

Monthly Neuro Seminar Series

Fall 2023



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Suddenly, syntax: HD-EEG investigations in grammatical processing and language variation with rapid sentence presentation

An evergreen puzzle in cognitive neuroscience is how the "language network", a fronto-temporal network mostly invariant across individuals and cultures, can adapt to different languages, which package and order information in very different ways. This challenge is exacerbated by the fact that our scientific and computational models of language are built on the assumption that language comprehension unfolds on a word-by-word basis – with no clear, cross-language definition of what a 'word' is. Here, I lay out a program for identifying language-invariant and language-specific patterns of brain activity, by leveraging a new technique in which entire sentences are rapidly displayed in parallel, mitigating the effects of order of 'word-by-word' presentation. HD-EEG studies in English show that syntactic structures yield different evoked-responses consistently around 300ms in this presentation style, and pilot data in Urdu and Mandarin Chinese suggest some uniformity and language-specific adaptations to these neural responses.

Tuesday, December 5
4:00 PM
Coverdell S175



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