**EEG correlates of active removal from working memory**

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The removal of no-longer-needed information from visual working memory (WM) is important for the functioning of WM, and can be flexibly accomplished with different mechanisms. Previously, with an “ABC-retrocuing” WM task, we have shown that simply withdrawing one’s attention from the to-be-removed memorandum (i.e., “passive removal”) results in that item exerting an attractive serial bias, whereas “active removal” results in it exerting a repulsive serial bias (Shan and Postle, 2022). In the current study, we recorded EEG signals while subjects performed the ABC-retrocuing task to investigate neural correlates of active removal vs. passive removal, and found two noteworthy effects. The first, in the ERP to the “drop” cue, may reflect the operation of the active removal mechanism itself: 300 ms following cue onset, at central electrodes, the negative-going component of the ERP was significantly greater in the active-removal condition relative to the passive-removal condition. The second, later in the trial, revealed a downstream consequence of active removal: the response in the theta band to a task-irrelevant visual “ping” was reduced in active-removal relative to passive-removal trials, most notably at right posterior electrodes. These results suggest that active removal from visual WM may be accomplished by the suppression of perceptual representations via a phasic top-down mechanism, a trace of which persists for at least several seconds in the form of decreased excitability in the visual cortical circuits that had represented that item. This residual consequence of active removal may explain the repulsive serial bias that is observed on the subsequent trial.