4th International Conference on Prospective Memory, Naples, 26-30 May, 2014

How frequently do you forget in everyday life?

A diary study of prospective and retrospective memory errors in young and old healthy adults

Andrew Laughland & Lia Kvavilashvili

University of Hertfordshire, UK

Memory Failures in Everyday life?

- **Important for Older Adults**
  - **Anecdotal evidence**
  - **Evidence from memory research**

Evidence from self-report questionnaires
CFQ, EMQ and PMRQ

Your most recent Memory Failure?

(Kvavilashvili et al., 2009)

	PM	RM	Other	Total
Young	**53%** (35)	**35%** (23)	**12%** (8)	100% **(66)**
61-70	**18%** (13)	**54%** (38)	**28%** (20)	100% **(71)**
71-80	**19%** (12)	**55%** (36)	**26%** (17)	100% **(65)**

$\chi^2 = 26.13$, df = 4, N=202, $p < .0005$

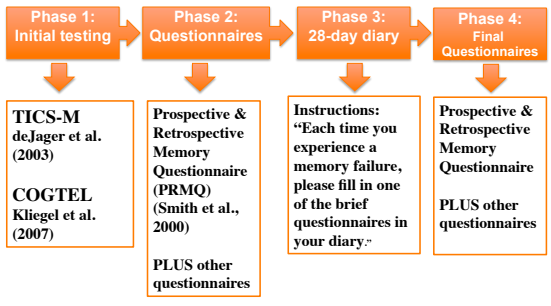
Aims of the present study

To conduct a systematic investigation of everyday memory errors in young and old using a diary method

Predictions 1:
If results of self-report questionnaires are valid, then no age effects in the number of errors recorded

Predictions 2:
Young adults will record more PM errors and old adults more RM errors

Method: Tasks and stages



METHOD - Participants

	YOUNG N=12	OLD N=18	F (1,28)	p-value	Partial eta²
Age	**41.33**	**78.39**			
SD	9.46	5.24			
Range	24-59	66-87			
Years Education	**15.50**	**13.56**	4.55	.04	.14
SD	1.83	2.77			
Range	13-18	9-18			
TICS-M	**30.42**	**27.50**	4.80	.04	.15
SD	*2.61*	*4.08*			
Range	*27-34*	*21-37*			

RESULTS- COGTEL (Kliegel et al., 2007)

	YOUNG N=12	OLD N=18	F (1,28)	p-value	Partial eta²
COGTEL -Total	41.93	33.06	6.60	.02	.19
Cued Recall -ST	6.26	4.61	6.26	.02	.18
Cued Recall-LT	6.00	4.67	3.90	.06	.12
Digit Span	7.67	8.33	.62	.44	.02
Verbal Fluency	37.27	29.78	5.04	.03	.15
Letter Fluency	17.00	13.94	1.91	.18	.06
Categ. fluency	21.08	15.83	11.31	.002	.29

RESULTS – COGTEL (PM task)

Instructions: "Please, interrupt me when I ask you to list as many professions and jobs as you can and tell me your date of birth"

PM performance

YOUNG – 100%
OLD – 50%

χ^2 = 8.57, p=.003, effect size-.29

INTERIM SUMMARY

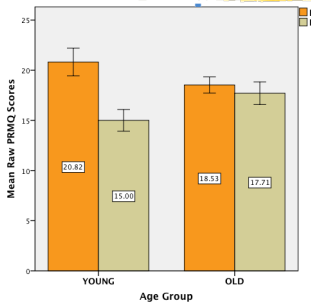
Typical ageing pattern for laboratory cognitive tasks

Negative age effect on cued recall

Negative age effect on 2 verbal fluency tasks

Negative age effect on an event-based PM task

RESULTS- PRMQ (Smith, Della Salla, Logie & Maylor, 2000)



Sig. Interaction – F(1, 26)=12.10, p=.002

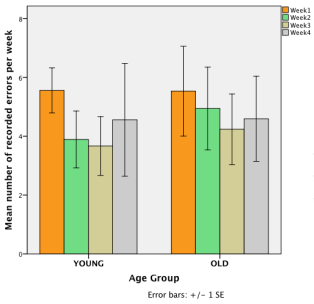
YOUNG – PM>RM
OLD – PM=RM

Main effect of AGE – NS (F<1)

RESULTS – 28 day Diary

	YOUNG N=9	OLD N=17	F (1,28)	p-value	Partial eta²
No of Recorded Errors	160	328			
Min – Max	6 – 47	1 – 71			
MEAN *SD*	17.78 *12.14*	19.29 *21.68*	.04	.85	.002

RESULTS – No of errors per week



2 (group) x 4 (weeks) Mixed ANOVA

Main effect of Week – F(1,24)=6.31, p=.02

Week1 > Week2 (p=.04)
Week1 >Week3 (p=.003)
Week 1> Week 4 (p=.025)

RESULTS – Type of errors (n=488)

Attentional or Absent-minded (AB) errors (n=94)

Prospective Memory (PM) failures (n=188)

Retrospective Memory (RM) failures (n=206)

Inter-rater agreement was high – 95%

Types of PM failures

- forgetting to do something a few seconds/minutes later
- Forgetting to do something more longer term
- leaving things behind
- forgetting to do actions in preparation for upcoming tasks

Types of RM errors

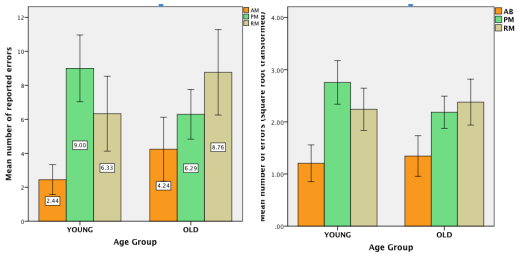
- Forgetting names and words (a predominant error)
- forgetting items from shopping lists
- forgetting facts, locations
- forgetting that actions have already been completed
- forgetting personal events (what happened, etc.)

Type of Absent-Minded (AB) errors

- temporary losing content of intention - Why am I here?
- action swap: doing one thing instead of another
- not finishing a started sequence
- omissions: missing a step
- commission errors: doing the same action again
- misplacing things
- losing track of sequence (of sub-tasks or operations), or temporal sequence
- disorientation: forgetting day, date or time
- distraction: zoning out while reading

RESULTS- Types of Recorded Errors

2 (group) by 3 (error type) mixed ANOVA



Conclusions for 28-day diary study

Number of errors recorded less than 1 a day!

Does act of recording reduce the number of errors?

NO Age Effects in the number or errors recorded

OVERALL CONCLUSIONS

1. Results of Diary study support findings from self-report questionnaires

2. Further support for the validity of Prospective Memory and Ageing Paradox

3. Good news for older people?
   Age related memory impairments greatly exaggerated?

Acknowledgements

Matthias Kliegel

Peter Rendell

To all our participants who kept a diary for 28 days

Thank You !