

**Qualitative impairment of the recollective experience for  
self-related information in AD patients:  
Evidence from probed verbal reports in a recognition  
paradigm.**

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# Introduction

## memory recognition & SRRE



- Recognition memory: dual process theories
  - ✦ Recollection:  
Controlled and **conscious** retrieval of information including the recovery of **details from the encoding context**.
  - ✦ Familiarity:  
Relatively automatic process of **global assessment of memory strength** or stimulus fluency without controlled access to the associated contextual information.
- Self reference recollection effect (SRRE)  
self referential processing at encoding promotes **recollection-based** processes at retrieval such as subjective experience of remembering and source memory (Conway and Dewhurst, 1995; Conway et al., 2001; Carroll et al., 2001; Van den Bos et al., 2010)

## Introduction

# impaired recollection-based retrieval in Alzheimer



- Remember/Know paradigms
  - Impaired subjective remembering with relatively preserved knowing in AD patients (Dalla Barba, 1997; Piolino et al., 2003; Rauchs et al., 2007).
- Associative memory tasks
  - Impaired retrieval of associations in AD patients (Gallo et al., 2004; Wolk et al., 2011; Hanaki et al., 2011; Algarabel et al., 2012; Genon et al., 2013)
- Qualitatively altered autobiographical retrieval in AD patients (Irish et al., 2011a, 2011b).

# Objectives



- SRRE in AD patients ?
  - ❖ Remember/Know paradigm
    - ✦ Validity in memory-impaired patients (e.g., Baddeley et al., 2001) ?
    - ✦ Quality of recollective experience ?
- ➔ Inclusion of probed verbal report
  - ➔ Remember/Know for self-related information
  - ➔ Quality of recollective experience for self-related information

# METHODS

# Methods



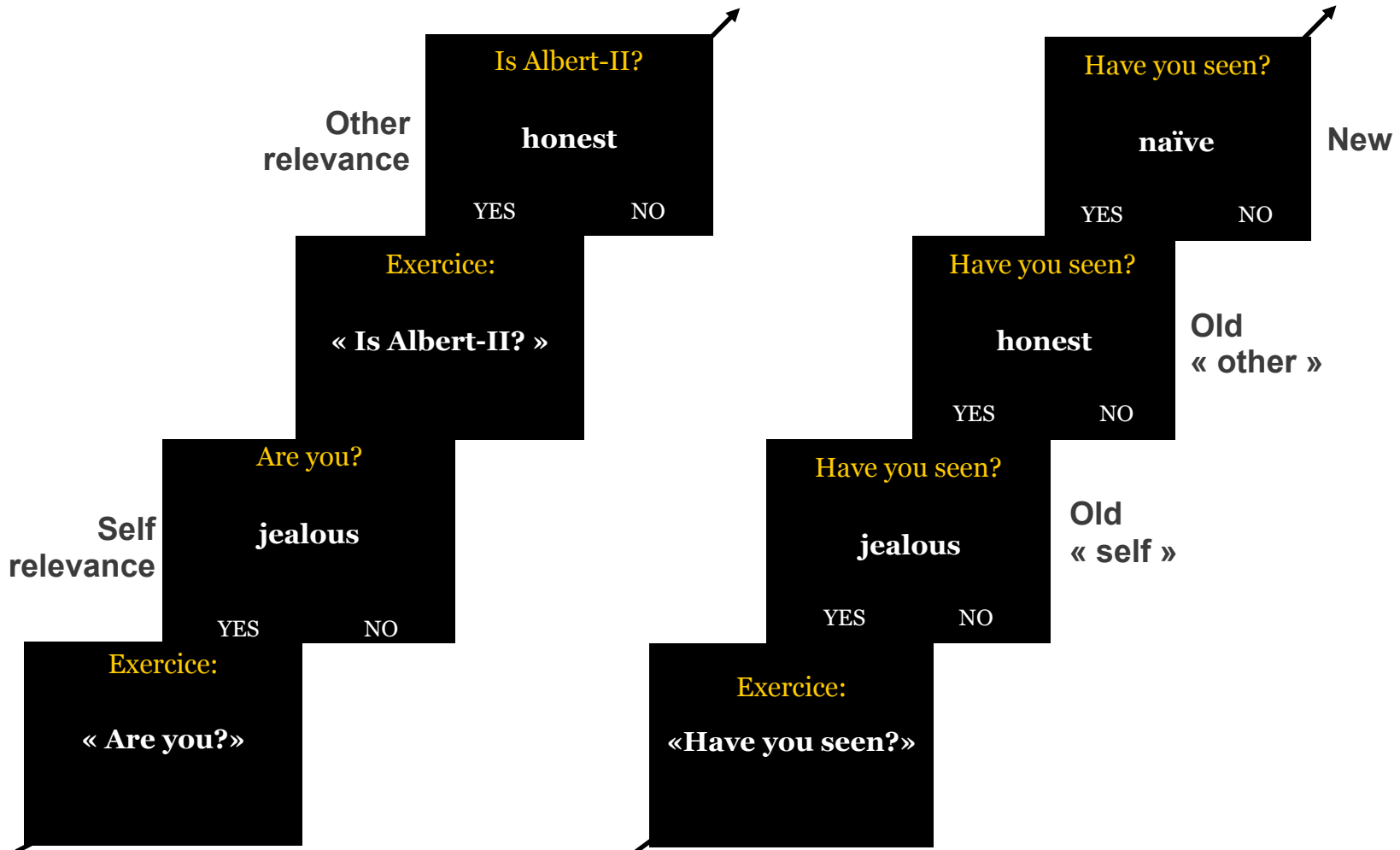
- Participants:

	OC	AD
N(male/female)	20 (10/10)	18 (11/7)
Age	76.2 ( $\pm$ 5.0)	76.0 ( $\pm$ 5.8)
Education	11.0 ( $\pm$ 2.3)	11.0( $\pm$ 3.8)
GDS	2.5( $\pm$ 2.1)	2.8( $\pm$ 2.6)
MDRS	139.1( $\pm$ 3.1)	126.6( $\pm$ 7.7)*

\*p < .001

# ENCODING

# RECOGNITION



Have you seen?

jealous

YES

NO

Do you remember precisely in which context ?

YES

NO

Do you remember:

- 1) In which condition?
- 2) The answer you had given?
- 3) A thought or a mental image?
- 4) Anything else ?

Experiencing of familiarity feeling  
but do not remember anything

NO

Chance or guessing ?

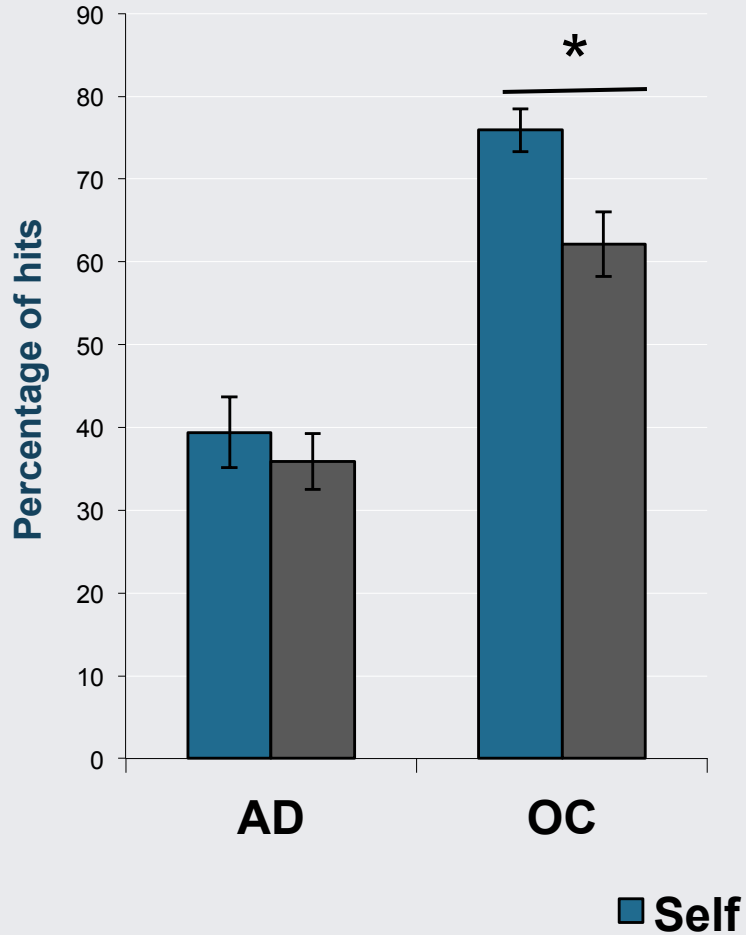


# RESULTS

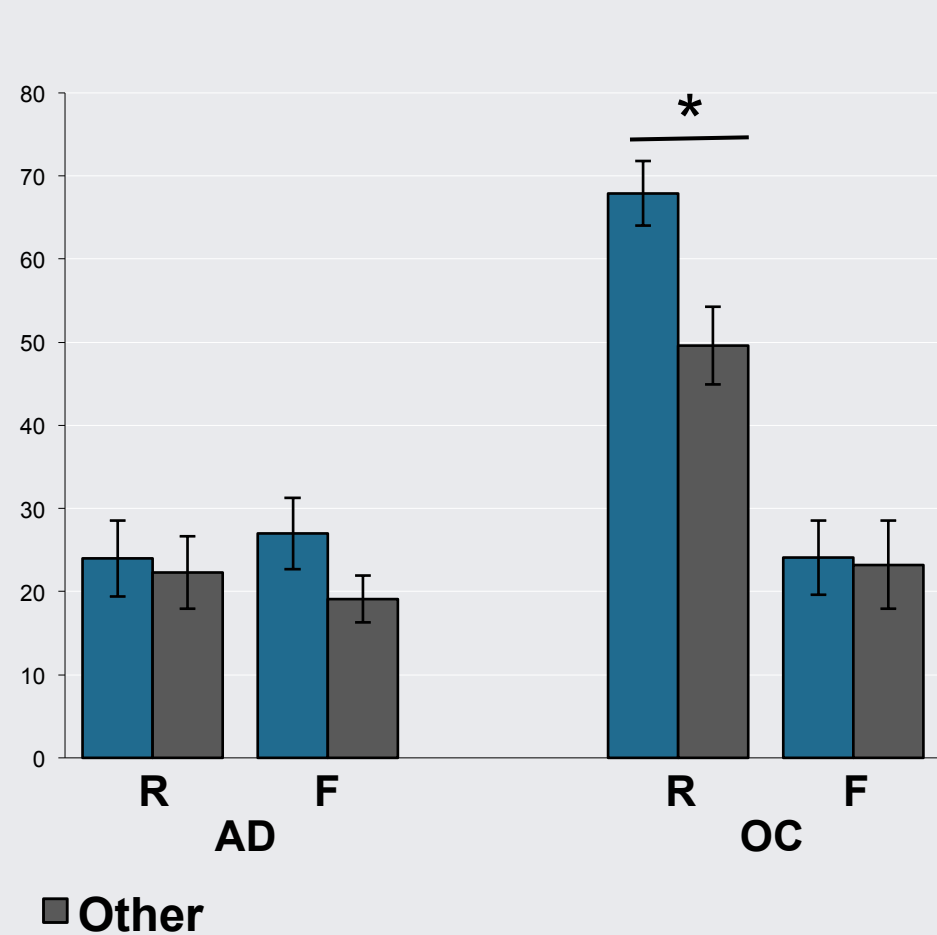
# Results



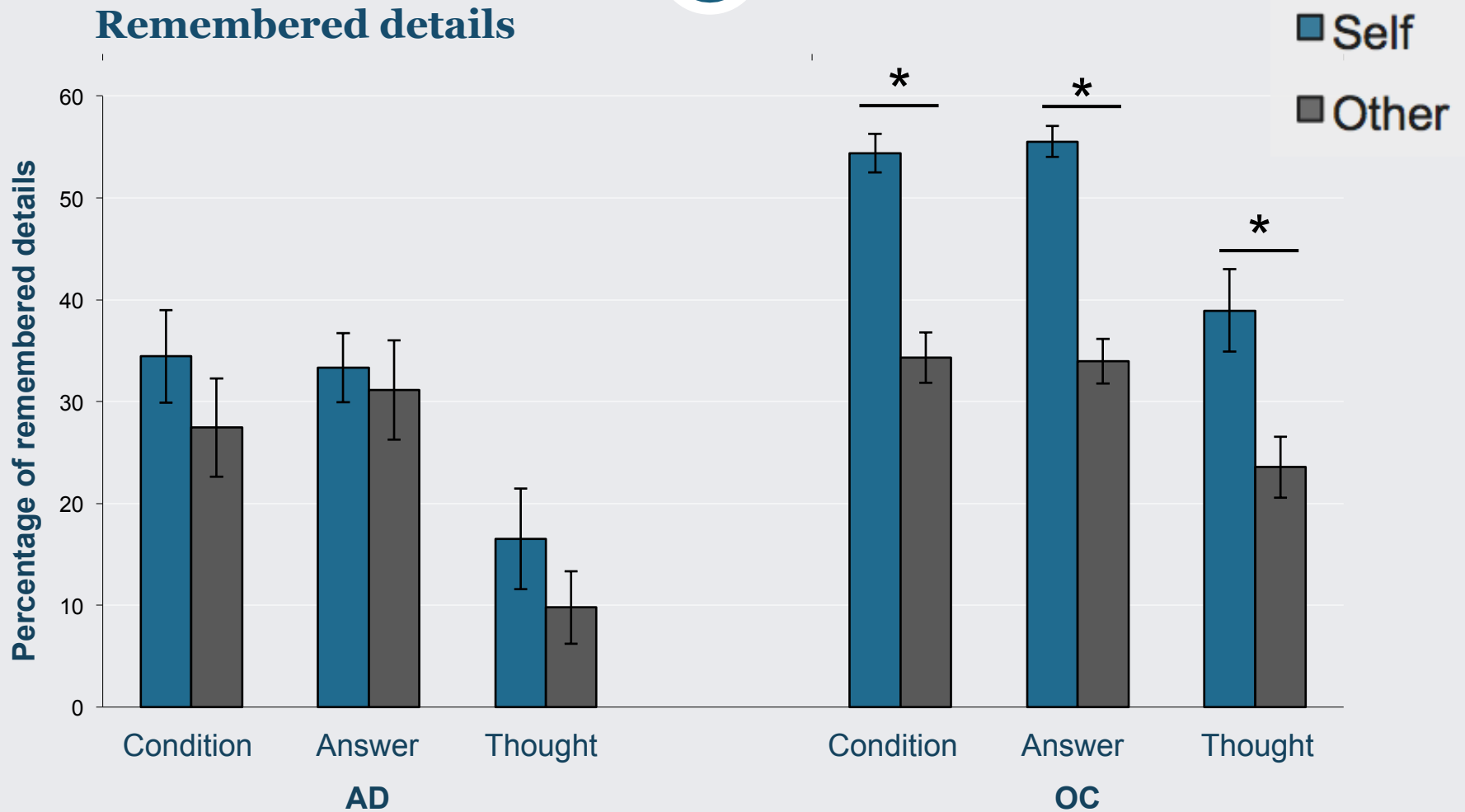
## Recognition performance



## Retrieval processes



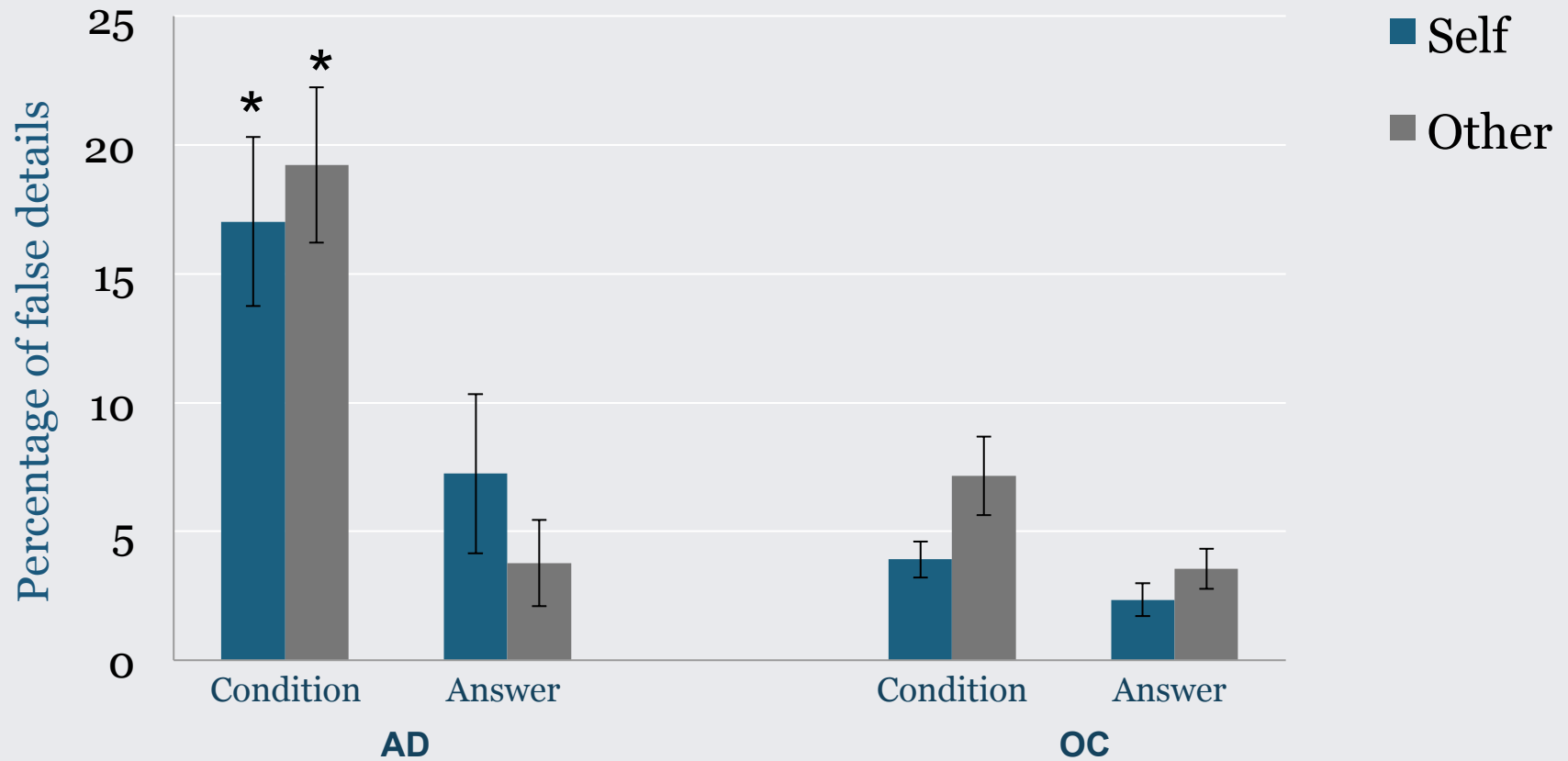
# Results



# Results



## False remembered details



# DISCUSSION

# Results summary



- Modified R/K paradigm with probed verbal reports in a memory recognition task:
  - ✦ Replication of previous findings: impaired recollection with relatively preserved familiarity in mild AD patients
  - ✦ Impaired SRRE in AD patients
  - ✦ Qualitatively impaired retrieval of self-related information
  - ✦ False source remembering in AD patients

# Discussion



- Retrieval of self-related memories is less associated with recollective experience
- Lack of contextual details for self-related memories

// lack of contextual details for autobiographical memories (Irish et al., 2011a, 2011b)

- **Impaired interaction between self and memory in AD patients**
- **Impaired autobiographical self** (Damasio, 1999; Northoff et al., 2006) **in AD patients**

# Discussion



- False source remembering in AD patients

// Source-based false recognitions in AD patients (Pierce et al., 2008)

// False recognitions in AD patients are associated with medium to high levels of confidence (Gallo et al., 2010)

→ **modified recollection process in AD patients**

// False memories in AD patients related to executive dysfunction (Plancher et al., 2009)

→ **monitoring process of source verification may be impaired in AD leading to false remembering during episodic retrieval.**





Thank you for your attention



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# Methods



- Measures:

- ❖ Hits =

[Remember – FA\_Remember] + [Know – FA\_Know]/total old

- ❖ Familiarity estimates under the assumption of independence (F)

$pc(\text{Hits\_Know}) = p(\text{Hits\_Know}) / (1 - p(\text{Hits\_Remember}))$

$pc(\text{FA\_Know}) = p(\text{FA\_Know}) / (1 - p(\text{FA\_Remember}))$

**F = pc(Hits\_Know) - pc(False alarms\_Know)**

- ❖ Remembered details

- ❖ Remembered detail = Remembered detail/N remember

- ❖ False remembered detail = false remembered detail/N remember