

Brown Bag Lunchtime Seminar (Via Zoom)
(Theme: Cognition and Neuroscience)

**Editing Unwanted Memories via Targeted Reactivation
of Competing Memories during Human Sleep**

12:30 p.m. – 1:30 p.m. | June 25, 2021 (Friday)



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Abstract

Uncontrollable retrieval of unwanted memories, such as recurrent flashbacks and ruminative thinking, could lead to psychiatric disorders such as post-trauma stress disorders (PTSD) and depression. Employing a modified A-B/A-C associative learning paradigm and targeted memory reactivation, the present research aims to modify consolidated negative memories via reactivating their competing, positive memories during human slow-wave sleep. Participants learn negative memories and their competing positive memories in pseudoword-picture association tasks on two consecutive evenings. Half of pseudowords will be aurally re-presented to participants during subsequent slow-wave sleep to reactivate competing memory traces. We will investigate whether memory competition and reactivation can weaken both voluntary and involuntary expressions of unwanted memories, as captured by recall, intrusion report, affective rating and affective priming tasks. We will investigate how consolidation-related brain activities such as spindles and slow oscillations mediate competition and influence subsequent memory performances. Results will provide insights on how to leverage sleep and offline processes to modulate unwanted memories and their emotional responses, which will bear implications in the development of novel interventions in the treatment of PTSD etc.

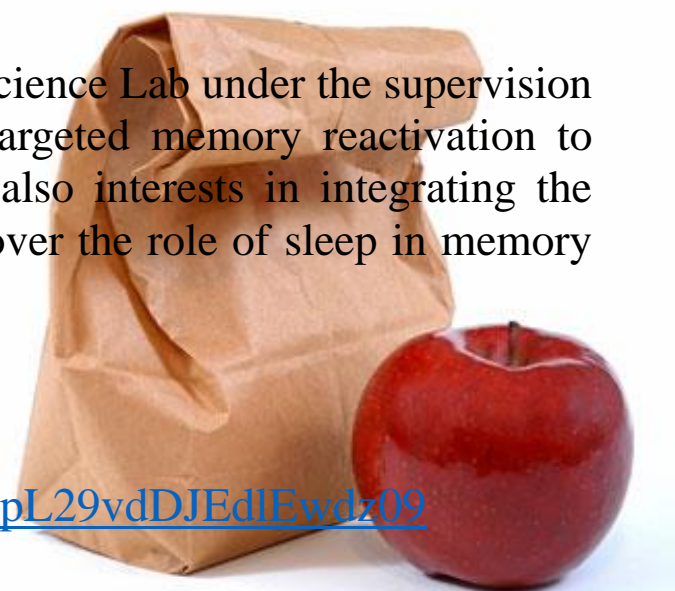
About the speaker

Tao is a third-year PhD candidate from Social Cognitive Neuroscience Lab under the supervision of Dr. Xiaoqing Hu. His current research focuses on using targeted memory reactivation to modify unwanted memories during human NREM sleep. He also interests in integrating the cognitive computational model and the experiment data to uncover the role of sleep in memory consolidation.

Zoom Meeting

<https://hku.zoom.us/j/3951550048?pwd=SncvL3RYakEycUtpL29vdDJEIdEwdz09>

Meeting ID: 395 155 0048 | Password: psyc



~All are Welcome~

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