An ERP Examination of a Pragmatic Repeated Name Penalty
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Introduction
The lexical repetition effect is robust, with facilitation observed to repeated words in isolation and in discourse. Recent studies have provided behavioral and electrophysiological evidence that syntactic (Almor, 1999; Gordon et al, 1995; Swaab et al, 2004) and semantic factors (temporal shifts in narratives; Ditman et al, 2008) can modulate this effect. Repeating the name of a person or entity that is already in a reader’s focus of attention results in a processing cost relative to repeating a non-prominent name or entity. This finding is known as the repeated name penalty (or the semantic repeated name penalty when modulated by semantic factors).

The present study used event-related potentials (ERPs) to investigate whether pragmatic cues could modulate the facilitation effects of lexical repetition in discourse.

Method
Event-Related Potentials (ERPs)
ERPs were collected to examine dynamic fluctuations in neural activity associated with integrating lexico-semantic and pragmatic influences during reading.

The N400 is a negative deflection in the waveform, peaking approximately 400msec after word onset, with larger negative-going amplitudes indicating increased difficulty integrating the meaning of a word into its preceding context.

The P600 is a positive deflection in the waveform, beginning approximately 500msec after word onset. Larger positive-going amplitudes indicate reanalysis.

Results
Sentence 1 introduced two characters; sentence 2 linked one of these characters to a specific entity (‘Lisa ran on the treadmill’); sentence 3 either referred to this character or to a different character (‘She’ or ‘Mark’), followed by the word ‘also’, and then either the same entity (‘ran on the treadmill’) or a new entity (‘ran on the track’).

Results demonstrated that readers quickly used both lexico-semantic and pragmatic information during comprehension. Specifically, 1) repeated entities (treadmill) evoked a smaller amplitude N400 than new entities (track) and 2) when comparing the repeated entity conditions, infelicitous entities (‘treadmill’ in ‘She also ran on the treadmill’) evoked larger N400 and P600 amplitudes than felicitous entities (‘treadmill’ in ‘Mark also ran on the track’), providing evidence for a pragmatic repeated name penalty.

Discussion

References

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