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I N T R O D U C T I O N

One year has elapsed since we prepared the previous issue. The period covered by this report has been a very active year, from the scientific point of view. Several scientists joined us from abroad to conduct research on language and speech. In particular, Dr. John Ohala, as a National Science Foundation postdoctoral fellow, spent about ten months with us at the laboratory, and we enjoyed the mutual benefits of cooperating in experiments and discussing crucial problems closely. A short stay of Mrs. Eva Gårding not only provided us with valuable discussions but also resulted in an appreciable amount of useful electromyographic data on the accent patterns partly with the cooperation of Dr. Minoru Hirano, who also stayed with us for a short while. Much of the EMG data are still being processed and studied, and this issue reports only on some of the preliminary results.

Although Dr. Masayuki Sawashima has been away completing his work with the research group at the Haskins Laboratories in New York, we have been continuing physiological research, studying the functions of the laryngeal muscles in connection with prosodic features. The fiberoptic technique was also combined with the EMG measurements.

As for the project on digitally controlled dynamic radiography, we are now completing the three year program as the first stage in developing the new technique of radiography for safe and systematic acquisition of articulatory data, as reported in the previous issue. By and large, the essentials of this new experimental method have proved adequate for the purposes proposed, as far as we can tell from the pilot experiments with the use of the presently available equipment. We do need, however, for the second stage of the experiment, a more powerful x-ray source. In particular, we need shorter wavelengths for the x-rays in order to make effective the radiographic measurement of the major articulatory organs, particularly of the tongue. We also need some additions to and reinforcement of our present computer system, which at present lacks, e. g. , any auxiliary memory, in order to meet requirements in the maximal use of the algorithmic flexibility and somewhat elaborate strategies in both in- and post-session data processing.

Unfortunately, we are encountering difficulty in obtaining the necessary financial support. This project has been supported to a large extent by a research grant of the National Institutes of Health (PHS Research Grant No. 07233-01, 07233-02, and 07233-03 from the National Institute of Neurological Diseases and Strokes, U. S. A.), the three-year period of which is now to expire. All renewal and supplemental grants as well as new ones from NIH to Japanese governmental institutions like ours have been suspended for business-official reasons, and we only hope that we will be able to receive our renewal grant in time so that we may report on further developments of the experiment in the next issue of this bulletin.

Research in linguistic behavior, studies in speech pathology and language learning, are also active, and some interesting findings are emerging. A study on aphasia reported on in this issue exemplifies our work in this field. Our PDP-9 computer equipped with a special hybrid magnetic tape unit is also demonstrating its usefulness in an experiment in computerized pronunciation-hearing tests of English for Japanese students.

In this connection, research activities in linguistics, in particular in the transformational theory of grammar, must also be mentioned. We conduct classes and seminars on the theory of grammar, and activity in this respect has been reinforced recently by the participation of Dr. James D. McCawley.

There are some more topics which I have not mentioned, but nonetheless very important for us in understanding the nature of human verbal behavior. Some are treated briefly in this issue, and some will be published later in formal publications. Our coverage of topics is rather broad, but our interest is common; to understand the essential functions of human verbal behavior, relating the behavioral phenomena we observe, to the underlying organization of language.

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