

CO-OPERATIVE VOWELS AND COMPETITIVE CONSONANTS?

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With dichotic presentation Studdert-Kennedy and Shankweiler (1970) found that identification was significantly better for the plosive presented to the right ear, but not for the vowel.

In the present experiments, the formants were split between the ears, in order to discover whether the information combines, as in normal binaural listening, or competes as in the above experiment.

Method

Two sets of nonsense syllables were generated by a synthesis-by-rule system. One consisted of /i, ε, a, ɔ, u, ə/ in an /h-d/ context, and the other of /p, t, k/ combined with each of the above vowels. Listeners identified these syllables in two modes: binaurally, and with F1 + F3 presented to one ear and F2 + F4 presented to the other.

Results

With the vowels, and with /p/ and /t/, no difference was found between the modes of presentation, but with split-formant presentation /k/ was often confused with /p/ or /t/.

Discussion

The results suggest that with split-formant presentation the brief bursts at the start of syllables are analysed independently by the two hemispheres of the brain, the results then compete in order for recognition of the consonant. During recognition of the vowel, however, the information from the two ears is combined.

References

Studdert-Kennedy, M. and D. Shankweiler (1970): "Hemispheric specialization for speech perception", J.A.S.A., 48, 579-594.