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Decoding Semantics During an Artificial Language Learning Task Using EEG

EEG is an effective method for collecting brain data due to its low cost and the flexibility to collect data anywhere. However, using EEG can be challenging due to the lower signal-to-noise ratio and poor spatial resolution. MEG/fMRI have long been used to study semantic representations in the brain because of the better signal-to-noise ratio and increased resolution, but these technologies are also extremely expensive and require a dedicated shielded room. This talk will cover research done in a collaborative project between University of Victoria's Neuroeconomics Lab and Language and Learning Lab to show that semantic representations can also be detected via EEG, and further that we can detect emergence of semantic representations as subjects learn an artificial language. This opens the door to new possibilities for studying semantics and learning via EEG.