

What Features of Mind-Wandering Episodes Predict Their Recall? A Think-Aloud Study

GILLES Arya^a, D'ARGEMBEAU Arnaud^{a,b}, and STAWARCZYK David^{a,b}

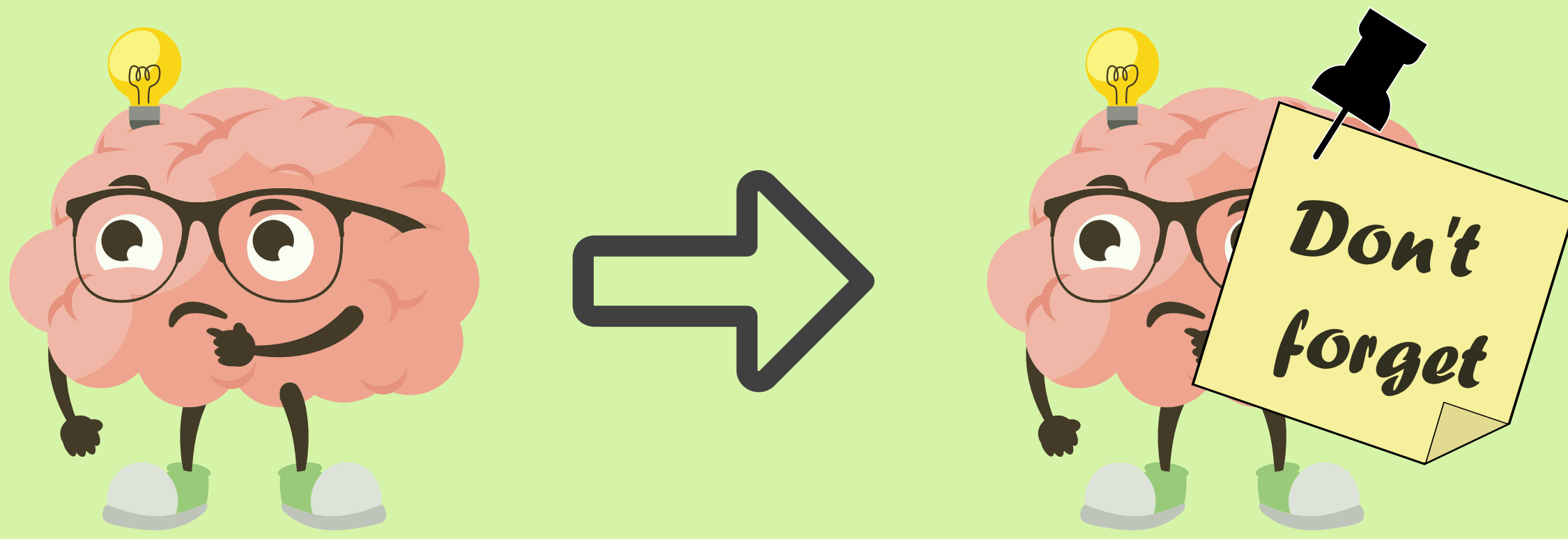
^a University of Liège, Psychology and Neuroscience of Cognition Research Unit (PsyNCog); ^b Fund for Scientific Research (FNRS)

INTRODUCTION

Spontaneous thoughts represent a substantial part of our daily cognition. A subset of these experiences, termed **Mind-Wandering (MW)** refers to thoughts whose content is **unrelated to both the task at hand and the surrounding environment**¹.

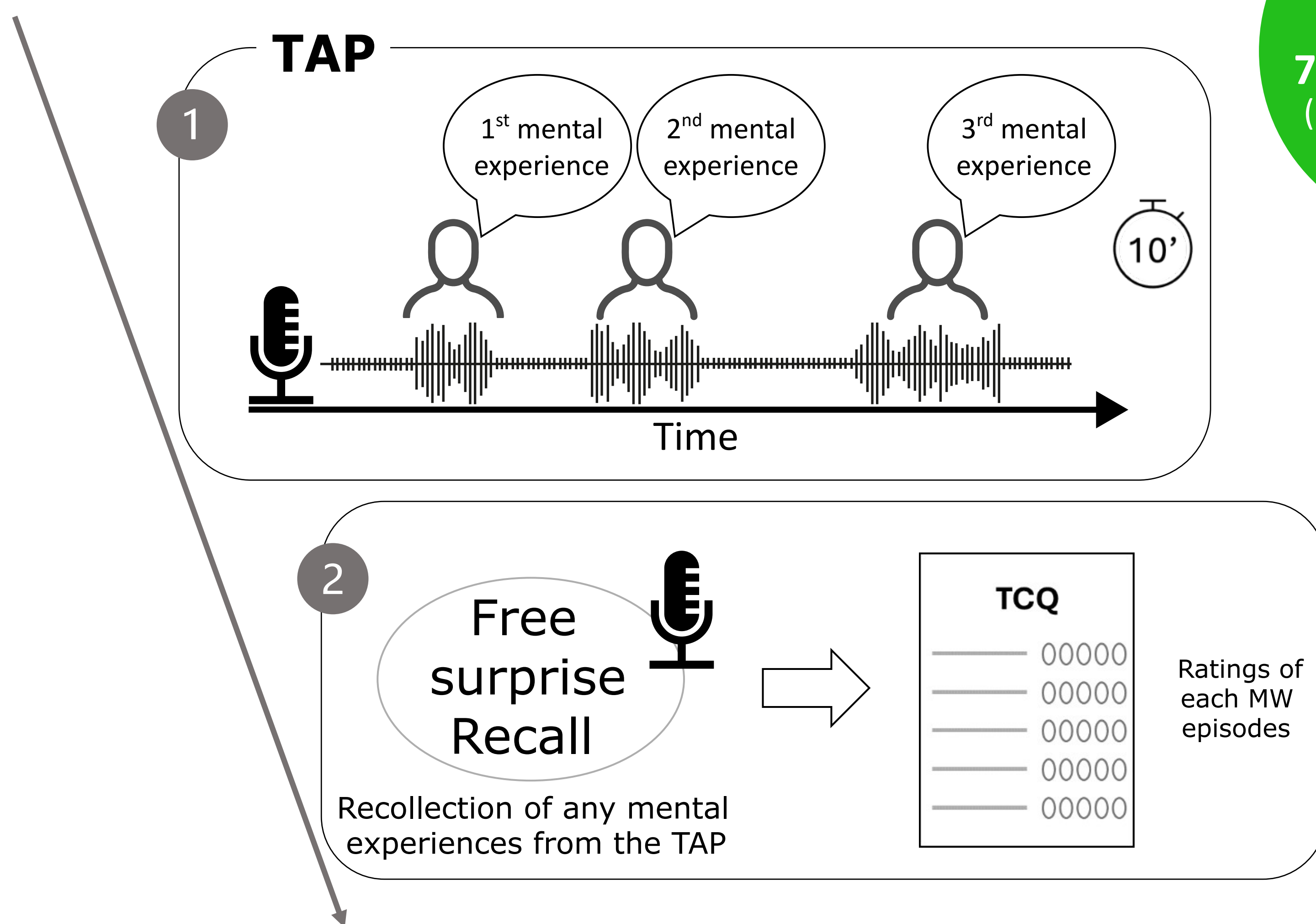
While typically perceived as disruptive, MW can also support **functional roles**, such as fostering **creativity, problem solving, or future planning**^{2,3}.

For MW episodes to be beneficial, however, individuals must be able to **recall their content when needed**.



What are the characteristics that predict the memory retrieval of mind-wandering episodes?

PROCEDURE



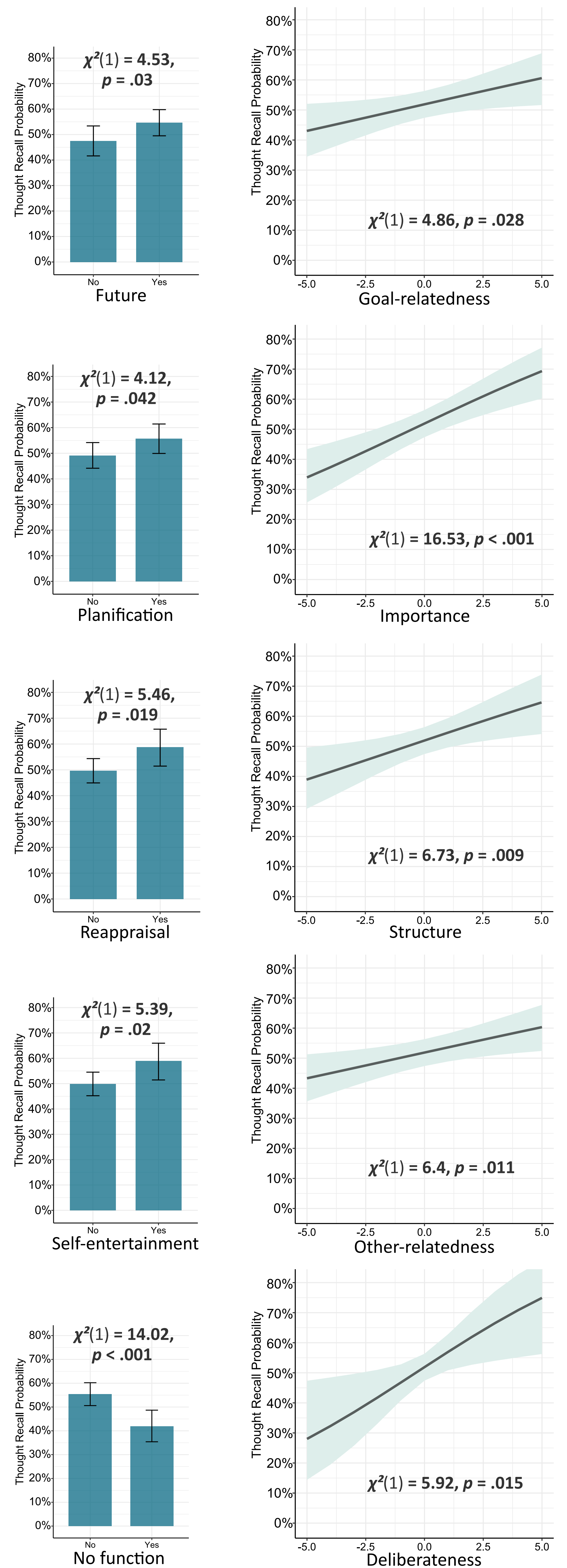
72 young adults
(63 ♀; M_{age} = 19.3 years; SD = 1.7)

On the first day, after a 2-min training, participants completed the Think-Aloud Procedure (TAP), which involves continuously verbalizing one's thoughts for 10 min.

The next day, participants first recalled each mental experiences they had during the 10-min TAP before assessing the features of their MW episodes. Characteristics such as the importance, affective valence, temporal orientations [Past, Present, Future, None], functions [Plannification, Self-entertainment, Reappraisal, Awakeness, Decision-making, Problem-solving, None, and Other], etc. were evaluated on a Thought Characteristics Questionnaire (TCQ).

RESULTS

Generalized linear mixed model with binary dependent variable



None of the other characteristics (e.g., Internal speech or Visual format, Task- or Stimulus-relatedness, Affective valence, Self-relatedness, Mundaneness, Temporalities [Past, Present, None], Awakeness, Decision making, Problem-solving, and Other functions) showed significant effects (all ps > .05).

CONCLUSION

What are the characteristics that predict the memory retrieval of MW episodes?

- Recall ↗ for thoughts rated as more important, deliberate, structured, related to other people or a goal, about the future, or associated with a planning, self-entertainment, or reappraisal function.
- Recall ↘ for thoughts with no apparent function.

These results suggest that several characteristics of MW episodes play a critical role in determining their later accessibility in memory, offering new perspectives on the functional role of MW.

¹ Smallwood, J., & Schooler, J. W. (2015). The Science of Mind Wandering: Empirically Navigating the Stream of Consciousness. *Annual Review of Psychology*, 66(1), 487–518.

² Randall, J. G., Oswald, F. L., & Beier, M. E. (2014). Mind-wandering, cognition, and performance: A theory-driven meta-analysis of attention regulation. *Psychological Bulletin*, 140(6), 1411–1431.

³ Mooneyham, B. W., & Schooler, J. W. (2013). The costs and benefits of mind-wandering: A review. *Canadian Journal of Experimental Psychology*, 67(1), 11–18.