

RECOGNITION OF SELECTED PHONETIC CONTRASTS IN THE SPECTRAL AND TEMPORAL DOMAINS BY APHASIC ADULTS

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There are conflicting reports regarding the ability of aphasic adults to discriminate phonetic contrasts that are spectral vs. those that are temporal (Carpenter et al., 1973; Blumstein et al., 1977). The present study presented a wider range of phonetic contrasts. Acoustic parameters were manipulated systematically through the use of computer-generated speech stimuli.

Subjects and Methods

Ten aphasic adults and 12 age-matched, neurologically "normal" controls served as subjects. Five 11-item stimulus arrays, each spanning two or more phoneme categories through a succession of equal acoustic changes, were generated. The 5 stimulus categories presented phonetic contrasts that were signaled by (1) 40 msec spectral differences, (2) 25 msec spectral differences, (3) formant transition duration differences, (4) amplitude rise-time differences, and (5) 340 msec spectral differences. Stimulus items were paired within categories at a 2-step level of difference and were presented using an AB discrimination procedure. Response data were pooled across subjects within each group for each of the stimulus categories.

Results and Conclusions

Group discrimination functions differed significantly only for the categories of stimuli that presented brief spectral contrasts. It was concluded that phonetic perceptual disturbances involve disproportionately the brief spectral parameters of speech.

References

- Blumstein, S.E., E. Baker, and H. Goodglass (1977): "Phonological factors in auditory comprehension in aphasia", Neuropsychol 15, 19-30.
- Carpenter, R.L. and D.R. Rutherford (1973): Acoustic cue discrimination in adult aphasia", JSHR 16, 534-544.