

Does predictive coding mediate language comprehension?
Evidence from computational modeling and MEG/EEG

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Predictive coding is a powerful computational theory of brain function. In this talk, I will first outline the computational principles of predictive coding, and describe a recent implementation of a predictive coding model of lexico-semantic processing, which is able to successfully simulate the effects of both lexical-level and contextual variables on the N400 event-related potential. I will then present a series of studies that use computational modeling, event-related analysis and Representational Similarity Analysis of MEG/EEG data to ask whether this theory can inform our understanding of the time-course of spatiotemporal activity produced during language comprehension. Together, our findings provide compelling evidence that predictive coding may mediate language comprehension. (Work with Lin Wang, Samer Nour-Eddine and Trevor Brothers).