Investigating Neural Correlates of Reading Immersion and Preferences Across Novel Genres: An fMRI Study

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Reading immersion (flow) significantly enhances enjoyment and satisfaction during novel reading, yet its neural mechanisms and relationship to event segmentation remain poorly understood. Event segmentation is an automatic cognitive process in which readers parse continuous narrative into discrete events. This study hypothesized that more efficient event segmentation facilitates higher levels of reading immersion, which in turn shapes readers' genre preferences. Participants read ~2,000-word excerpts from three distinct novel genres while undergoing functional magnetic resonance imaging (fMRI). After each session, they rated their liking on a 7-point Likert scale and completed the Reading Flow Short Scale (RFSS) to quantify immersion. Event boundaries were independently identified by three trained judges and used as parametric modulators in the fMRI analysis. Behavioral results revealed a significant positive correlation between reading immersion and liking scores across genres. Neuroimaging demonstrated widespread cortical activation during event segmentation. Flow-related regions were also identified. Notably, in the martial arts genre, immersion was more strongly associated with comprehension-related activity than with emotional engagement or general involvement, and immersion levels were negatively correlated with neural activity at event boundaries. These findings elucidate the neural mechanisms linking efficient event segmentation, reading immersion, and genre-specific preferences, providing new insights into the neuroscience of literary engagement.

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