

Dept. for Speech, Music and Hearing
**Quarterly Progress and
Status Report**

Formant-tracking

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whether pairwise stimuli consisted of sounds that were the same or different with respect to phonetic quality. A pair contained two synthesized vowels; one of the sounds used for the above-mentioned spectrogram study plus its measured counterpart specified by the spectrogram data. Subjects were unanimous in reporting that one or two out of 36 sounds differed considerably whereas the rest had remained practically unchanged with respect to phonetic quality.

B. Lindblom

2. Formant-tracking

A few pilot experiments on the use of phase detection methods in formant frequency trackers have been undertaken. The methods we have tried were:

- (1) Measuring the phase difference between the input and the output of an anti-resonance circuit of variable center frequency.
- (2) Measuring the phase difference between the outputs of two anti-resonance circuits spaced 250 c/s apart.
- (3) Measuring the phase difference between the outputs of two resonance circuits spaced 100 c/s apart.

Of these methods only the last one gave results which were judged to be of any practical use. However, a large pitch variation alone could give a phase shift of a formant frequency. The results were better for F_2 and F_3 than for F_1 . No further work on phase methods will be undertaken until sufficient experience has been gained from spectral maximum selectors.

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