

A Hierarchical Generative Framework of Discourse Comprehension

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There is increasing evidence that we continually use our stored knowledge about events, in combination with context, to anticipate upcoming information during discourse comprehension. If the semantic features of an incoming word are consistent with these predictions, processing is facilitated between 300-500ms of its onset. What is less clear is how the brain deals with bottom-up input that disconfirms some or all of our prior predictions (prediction error). I will discuss evidence from multimodal neuroimaging studies (ERP, fMRI and MEG) suggesting that, in such cases, we recruit distinct neural networks at a slightly later stage of processing (500-800ms), and that the networks we recruit depend on both the probability/strength and the representational level of our predictions (lexical or event structure). I will argue that these findings support a *hierarchical generative framework* in which both probabilistic predictions and prediction error are necessary components of accurate and flexible discourse comprehension.