

THEORIES OF LONG-TERM MEMORY

- Our long-term memory contains a variety of different kinds of information ⇨ assumption that there are various long-term systems

EPISODIC AND SEMANTIC MEMORY

- Tulving (1972)
 - episodic memory: storage of specific events occurring in a particular place at a particular time
 - semantic memory: contains information about our stock of knowledge about the world
- Wheeler et al. (1997)
 - “the manner in which information is registered is highly similar – there is no known record of readily encoding information into an adult’s semantic memory without putting corresponding information in episodic memory and vice versa...”
- it is assumed that the frontal cortex is involved in episodic memory
 - frontal lobe patients showed considerable source amnesia with failure of episodic memory
 - PET studies have shown that the right prefrontal cortex was more active during an episodic memory retrieval than a semantic one and the left prefrontal cortex was more active during episodic encoding

IMPLICIT MEMORY

- Graf & Schacter (1985)
 - explicit memory is revealed when performance on a task requires conscious recollection of previous experiences
 - implicit memory is revealed when performance on a task is facilitated in the absence of conscious recollection
- repetition-priming effect: the processing of a stimulus is faster and/or easier when it is presented on more than one occasion
- the relative contribution of implicit and explicit memory can be assessed by comparing performance on inclusion and exclusion tests
e.g. Jacoby, Toth & Yonelinas (1993): A list of words was presented (e.g. “mercy”), and there were two conditions at the time of the test:
 - ⇨ Inclusion test: participants were told to complete the cues or word stems (e.g. “mer__”) with list words they recollected, or failing that with the first word that came to mind.
 - ⇨ Exclusion test: participants were instructed to complete the word stems (e.g. “mer__”) with words that were not presented on the listIf the explicit memory were perfect, then 100% of the completions on the inclusion tests would be list words compared to 0% on the exclusion test.
- perceptual priming: influenced more by manipulation of study modality than level of processing
- conceptual priming: influenced more by level of processing than manipulation of study modality
- there are numerous kinds of implicit memory tasks ranging from motor skills to word completion ⇨ probably several kinds of implicit memory

IMPLICIT LEARNING

- implicit learning occurs when there is a partial or total inability to verbalize what has been learned.
- Shanks & St. John (1994): Two criteria for learning to be regarded as unconscious:
 1. Information criterion: The information that the participants are asked to provide on the awareness test must be the information that is responsible for their improved level of performance.
 2. Sensitivity criterion: The participants may be consciously aware of more task-relevant knowledge than appears on an insensitive awareness test ⇨ may lead to an underestimation of their consciously accessible knowledge

TRANSFER APPROPRIATE PROCESSING

- Roediger (1990): Two types of cognitive processes:
 1. Data-driven or perceptual processes: can be defined as “the analysis of perceptual or surface-level features” (Mulligan, 1998)
 2. Conceptually driven processes: can be defined as the “analysis of meaning or semantic information” (Mulligan 1998)
- memory performance will be better when there is a match between the processes used at study and at test

AMNESIA

- study of amnesia provides a good test-bed for existing theories of normal memory
- research has also led to new theoretical developments
- main features of the amnesic syndrome:
 - anterograde amnesia: difficulties in remembering new information which was learned after the onset of the amnesia
 - retrograde amnesia: difficulties in remembering events occurring prior to amnesia, e.g. Korsakoff’s syndrome
 - intact short-term memory
 - normal intelligence
 - residual learning ability
- can be produced by damage to the diencephalons or to the medial temporal lobe
- most amnesic patients show both retro- and anterograde amnesia

THEORIES OF AMNESIA

- amnesic patients have
 - often worse episodic than semantic memory
 - deficit in contextual processing
 - poor recognition-memory performance
 - impaired explicit memory but intact implicit memory
 - fairly intact data-driven or perceptual processes but impaired conceptual processing
 - intact procedural learning system but impaired declarative learning system
- they
 - perform poorly on explicit memory tests
 - find it hard to store integrated or linked information in long-term memory