



# Tracking Autobiographical Thoughts: Improving Sensitivity to Alzheimer's Disease Risk

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## Introduction

- The default network (DN) is a primary pathway of Alzheimer's disease (AD)<sup>1</sup>
- Perhaps no aspect of cognition is more closely linked to the DN than autobiographical thought<sup>2</sup>
- Some features of autobiographical thought decline in older age<sup>3</sup>
- Autobiographical thought is compromised in individuals with mild cognitive impairment and dementia of presumed AD etiology<sup>4</sup>
- We recently showed that signs of altered autobiographical thought are present in cognitively unimpaired older adults who are at increased genetic risk for AD, because of the presence of APOE4<sup>5</sup>

**Goal of this line of work:**  
Assess whether tracking autobiographical thoughts in the lab, and in the real-world, is a sensitive cognitive test of AD risk

## Participants & Procedures

- Middle-aged and older adults (50-85)
- Cognitively unimpaired, based on extensive neuropsychological testing
- Studies in the lab have investigated autobiographical memories (**Fig 1, 2**) and future thoughts (**Fig 3**)
- Using a smartphone app called the "EAR", we have also assessed autobiographical thought sharing in the real world (**Fig 4**)
- Studies to date have focused on episodic specificity (**Fig 5**)

## Results

Unpublished Data

## Figure 5

**Scoring example**"...Real nice guy (semantic[sem]). Wonderful gentleman (sem). He was um more senior than me at the time (sem). He was like the dean of our hospital association group (sem). I look down (episodic[ep]) and I see his name (ep). I see his name plate there, but he is not at his seat (ep). And um I didn't think much of it (ep). I figured he is in the bathroom or something (ep). And um time goes by (ep) and then all of a sudden someone taps me on the shoulder (ep)..."

Episodic specificity = ep/total details

## Summary & Conclusions

- Accumulating findings from our lab indicate that autobiographical thought specificity is commonly reduced in cognitively unimpaired older adults, especially APOE4 carriers
- We may be able to capture cognitive markers of AD risk by tracking autobiographical thoughts with a smartphone app that records snippets of daily social interaction
- In ongoing work, we are examining autobiographical thought signatures in the brain, in particular in regard to resting state functional connectivity of the DN

## References

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