

GLENDON

# Agency of Choice and Its Effect on Memory Throughout the Lifespan

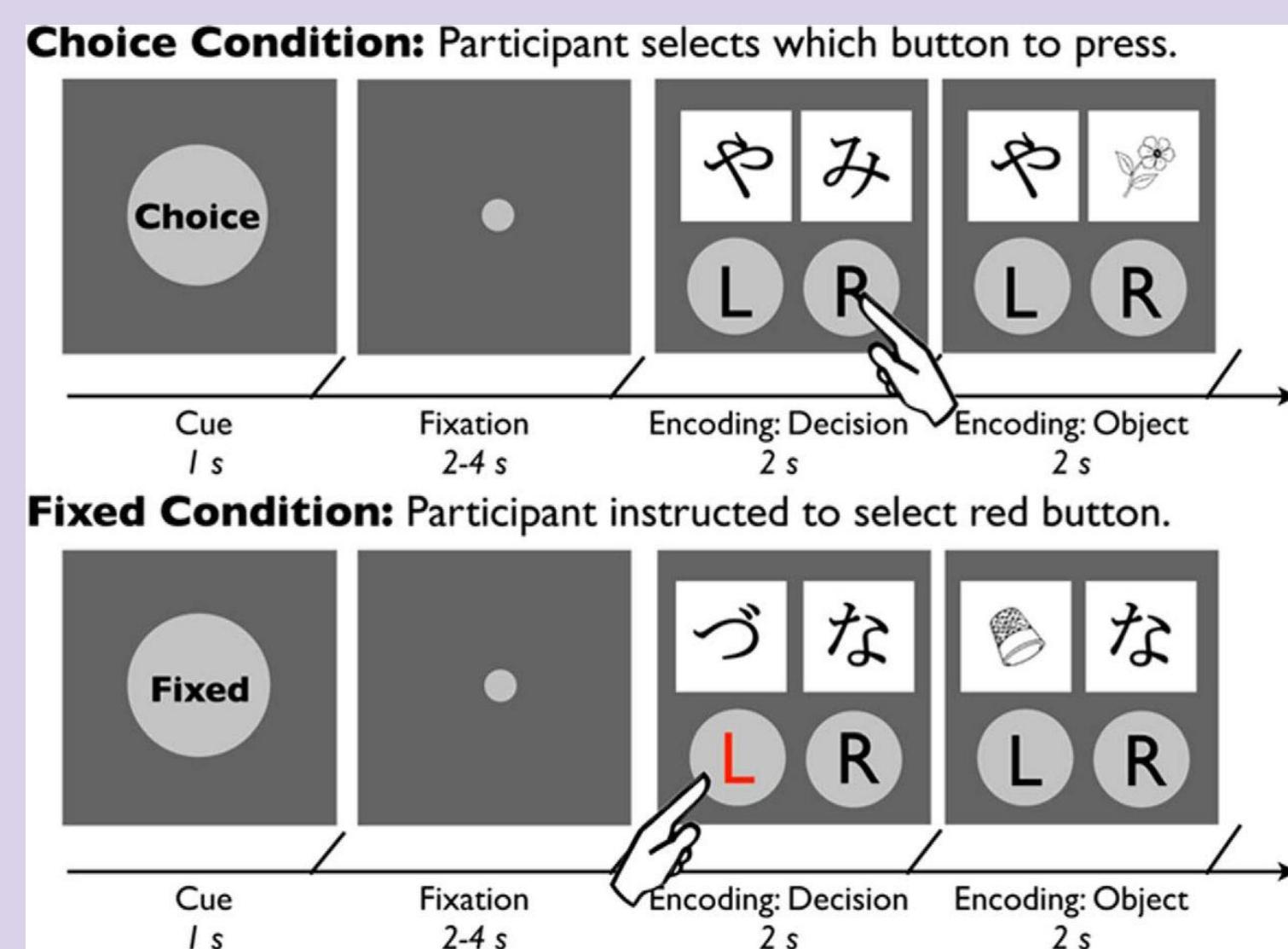
Riya Trikha &amp; Andrée-Ann Cyr



Glendon College, York University, Toronto, Ontario

## BACKGROUND

**Autonomy** (Self-Determination Theory<sup>1</sup>) plays a role in learning  
 ➤ **Murty and colleagues (2015):** endowing younger adults with perceived control over what is learned significantly enhances memory for the learned material



### Aging and Episodic Memory

Regions known to play an essential role in episodic memory (i.e., hippocampus and the prefrontal cortex) shrink as we age<sup>2</sup>

*How may providing autonomy of choice during learning affect the episodic memory of younger and older adults? Will these memory gains differ between age groups?*

### Hypotheses:

- Recognition will be better for words presented in the Choice condition than the Fixed condition, and this effect will be equally pronounced in both older and younger adults.
- Confidence ratings will be higher for words that were presented in the Choice condition than the Fixed condition for both older and younger adults.

## PARTICIPANTS

	Young Adults (18-30 years old)	Older Adults (65+ years old)	Exclusion Criteria <i>Medical and psychiatric conditions known to affect memory</i>
Recruitment Method	York University's Glendon Participant Pool	Advertisements in Zoomer magazine	<input type="checkbox"/> Diagnosis of depression and/or anxiety that is not currently being treated <input type="checkbox"/> Diagnosis of a learning disability <input type="checkbox"/> History of traumatic brain injury (TBI) <input type="checkbox"/> Major heart conditions (i.e., history of heart attacks, strokes, congestive heart failure) <input type="checkbox"/> Uncontrolled high blood pressure <input type="checkbox"/> Uncontrolled diabetes (Type I or Type II)
Sample Size	32 participants	32 participants	
Remuneration	Course credit: 1% bonus for PSYC 2510	\$20 CAD	Note: this will be measured via Qualtrics, prior to starting the encoding task

## MATERIALS

### Old English Vocabulary Words

- A total of 120 Old English words (e.g., *valinch*) along with their translations (e.g., *tube*) were selected
- Word norms were collected using University of Western Australia's MRC Psycholinguistic Database

### Questionnaires (administered via Qualtrics)

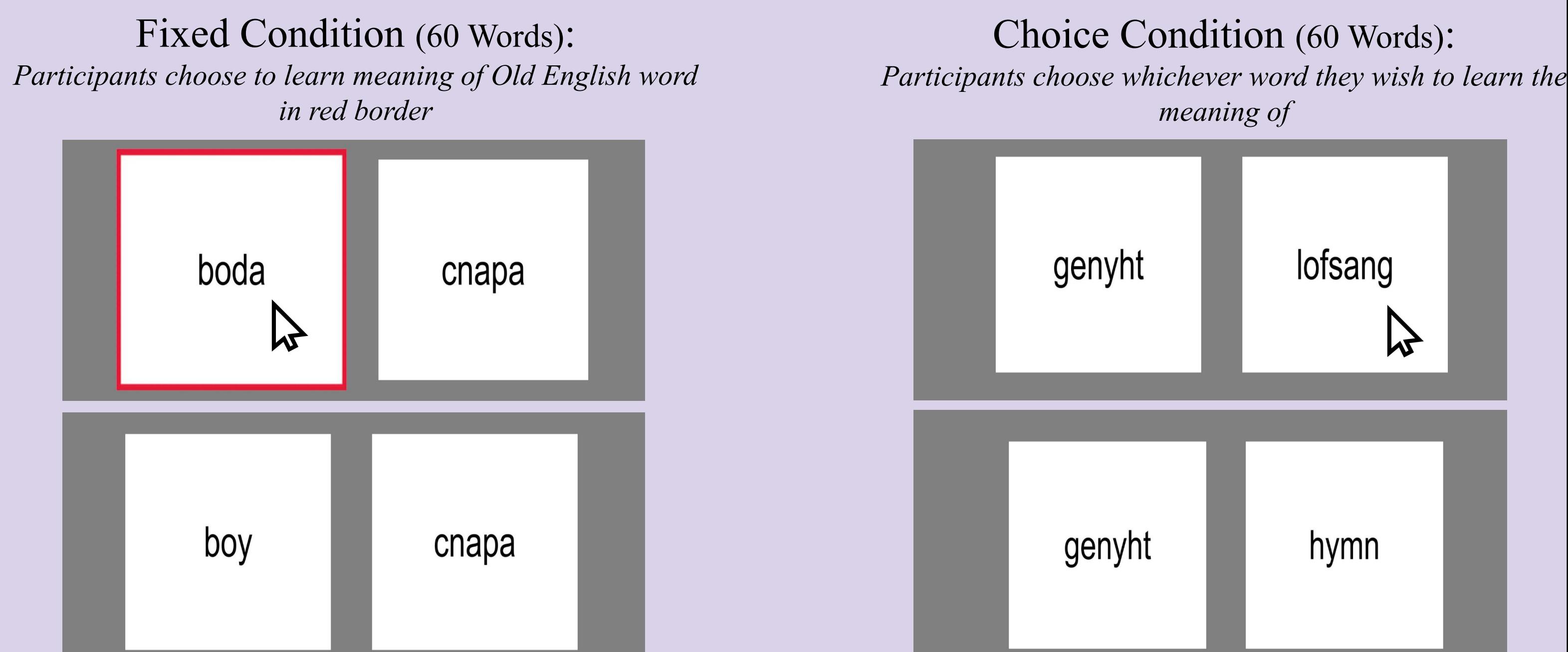
- The Shipley Institute of Living Scale (40-item)
  - *Vocabulary section only*
- The Need for Cognition Scale (18-item)
- The Curiosity and Exploration Inventory (10-item)

Tasks were administered via Pavlovia.org

## PROCEDURE

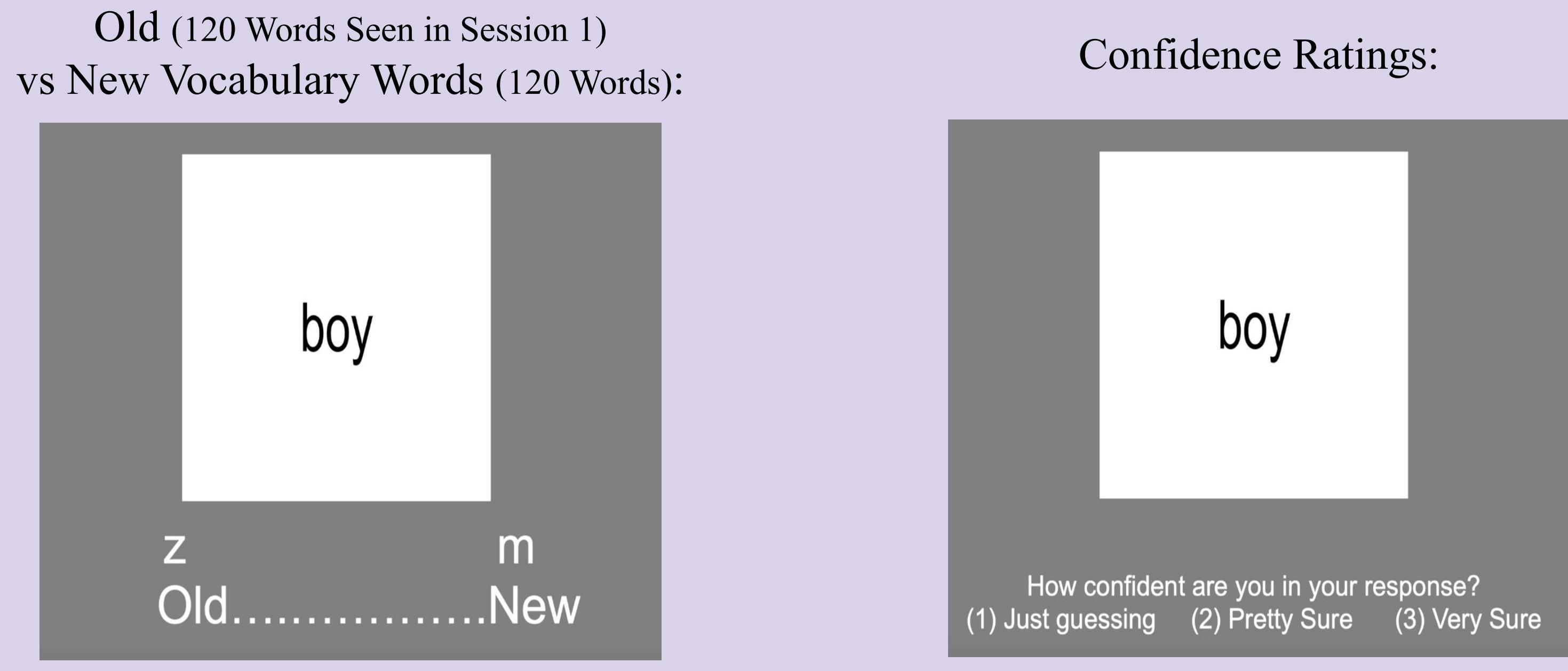
### Session 1: Encoding Task

**Qualtrics:** Consent form, Eligibility questionnaire, Link redirecting to Pavlovia  
**Pavlovia**



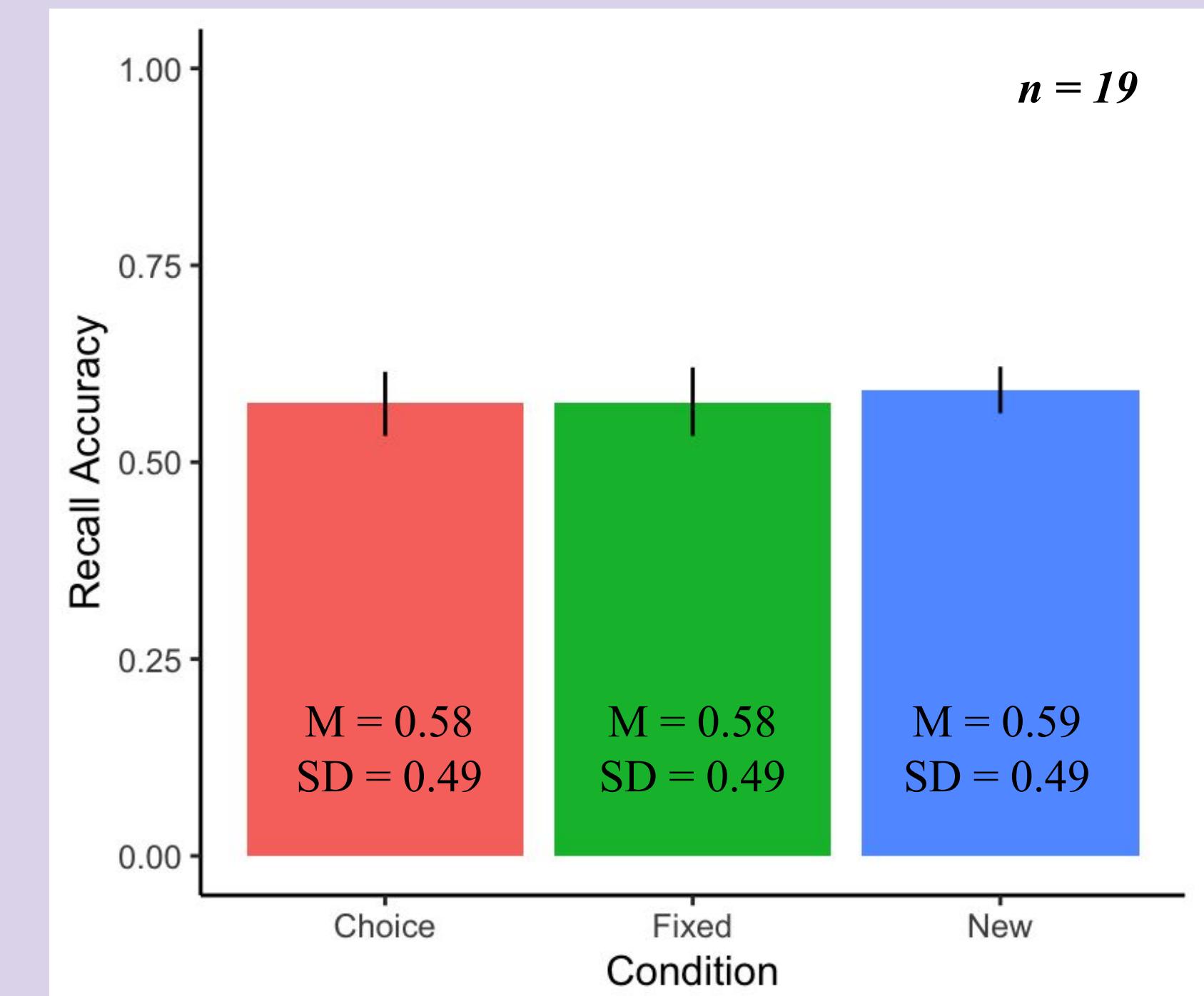
### Session 2: Recognition Task (24 Hours Later)

**Qualtrics:** Personality questionnaires Link redirecting to Pavlovia  
**Pavlovia**



### Debriefing via Qualtrics

## RESULTS (OLDER ADULTS)



Paired Samples Wilcoxon Test:  $t(539) = 0$ ,  $p = 1$

## PLANNED ANALYSES

	Analysis	Independent Variable(s)	Dependent Variable(s)
Recall Accuracy	Mixed ANOVA (2 X 2)	Age: Old and Young Condition: Choice and Fixed	Accuracy: Correct and Incorrect
Confidence Rating	ANOVA (2 X 2 X 2)	Age: Old and Young Condition: Choice and Fixed Accuracy: Correct and Incorrect	Confidence Rating: 1 (Very well), 2 (Pretty well), 3 (Just guessing)

## FUTURE IMPLICATIONS

Preliminary analyses for older adults ( $n = 19$ ) have not showed any difference between words recalled in the Fixed condition and the Choice condition

- Recruitment will continue until goal of  $N = 32$  is met, and full analyses will be conducted

If the findings are consistent with the proposed hypotheses, it may potentially be useful for developing appropriate and efficient programs to mitigate the effects of cognitive aging

- Agency may boost memory by spurring curiosity. Implementing programs to encourage curiosity and learning may be beneficial, as research suggests curiosity helps to maintain cognitive health as we age<sup>4</sup>

The COVID-19 pandemic has made it a mandatory safety measure for many to socially isolate

- Loneliness and lack of participation in social activities has been shown to increase risk of cognitive decline<sup>5</sup>
- Providing resources to engage in autonomy-enhancing activities in a safe and secure way and increasing motivation to continue to learn through hobbies may mitigate the effects of cognitive aging.

## REFERENCES

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