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Background

Previous research: older adults' slower processing may be a strategy to avoid potential error (based on evidence from non-linguistic tasks).

Goal: to test whether the strategic-slowness hypothesis also holds for linguistic processing, which has not been done before.
(the only exception — Brebion, 2001)

Method

Participants

Two age groups:
18-24 & **60-81**
years old younger adults years old older adults

Younger adults (n = 23, age: M = 19.8, SD = 1.96)
Older adults (n = 23, age: M = 67, SD = 6.36)

- Native Russian speakers
- Without neurological and psychiatric disorders
- Without reading/speech impairment
- With normal or corrected vision

Design

task:
sentence comprehension

- Word by word sentence representation (change by pressing the space bar)
- A content question after each sentence (two response options selected by button press)
- A fixation cross (+) before each sentence



Word by word
sentence
representation

Stimuli information:

- 3 sets of 100 sentences
- Each set was pseudo-randomized in 5 different ways
- Different sets of stimuli across the 3 sessions of each participant
- Types of sentences:
 - Sentences with a participial clause
 - Sentences with reflexive pronouns
 - Sentences with a relative clause
 - Sentences with OVS and SVO word orders
 - Fillers

day 1:
self-paced reading

day 2:
rapid serial visual
presentation

part A:
words presented at the
median speed of self-
paced reading ('average')

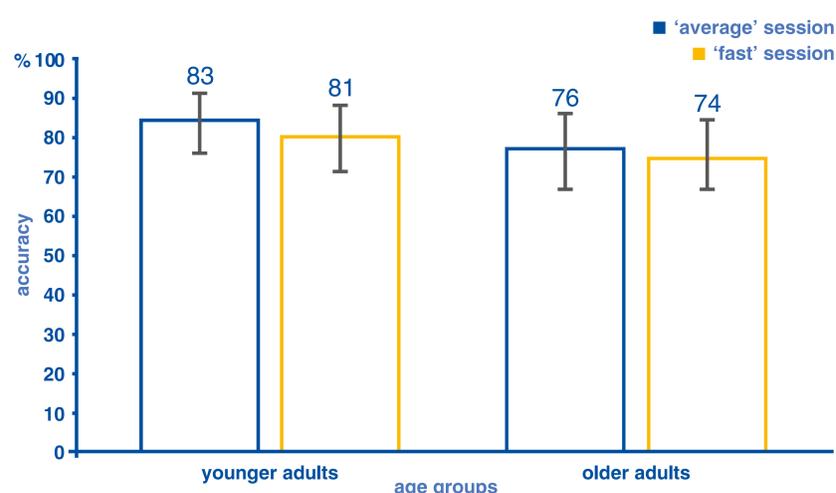
part B:
words presented twice as
fast ('fast')

Hypothesis

In self-paced reading, older adults will strategically read the sentences slower than possible in order to avoid potential errors, while younger adults will perform close to the maximum possible speed.

Thus, if we increase the sentence presentation speed, the older adults' comprehension accuracy will decrease less than younger adults'

Results



- Significant difference in accuracy between younger and older adults across all three sessions SPR: $t(44) = -2.25, p = .029$, 'average' session: $t(44) = -2.65, p = .011$, 'fast' session: $t(44) = -2.71, p = .009$
- Faster SPR speed in younger adults $t(44) = +6.33, p < 0.0001$
- Different hierarchy of sentence type complexity in the age groups:



No significant difference between accuracy decline in the 'fast' session compared to 'average' session in younger than older adults $t(44) = +0.05, p = .96$

Discussion

Younger adults' accuracy decline with a presentation-speed increase was non-significantly greater than older adults'.

➔ No evidence of strategic slowing in linguistic processing in older adults.

Reasons

- 1) A lower level of stereotyping of the linguistic area.
- 2) Participants of both groups may be more concentrated during the 'fast' session
➔ accuracy increases in both groups.

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