

# Aging and short-term memory for emotional faces

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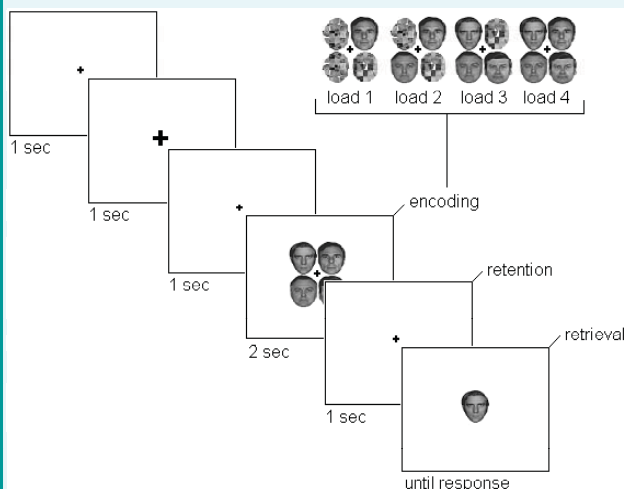


## Introduction

- Age differences exist in long-term memory for emotional stimulus content [1]
- Age differences in short-term memory (STM) have been investigated for feelings elicited by emotional stimuli [2], but not for stimulus content
- Research goal: examine age differences in the effect of stimulus emotionality (i.e. facial expression) on STM for stimulus content (i.e. face identity)

## Method

- 20 younger (18-29 yrs) and 20 older (61-77 yrs) participants
- STM task [3], see display of trial overview below
- Angry, happy, and neutral faces (Ekman)
- All faces within a trial displayed the same expression
- Encoding phase: participants memorized 1 to 4 faces
- Retention phase
- Retrieval phase: participants indicated whether the probe face identity matched any of the to-be-remembered faces (50% match trials)

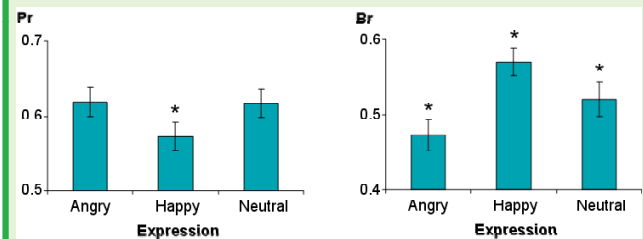


- Valence and arousal ratings (SAM)

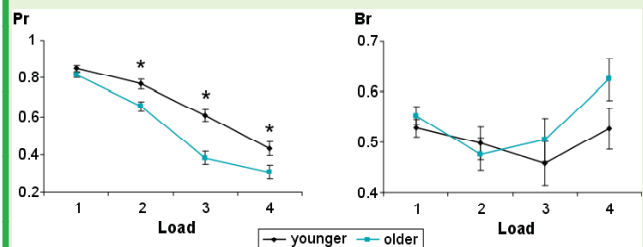
## Results - Valence and arousal ratings

- Older adults found happy faces less pleasant than younger adults did
- Older adults found angry faces less arousing than younger adults did

## Results - Discrimination (Pr) and response bias (Br)



- Discrimination was poorest for happy faces, see left panel above
- Response bias was most liberal for happy faces and least liberal for angry faces, see right panel above



- Older adults had poorer discrimination than younger adults in loads 2 to 4, see left panel above
- No age differences occurred with respect to response bias, see right panel above

## Conclusion

- Effects of expression occurred even though expression was task-irrelevant
- No age differences occurred in this emotional modulation of STM
- Probably because facial expression influences memory for face identity automatically [4] and because the STM task is constraint (probe-guided retrieval and short retention interval)
- Our data support the theory that bottom-up emotional processing does not change with aging [1]

## References

- [1] Mather & Carstensen (2005) *Trends Cogn Sci*, 9, 496-502.
- [2] Mikels et al. (2005) *Psychol Aging*, 20, 542-553.
- [3] Jackson et al. (2009) *J Exp Psychol Hum Percept Perform*, 35, 363-374.
- [4] D'Argembeau & Van der Linden (2007) *Emotion*, 7, 507-515.

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