# The influence of planning and interruptions on multitasking assessment in healthy aging

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Sarah E. MacPherson & Brandon Gautier

*Human Cognitive Neuroscience, Department of Psychology, University of Edinburgh, UK*
*Centre for Cognitive Ageing and Cognitive Epidemiology, University of Edinburgh, Edinburgh, UK*

sarah.macpherson@ed.ac.uk

## Introduction

- In neuropsychological assessment, measures which reflect the demands imposed in everyday life are thought to be better predictors of an individual's performance in daily life (Chaytor & Schmitter-Edgecombe, 2003).
- Performance on everyday tasks such as preparing a meal or shopping is typically assessed in clinical and research settings using multitasking paradigms.
- In these paradigms, individuals attempt several tasks within a limited time period by switching between the tasks and planning the best order to perform them.
- While multitasking is thought to decline in healthy aging (Kliegel et al., 2000; Levine et al., 1998), how it might be improved remains poorly understood.

## Aim

- We present two experiments investigating the influence of planning (Experiment 1) and unexpected interruptions (Experiment 2) on multitasking in healthy aging.

## Experiment 1 (Plan versus No Plan)

- Participants

| | | Age | Education |
|---|---|---|---|
| Younger (n = 16) | Plan | 25.44 (4.16) | 16.69 (2.50) |
| (n = 16) | No Plan | 22.88 (3.26) | 16.63 (2.06) |
| Older (n = 15) | Plan | 70.67 (4.50) | 14.40 (2.64) |
| (n = 15) | No Plan | 72.20 (4.90) | 14.80 (2.93) |

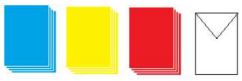
- Greenwich Test

A modified version of the **Greenwich Test** will be used to assess multitasking ability (Law et al., 2004).

- 10 minutes to score as many points as possible
- **Red** items worth 10 points. Other colours worth 1 point.

Four sub-tasks

**Envelope Task**



Fold sheets and place in envelopes (One sheet per envelope)

**Beads Task**

Thread beads onto a piece of string. (Replicate the example)

**Telephone Task**

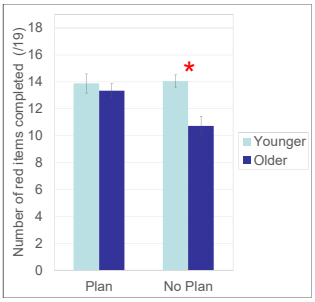

Look up phone numbers corresponding to names on a list

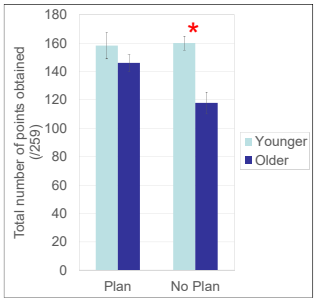
**Brick Construction Task**

Replicate structure using Lego™ bricks (Each layer is a uniform colour)

- Individuals in "plan" condition will get 3 minutes to write a plan

- Results




## Experiment 2 (Interruption versus No Interruption)

- Participants

| | | Age | Education |
|---|---|---|---|
| Younger (n = 9) | Interrupt | 26.33 (4.64) | 16.60 (2.46) |
| (n = 10) | No Interrupt | 27.50 (5.84) | 16.11 (1.45) |
| Older (n = 12) | Interrupt | 66.83 (4.93) | 15.18 (3.28) |
| (n = 10) | No Interrupt | 66.50 (5.87) | 13.50 (3.14) |

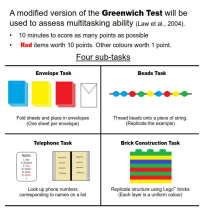
- **Interruption condition**:

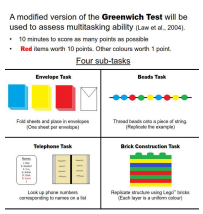
Silly Sentences (Baddeley et al., 1985)

"Bananas are often made by carpenters."
*True/False?*

"Flies are insects."
*True/False?*

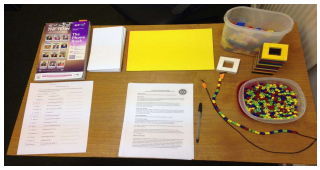
"Lions are eaten in salads."
*True/False?*

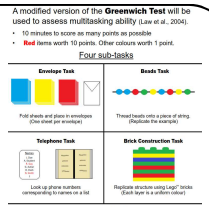




**7 minutes** → **1 minute** → **3 minutes**

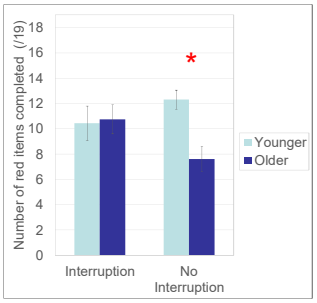
- **No Interruption condition**:

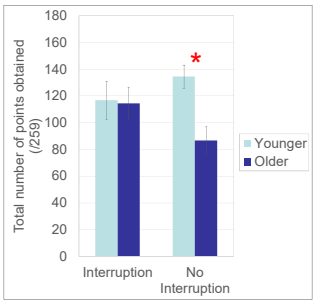




**10 minutes**

- Results




## Discussion

- These findings suggest that older adults' multitasking is improved when encouraged to formulate a plan or take a break mid-task, allowing them to focus and refocus on the task at hand.
- The findings from Experiment 2 are in line with multitasking studies involving individuals with traumatic brain injury or stroke who have been found to be resistant to interruptions (Law et al., 2004) or even improve in their performance (Manly et al., 2002).

## References

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