Déjà Vu Experiences Throughout the Lifespan: On the Relationship between Age, Spontaneous and Experimentally-Induced Déjà Vu, and Other Metacognitive Quirks

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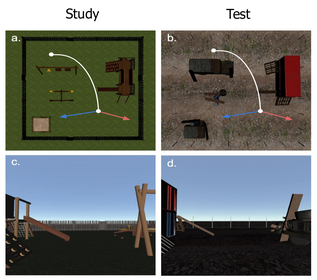
Background

Déjà vu – the feeling of having experienced something before while simultaneously feeling a sense of novelty

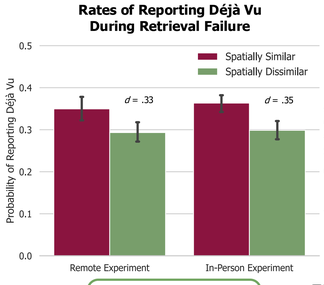


Trial-by-Trial Prompts

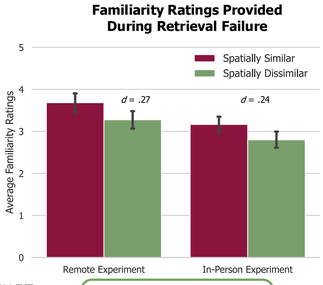
1. Déjà Vu? (Y/N)
2. Feeling-of-Prediction? (0-10)
3. Next Turn? (L/R)
4. Familiar (0-10)
5. Recall a similar-seeming study scene?

Novel scenes containing spatially similar layouts

Rates of Reporting Déjà Vu During Retrieval Failure



Familiarity Ratings Provided During Retrieval Failure



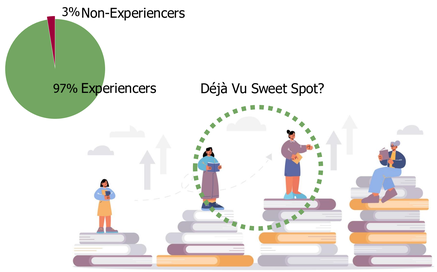
Déjà vu more likely for spatially similar scenes

Okada et al. (2024)

Familiarity sensations used for scene discrimination

Does participant age affect these results?

- Recollection-based recognition decreases
- Familiarity-based recognition increases*
- Spontaneous déjà vu decreases



Present Study

Primary Research Questions:

1. Does déjà vu frequency decrease with age?
2. Does spatial recognition memory vary with age?
3. Do metacognitive illusions vary with age?

Methods

Prolific

Total N = 396

Group 1 (18-30) *N* = 94

Group 2 (31-43) *N* = 105

Group 3 (44-56) *N* = 100

Group 4 (57+) *N* = 97

Survey Phase

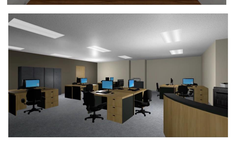
Inventory for Déjà Vu Experiences Assessment (Sno et al. 1994)

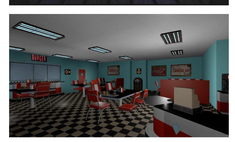
1. Have you ever encountered a new situation but felt as if you had experienced that exact situation before?
2. When having this sensation, can you remember exactly where and when you had the feeling?
3. How long does this feeling usually last?
4. While having this feeling of 'recognition,' did you feel as if you could predict what was going to happen next?

Spatial Memory Task Phase

Study Scene Examples

Test Scene Examples





Trial-by-Trial Test Prompts

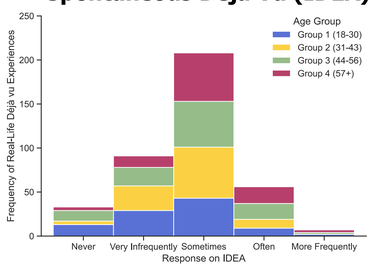
1. Déjà vu sensation? (Y/N)
2. Feeling-of-Prediction? (Y/N)
3. Familiarity intensity? (0-10)
4. Recall a similar-seeming study scene?

Results

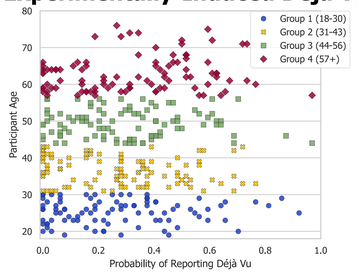
Déjà Vu Rates

Do déjà vu reports decrease with age?

Spontaneous Déjà Vu (IDEA)



Experimentally-Induced Déjà Vu

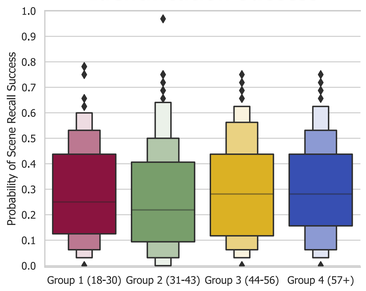


Frequency of déjà vu experiences does not decrease with age

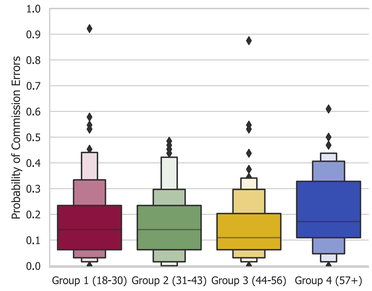
Study Scene Identification

Does recollection of spatially similar scenes decrease with age?

Rates of Study Scene Identification Success



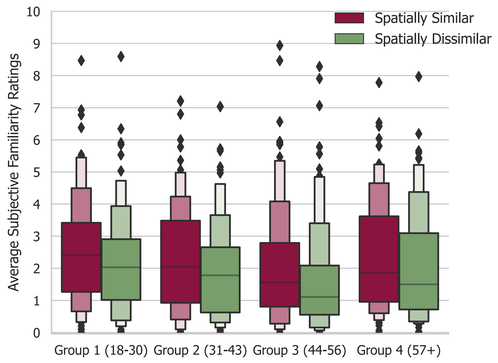
Rates of Commission Errors



Rates of recall success do not decrease with age

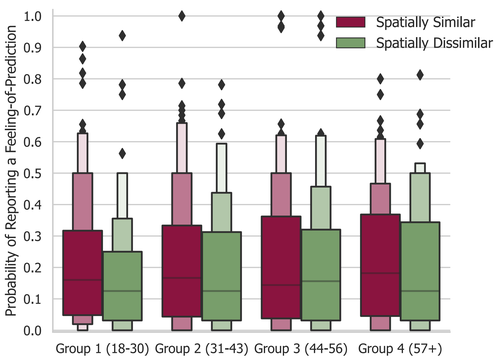
Familiarity-based Recognition

Does familiarity-based recognition improve with age?



Feeling-of-Prediction Rates

Do feeling-of-prediction reports change with age?



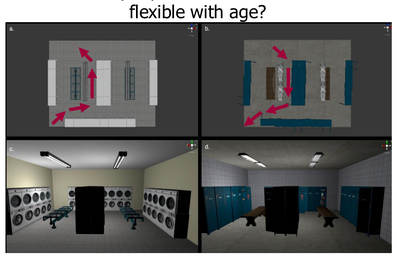
Conclusions and Future Directions

Spatial recognition memory processes remain intact across lifespan

- Déjà vu frequency does not vary with age
- Recollection-based recognition does not decrease with age
- Familiarity-based recognition remains stable

Egocentric vs Allocentric Navigation

Do memory representations become less flexible with age?



Comparison to Standard Recognition Tasks

Will our participants show deficits on word-list learning paradigms, but not our dynamic memory task?

Study List
Table – Umbrella
Apple – Couch
Stereo – Jacket
Magazine – Anchor
…

vs.

Test List
Table – ?
Bracelet – ?
Pencil – ?
Stereo – ?
…

Study Scene

Test Scene