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The Oscillatory Dynamics of Narrative Structure-Building

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Abstract

While many theoretical models describe the process of structure building during the construction of a mental model of a story, neurophysiological explorations of this process are limited. Here, we use time-frequency analysis of EEG data to explore the oscillatory dynamics associated with narrative comprehension of comics. Using an existing dataset wherein participants viewed each of six comic panels serially, we performed spectral decomposition from theta to gamma bands over the full extent of narrative processing (10+ seconds). Power incrementally decreased in both alpha (8 -12 Hz) and low beta (12.5-20 Hz) frequency bands as narratives unfolded. These results are contextualized in the attentional literature, where some suggest that alpha and low beta frequency bands act as suppression and enhancement mechanisms to modulate attention. This model also aligns with theoretical models of narrative structure building. Study findings are consistent with changes in alpha and low beta power reflecting domain-general narrative structure building processes during discourse comprehension.