

# Investigating the neural correlates of continuous speech computation with frequency-tagged neuroelectric responses

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In order to learn an oral language, humans have to discover words from a continuous signal.

Streams of artificial monotonous speech can be readily segmented based on the statistical analysis of the syllables' distribution. This parsing is considerably improved when acoustic cues, such as subliminal pauses, are added suggesting that a different mechanism is involved. Here we used a frequency-tagging approach to explore the neural mechanisms underlying word learning while listening to continuous speech. High-density EEG was recorded in adults listening to a concatenation of either random syllables or tri-syllabic artificial words, with or without subliminal pauses added every three syllables. Peaks in the EEG power spectrum at the frequencies of one and three syllables occurrence were used to tag the perception of a monosyllabic or tri-syllabic structure, respectively. Word streams elicited the suppression of a one-syllable frequency peak, steadily present during random streams, suggesti