

## **Selecting a past to remember: psychophysiological studies of forgetting and remembering**

### **Results:**

In a series of studies, we investigated boundary conditions for when memory retrieval can be restricted successfully to task-relevant information. We exploited the fact that scalp-recorded electrophysiological indices of episodic retrieval processes can act as indicators of the conditions under which remembering is controlled. Our work suggests that temporal information is one form of mnemonic information over which less control can be exerted than can be exerted over other forms – in particular, colour and task information. This finding is broadly consistent with the notion that an important determinant of the conditions under which some kinds of information can be retrieved at the expense of others is the similarity between the different kinds of information. This may seem trivial, but understanding what dimensions of ‘difference’ do and do not permit selective retrieval has important practical implications for how memories are encoded and thus what kind of information is or is not likely to be confused with other kinds. In this regard, we also investigated whether the emotional valence of stimuli influenced the extent to which control over memory retrieval could be exerted. The rationale for this approach was the possibility that emotionally significant events are ones over which control is somewhat more difficult (compared to ‘neutral’ events). The data we acquired did not, however, support this position: participants were equally able to exert control over recovery of information associated with neutral words as with words with negative associations. These findings thus provide little support for the view that emotional valence is an important determinant of when remembering can and cannot be restricted to task-relevant information, although it remains a possibility that the stimulus sets we used did not separate words with neutral and negative valence scores to a sufficient degree for indices of differential retrieval processing to be evident in the electrophysiological record.

### **Published work:**

Bridson NC, Fraser CS, Herron JE, Wilding EL. Electrophysiological correlates of familiarity in recognition memory and exclusion tasks.  
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