

A visit to China 29.4. - 7.6. 1986

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In the fall of 1985 I was invited to lecture and do research at the Institute of Acoustics of Academia Sinica, Beijing. IVA, the Swedish Academy of Engineering Science, accepted me in their exchange program with China. Lund University gave me a travel grant from Elisabeth Rausing's foundation. What follows is a translation of my report to IVA and Lund University.

The Institute of Acoustics, which was founded in 1964, has about 200 employed researchers and comprises 13 laboratories with activities ranging from signal processing, underwater acoustics, room acoustics, geo acoustics etc. to the acoustics of speech. The activities include basic research with applications as well as supervision of master's dissertations and doctoral dissertations. The head of the speech acoustics laboratory is Professor Jialu Zhang.

My invitation to China was motivated by a collaboration between the Institute of Acoustics and the Phonetics department in Lund which started during the spring of 1983 when Professor Zhang was a guest researcher at a project dealing with some non-European languages, among those Chinese, and sponsored by the Research Council. The interest in intonation among speech engineers has to do with the present development of text-to-speech and speech-to-text systems. Zhang had become interested in the model for analysis and synthesis of Swedish intonation which had seemed applicable also to Chinese.

In the traditional view of intonation, words with their tones or accents are regarded as basic primary units and the sentence intonation expressing statement, question, etc. as secondary. The difficulty will then be to explain the varying manifestations of accents and tones that occur in practice. In our model this order is reversed. Accents and tones are superimposed on a larger movement determined by sentence intonation. In this way the different manifestations of accents and tones in the sentence can be derived by rather simple rules. The model is more economical than the traditional one and has a natural relation to speech psychology.

At the Acoustics Institute I gave a series of lectures, entitled "Intonation across several languages". They were organized according to the communicative functions of intonation, i.e. to mark lexical units, to partition speech into phrases, to show the focus and syntactic type of the sentence and the emotional attitude of the speaker. The examples, taken from Swedish, French, English and Chinese, were intended to show that if lexical markings are factored out, the intonation expressing the other functions of communication is remarkably similar.-- Some days were spent on sketching an outline for future collaboration on intonation.

I also gave two lectures at the spring institute of modern phonetics in Tianjin for university teachers from all over China. The titles were "The structure and manifestations of intonation" and "Learning and teaching problems in the light of a model for prosody". The first of these lectures was later given at Beijing University. There I could also test, with the aid of professor Zhang, stimuli which had been prepared in our laboratory by Shi Bo, a research student from the Acoustics Institute who has a grant from the Swedish Institute. The work is part of her research project whose aim is to quantify our qualitative model.

I lived in comfortable quarters at the Friendship Hotel where Academia Sinica houses her guests and provides them with a car and driver. Sightseeing and evening entertainment were part of the program. In the restaurant of the hotel I met scientists from many countries invited by Academia Sinica. The consensus was that China's efforts to improve research and higher education were promising. These efforts were a standing theme in the English language newspaper "China Daily" and it was emphasized there that exchange programs for research are essential for the economic development of the country.

Together with my husband Lars Gårding, who had been a guest lecturer at Nankai University in Tianjin, I was invited by its mathematical institute to a two week tour of Southwest China with visits to the universities of Kunming, Chengdu, Qungqing and Wuhan.

I was impressed by the kindness and care shown to me and the interest in my scientific work. Professor Zhang emphasized more than once the importance of contact between speech technology and speech science.

I should like to thank in particular my host, professor Zhang, and his collaborators at the speech acoustics laboratory, Mr Qi and Mr Lu as well as the present and former director of the Acoustics Institute, Professor Guan and Professor Maa for all favours rendered to me. I am also grateful to Professor Xing and Mr Shi of the Department of Chinese Linguistics at Nankai University for their kind reception and hospitality.