberg continued to develop communication technology at KTH into the current Department of Speech, Music and Hearing. Over the years, a great many scientists from abroad and within the country have taken advantage of spending longer or shorter periods of time in the creative and stimulating environment of the Laboratory at KTH founded by Fant. For several decades during the late 20th century, the Speech Transmission Laboratory Quarterly Progress and

Status Report (STL-QPSR) was a leading series of working papers for all students interested in the development of speech science.

Gunnar Fant was an unobtrusive man in private, and on the scientific scene he was determined and truly authoritative. He was a very polite and noble person. Gunnar Fant managed to shape around him a friendly and creative atmosphere characterized by scientific freedom, respect, care and cooperation. It was almost always Gunnar who took the opportunity of thanking the organisers of a conference by making an elegant speech. Gunnar Fant was a scholar of great international significance. He managed to create a bridge between different perspectives in the study of speech sounds, unifying the humanistic discipline of phonetics and the technological study of spoken language.

**Gösta Bruce**  
Lund University

The Secretary has also been notified of the deaths of Professor H. F. Aikens, Canada (February 2008), Mr Bryan Martin, UK (March 2009) and Mr James A. Houldsworth, UK (May 2009).