**Different impact of task switching and response compatibility on long-term memory**

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In three experiments (N = 112), we investigated the impact of task switching and response compatibility on subsequent recognition memory. At study, participants had to classify photographs of animals and easy-to-name objects according to size or to animacy in a AABB task order. As the same set of response keys was used for both tasks, for half of the stimuli the responses for the two tasks were the same (i.e., compatible) and for the other half they were not (i.e., incompatible). At test, which occurred either after a short delay (Experiment 1), after one week (Experiment 2) or, using a within-subject design, at both time points (Experiment 3), participants completed a surprise recognition test. The results of the immediate tests revealed that memory was consistently lower for switch compared to repeat stimuli, while response compatibility did not affect memory performance. In contrast, after one week, the effect of task switching disappeared, but memory performance for incompatible stimuli was significantly lower than for compatible stimuli. Thus, the immediate test depended on the encoding context: in switch trials, attention was drawn away from encoding by task requirements resulting in impaired memory performance. In contrast, consolidation before the delayed test weakened the effect of the encoding context but increased interference due to response incompatibility. Together, the results demonstrate that task switching and response incompatibility impair memory performance differently across different delays.

Keywords: bivalent stimuli, cognitive conflict, task switching, response incompatibility, cognitive control, recognition memory, consolidation, encoding context