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Prof. Dr. Jens-Peter Koester
Awards Committee
International Society for the Phonetic Sciences
Universitaet Trier, Phonetik
D-54 286 Trier, Germany

Dear Professor Koester,

It is with great pleasure - and some notable disbelief - that I learned about the receipt of the Kay Elemetrics Award. For years I had taken pleasure in reading about my well-known predecessors of this award. It is a great honour indeed to be listed in such a prestigious line-up. I would like to thank you, the Awards Committee, for identifying my contribution to our science in support of this award.

This is perhaps an appropriate moment to permit myself to share with you a few reflections about our field. As you know, the phonetic sciences have been going through a profound change during the past seventy years. From a scientific curiosity of interest to just a handful of specialists before the Second World War (some of who set up our Society in the darkest years of the Depression), the phonetic sciences have transformed themselves into a vast multidisciplinary field that is providing the foundation for two major technological innovations, speech synthesis and speech recognition. Those of us who have participated in this exciting venture for some time have been encouraged to travel a very varied and challenging path.

My own path is perhaps typical. My first contributions to the phonetic sciences were in the area of speech motor control at the beginning of the 1980s. I initiated the co-development (with D. Ostry, McGill University) of the first ultrasound measuring device that permitted us to study tongue surface movement in considerable temporal detail (at 1000 Hz). This instrumentation showed us the fine structure of normal speech motor movement of the tongue, and it led to some interesting insights into the behavior of patients affected by various neurogenic speech disorders.

A detailed look at a single parameter is interesting, but it is even more important to understand speech in its amplest possible parametrisation. I thus developed an easy, click-and-see type of speech analysis system for the Macintosh, called "Signalize". Since many colleagues asked me for copies of the program, I made it available commercially at a reasonable price. The ramifications of this sharing of resources were interesting. Several colleagues in Linguistics, who in the course of the

"Chomskyan revolution" had stopped examining the acoustics of speech, have told me that this program brought them back to the examination of the acoustic bases of speech. This fulfilled a deeply felt wish of seeing the channels of empirical acoustic verification of phonological theory re-opened.

But even speech analysis conducted with extensive technological tools cannot test the full predictive adequacy of a given speech theory. Only a full reconstruction of the speech event can test all aspects of our theoretical understanding. It is the sort of test that is only possible via speech synthesis.

For this reason, I oriented our laboratory at the University of Lausanne towards speech synthesis upon its foundation in 1991. In this framework, my collaborators and I have been able to show that substantial prosodic improvements are possible, if certain psycholinguistic principles are directly implemented in speech synthesis algorithms. And to our own pleasant surprise, the psycholinguistic principles driving phrase boundary and pause placement are much simpler to implement than traditional syntactic analysis. The internal logic of speech motor structure (with partial remoteness from syntactic structure) has just received another vindication.

Driven by scientific interest, I have thus been impelled to examine the foundations of speech and to test my hypotheses with technological means. It is a path I can heartily recommend to others, in all of its aspects.

It is important to understand the detailed functioning of our speech production and perception system, because without such an understanding, attempts to implement synthesis and recognition emulations lack an important foundation and a possible inspiration for innovation. It is also important to understand speech from more than one angle, and to include articulatory, acoustic and perceptual angles. A single angle gives tunnel vision, a very insufficient basis for new understanding and technological innovation.

And finally, it is essential to seek the fullest possible test of our hypotheses. Speech is one of the few areas in the human sciences where analysis results can be thoroughly tested in an increasingly realistic resynthesis environment. We should do our best to fully exploit this advantage and to show others in our environment how our understanding of human functioning can be considerably refined and extended by the combined use of analysis and synthesis.

ISPhS has a valuable role to play in encouraging these developments, in part through its extensive system of awards. I wish you an excellent continuation of your very valuable activities.

With my best wishes,

Prof. Eric Keller