

Agenda

I. Episodic Encoding

II. Principles of Encoding

Episodic Memory

Primary memory

“...the knowledge of a former state of mind after it has already once dropped from consciousness; or rather it is the knowledge of an event, or fact, of which we have not been thinking, with the additional consciousness that we have thought or experienced it before.” – W. James (1890)

Episodic memory

memory for a specific event that occurred in a specific time and place (i.e., spatio-temporal context) – Tulving (1972)

Episodic Encoding

Processes that yield a durable memory trace such that an event can be subsequently consciously remembered

- Cognitive mechanisms that impact encoding?
- Neurobiological computations that mediate encoding?

Amnesia, MTL, & Episodic Memory

Prefrontal Cortex & Episodic Encoding

Neural Correlates of Encoding:

Predicting Subsequent Memory

Predicting Later Remembering and Forgetting

Encoding Correlates of Subsequent Memory

Left PFC: Predicting Subsequent Memory

Left PFC: Predicting Subsequent Memory

Building Memories: Prefrontal and Medial Temporal Interactions

Principles of Episodic Encoding

Attention & Encoding

Neural Consequences of DA at Encoding

Neural Consequences of DA at Encoding

Levels of Processing

(Craik & Lockhart, 1972; Craik & Tulving, 1975)

Levels of Processing Paradigm

Levels of Processing: Time to Process Item

Levels of Processing: Subsequent Memory

Levels of Processing Paradigm

Levels of Processing: Subsequent Memory

Neural Correlates of Levels of Processing
Neural Correlates of Levels of Processing
Incidental vs. Intentional Learning

Difficulties for Levels-of-Processing
Difficulties for Levels-of-Processing
Encoding/Retrieval Interactions
Compatibility Effects
Implications of LoP
Principles of Episodic Encoding
Verbal Learning Situation
Associating Items with Other Long-Term Knowledge: Semantic Organization
Neural Bases of Semantic Organization
Principles of Episodic Encoding
The Generation Effect
Episodic Retrieval Yields Robust Encoding
Retrieval Activity Predicts Later Memory
Principles of Episodic Encoding
Distribution of Practice
Understanding Distributed Practice
Stimulus Sampling Theory & Lag Effects