

生理学セミナー特別講演

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演題：Signal flows substantiating semantic and episodic-like memory in the primate medial temporal lobe.

日時：9月8日（月）午後6時15分～7時15分

会場：筑波大学・総合研究棟D、1階公開講義室（116）

演題要旨：Declarative memory, which depends on the medial temporal lobe (MTL) structures, consists of two sub-categories: semantic memory and episodic memory. The former refers to general knowledge of facts, while the latter refers to memories of autobiographical events containing items, times and places. In this talk, I will present neurophysiological data examining the two memories in macaque brains. Semantic memory was tested using an item-item association task in which monkeys were required to retrieve a particular visual object when its paired object was presented as a cue stimulus. The single-unit data suggested that bidirectional signaling between the perirhinal cortex (PRC) of the MTL and visual association area TE is involved in the encoding and retrieval of item-item association memories of visual objects (Naya, Yoshida & Miyashita, 2001 & 2003). On the other hand, episodic memory was tested using a temporal-order memory task in which monkeys were required to encode two visual items and their temporal order. The data of single-unit recording indicated that the hippocampus (HPC) provided incremental timing signals from one item presentation to the next while the PRC signaled the conjunction of items and their relative temporal order. These results suggest the incremental timing signal in HPC is conveyed to PRC via the entorhinal cortex, where it is integrated with item information from TE and converted into a discrete item-based temporal order signal (Naya and Suzuki, 2011).

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