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Evidences for Better Recall with Compatible Items in Episodic Memory

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Abstract : A focus of recent research is to understand the role of our own response goals in the selection of information that will be encoded in episodic memory. For example, if we respond to a target in the presence of distractors, an important aspect under study is whether the distractor and the target share a common response (compatible) or not (incompatible). Some studies have found that compatible objects tend to be groups together and stored in episodic memory, whereas others found that targets in the presence of incompatible distractors are remembered better. Our current research seems to support both views. We used a Tulving-based definition of episodic memory to differentiate memory from episodic and non-episodic traces. In this task, participants first had to classify a blue object as human or animal (target) which appeared in the presence of a green one (distractor) that could belong to the same category of the target (compatible), to the opposite (incompatible) or to an irrelevant one (neutral). Later they had to report the identity (What), location (Where) and time (When) of both target objects (which had been previously responded to) and distractors (which had been ignored). Episodic memory was inferred when the three scene properties (identity, location and time) were correct. The measure of non-episodic memory consisted of those trials in which the identity was correctly remembered, but not the location or time. Our results showed that episodic memory for compatible stimuli is significantly superior to incompatible ones. In sharp contrast, non-episodic measures found superior memory for targets in the presence of incompatible distractors. Our results demonstrate that response compatibility affects the encoding of episodic and non-episodic memory traces in different ways.

Keywords : episodic memory, action systems, compatible response, what-where-when task
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