

# Does passing time influence the recollection of early memories in children and adults?

The ontogeny of episodic memory recollection: characterizing the experience of recollecting memories in children and adults.

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## Introduction

In healthy individuals, the experience of recollecting personal experiences occurring within childhood is dependent upon the time elapsed since the original event occurred and the age of the individual at the time of the occurrence. Previous research has demonstrated in children and young adults the richness of recalling personal experiences declines as time increases from the present moment. Generally the individual's recently experienced events are the most vividly recollected, with earliest memories the most fragmented during recall. The strength of this decline is likely to be caused by the time elapsed (TE) since the original event was experienced.

What was our projects aim?

## Objective

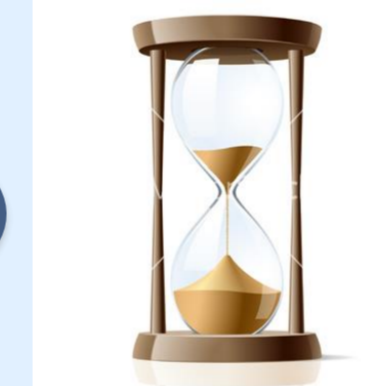
- This project intended to support previous research findings by comparing the vividness of the earliest memories of a former children and young adult sample with two new population samples; a larger cohort of 7-10 year olds and an older young adult sample (28-32 years old).
- The current data would then be compared against previous data sets to look for a decline in memory vividness. If time permitted, the verbal descriptions of the adult groups recollected memories would be transcribed and scored using standardized methods previously used in the memory literature. This would allow the content of the recollected event to be divided into episodic and semantic components (Levine et al, 2002).



## Method

This experimental design repeated that of previous methodology. The adult's procedure was amended to be suitable for the children. This involved removing the final questionnaire from the procedure to reduce the complexity of the task.

What did our procedure entail?



- All participants verbally documented details of different memories they had from different stages in their lives. This began at their most recent memory (from within a one month range) right up to their earliest memory.
- Participants then physically drew from their minds eye what they pictured when recalling their most recent and earliest memories.
- All participants then answered further questions about their experience of recollecting their memory. The young adult procedure included questions such as 'does the memory appear vivid?' The language was simplified in order for the children to understand the task, therefore questions included 'Did your memory look like a picture/clip from TV in your head?'
- In the final phase, adult subjects completed a number of questionnaires assessing their self-reported memory, navigation and imagination abilities. These questionnaires would reveal if the above factors influenced memory recollection.

## Results

- The transcriptions of participant verbatim accounts were scored using the Hassabis scoring method (Hassabis et al, 2007). This involved analyzing the narrative of the memories by dividing them into 4 different components; entities present (e.g. names of objects or humans mentioned), sensory details (e.g. smells, sounds), spatial references (e.g. positions of objects or humans in the memory) and thoughts, emotions and actions of the subject or other entities. Defining these components would aid in further characterizing the nature of the memories decline.
- The current data was then compared against previous data sets in order to observe a decline in the vividness of memory recollection.
- Currently the research data is still being interpreted with further work being continued before full publication.

## Conclusion

- Our results support previous research findings in that episodic memories decline in vividness as the time of recall from the original event becomes greater.
- We suggest our experimental design be repeated with a larger cohort of 28-32 year olds in order to increase the validity of the current data.

## References

Hassabis, D., Kumaran, D., Vann, S. D., & Maguire, E. A. (2007). Patients with hippocampal amnesia cannot imagine new experiences. *Proceedings of the National Academy of Sciences*, 104(5), 1726-1731.

Levine, B., Svoboda, E., Hay, J. F., Winocur, G., & Moscovitch, M. (2002). Aging and autobiographical memory: dissociating episodic from semantic retrieval. *Psychology and aging*, 17(4), 677.