

Synthesis & Review

- For final exam, review of Chapter 1, 2, 7 and 8

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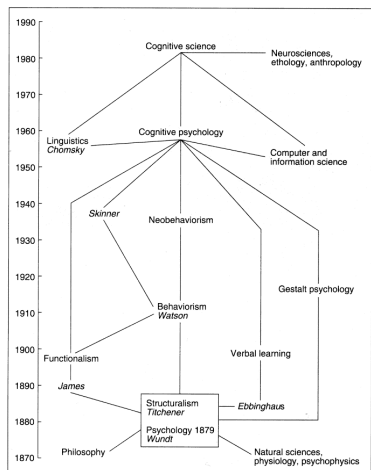
Chapter 1

- Review of selected topics from History

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History of Cognitive Psychology



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History

- Philosophy
- Early Researchers
 - Introspection
- Behaviorism
 - Methods
 - Topics
- Cognitive Revolution
 - Methods
 - Topics

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Major influences on Cognitive Science

- Philosophy
- Computer Science
- Neuroscience
- Evolutionary Psychology & Ethology
- Clinical Psychology
- Cognitive Psychology

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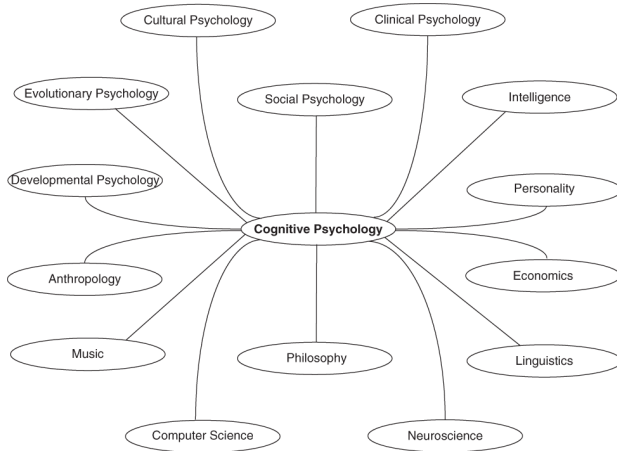
Methodological Concerns

- Reductionism
- Ecological Validity

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Cognitive Psychology



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Assumptions of Cognitive Psychology

- Mental processes exist!
- Mental processes can be studied scientifically (by using speed or accuracy as DV's).
- Human beings are active information processors.
- Humans are not necessarily special : it should be possible to deconstruct and reconstruct mental processes in other substrates (e.g. a computer)

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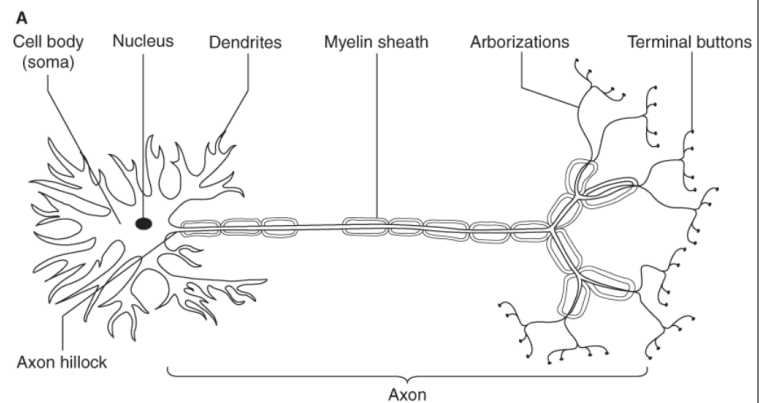
Chapter 2

- Review of selected topics from Cognitive Neuroscience

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Neurons

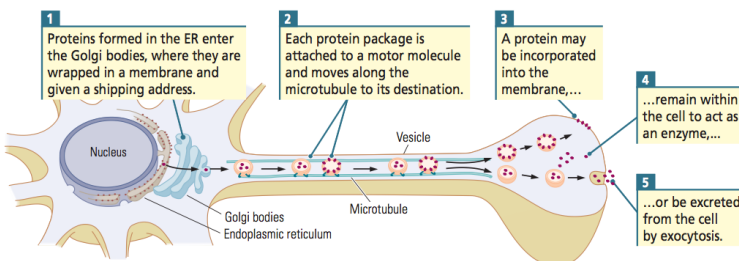


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Vesicles and Neurotransmitters

- Neurotransmitters bridge the synapse between axon and dendrite
- Vesicles are created in cell body and hold neurotransmitters



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Neurons as Calculators

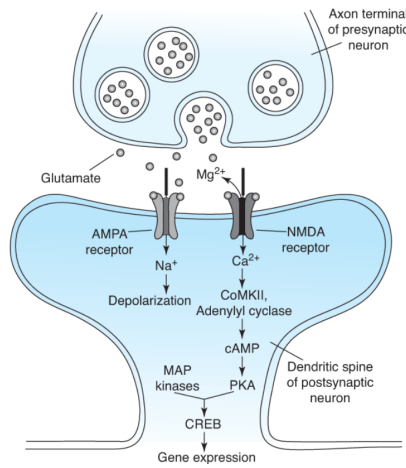
- Input Connections
 - Excitatory
 - Inhibitory
- Function
 - Summation
- Output
 - Action Potential

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Long Term Potentiation (LTP)

- Glutamate
 - AMPA receptors (fast, cause action potential)
 - NMDA receptors (slow, makes new NMDA receptors)



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Principles of Organization

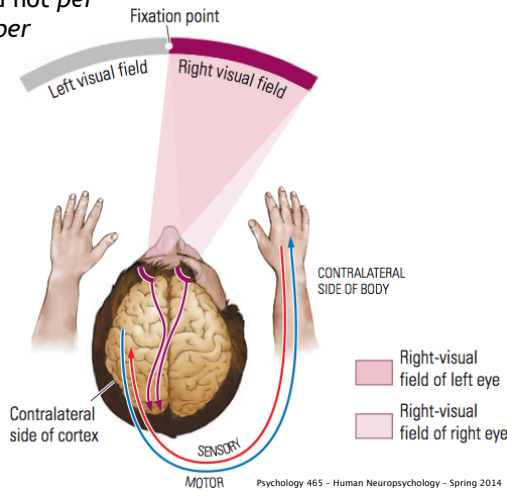
- Contralaterality...
- Hemispheric Specialization...
 - Lateralization
- Cortical Specialization...
 - different areas perform different functions

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Contralaterality - the Crossed Brain - Vision

- Vision is crossed not *per eye* but rather *per visual field*



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Lateralization

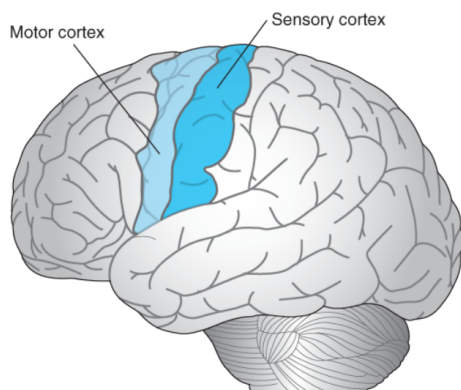
Function	Left Hemisphere	Right Hemisphere
Visual System	Letters, Words	Geometric patterns, faces
Auditory	Language-related sounds	non-language sounds, music
Memory	Verbal	Nonverbal
Language	speech	prosody
Spatial		geometry, map-reading, mental rotation

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Cortical Specialization

- Different areas control different functions



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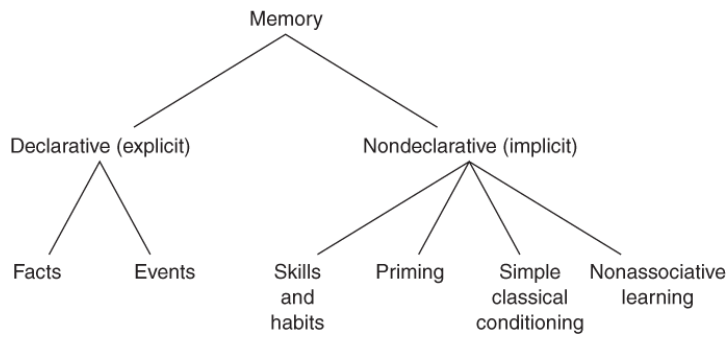
Chapter 7

- Review of selected topics from Semantic Memory
- Taxonomy of LTM, explicit vs. implicit, semantic network model, spreading activation & priming, lexical decision, schemata, categorization

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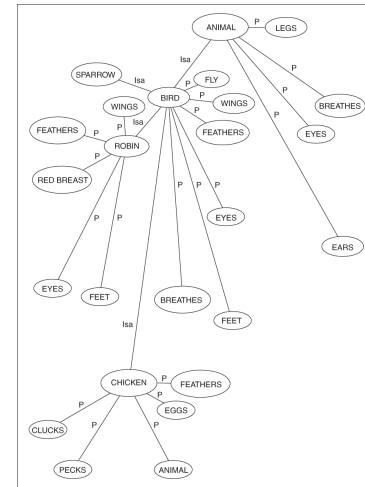
Squire (1993) Taxonomy of Long Term Memory



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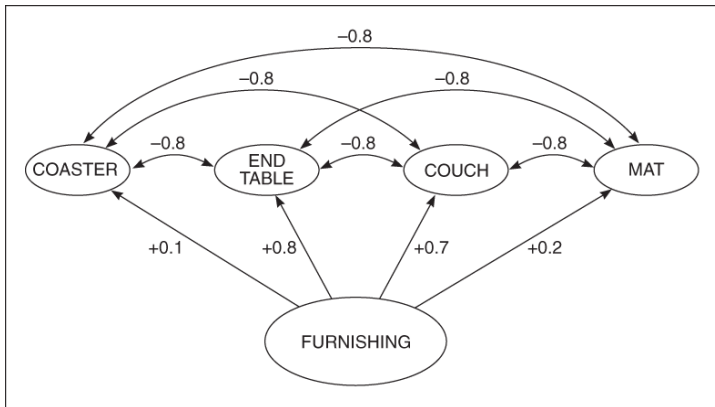
Revised Network Model



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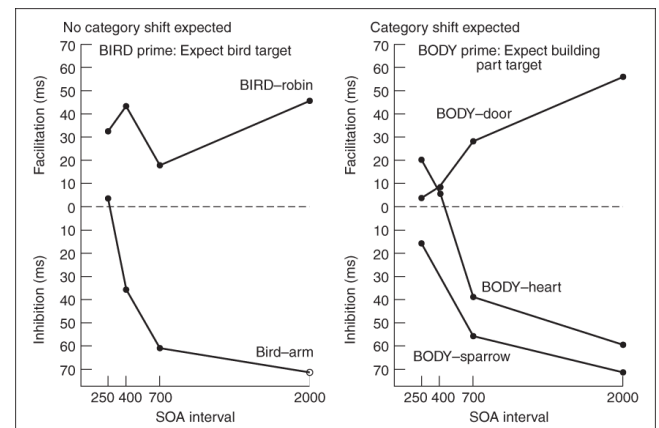
Semantic Net Model



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Neely (1977)



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Schemas, Scripts and Memory

- Schemas
- Scripts
- Reconstructive vs. Reproductive Memory

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Concepts & Categorization

- Major Themes
 - Classic
 - Probabilistic
 - Explanation-based

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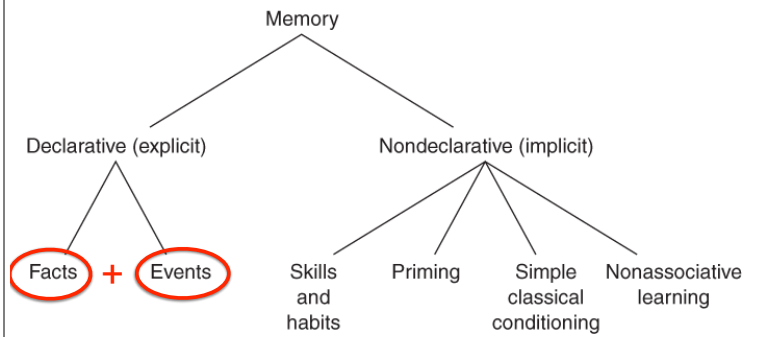
Chapter 8

- Review of selected topics from Using Knowledge in the Real World
- Propositions, levels of representation, the DRM paradigm, false memories (and subsections), repressed and recovered memories, Bahrick's studies

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Squire (1993) Taxonomy of Long Term Memory



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The Seven Sins of Memory (Schacter, 1999)

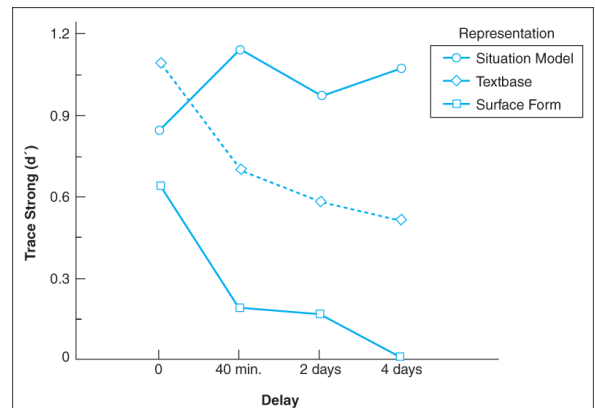
Sin	Description
Transience	Losing access to information across time, whether through forgetting, interference, or retrieval failure
Absent-mindedness	Everyday memory failures caused by insufficient attention or superficial, automatic processing during encoding
Blocking	Temporary retrieval failure such as the tip-of-the-tongue state, in either episodic or semantic memory
Misattribution	Remembering a fact correctly from past experience but attributing it to an incorrect source or context
Suggestibility	Incorporating information provided by others into your own recollection and memory representation
Bias	Knowledge, beliefs, and feelings distort recollection of previous experiences and affect current and future judgments and memory
Persistence	Remembering facts or events, including traumatic memories (one would rather forget). Failure to forget because of intrusive recollections and rumination

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Memory vs. Levels of Representation

- Kitsch et al. (1987)



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Review

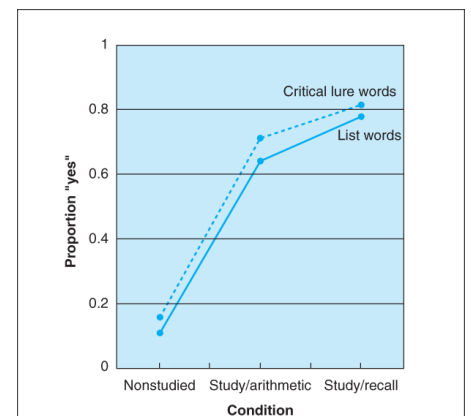
- Metamemory
 - source monitoring
 - prospective memory
 - familiarity / feeling of knowing
- False Memory
 - DRM Paradigm
 - Semantic Network / Spreading Activation
 - Semantic Integration
 - Leading Questions / Memory Distortion

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The DRM Paradigm

- if the subject recalls the lure this strengthens the false memory on Recognition test



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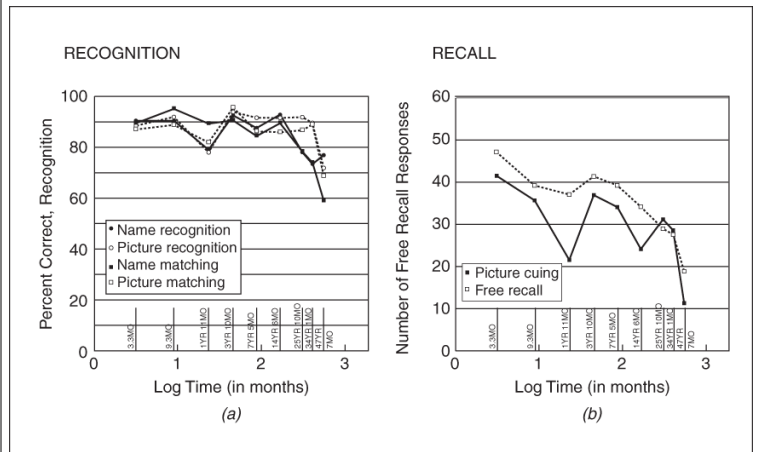
Repressed and Recovered Memories

- Freud's theory of the unconscious
 - our mind represses (forgets or hides) pain/trauma
- Evidence for this is weak but probably exists
- Recovering memories
 - imagery
 - suggestive questioning
 - repetition

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Bahrnick's Results



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