Speed discrimination predicts word but not pseudo-word reading rate in adults and children.

By amezer
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By amezer April 15, 2015


Abstract:

Visual processing in the magnocellular pathway is a reputed influence on word recognition and reading performance. However, the mechanisms behind this relationship are still unclear. To explore this concept, we measured reading rate, speed-discrimination, and contrast detection thresholds in adults and children with a wide range of reading abilities. We found that speed discrimination thresholds are higher in children than in adults and are correlated with age. Speed discrimination thresholds are also correlated with reading rates but only for real words, not pseudo-words. Conversely, we found no correlations between contrast detection thresholds and the reading rates. We also found no correlations between speed discrimination or contrast detection and WASI subtest scores. These findings indicate that familiarity is a factor in magnocellular operations that may influence reading rate. We suggest this effect supports the idea that the magnocellular pathway contributes to word reading through an analysis of letter position.

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