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Collaborative learning in healthy ageing with familiar and unfamiliar partners.

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Introduction

• Learning and memory abilities decline in healthy ageing1. Learning collaboratively with a familiar partner may improve older adults’ learning performance.2

• We tested familiar and unfamiliar pairs to see if familiarity affects performance, or if collaboration alone improves older adults’ performance.

• Investigated whether better social abilities underlie better learning outcomes.

Method

• Younger (18-30) and Older (60+) participants (n=48) completed the task with a familiar partner and a stranger.

• Each pair had a Director and Matcher, sitting opposite each other separated by a short barrier, each with 12 abstract tangram shapes.

• The Directors’ card order was communicated to the Matcher. Pairs create and learn referential labels for shapes, making interaction more efficient over time.

• Performance measured over 9 trials (3x3 bins).

• Also completed Memory, Executive and Social Cognition measures.

Results

• Analysis using linear mixed effect models showed learning effects in younger and older adults.

• Older initially took longer to complete than younger. There was a main effect of age (β = -0.82, SE = 0.11, t = -7.25), trial (β = -0.63, SE = 0.03, t = 19.34), and a trial by age interaction, with trial having a greater effect on older than younger participants particularly in later trials (β = 0.14, SE = 0.04, t = 2.99 (Figure 3))

• Over trials, participants used fewer words as they learned their co-created referential labels for each shape, which enabled more efficient communication. There was a main effect of age (Directors (β=-0.53, SE = 0.19, t = -3.04), Matchers (β=-0.61, SE = 0.25, t = -3.26)), and Trial (Directors (β=0.69, SE = 0.05, t = -13.32), Matchers (β=-0.95, SE = 0.07, t =-12.68) (Figure 4))


Conclusions

• Older adults achieve the same level of performance as younger adults, but only over multiple trials.

• Collaborating with a familiar partner does not improve performance compared with an unfamiliar partner.

• Performance on Social Cognition measures predicts collaborative learning efficiency in early trials.

References


Further information

We are now using a computerised version of this paradigm to compare younger and older adults’ performance and interaction style with natural and synthetic speech systems.

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