

Attribution and recognition: The fluency heuristic in amnesia

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INTRODUCTION

- Processing fluency – typically defined as the ease with which a stimulus is processed (Reber, Wurtz, & Zimmermann, 2004) – is one of many **cues** that are involved in **memory decisions**.
- Because people intuitively know that an earlier encounter with a stimulus generally enhances processing fluency, a feeling of “oldness” can result from **attributional processes** whereby people ascribe **fluency to the past**.
- However, the extent to which these processes are preserved in amnesia is not yet clear and still remains a subject of debate. For instance, Squire (2004) reported the case of patient E.P. who did not use fluency as a cue for recognition decisions although he successfully completed priming tasks.
- One hypothesis that is put forward to explain these findings is that the conversion of processing fluency to a feeling of oldness is not automatic or mandatory, as proposed by Unkelbach (2006), who conceptualized the use of **fluency** as a **malleable heuristic** that can evolve as a function of context and daily learning.

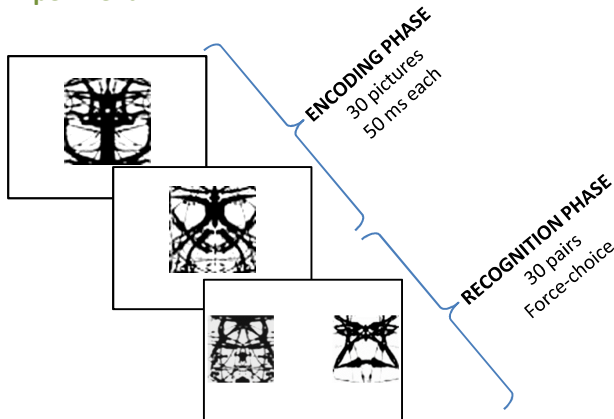
THIS STUDY

Exploring *how* the use of the fluency heuristic evolves in amnesia. Two experiments were conducted:

- In Experiment 1, we examined the effect of the introduction of a competing source of fluency on **amnesic** (n = 8) and **control participants** (n = 16) recognition decisions (Experiment 1).
- In experiment 2, we examined whether **healthy participants** (n = 42) behave like patients with amnesia after they are repeatedly exposed to situations where the association between fluency and past experience is artificially broken (Experiment 2).

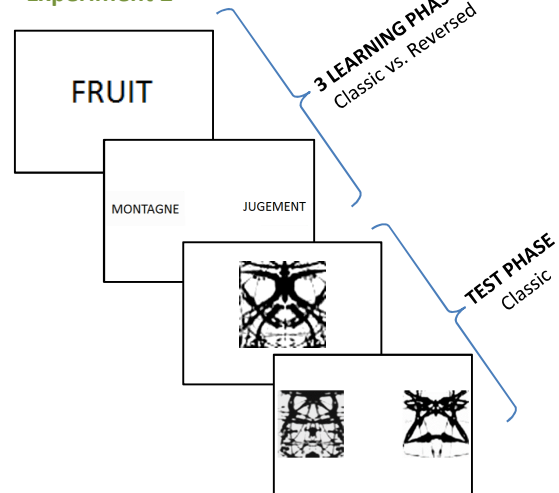
METHOD

Experiment 1



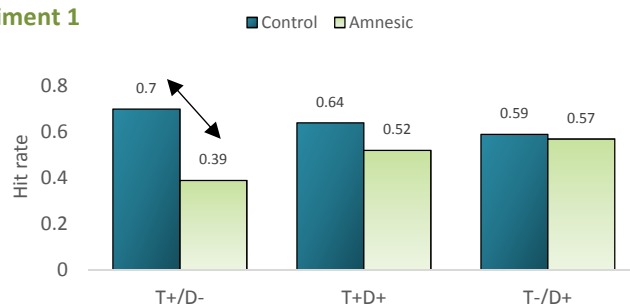
10 Target+/Distractor-, 10 Target+/Distractor+, and 10 Target-/Distractor+ pairs. “+” = stimulus with high perceptual fluency; “-” = stimulus with low perceptual fluency.

Experiment 2

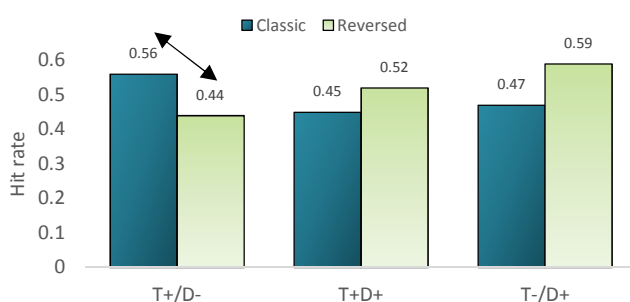


RESULTS

Experiment 1



Experiment 2



DISCUSSION

- We found that **control** participants (Experiment 1) and participants in the **classic condition** (Experiment 2) seemed to rely on the **absolute level of fluency** when making their recognition decisions.
- Conversely, patients with **amnesia** (Experiment 1) and participants in the **reversed condition** (Experiment 2) seemed to detect the perceptual manipulation of our stimuli and attributed the overall subjective feeling of fluency to this **alternative explanatory source** rather than to pre-exposure.
- Our hypothesis is that people who have learned that they cannot rely on their memory (in general or for a specific task) can be **reluctant to attribute** a very high level of **fluency to their memory**, which they know is unlikely to produce such a strong feeling of “oldness”.

References:

Reber, R., Wurtz, P., & Zimmermann, T. D. (2004). Exploring “fringe” consciousness: The subjective experience of perceptual fluency and its objective bases. *Consciousness and Cognition*, 13, 47–60.

Squire, L. R. (2004). Memory systems of the brain: A brief history and current perspective. *Neurobiology of Learning and Memory*, 82, 171–177.

Unkelbach, C. (2006). The learned interpretation of cognitive fluency. *Psychological Science*, 17, 339–345.