

Project title: Exploring the shared mechanisms of true and false memories

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Function: Assistant Professor

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Proposal (250 words):

Introduction: True and false memories are like two sides of human's memory system. On the one hand, people can remember what have happened months and years ago. However, on the other hand, there are always memory errors occurring. Even for people with highly superior autobiographical memories, who can accurately remember every day details since mid-childhood, false memories are inevitable to them. The question is why false memories persist after millions of years' evolution? We and some researchers suggest that true and false memories are derived from the same functional memory mechanisms such as associative binding (e.g., spreading activation theories) and abstraction of information (e.g., fuzzy trace theory). That is, by making true memories more efficient, memory processes will lead to more false memories as well. Little empirical research has been done to directly examine those theoretical assumptions. Recent research on true memory has demonstrated that true memory develops as the ability of associative binding develops. Interestingly, research on false memory recently found that false memory originated from associative binding also increases from childhood to adulthood. The current research will bridge the gap between the mechanisms of true and false memories.

Hypothesis and Objectives: We hypothesize that true and false memories share the same mechanisms such as associative binding and abstraction. The current research line aims to explore whether true and false memories co-occur as a result of shared mechanisms.

Setting and Methods: Children and adults will be tested using various experimental paradigms such as associative binding paradigms and the Deese-Roediger/McDermott false memory paradigm.

Impact: This project will enhance theoretical understanding of memory.

Requirements candidate: Highly motivated student with good English communication skills and proactive and resolute attitude.

Keywords: true memory, false memory, memory mechanisms, developmental trend, binding

Top 5 selected publications:

1. Otgaar, H., Howe, M.L., Smeets, T., & Brackmann, N. (2016). The malleability of developmental trends in neutral and negative memory illusions. *Journal of Experimental Psychology: General*, 145, 31-55.
2. Otgaar, H., Scoboria, A., & Mazzoni, G. (2014). On the existence and implications of nonbelieved memories. *Current Directions in Psychological Science*, 23, 349-354
3. Otgaar, H., Muris, P., Howe, M.L., & Merckelbach, H. (2017). What drives false memories in psychopathology? A case for associative activation. *Clinical Psychological Science*, 5, 1048-1069.
4. Otgaar, H., Scoboria, A., & Smeets, T. (2013). Experimentally evoking nonbelieved memories for childhood events. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 39, 717-730.
5. Otgaar, H., Howe, M. L., Brackmann, N., & van Helvoort, D. (2017). Eliminating age differences in children's and adults' memory conformity and suggestibility. *Developmental Psychology*, 53, 962-970.