Over-imitation in Older Adults

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INTRODUCTION

What is over-imitation?

A **social learning phenomenon**, where human observers copy all the actions of a demonstrator in a goal-directed action sequence, even when some of those actions are unnecessary to goal achievement[1].

This mechanism can be useful when **learning new skills**, enabling humans to quickly acquire as much information as possible from the social world[2].

Research has shown middle-aged adults display higher levels of fidelity to irrelevant actions than children[3], suggesting over-imitation may be **progressive through the lifespan**. However, this has never been investigated in older adults[4], leading to uncertainty as to whether over-imitation continues into older age and if so, what function it serves.

AIMS AND HYPOTHESIS

This study aimed to address the gap in literature by expanding over-imitation research into older adults, an understudied population.

METHODS

1. 27 younger and 27 older adults viewed **video demonstrations** of an individual performing an action sequence including **causally relevant and irrelevant actions**, to gain a reward from inside a transparent puzzle box (figure 2).

2. Participants then **'had a go themselves',** performing three trials.

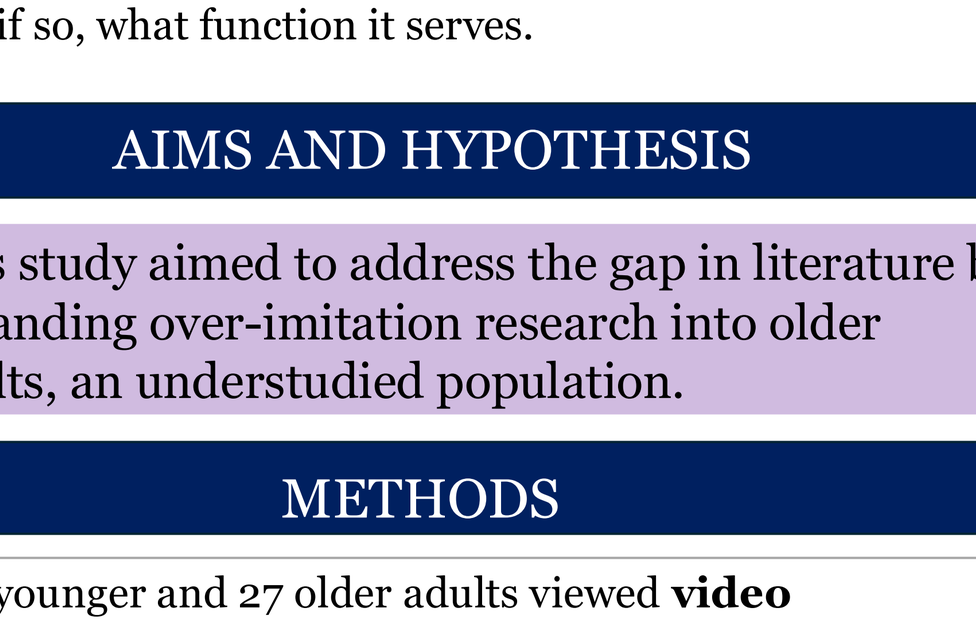


Figure 1. *Demonstrator performing action sequence*

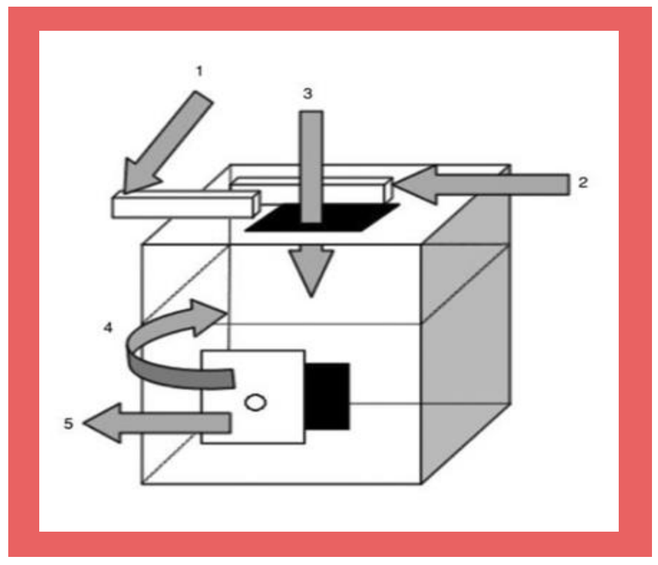
3. **Two questions** were asked about their performance and what they believed the goal was.

4. A **cognitive assessment** (M-ACE) was used to screen for signs of mild cognitive impairment. All participants included in the results achieved the assigned threshold (>21).

PUZZLE BOX

Figure 2. Depiction of the 'puzzle box'.

Illustration from McGuigan et al. (2011).



RESULTS

Older adults had significantly higher levels of fidelity to irrelevant actions (m = .73).

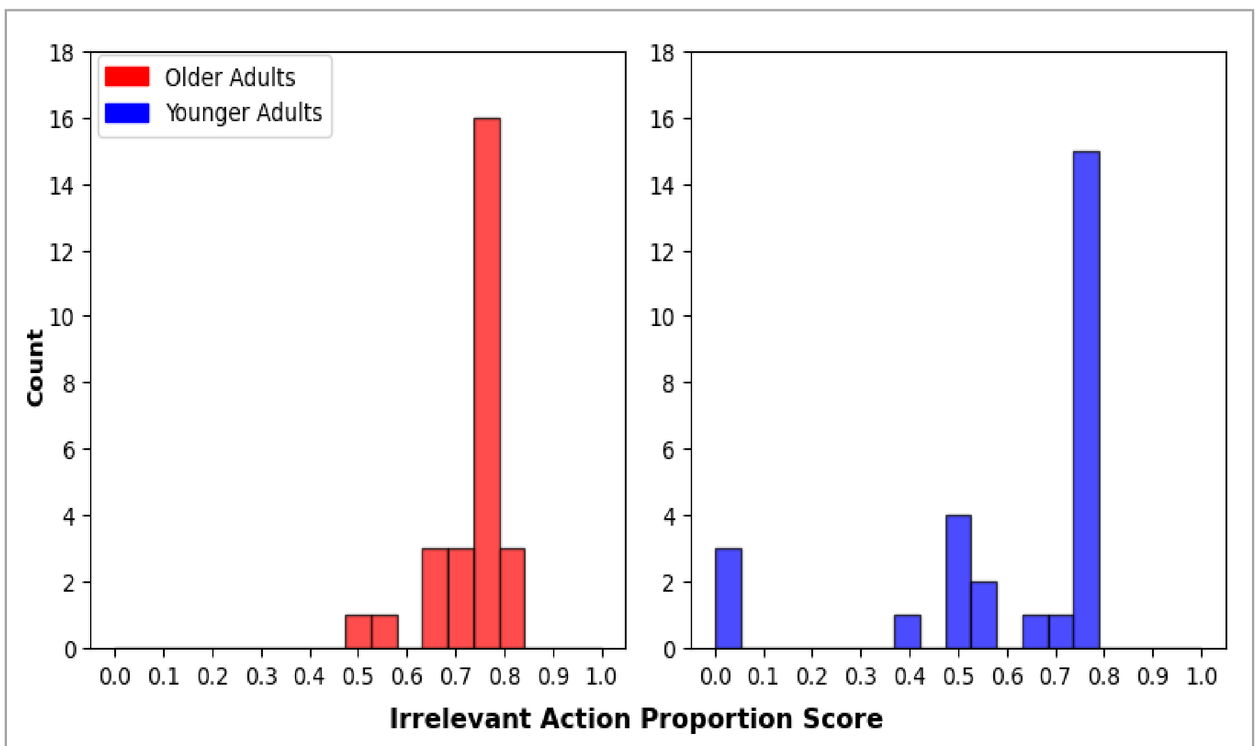


Figure 3. *Histogram of the proportion of irrelevant tool insertions made by older and younger adults*

Further, in line with previous research, **younger adults continued to be faithful imitators** (m = .60).

CONCLUSION

These findings suggest over-imitation continues to be a powerful learning strategy used through the full human lifespan.

REFERENCES

[1]Kenward, B., Karlsson, M., & Persson, J. (2011). *Over-imitation is better explained by norm learning than by distorted causal learning*. Proceedings of the Royal Society B: Biological Sciences, 278(1709), 1239-1246.

2McGuigan, N. (2012). *The role of transmission biases in the cultural diffusion of irrelevant actions*. Journal of Comparative Psychology, 126(2), 150–160. https://doi.org/10.1037/a0025525

[3]McGuigan, N., Makinson, J., & Whiten, A. (2011). *From over-imitation to super-copying: Adults imitate causally irrelevant aspects of tool use with higher fidelity than young children*. British Journal of Psychology, 102(1), 1-18.

[4]Hoehl, S., Keupp, S., Schleihauf, H., McGuigan, N., Buttelmann, D., & Whiten, A. (2019). *'Overimitation': A review and appraisal of a decade of research*. Developmental Review, 51, 90-108.

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