The Impact of Secondary Load on Time-Based Prospective Memory: Evidence from a Dual-Task Paradigm

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Abstract

Time-based prospective memory (TBPM) involves remembering intended actions at the appropriate time point while performing an ongoing task. TBPM relies on time monitoring and thus may suffer from cognitive load. Fifty-two young adults completed four blocks of an ongoing word-picture matching task and had to press a special key every seven minutes as TBPM task. Cognitive load (no, low, middle, high) was randomly varied between blocks, by asking participants to count backwards in varying step sizes. Increasing load impaired ongoing-task performance, reflected in lower accuracy and slower responding, but not TBPM accuracy, suggesting that participants were able to maintain TBPM under load by prioritizing it over the ongoing task. However, TBPM precision suffered under high load. Time monitoring became more strategic with increasing load and predicted TBPM accuracy beyond load. Individual differences in working memory capacity were not associated with TBPM accuracy or ongoing-task performance.

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