

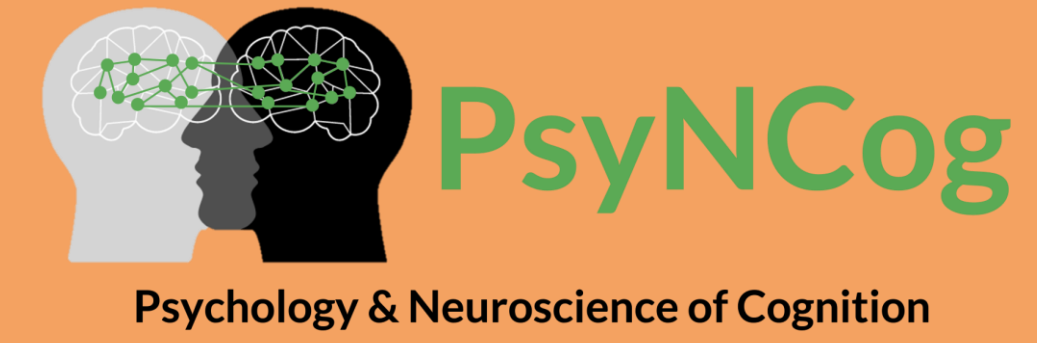
Temporal compression in episodic memory for real-life



events: the role of event features

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Introduction

Remembering past events typically takes less time than the actual duration of prior experience (Jeunehomme & D'Argembeau, 2019)

→ **Temporal compression of events in episodic memory**

Recent studies on the structure of memory representations for real-world events found that temporal compression **is not constant**

But events studied were brief and mundane (e.g., purchasing a drink at the cafeteria)

Various features of events affect the vividness and level of detail of memories (e.g., Familiarity, emotionality, importance)
(Bainbridge & Baker, 2022; Finley & Brewer, 2024)

What event features determine how we compress long and complex real-life events?



Examination of the role of **event duration** and other **event characteristics** on temporal compression

Method

40 healthy young adults

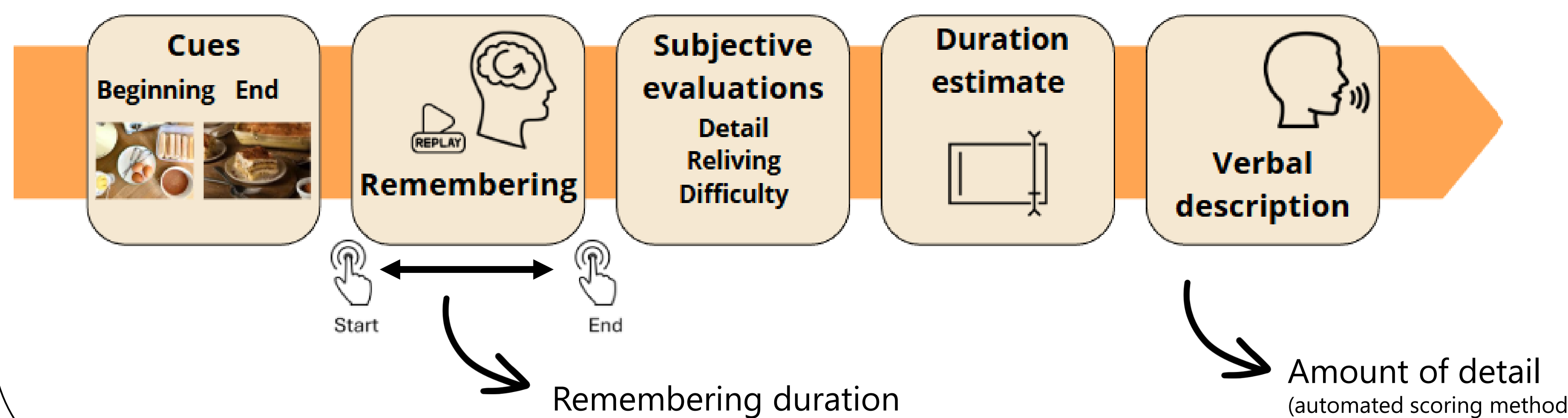
Recording of events



Participants used a wearable camera to record three events per day for three consecutive days (for a total of nine events)

Memory and event assessment tasks (2-4 days later)

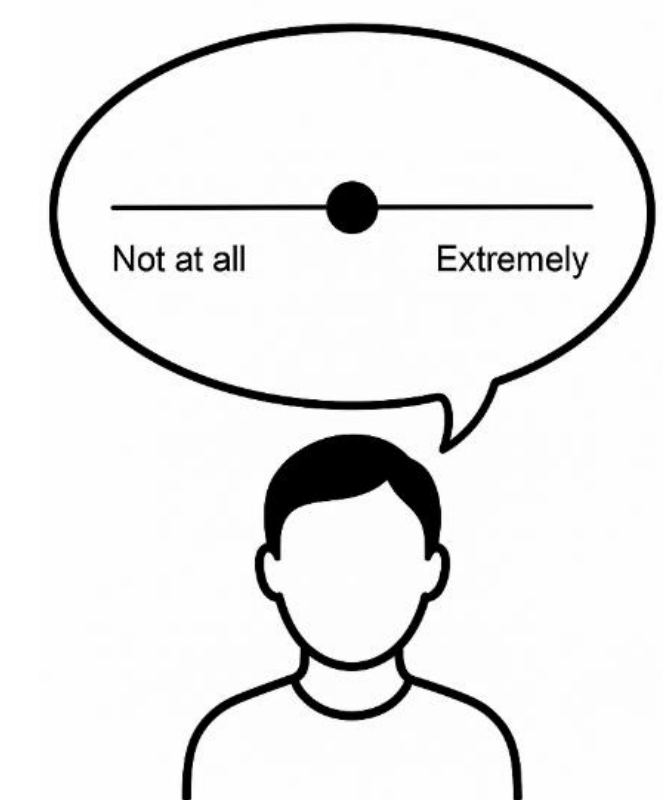
① Memory task



② Event assessment task

Visual analogue scales (VAS, ranging from 0 to 100):

-Familiarity
-Unusualness
-Importance
-Goal-relevance
-Emotionality
-Rehearsal
-Level of change
-Planning
-Sociality

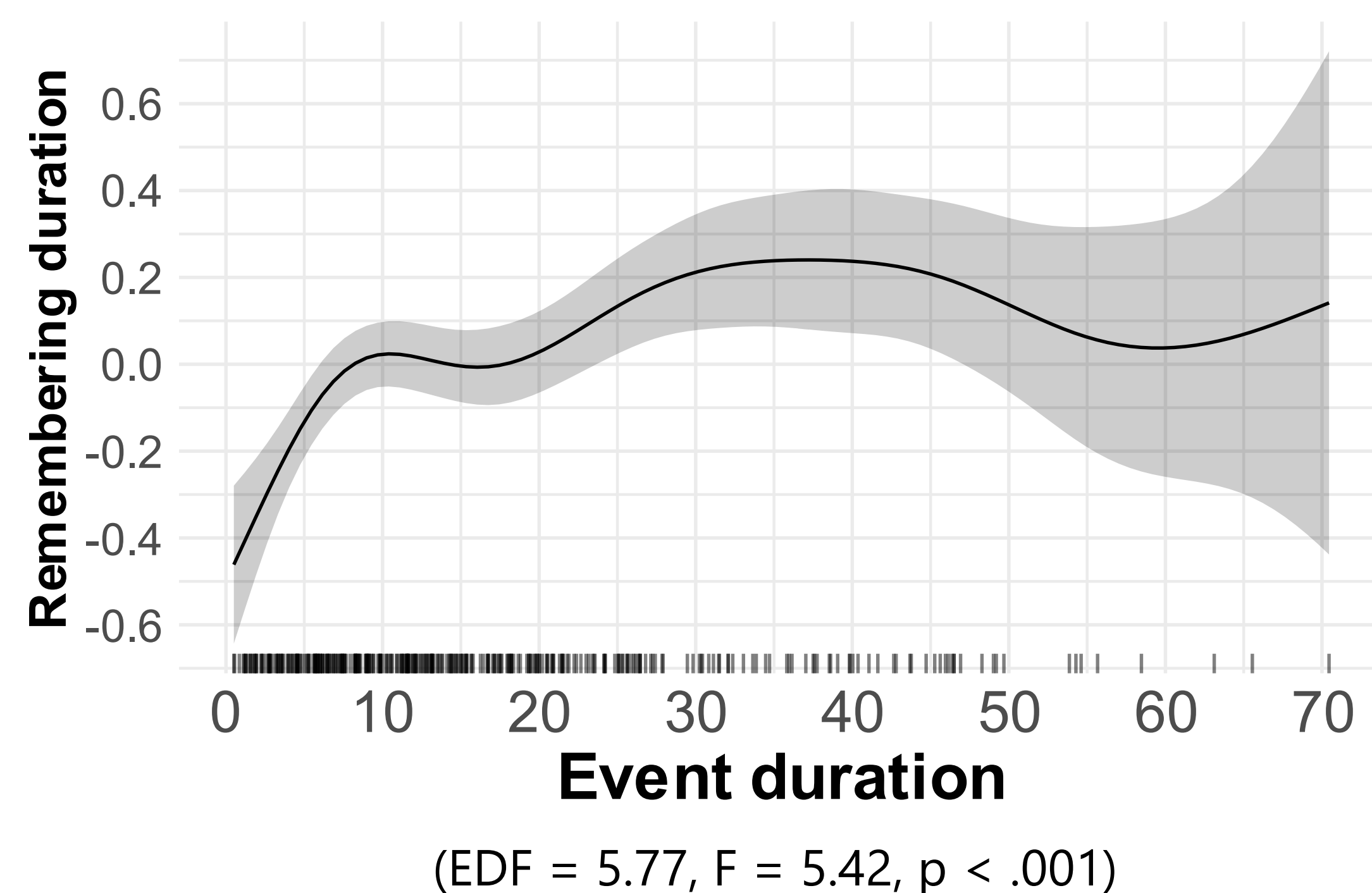


Results



Generalized Additive Mixed Models (GAMMs) (Pedersen et al., 2019)

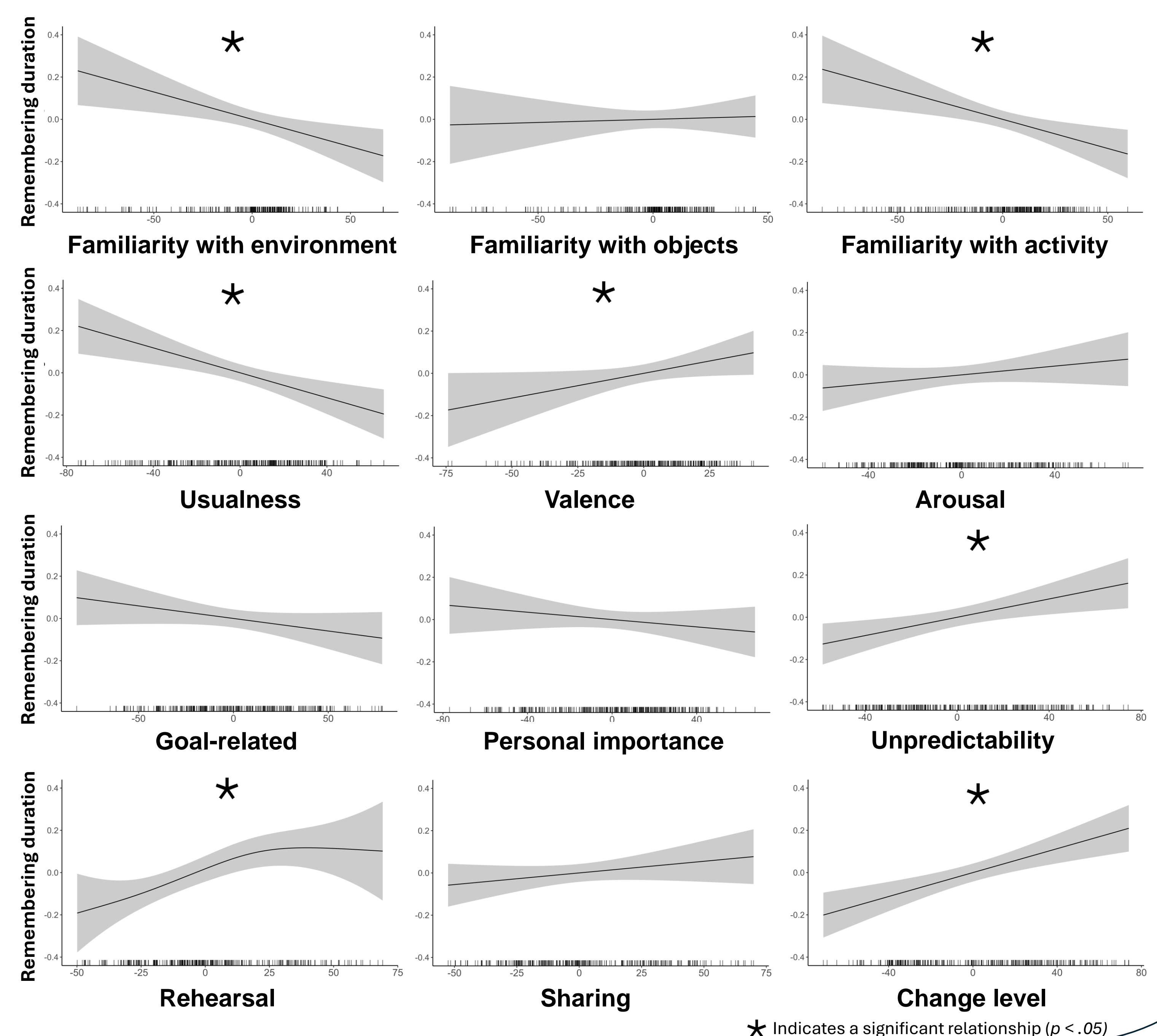
Remembering duration as a function of event duration:



Subjective and objective characteristics of memories: Subjective memory quality and objective measures of the amount of detail predict remembering duration

Estimation duration: Both event duration and remembering duration are significant predictors of estimated duration

Effects of event characteristics (Beyond event duration):



Discussion

- ✓ Significant non-linear relationship between event duration and remembering duration
- ✓ Beyond event duration, event characteristics, subjective memory quality and objective measures of the amount of detail influence recall duration
- ✓ Retrospective duration estimates are influenced by the time taken to recall an event

References:

Bainbridge, W. A., & Baker, C. I. (2022). Multidimensional memory topography in the medial parietal cortex identified from neuroimaging of thousands of daily memory videos. *Nature Communications*, 13(1), 6508. <https://doi.org/10.1038/s41467-022-34075-1>

Finley, J. R., & Brewer, W. F. (2024). Accuracy and completeness of autobiographical memory: Evidence from a wearable camera study. *Memory*, 1–31. <https://doi.org/10.1080/09658211.2024.2377193>

Jeunehomme, O., & D'Argembeau, A. (2019). The time to remember: Temporal compression and duration judgements in memory for real-life events. *Quarterly Journal of Experimental Psychology*, 72(4), 930–942. <https://doi.org/10.1177/1747021818773082>

Pedersen, E. J., Miller, D. L., Simpson, G. L., & Ross, N. (2019). Hierarchical generalized additive models in ecology: An introduction with mgcv. *PeerJ*, 7, e6876. <https://doi.org/10.7717/peerj.6876>