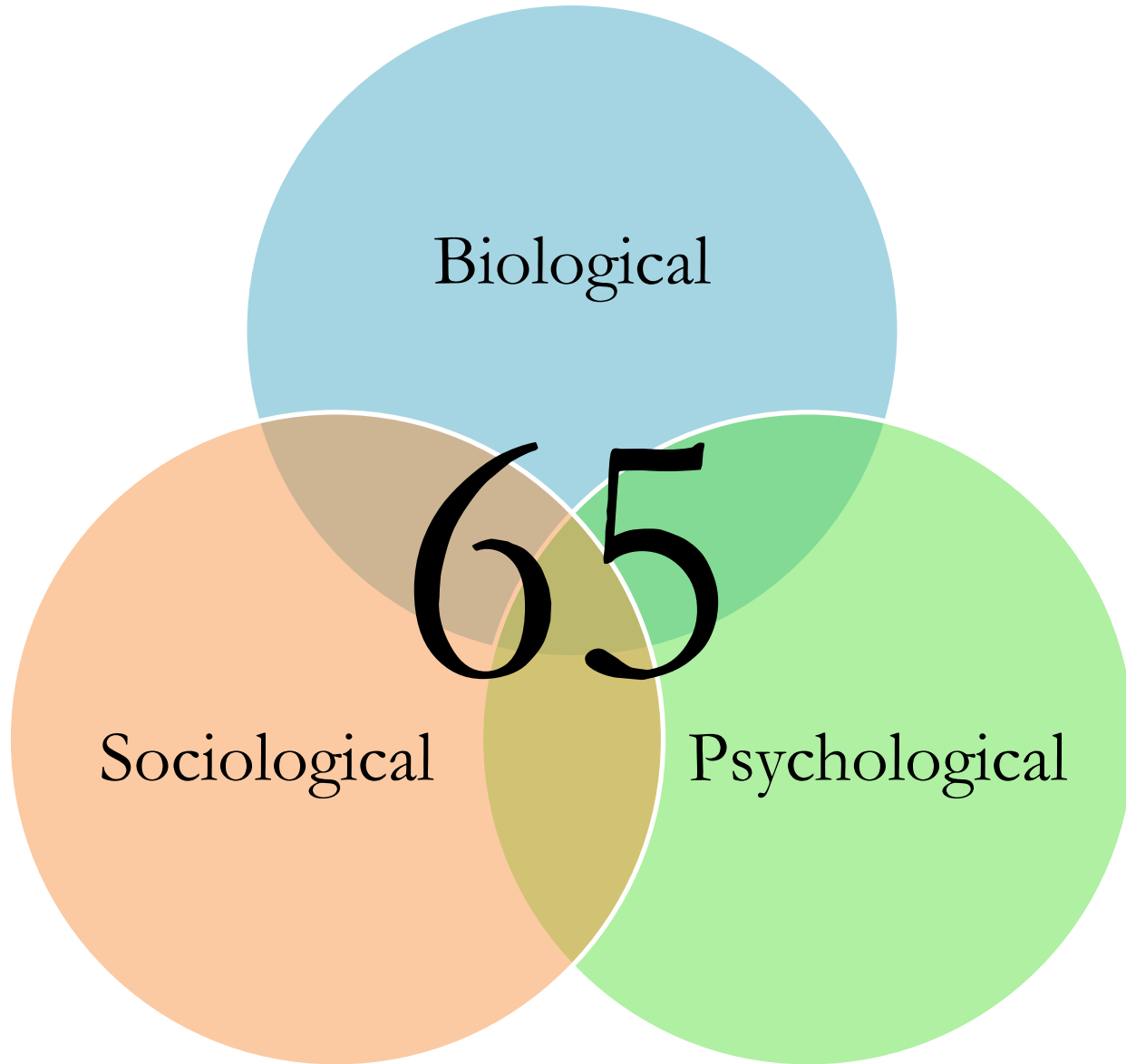


# Optimizing Learning and Memory as we Age

Dr. Andrée-Ann Cyr



GLENDON



Biological

Sociological

Psychological

65

Older adults do **not** learn  
in fundamentally different  
ways than younger adults.

# Some types of memory get **worse**

## EPISODIC MEMORY

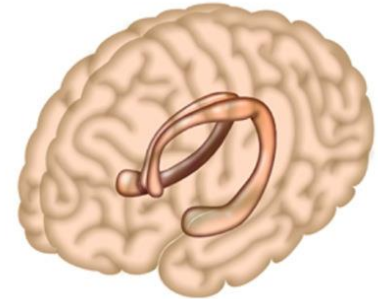
- Memory of events that are linked to specific times and places.

What is the name of the new neighbour you met yesterday?

What did you eat for breakfast this morning?

Where did you leave your keys?

Hippocampus



# Some types of memory get **better**

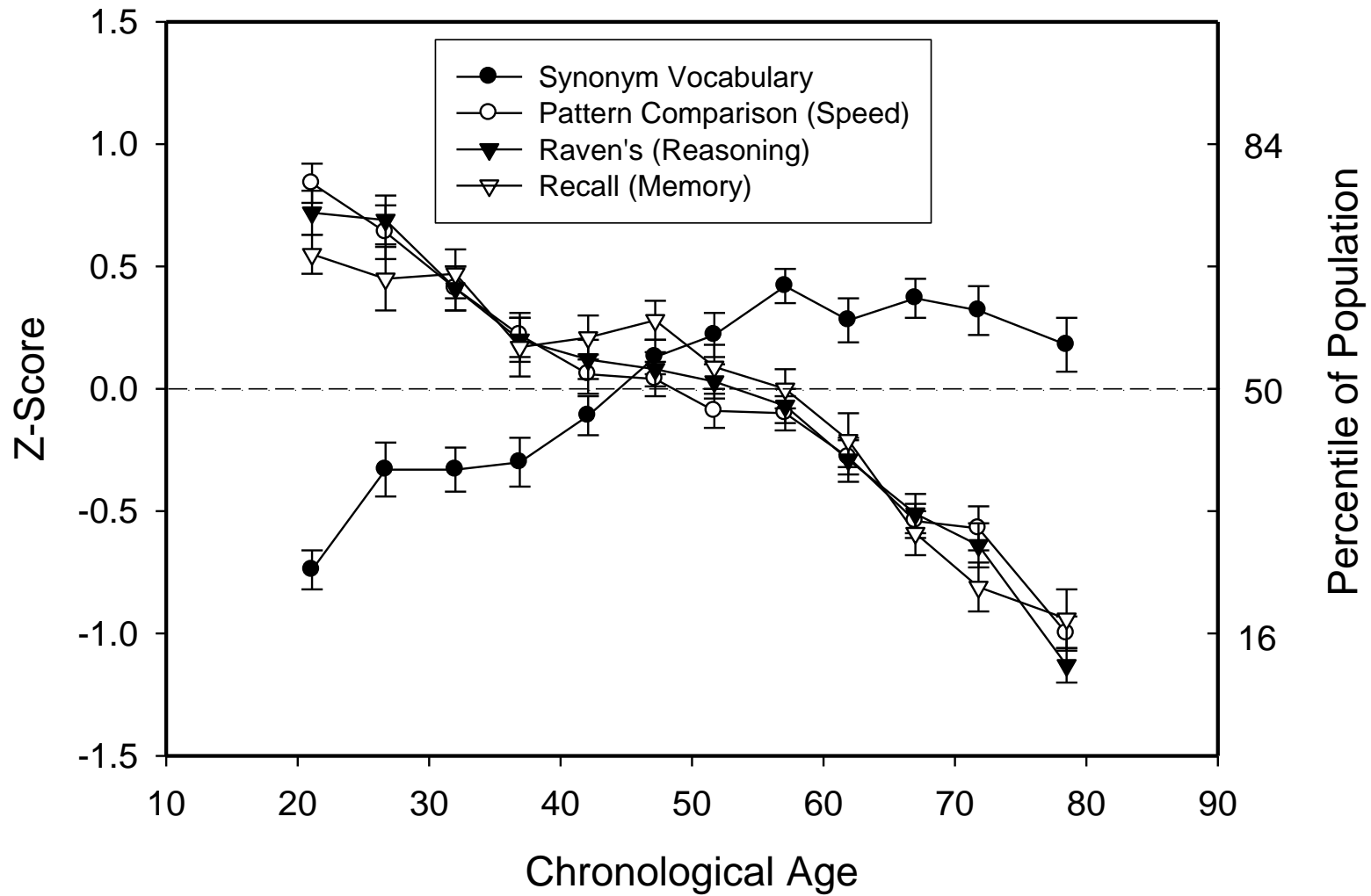
## **SEMANTIC MEMORY**

- General knowledge and meaning of concepts

What is the capital  
of Finland?

What is the name  
of your first grade  
teacher?

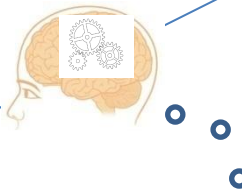
How does  
photosynthesis  
work?



## Short-term memory

(About 1-minute)

*“Paul, I’d like to introduce you to Veronica.”*



*She looks like Veronica Lake, her name starts with ‘V’ and she’s wearing a v-neck blazer.*

*“Hi! My name is Veronica!”*



*Veronica... Veronica...  
Veronica... Veronica...*

## Long-term memory

*“Nice to see you again, Veronica!”*

# ENCODING

Short-term memory

(About 1-minute)

*“Hi! My name is  
Veronica!”*



*Veronica... Veronica...  
Veronica... Veronica...*

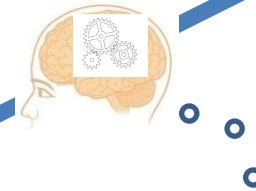


*“Paul, I’d like to  
introduce you to  
Veronica.”*

Long-term memory

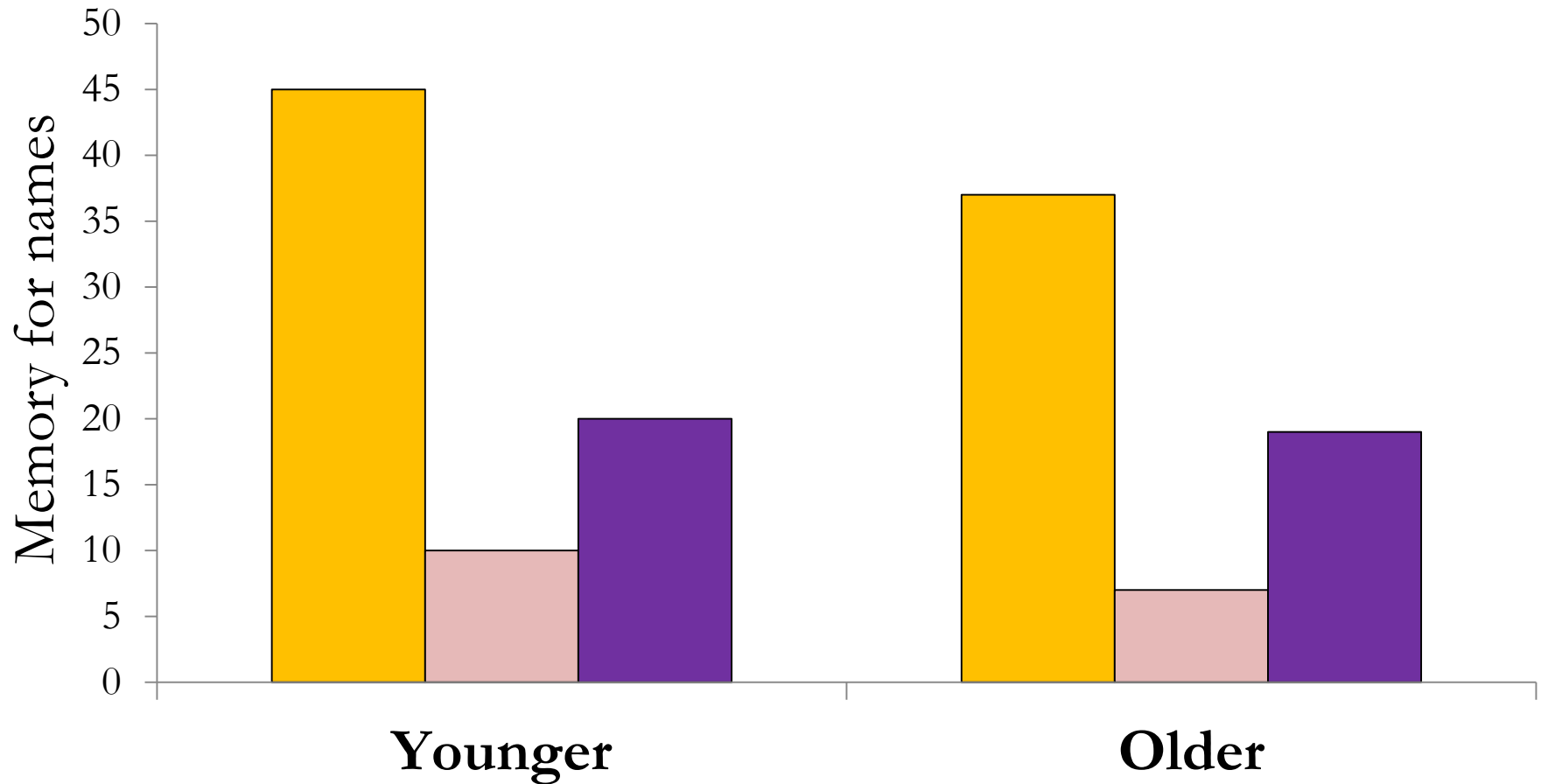
*“Nice to see you again,  
Veronica!”*

*She looks like  
Veronica Lake, her  
name starts with ‘V’  
and she’s wearing a  
v-neck blazer.*





- Commit her name to memory
- Say the first letter of her name ( $\checkmark$ )
- What kind of occupation do you think she does?





*“I need to remember her name,  
this is really important, do  
NOT forget Veronica  
VeronicaVeronica!!!”*



*“Hub, she looks a little bit like  
the actress Veronica Lake, I  
wonder if she’s an actress too.”*

*“Hi! My name  
is Veronica!”*



*Veronica Veronica Veronica Veronica*



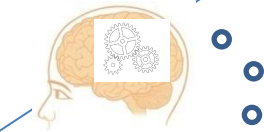
*Veronica... Veronica... ... Veronica... ... ... Veronica*

# RETRIEVAL

Short-term memory

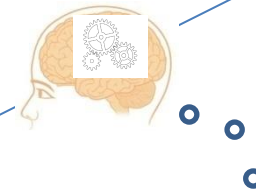
(About 1-minute)

*“Hi! My name is  
Veronica!”*



*Veronica... Veronica...  
Veronica... Veronica...*

*“Paul, I’d like to  
introduce you to  
Veronica.”*



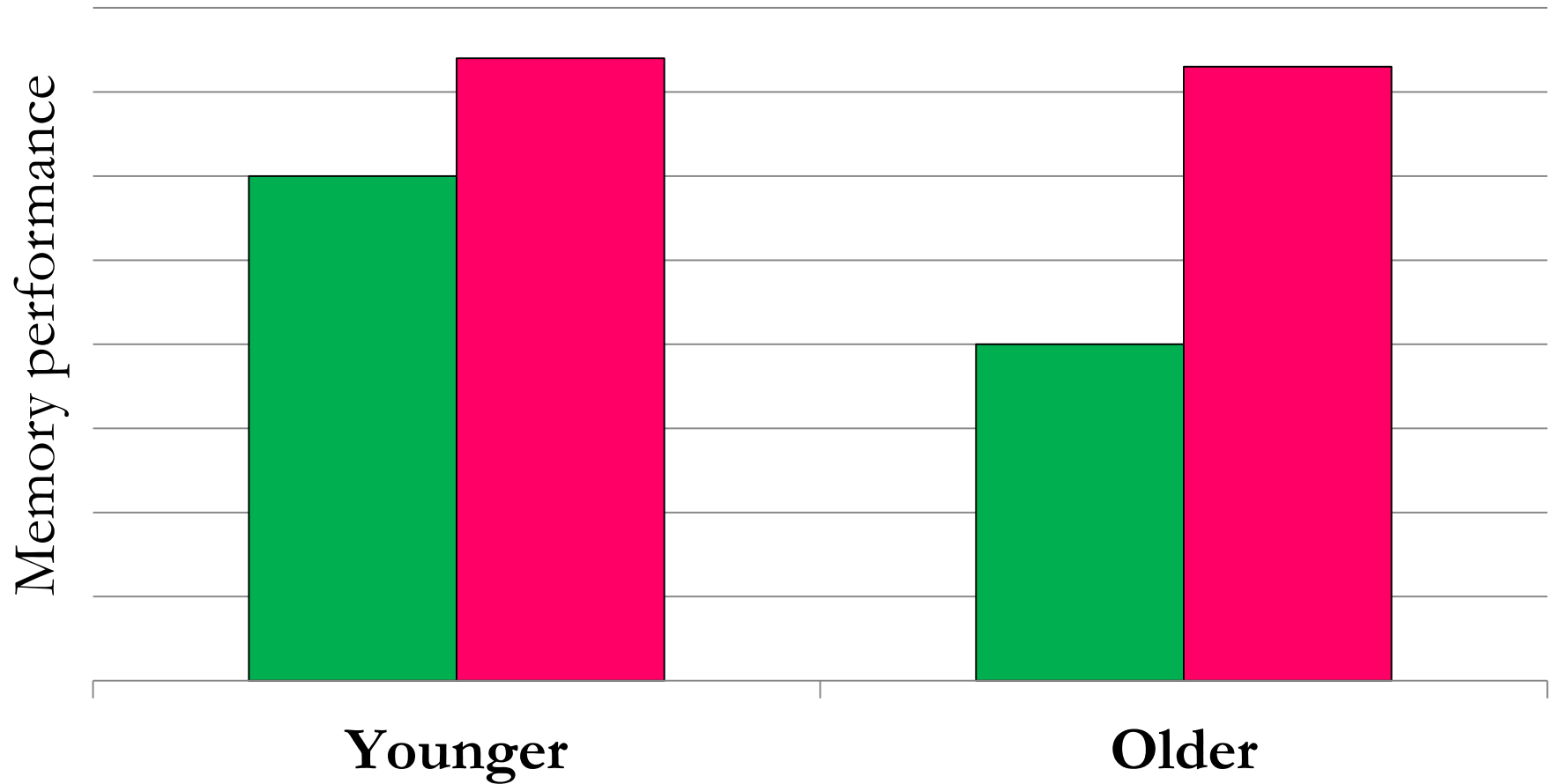
*She looks like  
Veronica Lake, her  
name starts with ‘V’  
and she’s wearing a v-  
neck blazer*

Long-term memory

*“Nice to see you again,  
Veronica!”*

■ RECALL: “What is her name?”

■ RECOGNITION: “Is her name Jane or Veronica?”



# Optimizing learning as we age

- ✓ **Quality** of processing is more important than intention to learn.
- ✓ Older adults need more **support** to bolster recall.

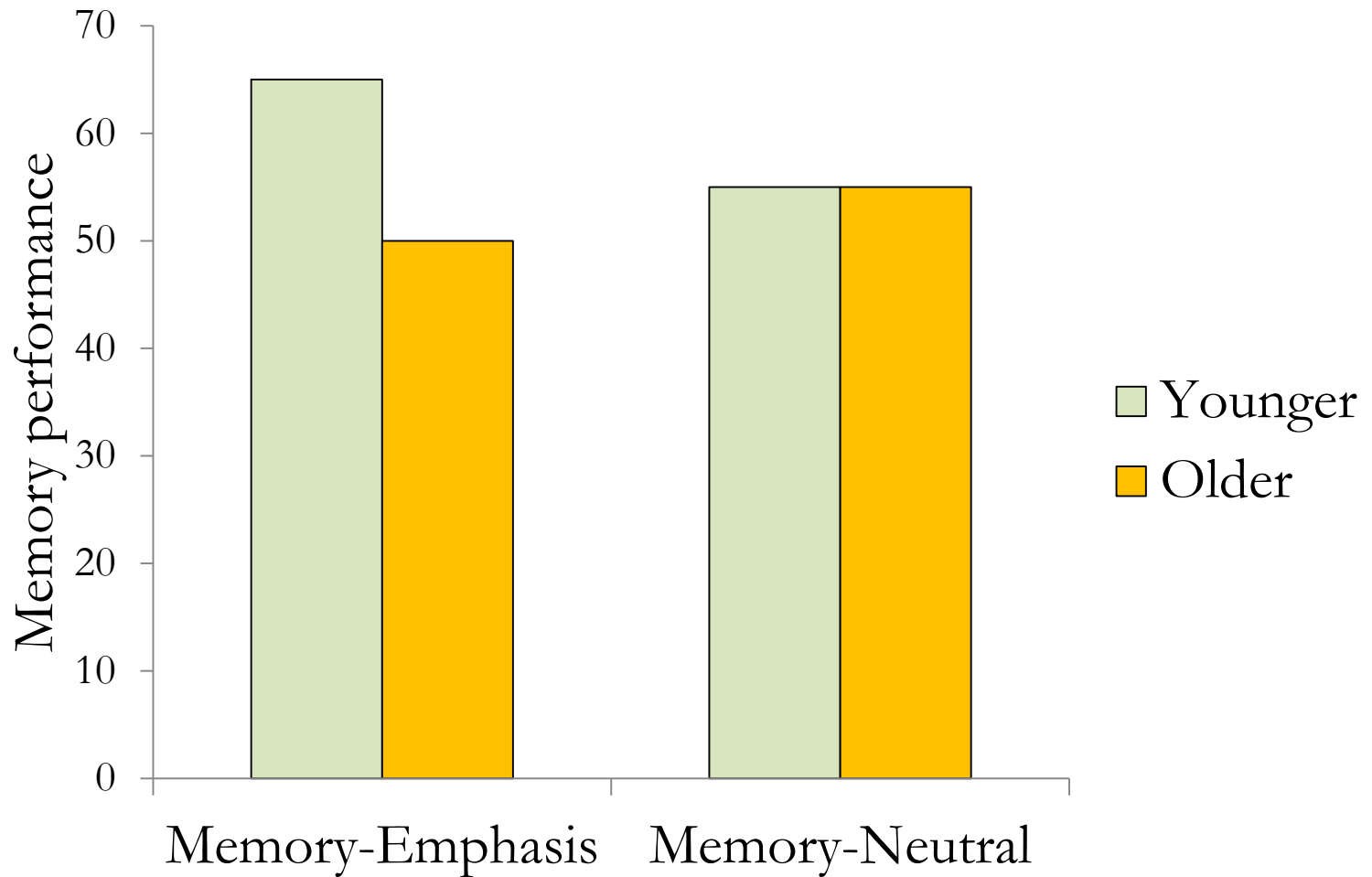


**WORK**

EXIT ↙

**RETIRE**

EXIT ↗



*“In this experiment, we are interested in how good your memory is.”*

*“In this experiment, we are interested in your ability to learn facts.”*



There are 19  
cave paintings  
in Southern  
France



MARY  
**TRUTH**

About 4  
hours are  
required to  
boil an ostrich  
egg



JOHN  
**LIE**

About 4 hours are required to boil an ostrich egg.

Voice Test

MARY

JOHN

Younger > Older

Truth Test

TRUE

FALSE

Younger = Older

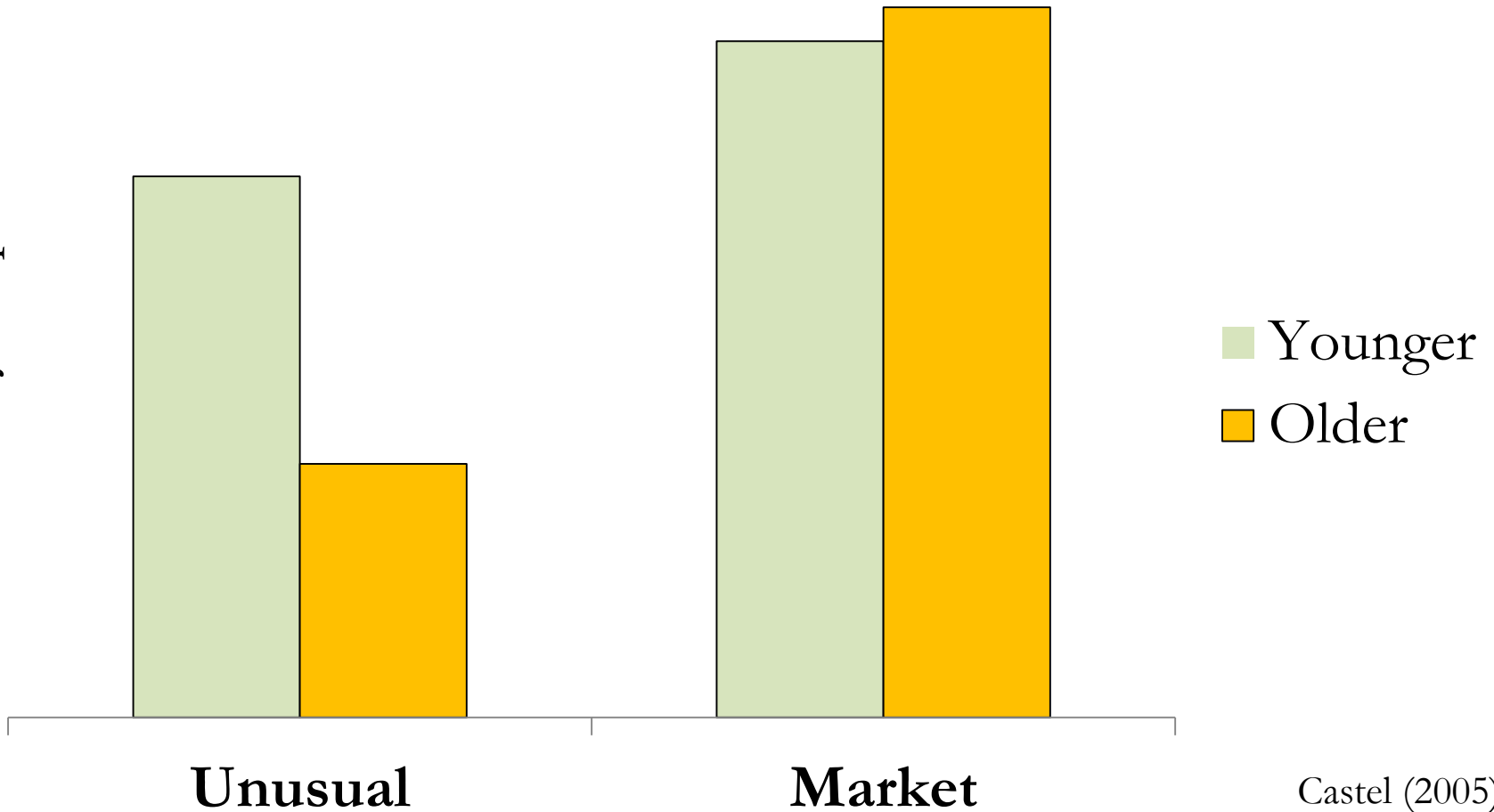


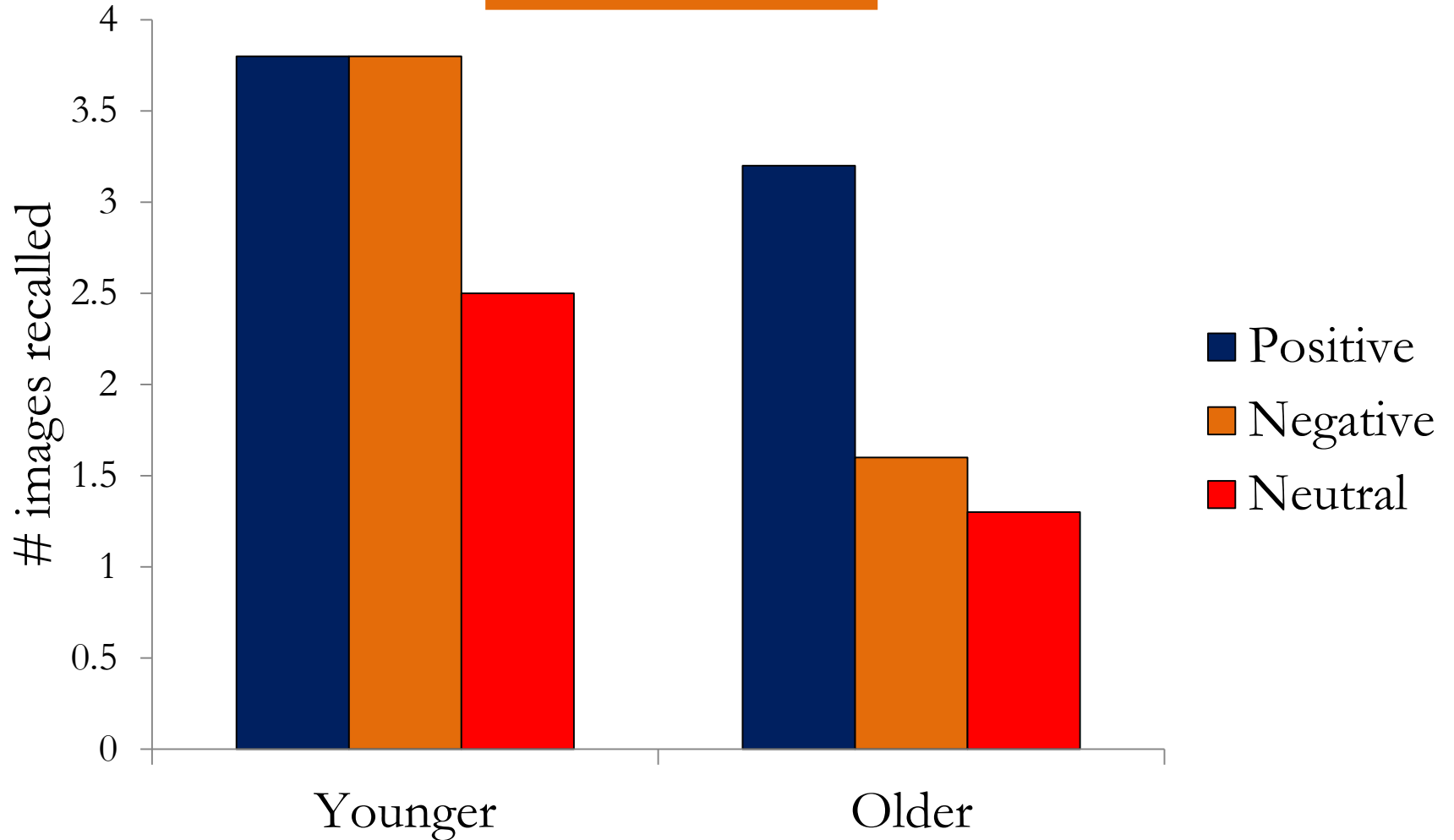
\$11.69



\$3.15

Memory for prices





# Optimizing learning as we age

- ✓ Quality of processing is more important than intention to learn.
- ✓ Increase support to bolster recall.
- ✓ Engage with material that **interests you**.
- ✓ Use **familiar** frames of reference to make sense of new information.

# Use it or lose it?



Ruslan Guzov/Shutterstock

## Neuroscientists speak out against brain game hype

By [Emily Underwood](#) | Oct. 22, 2014, 4:30 PM

# Use it or lose it?

Photography



Quilting



Dual



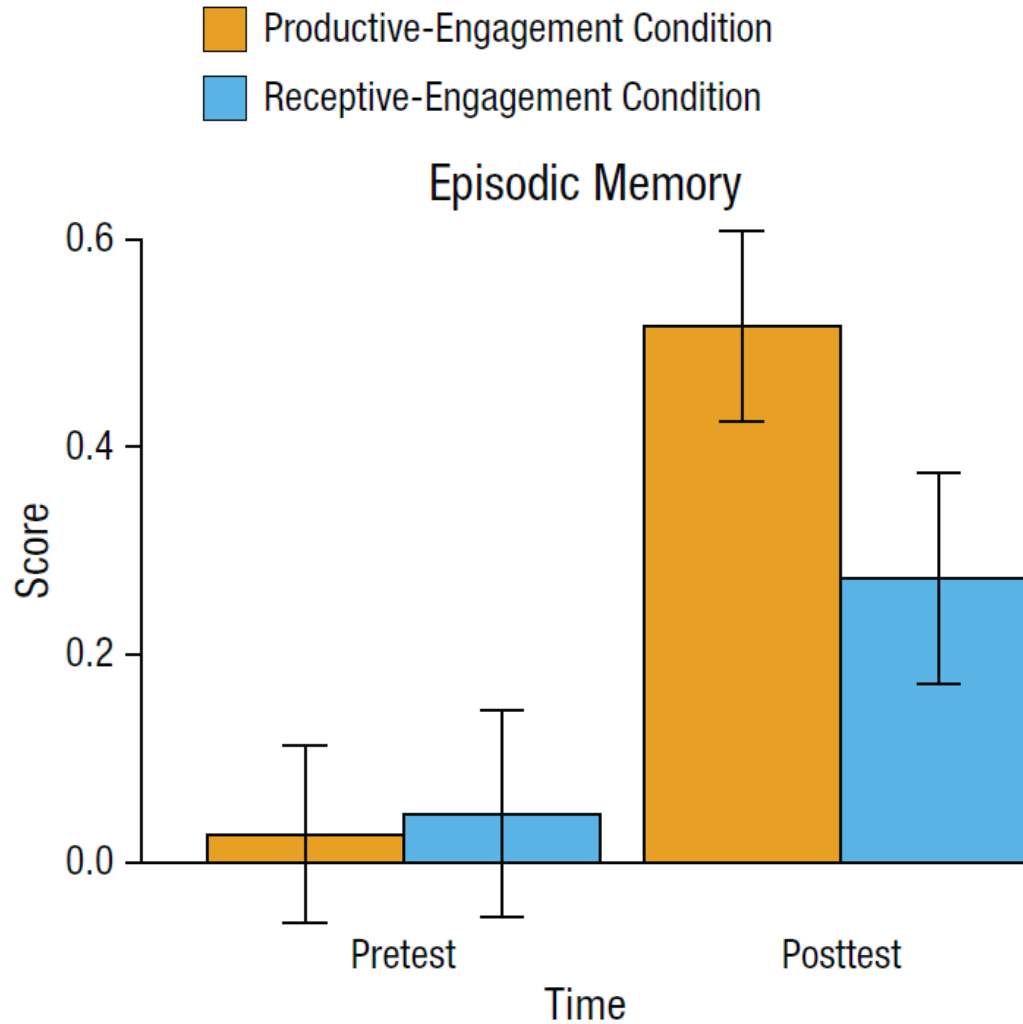
Socializing



Informative materials

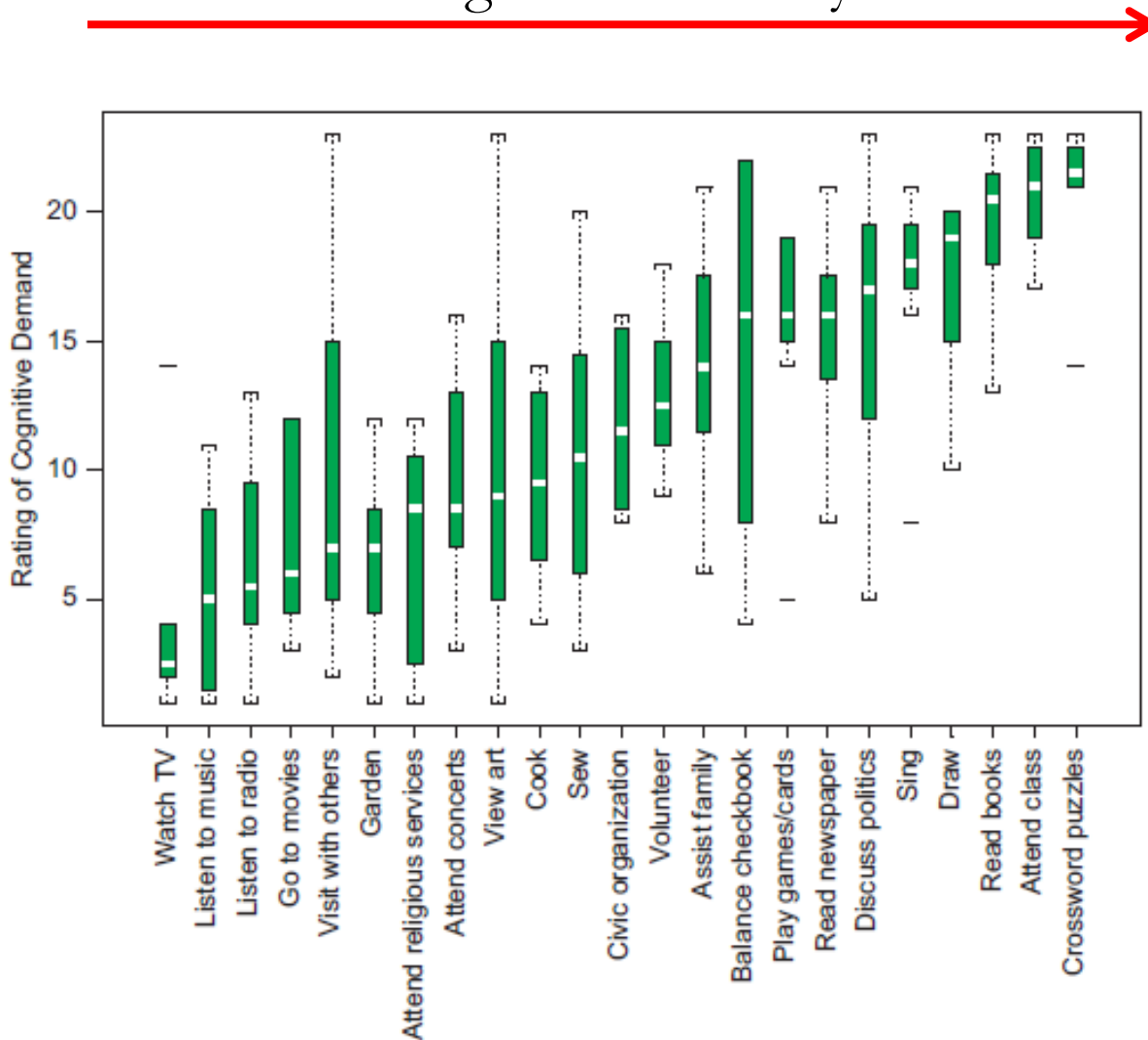


# Use it or lose it?



# Use it or lose it?

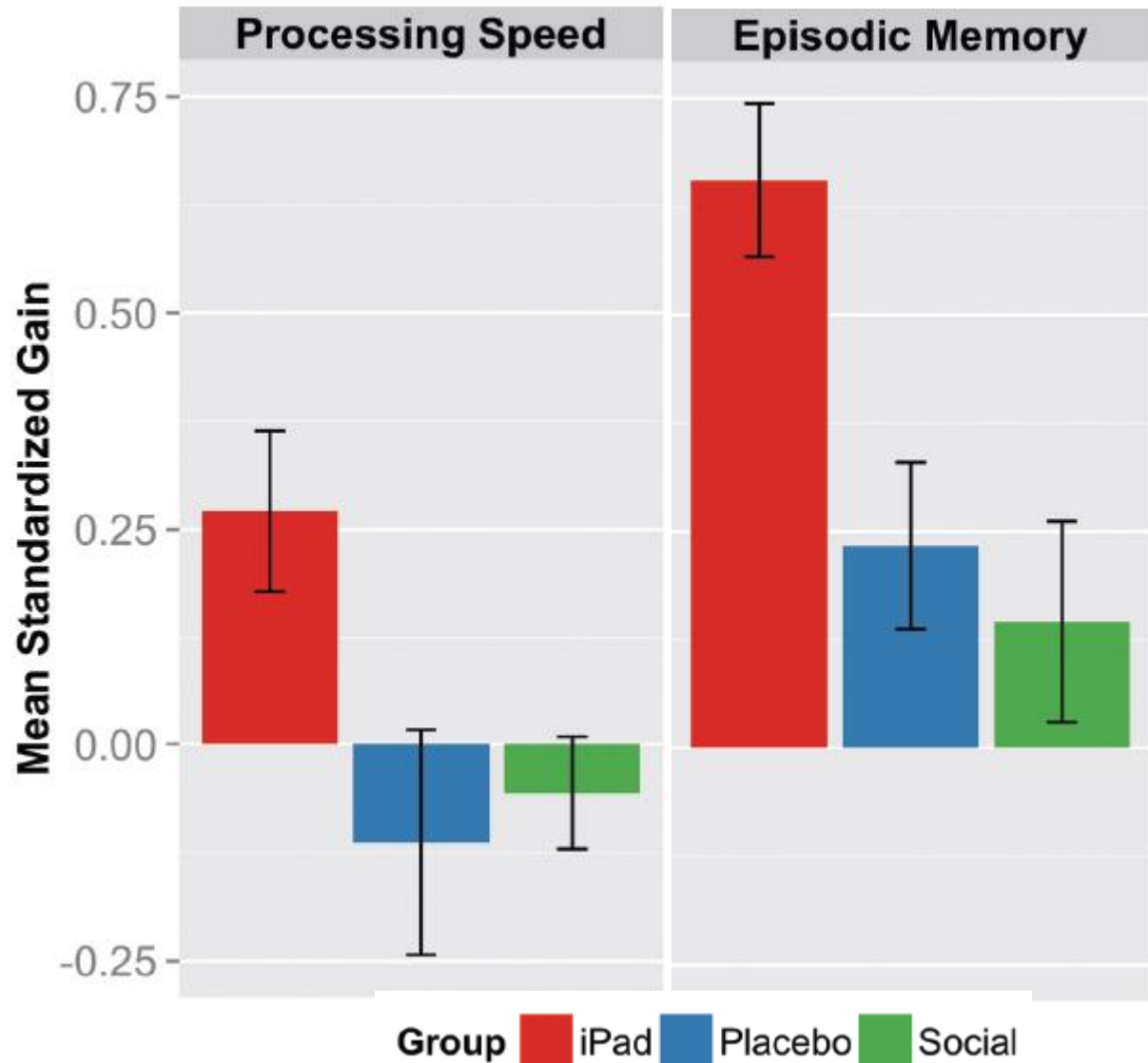
Cognitive difficulty



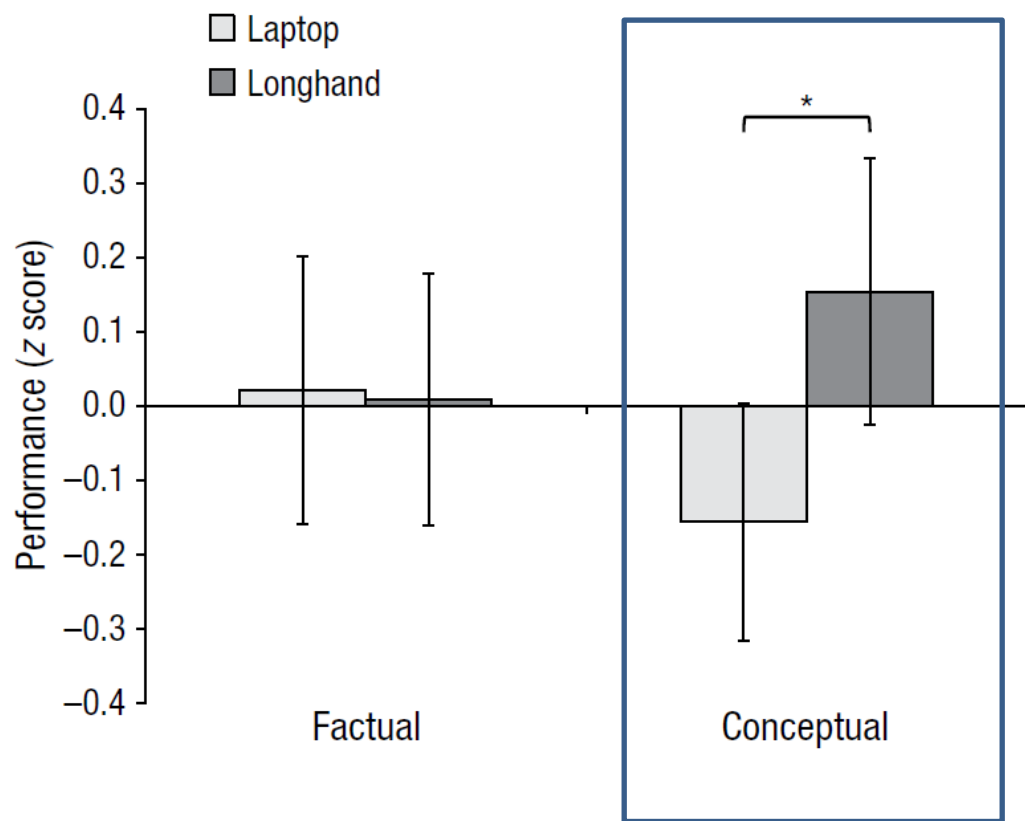
Variety is the  
spice of life!



# Use it or lose it?



Chan et al. (2016)



Mueller & Oppenheimer (2014)

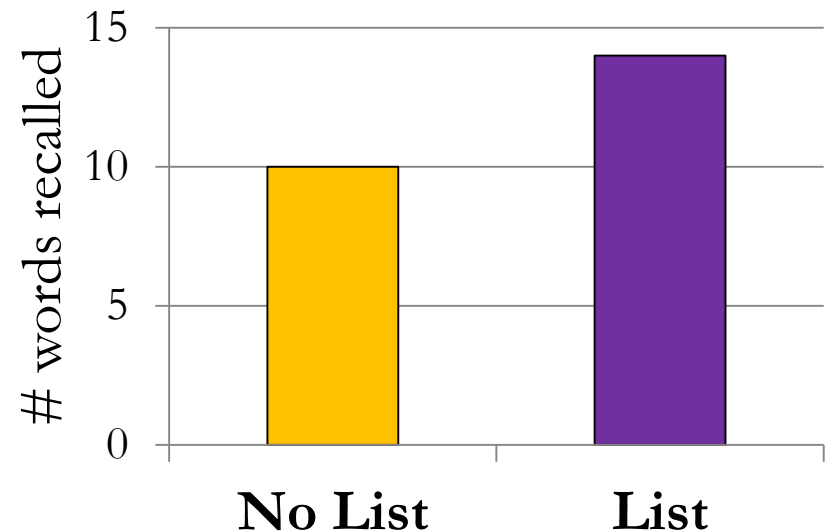
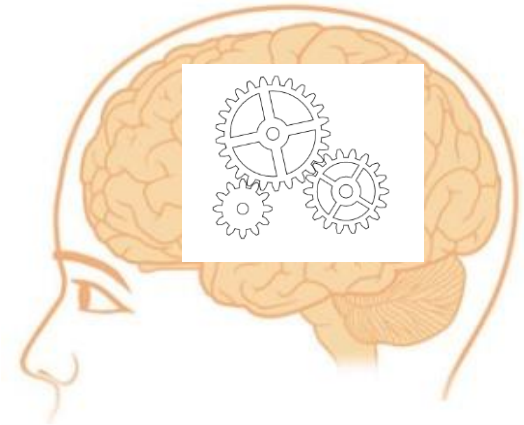
Rendez-vous at Roy Thomson Hall at 2:00pm next

## Do you make a note?

“I use to be able to remember appointments without writing anything down.”

“It’s really important, I won’t forget.”

**“Memory aids will make my mind lazy.”**



Rendez-vous at Roy Thomson Hall at 2:00pm next

Thompson  
Tuesday  
Two

Sunday

Monday

Tuesday



Wednesday

# Optimizing learning as we age

- ✓ Quality of processing is more important than intention to learn.
- ✓ Increase support to bolster recall.
- ✓ Engage with material that interests you.
- ✓ Use familiar frames of reference to make sense of new information.
- ✓ Choose activities that are reasonably **complex** and **varied**.
- ✓ Developing **strategies** is more important than improving on a single task.

Thank you for your attention!