

## TOWARD DIFFERENTIAL DIAGNOSIS OF DYSARTHRIA\*

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A method of differential diagnosis of dysarthria due to disorders of the central nervous system was presented as a preliminary report.

Voice and speech samples were collected from 36 cases, each of which was diagnosed in advance by thorough neurological examinations to represent six neurological categories, i. e., pseudobulbar palsy, bulbar palsy, amyotrophic lateral sclerosis, cerebellar ataxia, Parkinsonism, and cholea. All cases had motor speech involvement but none of them showed any sign of apraxic or aphasic problems. Three to five minute long samples recorded from each case were dubbed on a listening tape and used for rating each patient on each of 25 speech dimensions. The speech dimensions used in the present study were derived by modifying those reported by Darley et al. (1969) to make them adequate for Japanese. Each sample was rated by six judges on a four-point scale of severity and mean ratings of speech dimensions of all cases were subjected to a statistical treatment.

It was found that there was a considerable difference between the subtypes of dysarthria in the patterning of the rating scores for the speech dimensions. The result indicates that a systematic survey of speech samples no doubt contributes to the diagnosis in identification of particular neurological disorders, while further studies are needed to clarify precise neurophysiological correlates of deviant speech in all kinds of dysarthria.

It was pointed out that acoustic analysis of selected speech samples by sound spectrography made it possible to describe characteristic distortions in speech of dysarthric patients in some details, and that it should be quite useful for differential diagnosis in some cases when combined with the

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subjective evaluations by the ear as mentioned above.

Significance of electromyographic examinations of the articulatory muscles in the neurological diagnosis was also stressed.

### References

- F. L. Darley, A. E. Aronson, and J. R. Brown, "Differential Diagnostic Patterns of Dysarthria," Journal of Speech and Hearing Research, Vol. 12, 246 (1969)