

Are older adults less strategic in discourse processing?: Evidence from pitch accents

Scott H. Fraundorf, Duane G. Watson, and Aaron S. Benjamin

University of Illinois at Urbana-Champaign



INTRODUCTION

How does episodic memory (e.g., for a discourse) change over the lifespan?

- > **Less** selective¹
- > **More** selective² (↓ resources, ↑ experience)

New test: Effect of **pitch accenting** on memory

- > Indicator of discourse status / importance

DISCOURSE MEMORY TASK³

STUDY: Hear 48 stories with **2 contrast sets**

"Both the British and the French biologists were searching Malaysia and Indonesia for the endangered monkeys. Finally, the British spotted one of the monkeys in Malaysia and planted a radio tag on it."

Contrast Set A:
"British" or "French"

Contrast Set B:
"Malaysia" or "Indonesia"

Orthogonally vary pitch accent on each referent:
Presentational (**H*** in ToBI) or **contrastive (L+H*)**

TEST: (30 min later)

See **entire** story presented visually with critical words missing:

Both the British and the French biologists were searching Malaysia and Indonesia for the endangered monkeys. Finally, the ___(A)___ spotted one of the monkeys in ___(B)___ and planted a radio tag on it.

Make forced choice memory response:

- (A) BRITISH or FRENCH?
- (B) MALAYSIA or INDONESIA?

ANALYSIS

Analyze age differences in two **main effects on memory:**

- > Accent on **this** contrast set
» **Accent Benefit** to memory
- > Accent on **other** set in story
» **Other Accent Cost** to memory

e.g. memory for *British*

Contrastive accent on *British*?

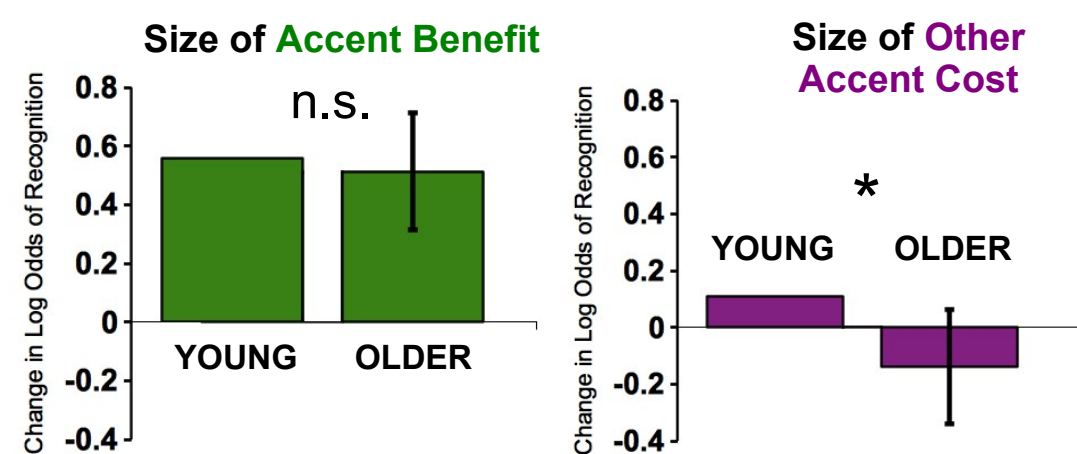
Contrastive accent on *Malaysia*?

ACKNOWLEDGEMENTS & REFERENCES

See back.

Email: sfraund2@illinois.edu

EXPERIMENT 1: YOUNG VS. OLDER ADULTS



Groups show **equal memory benefit** from **contrastive accent** on **target**

Only older adults show **memory cost** if **contrastive accent elsewhere**

Older adults sensitive to pitch accents!

- > Similar benefits from accented target
- > Cost when other information accented

EXPERIMENT 2: YOUNG ADULTS

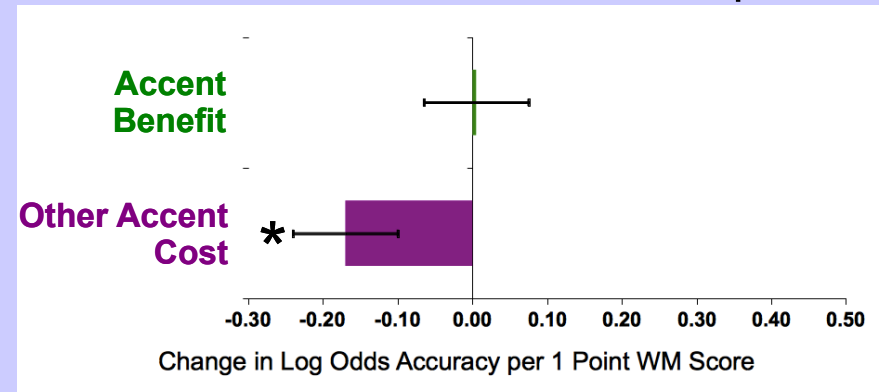
Why do older adults show **Other Accent Cost**?

- > ↓ **resources**, only remember important info.?
» Predict **cost** in limited-resource young adults
- > ↑ **linguistic knowledge**, more strategic?
» No such **cost** in limited-resource young adults

Test young adults with:

- > Discourse memory task
- > 4 complex span tasks (see back)

MULTI-LEVEL MODEL: Effect of span score on:



Low-span young adults resemble older adults:

- > **No change** in **Accent Benefit** to memory
 - > **Show** the **Other Accent Cost** in memory
- Supports ↓ processing resource account

CONCLUSION

- > Older adults may only remember most important details due to limited resources
- > But at least as sensitive to pitch accents as young adults!

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Additional Information



PARTICIPANTS

EXPERIMENT 1

48 young adults (age 18 to 22)
48 older adults (age 60 to 80)

EXPERIMENT 2

56 young adults

SPAN TASKS

Loaded reading span⁴

- > Span length: 2 to 7

Loaded listening span⁴

- > Span length: 2 to 7

Alphabet span⁵

- > Recall words in alphabetical order
- > Span length: 2 to 7

Subtract 2 span⁵

- > Recall digits while subtracting 2 from each
- > Span length: 2 to 8

2 trials of each span length, in random order⁶

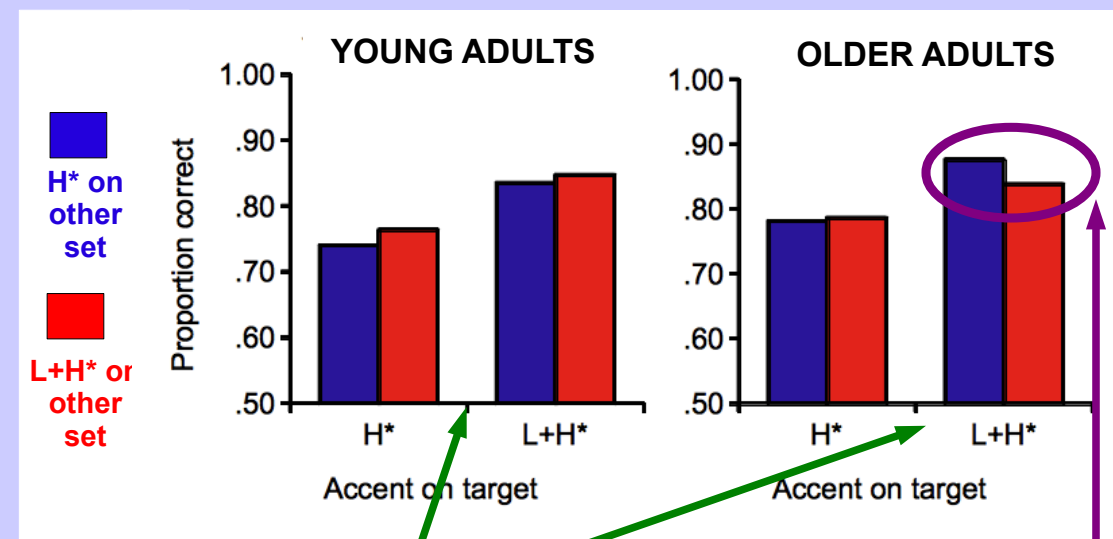
Score: Number of trials correctly completed
(partial credit included)⁶

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Email: sfraund2@illinois.edu

EXPERIMENT 1: RAW PERFORMANCE



Groups show **equal** **memory benefit** from **contrastive accent** on **target**

Only older adults show **memory cost** if **contrastive accent** **elsewhere**

- Older adults sensitive to pitch accents!
- > Similar benefits from accented target
 - > Cost when other information accented

REFERENCES

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