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Error Correction in Older and Younger Adults

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Background

Hypercorrection Effect

- Confidently-held errors are more likely to be corrected after feedback than errors held with low levels of confidence (Butterfield & Metcalfe, 2001)

Prior Knowledge and Error Correction

- Prior knowledge is a better predictor of error correction than subjective confidence for both younger and older adults (Sitzman et al., 2015)
- Older adults may revert back to incorrect prior knowledge after a delay despite correcting errors on an immediate test (Okun & Rice, 1997)

Research Question

- Do participants forget their initial error after it has been corrected or do they remember their initial incorrect response?
- How does memory for the original error change over time?

Study #2

Participants:

6 Minutes: 21 younger adults
1 Week: 13 younger adults

Materials:

120 General Knowledge questions (easy, medium, & hard)

Judgments:

Confidence judgments: 0 (not confident at all) – 100 (Completely confident)

Knew-it-all-along judgment (KIAA): 1 (that's new to me) – 7 (I knew that all along)

Test 1

- Answer question
- Rate Confidence
- Receive feedback (correct answer) (5 sec. each)
- Make a knew-it-all-along judgment (repeat for all 120 questions)

Retention Interval

6 minutes or 1 week

Test 2

- Answer questions from test 1
- Rate confidence
- Indicate whether they answered correctly on Test 1
- Recall initial answer

Participants:

56 Older adults
69 Younger adults

Materials:

119 General Knowledge questions (easy, medium, & hard)

Judgments:

Confidence judgments: 0 (not confident at all) – 100 (Completely confident)

Knew-it-all-along judgment (KIAA): 1 (that's new to me) – 7 (I knew that all along)

Test 1

- Answer question (self paced)
- Rate Confidence (self paced)
- Receive feedback (correct answer) (5 sec. each)
- Make a knew-it-all-along judgment (self paced) (repeat for all 119 questions)

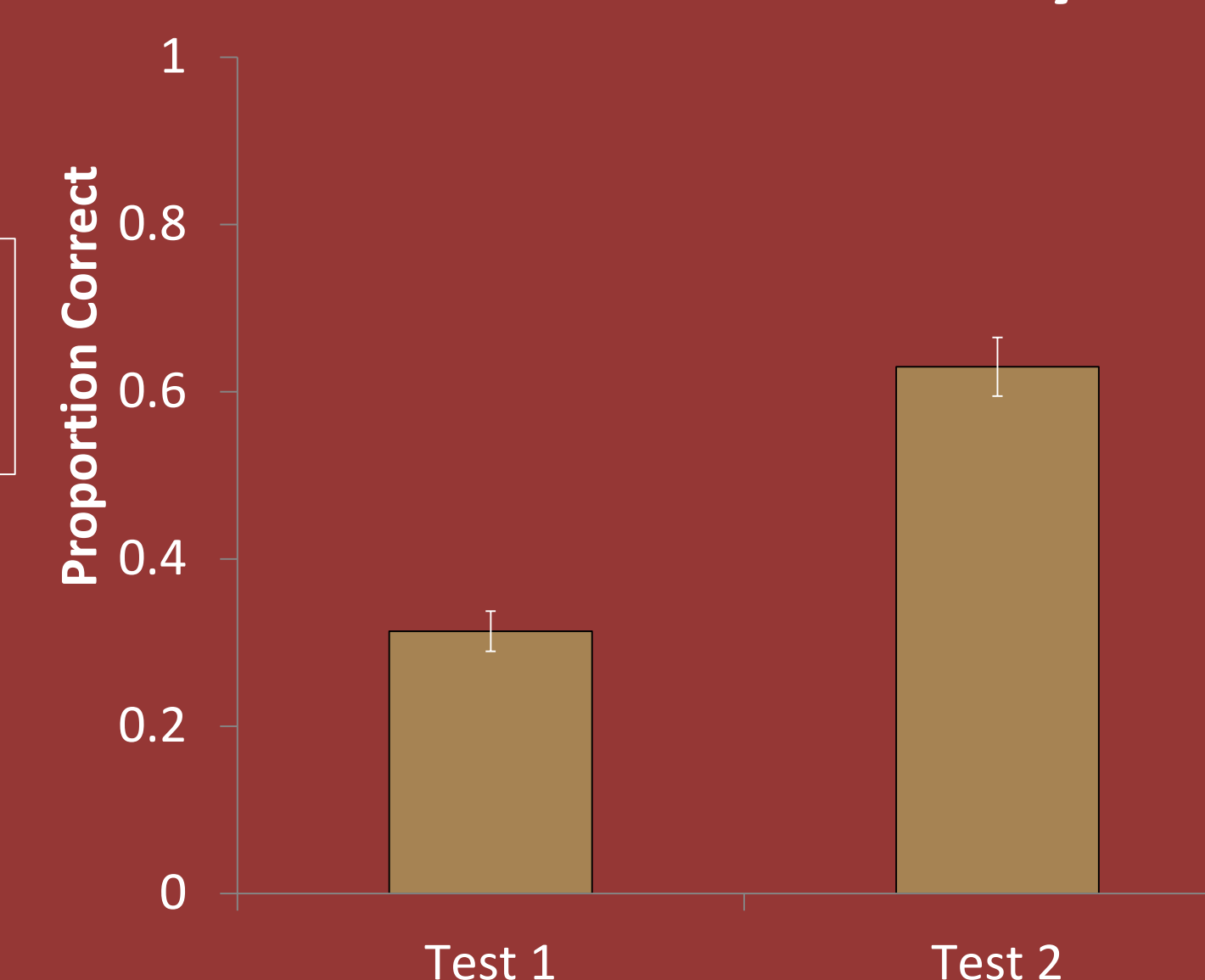
Retention Interval

6 minutes or 1 week

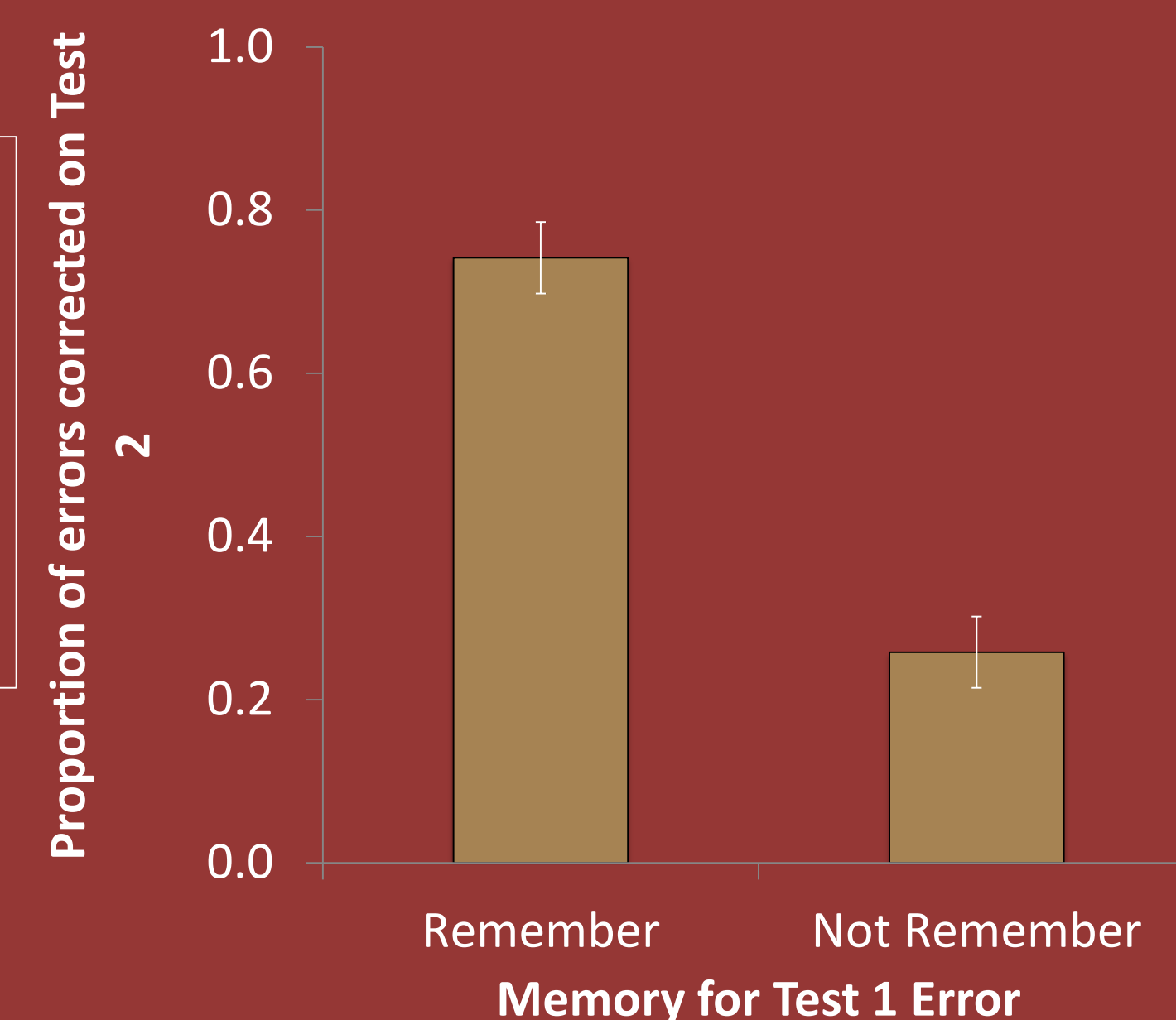
Test 2

- Answer questions from test 1
- Rate confidence

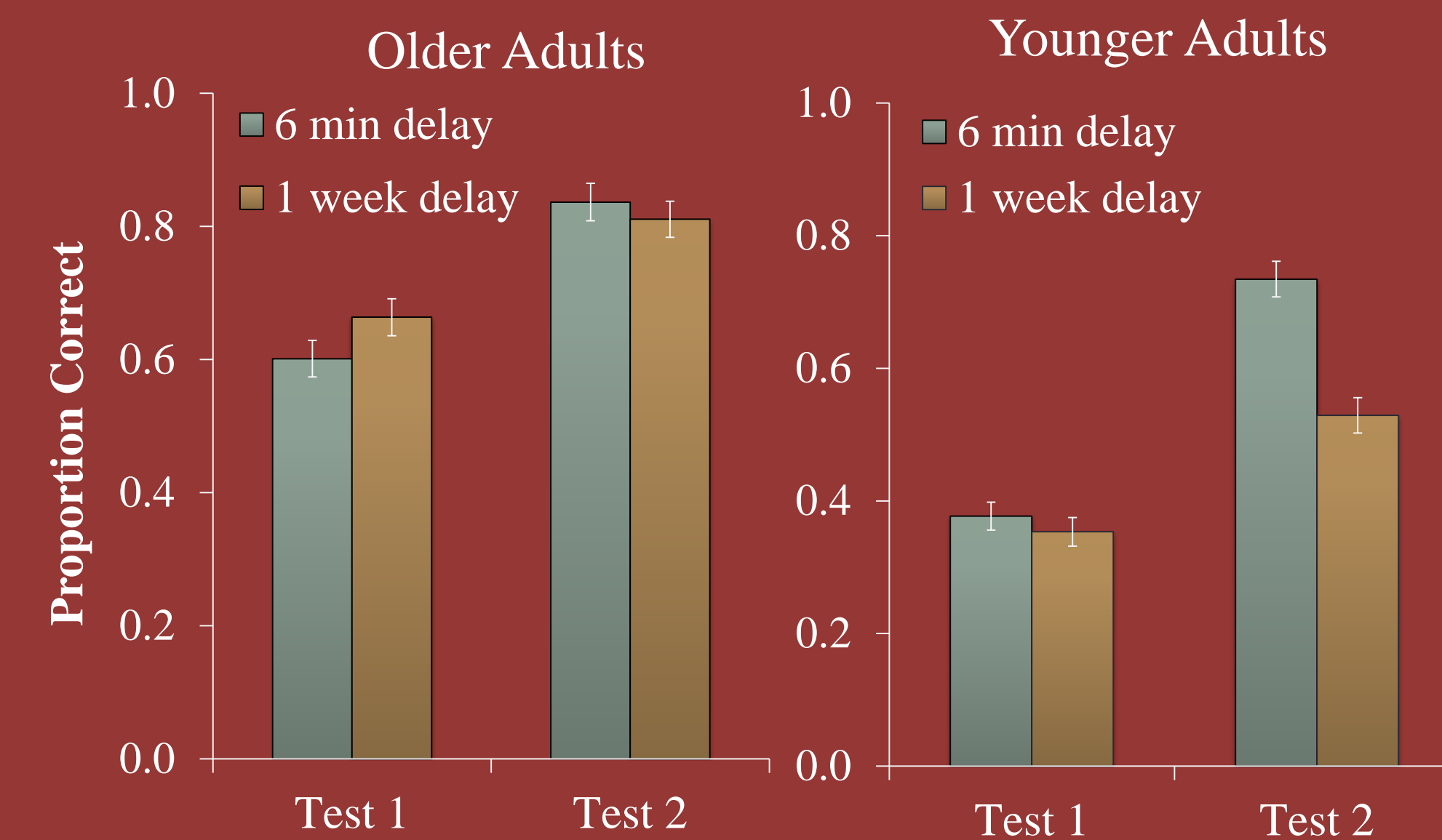
Proportion of errors correct responses on Test 1 and Test 2



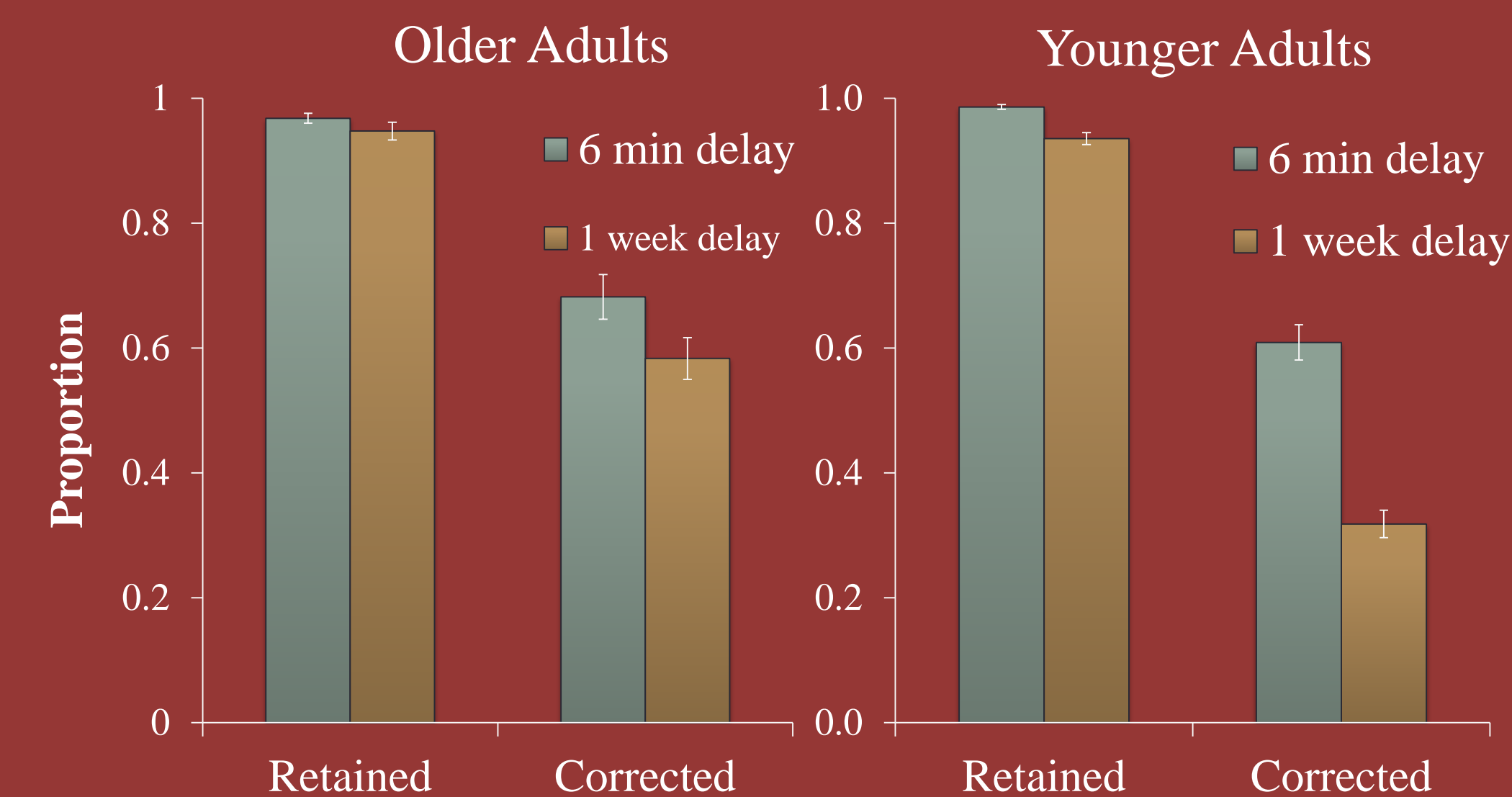
Proportion of errors corrected on Test 2 based on whether or not people remembered their initial error on Test 1



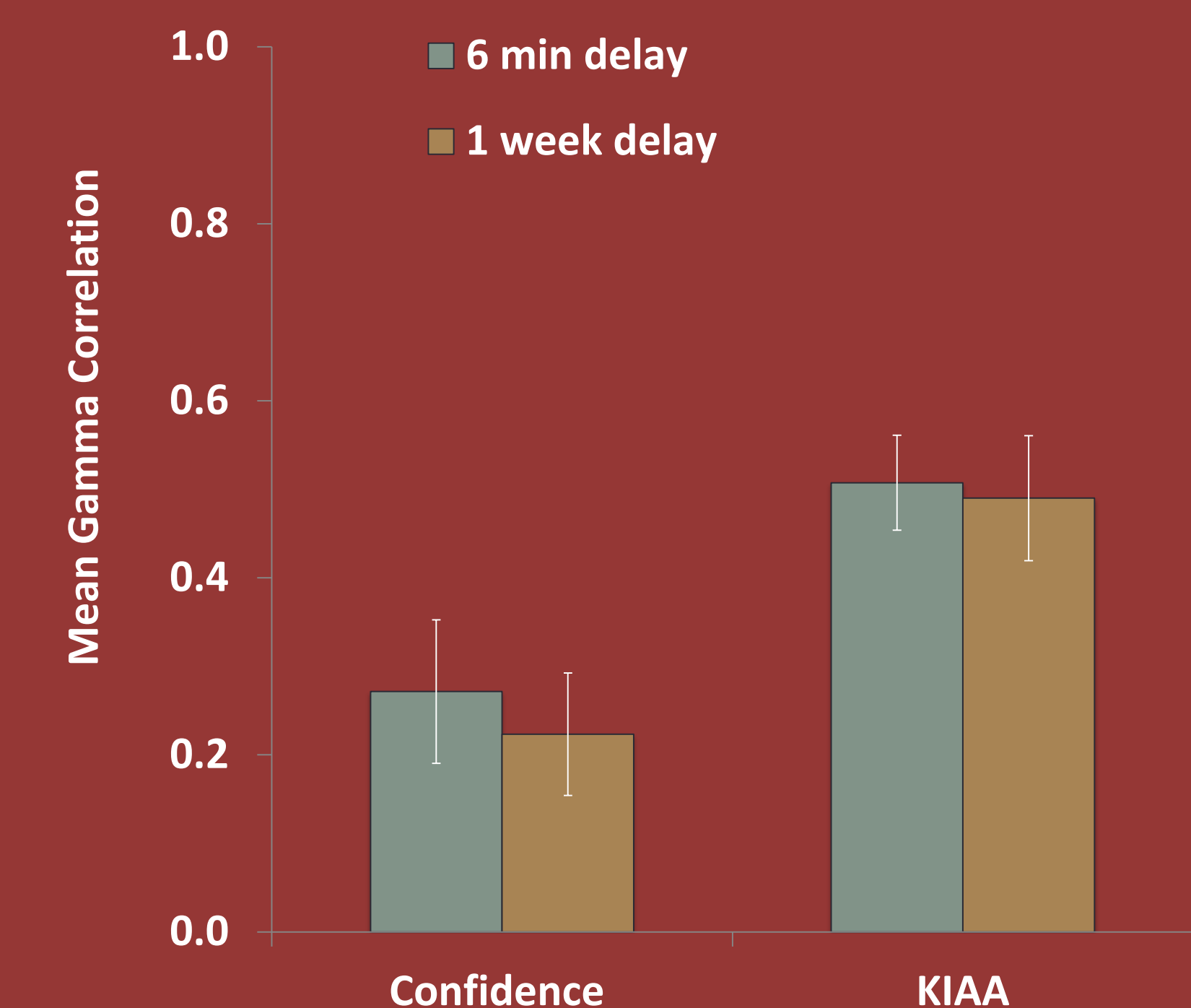
Proportion correct on Test 1 and Test 2



Proportion correct on Test 2 based on Test 1



Gamma correlations for errors on Test 1 and accuracy on Test 2



Discussion

- Older adults largely maintain error correction over a delay, a short delay, and a 1 week delay
 - Younger adults retain fewer corrected errors after a 1-week delay
- Prior knowledge is more strongly related to error correction than confidence
 - Prior knowledge did not impair older adults from maintaining corrected errors
- Out of all the errors corrected younger adults remember their initial incorrect response seventy five percent of the time in the six minute condition
 - Memory for initial errors decreased in the one week condition
- Future research will explore older adults memory for their incorrect responses

References

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