L2 parafoveal processing (or lack thereof)

Leigh Fernandez & Shanley Allen
University of Kaiserslautern

While native speakers use information rapidly during processing to anticipate upcoming sentence content, L2 speakers do so less efficiently. Previous explanations for this difference include factors like frequency and lexical representation\textsuperscript{1}, as well as reduced ability of L2 speakers to generate expectations\textsuperscript{2}. However, we hypothesize that these differences may (in part) be explained by the reduced perceptual span (the area outside of the highest level of visual acuity) of L2 speakers\textsuperscript{3}. Research has shown a L1 benefit when previewing frequent and expected words in the perceptual span while reading\textsuperscript{4}.

We used an eye-tracking boundary paradigm to test the use of expectation and frequency information in the perceptual span during reading in L1 and L2 speakers of English. The critical words were manipulated in a 2x2x2 design: frequency (high(HF)/low(LF)), expectation (high(HE)/low(LE)), and masking (unmasked/masked). For the masked condition, the critical word was masked with a non-word in the perceptual span and changed to the critical word upon making a saccade across an invisible boundary. Critical words were controlled for frequency, syllable count, stress, and length, and their expectation was judged by 84 native English speakers.

Two groups were tested: native English speakers (n=21) and L2 English speakers (n=20). In terms of first fixation duration (FFD) we found an interaction between masking, frequency, and language (Figure 1) that revealed that the L2 group did not differ between masked and unmasked conditions, while the L1 group had a greater FFD for masked compared to unmasked conditions. Additionally, the L1 group had a greater FFD for HF-masked than the L2. This suggests L2 speakers are unaffected when parafoveal information is denied, while L1 speakers show longer reading times. What appears to be reduced involvement of prediction and expectation by L2 speakers may actually be a Decreased Ability to Preprocess Information during reading, or DAPI.
Figure 1: First Fixation Duration masking, language, and frequency interaction

References


