Adaptation to Unexpected Word-Forms in Highly Predictive Sentential Contexts

Shaorong Yan
Department of Psychology, University of Iowa, Iowa City, IA, USA

Thomas Farmer
Department of Psychology, University of Iowa, Iowa City, IA, USA

Abstract: Readers and listeners rely upon previous experience to generate predictions about multiple aspects of an unfolding linguistic signal. Error signals elicited by unexpected input feed forward to higher-level units, serving in the adjustment of expectancies and thus increasing the precision of predictions in that context. When a syntactic ambiguity is resolved with a dis-preferred continuation, a garden-path effect occurs, but decreases in magnitude as a function of exposure to the unexpected event. But, can readers adjust lower-level expectations about word forms in contexts that do not permit overt higher-level ambiguity? We monitored eye-movements as participants read expected or unexpected words in highly-constraining sentences. Half of items contained the predicted word and half contained a plausible but unexpected word. Adaptation—in the form of decreased fixation duration on unexpected words—was observed on first fixation duration but nowhere else, suggesting that adaptation occurs at different levels of a multilayered processing system.