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How frequently do you forget in everyday life?
*A diary study of prospective and retrospective memory errors
in young and old healthy adults*

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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

Phase 1:
Initial testing

TICS-M
deJager et al.
(2003)

COGTEL
Kliegel et al.
(2007)

Phase 2:
Questionnaires

Prospective &
Retrospective
Memory
Questionnaire
(PRMQ)
(Smith et al.,
2000)

PLUS other
questionnaires

Phase 3:
28-day diary

Instructions:
"Each time you
experience a
memory failure,
please fill in one
of the brief
questionnaires in
your diary."

Phase 4:
Final
Questionnaires

Prospective &
Retrospective
Memory
Questionnaire

PLUS other
questionnaires

METHOD - Participants

	YOUNG N=12	OLD N=18	F (1,28)	p- value	Partial eta ²
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 eta ²
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%

$\chi^2 = 8.57, p=.003, \text{effect size}=.29$

INTERIM SUMMARY

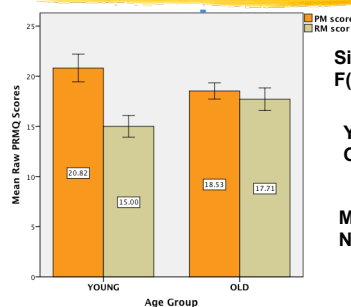
Typical ageing pattern for laboratory cognitive tasks

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

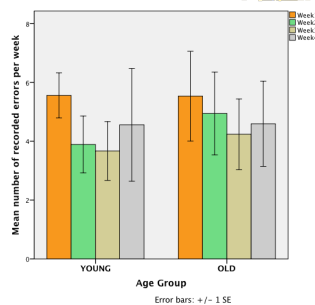
YOUNG – PM>RM
OLD – PM=RM

Main effect of AGE –
NS (F<1)

RESULTS – 28 day Diary

	YOUNG N=9	OLD N=17	F (1,28)	p- value	Partial eta ²
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

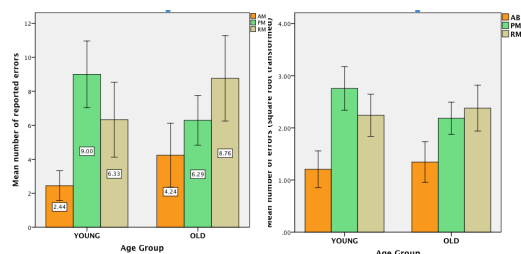
Types of RM errors

- 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?

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Thank You !

