

Semantic Memory: A Multidimensional System Under Control

Saturday, September 13, 2025 9:00 AM (1h 30m)

The symposium explores the structure of semantic memory through the lens of multidimensionality, multi-modality, and control, integrating theoretical perspectives with empirical evidence.

The first talk investigates how semantic memory is shaped by cumulative linguistic, visual, and auditory experiences. Using distributional semantic models and EEG data, it reveals that modality-specific and modality-independent priors guide memory formation, with different modalities dominating depending on the nature of the task (words, images, sounds).

The second contribution extends the embodied cognition framework to abstract concepts, showing that these are grounded across multiple experiential dimensions, each linked to partially distinct neural systems. While most abstract concepts emerge from a convergence of dimensions, some rely more heavily on particular types of dimensions. Evidence from behavioral and neurostimulation studies in both healthy individuals and patients highlights distinct categories of abstract knowledge (e.g. emotion, space, time, quantity).

The third talk focuses on the social dimension of abstract concepts. It proposes that these concepts often evoke uncertainty and a need for social interaction to construct meaning. Interactive tasks, rich in multimodal cues, are highlighted as essential tools to capture the nuanced ways in which different types of abstract concepts are processed.

The final talk examines the relationship between semantic control and executive functions across development. Results from behavioral tasks and structural equation modeling suggest these systems are partially distinct yet strongly interconnected, emphasizing both their unity and diversity.

Together, these contributions offer an updated, comprehensive and nuanced account of how semantic memory operates across experience, modalities, and cognitive control mechanisms.

If you're submitting a symposium talk, what's the symposium title?

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

No

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