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A Cognitive Approach to Modeling Sentence Level Prominence Based on Stimulus Unpredictability

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Abstract: The human sensory system is capable to rapidly respond to novel input, allowing for quick allocation of attentional resources to the stimulus. In a similar manner, prominent words in speech seem to attract the listeners' attention and facilitate or alter interpretation. Sentence prominence has been typically studied across languages by examining configurations of acoustic prosodic features during prominent words. Recent studies have provided evidence that, in addition to the predictability of the lexical units in speech, manipulating the predictability of the acoustic prosodic features can also signal prominence. In this work, we provide a high-level description of a cognitive framework that attempts to characterize sentence prominence as a phenomenon that is connected with the unpredictability of suprasegmental acoustic features, thereby capturing the attention of the listener and causing differential processing of prominent speech.