

Confabulations and False Recognitions in Korsakoff Syndrome: evidence from an ecological virtual reality paradigm

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Introduction

- Confabulation is a specific symptom observable in some amnesic patients who are **unaware** of their memory deficit (Dalla Barba, 1993).
- Korsakoff syndrome (KS) is characterized by severe memory impairments, including confabulations and an increased susceptibility to false recognitions (Fama et al. 2012).
- Confabulations can be distinguished between **provoked** forms, which emerge in response to specific questioning, and **spontaneous** forms, which occur without external prompting and often intrude in daily life (Kopelman, 1987).
- **Aims of the study:** (i) to investigate the relationship between both types of confabulatory tendencies and false recognitions, by using a virtual reality (VR) task in KS patients, a link that remains poorly understood despite its theoretical and clinical relevance, (ii) to study the link between self-awareness and different types of false memories in KS.

Methods

Population: 12 KS patients (Mean age : 55.75; SD: 7.01) and 15 normal controls, NC (Mean age : 36.20; SD: 17.3)

VR task :
FalseMem

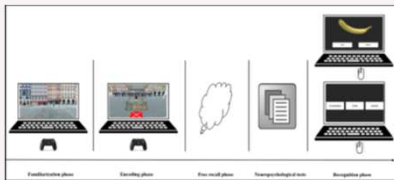


Figure 1 Design of the experimental FalseMem task



Figure 2. Examples of the virtual environment

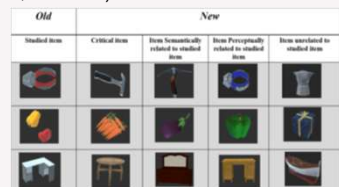


Figure 3. Examples of old and new stimuli

False memories assessment:

Provoked Confabulations: Confabulation battery including 165 questions probing both episodic and semantic domains (Dalla Barba et al., 2018).

Spontaneous Confabulations: *GREFEX Questionnaire* (Godefroy et al. 2008).

False Recognitions : FalseMem virtual reality task (Abichou et al. 2022).

Self-awareness assessment:

Patient Competency Rating Scale (PCRS) :

which includes both self-report and caregiver/clinician ratings to identify awareness deficits through comparative analysis (Prigatano et Altman, 1990).

Main Results

- True recognitions significantly reduced in KS compared to NC. ($p < .001$). KS patients produced significantly more FR ($p < .001$).
- No link between confabulations and false recognitions.
- Positive correlation between spontaneous confabulations and anosognosia.

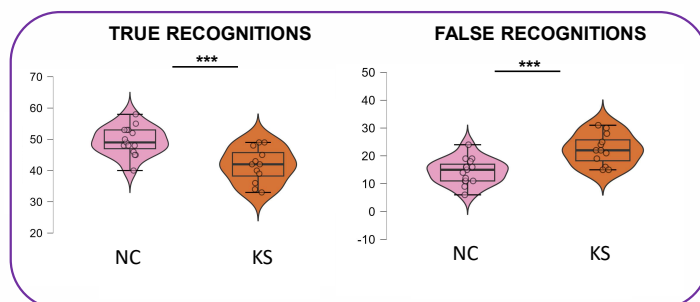


Figure 4. True and False recognitions rate in NC and KS *** $p < .001$

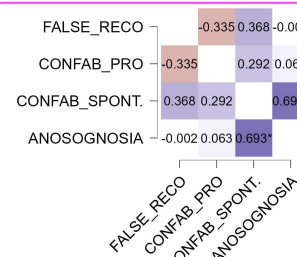


Figure 5. Pearson's r heatmap * $p < .05$

Conclusions and future directions

- Although both **confabulations and false recognitions** are elevated in KS, they may rely on partially distinct mechanisms.
- KS generated a greater number of **episodic confabulations**, mainly related to over-learned information or daily life routines (i.e. *habits confabulations*) (La Corte et al. 2010).
- **Metacognitive process** appear to differentially contribute to confabulations and false recognitions.
- Overall, this study highlights the value of **virtual reality** in capturing episodic memory distortions in ecologically contexts and provides new insights into the interplay between memory deficits and distortions in Korsakoff syndrome.