Attention and Biological Motion in Healthy Ageing

Hannah C. Agnew, Louise H. Phillips and Karin S. Pilz
School of Psychology, University of Aberdeen, Scotland, UK
hannah.agnew@abdn.ac.uk

INTRODUCTION

- Biological motion perception and attentional abilities have been shown to deteriorate with age (Norman et al., 2005; Billino et al., 2009; Pilz et al., 2010; Insch et al., 2012).
- A direct link has been found between attentional abilities and performance on biological motion tasks (Thornton, Rensink & Shiffrar, 2003; Cavanagh, Labianca & Thornton, 2001; Chandrasekaran et al., 2010).
- It is not known whether there is a direct link between age-related deficits in biological motion processing and attention.

STUDY AIM

To investigate whether age-related decline in biological motion perception is mediated by impaired attentional abilities.

BASELINE TASK

- Participants: 18 Younger (M=25;22-31) & 13 Older (M=66;59-73) adults.
- Left/rightward facing point-light actions.

Stimulus Presentation (200ms)

Task: What direction is the point-light action facing?

BIOMOTION TASK

Left/rightward facing point-light walkers.

Target Detection
Set Size (2,3,4)

Stimulus Presentation (5sec)

Task: Is the target walker present or absent?

BIOMOTION TASK

YOUNGER
OLDER

Percentage Accuracy [%]

0 50 100

Younger Older

ATTENTION TASKS

1) Visual Search Task

2) Stroop Task

3) Rapid Serial Visual Presentation

4) Spatial Cueing Task

1. Feature Detection Set Size (4,8,16)

Task: Is the target present or absent?

2. Green Blue Red

3. Congruent Incongruent Neutral

Task: Name the ink colour of the words

4. Dog Desk Bottle

Task: Identify the target numbers.

5. Reaction Times (Sec)

6. Set Size

7. YOUNGER OLDER

8. Other effect of age ***

9. Main effect of congruency ***

10. PA x set size x age interaction *

DISCUSSION

- Overall, older adults were slower and less accurate across all tasks compared to younger adults.
- Our results revealed large individual differences, especially within the older age group.
- The rapid serial visual presentation task proved problematic and yielded confusing and unexpected results.
- Outlook: We will correlate performance across all tasks to investigate whether and how older adults decreased biological motion performance is related to their decreased attentional abilities.

REFERENCES


p <0.05 * p <0.01 ** p <0.001 ***