

Parallel semantic reading of multiple words in aging

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Reading, like other complex abilities, can change with age and older adults may experience fatigue and rely more on contextual cues for compensation. Reduced visual acuity and increased crowding likely narrow the visual span, which in turn could affect semantic processing in the parafovea and slow down reading.

We investigated these age-related differences by examining parafoveal-on-foveal and parafoveal preview effects using the Rapid Parallel Visual Presentation paradigm (Primativo et al., 2022).

Specifically, we assessed whether adults aged 65+ show diminished parafoveal processing and whether visual span limitations contribute to reading slowdown. We hypothesized longer reading times for older adults compared to younger participants, maintained accuracy for foveal words but reduced accuracy for parafoveal words and a decreased visual span. Furthermore, we expected a preserved or even enhanced advantage for semantically related words.

Initially, we assessed visual parameters through an optometric examination and excluded participants with low vision.

Participants read pairs of words presented for 150 ms, with and without semantic relationship, and we recorded reaction times and accuracy. Preliminary results from a group of young adults (M age = 24.88 ± 2.52 years) and a group of older adults (M age = 70 ± 2.1 years) show overall differences in speed and accuracy, but faster reading times and higher accuracy for semantically related pairs for both groups. Furthermore, visual span correlates with parafoveal accuracy in older adults. Our results suggest that aging affects some components involved in reading but not all, and preserved mechanisms can compensate for those that decline.

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