

**To the Staff of the Research Institute of Logopedics
and Phoniatics, Faculty of Medicine,
University of Tokyo**

Kenneth N. STEVENS*

It is a pleasure to send greetings to you on the occasion of the publication of your first annual research bulletin. From the list of research projects that are in progress or are planned by your Speech Science Section it is clear that you are making important contributions to our understanding of the speech communication process. You have the capability to examine the speech event from several points of view, and your research seems to be motivated by the desire not only to assemble data with regard to speech communication but also to test hypotheses and theories concerning the speech process.

In searching for acoustical and physiological correlates of linguistic features, it is necessary to study many different aspects of the speech event, using cineradiographic techniques, measuring air pressures and velocities, obtaining electromyographic tracings, and examining the results of acoustical analysis. The collection of data alone, however, is not enough to give an adequate description of the features. The features provide a specification of the instructions that underlie speech generation, and the transformation from features to physiological and acoustical events tends to blur or obscure the discrete segmental character of the features.

In order to interpret physiological and acoustical data, therefore, it is necessary to have in mind a model that accounts for the transformation from features, or underlying instructions, to observable peripheral aspects of speech. The data cannot be used to verify directly the nature of the features, but rather serve as criteria against which the performance of a model can be compared. If the performance of the model does not coincide with the observed data, then the model must be modified and then tested again. It is evident that in your research program at the Research Institute of Logopedics and Phoniatics you are addressing yourselves to both sides of this research—the collection of data by new and powerful techniques, and the modelling of the speech process.

Research workers in phonetics are often prone to divorce their experimental studies and their theories from other aspects of linguistics. The tendency sometimes is to attempt to classify phonetic events simply with regard to their physical and acoustical characteristics. The features that underlie the speech movements and sounds also play a central role in determining the sequences of segments that are allowed in a language, and govern the regularities that exist on the more ab-

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stract level of the phonology of a language. Indeed, studies of the phonology may provide indirect evidence concerning the inventory of features that exist in language, and may indicate, therefore, the manner in which speech gestures are organized and controlled. This broader view is clearly one to which you subscribe in your research philosophy.