

# Synthesis & Review

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

923

Psyc 362 - Spring 2018

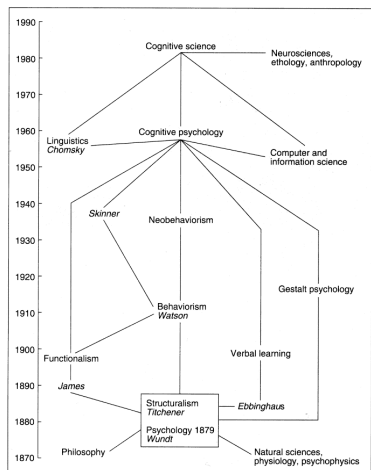
# Chapter 1

- Review of selected topics from History

925

Psyc 362 - Spring 2018

## History of Cognitive Psychology



926

Psyc 362 - Spring 2018

## History

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

927

Psyc 362 - Spring 2018

## Major influences on Cognitive Science

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

928

Psyc 362 - Spring 2018

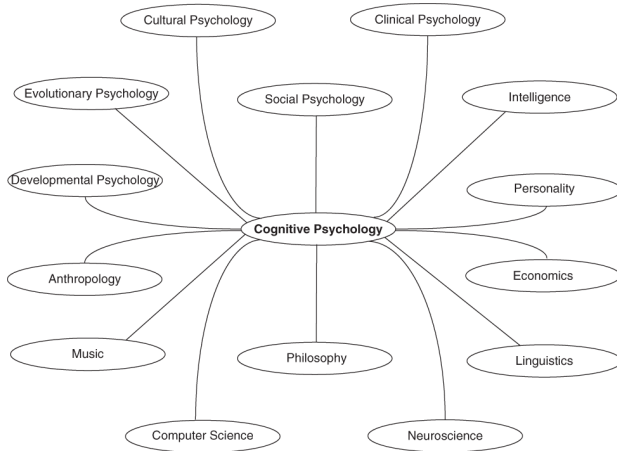
## Methodological Concerns

- Reductionism
- Ecological Validity

929

Psyc 362 - Spring 2018

# Cognitive Psychology



930

Psyc 362 - Spring 2018

## 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)

931

Psyc 362 - Spring 2018

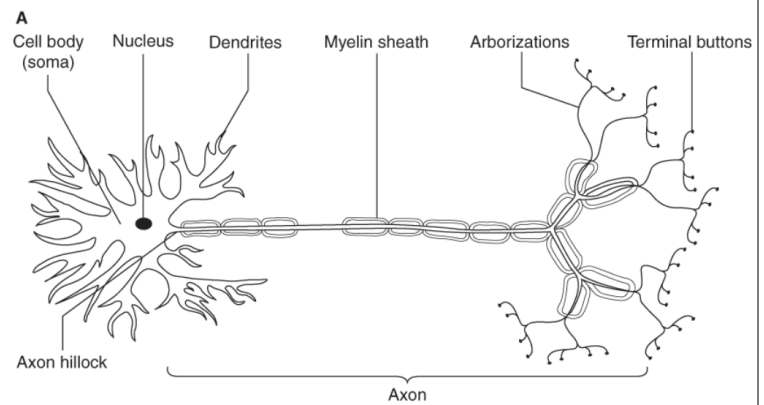
## Chapter 2

- Review of selected topics from Cognitive Neuroscience

932

Psyc 362 - Spring 2018

## Neurons

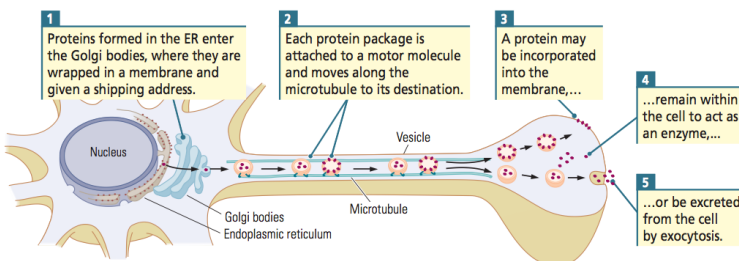


933

Psyc 362 - Spring 2018

## Vesicles and Neurotransmitters

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



934

Psyc 362 - Spring 2018

## Neurons as Calculators

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

935

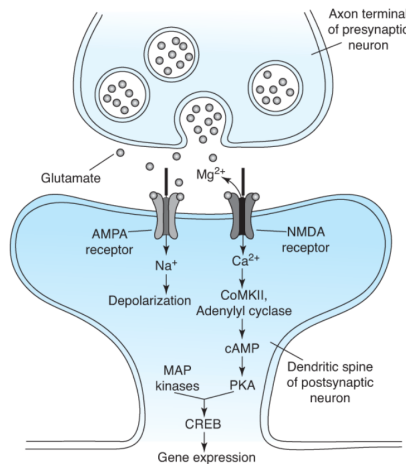
Psyc 362 - Spring 2018

## Long Term Potentiation (LTP)

- Glutamate

- AMPA receptors (fast, cause action potential)

- NMDA receptors (slow, makes new NMDA receptors)



936

## Principles of Organization

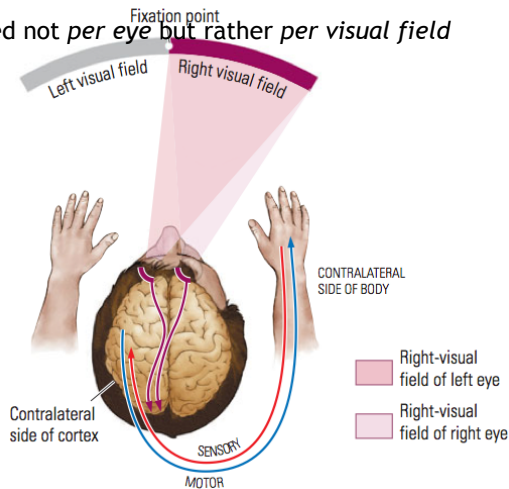
- Contralaterality...
- Hemispheric Specialization...
  - Lateralization
- Cortical Specialization...
  - different areas perform different functions

937

Psyc 362 - Spring 2018

## Contralaterality - the Crossed Brain - Vision

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



938

## Lateralization

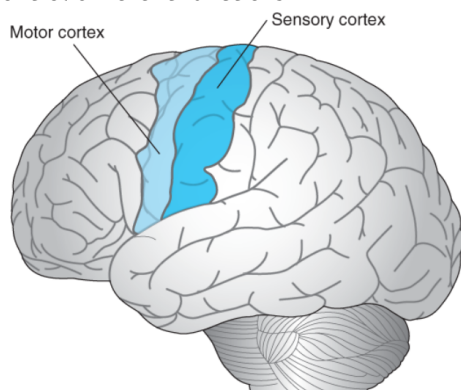
Function	Left Hemisphere	Right Hemisphere
Visual System	Letters, Words	Geometric patterns, faces
Auditory	Language-related sounds	non-language sounds, music
Memory	Verbal	Nonverbal
Language	speech	prosody
Spatial		geometry, map-reading, mental rotation

939

Psyc 362 - Spring 2018

## Cortical Specialization

- Different areas control different functions



940

Psyc 362 - Spring 2018

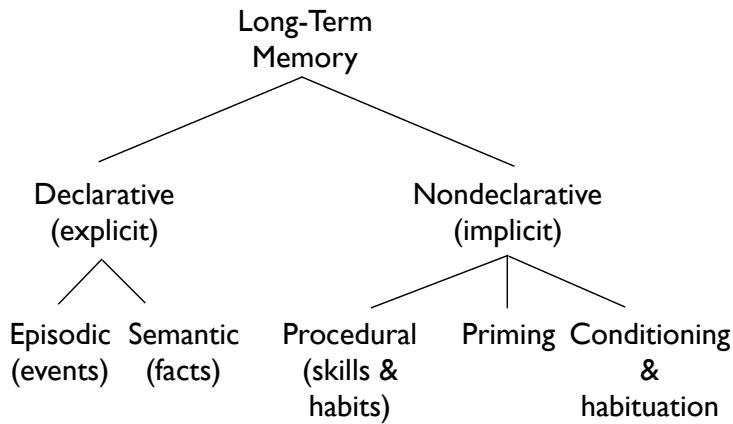
## Chapter 7

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

941

Psyc 362 - Spring 2018

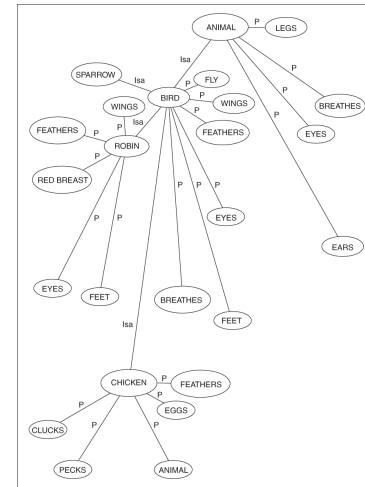
## Squire (1993) Taxonomy of Long-Term Memory



943

Psyc 362 - Spring 2018

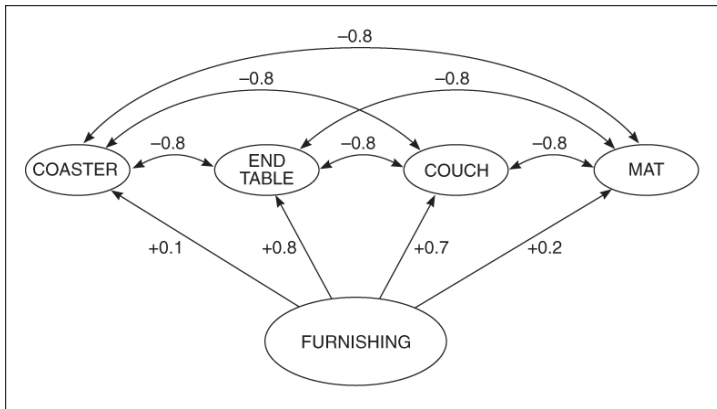
## Revised Network Model



944

Psyc 362 - Spring 2018

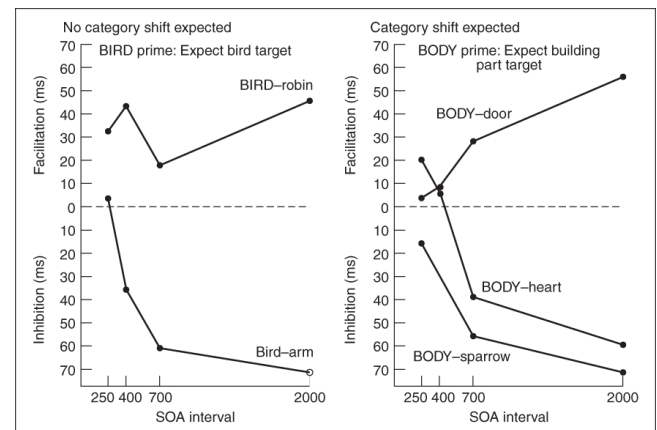
## Semantic Net Model



945

Psyc 362 - Spring 2018

## Neely (1977)



946

Psyc 362 - Spring 2018

## Schemas, Scripts and Memory

- Schemas
- Scripts
- Reconstructive vs. Reproductive Memory

947

Psyc 362 - Spring 2018

## Concepts & Categorization

- Major Themes
  - Classic
  - Probabilistic
  - Explanation-based

948

Psyc 362 - Spring 2018

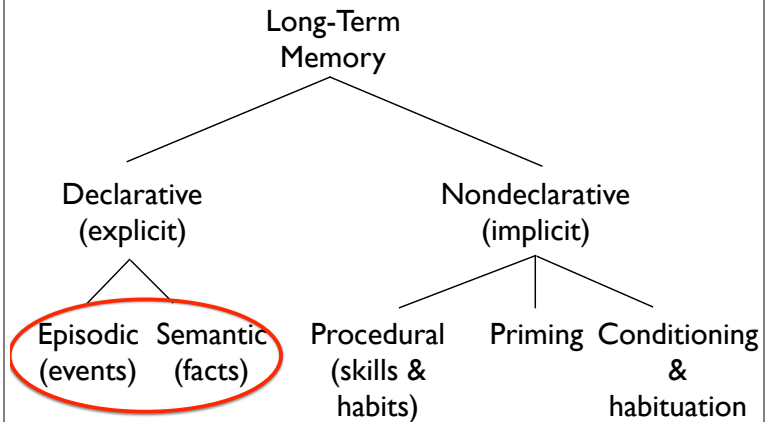
# Chapter 8

- 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

949

Psyc 362 - Spring 2018

## Squire (1993) Taxonomy of Long-Term Memory



950

Psyc 362 - Spring 2018

## The Seven Sins of Memory (Schacter, 1999)

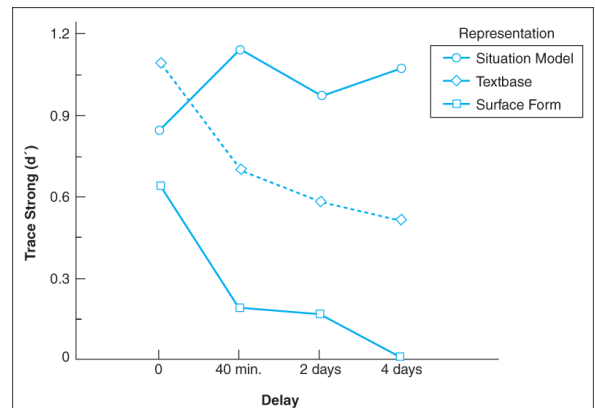
Sin	Description
<b>Transience</b>	Losing access to information across time, whether through forgetting, interference, or retrieval failure
<b>Absent-mindedness</b>	Everyday memory failures caused by insufficient attention or superficial, automatic processing during encoding
<b>Blocking</b>	Temporary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

952

Psyc 362 - Spring 2018

## Memory vs. Levels of Representation

- Kitsch et al. (1987)



953

Psyc 362 - Spring 2018

## Review

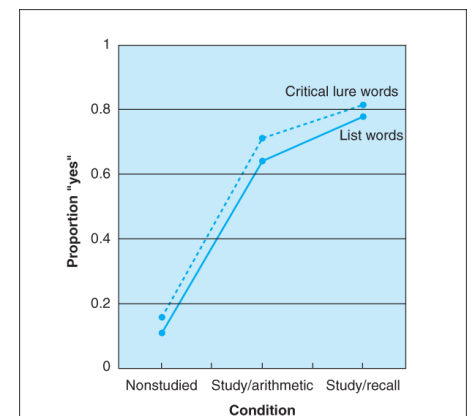
- Metamemory
  - source monitoring
  - prospective memory
  - familiarity / feeling of knowing
- False Memory
  - DRM Paradigm
  - Semantic Network / Spreading Activation
  - Semantic Integration
  - Leading Questions / Memory Distortion

954

Psyc 362 - Spring 2018

## The DRM Paradigm

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



955

Psyc 362 - Spring 2018

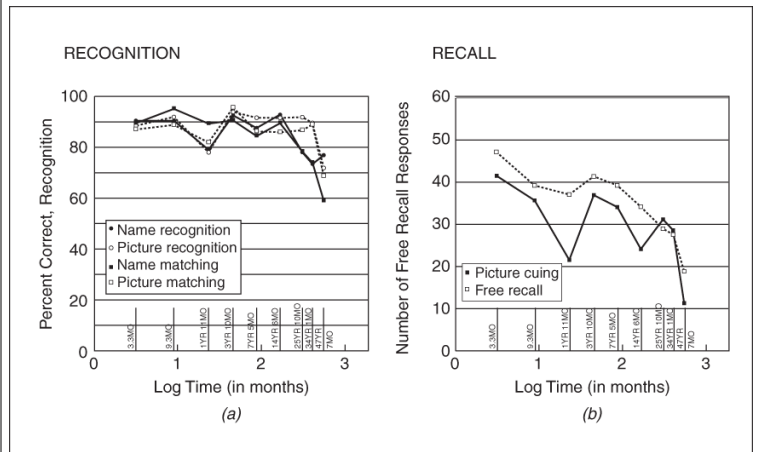
## Repressed and Recovered Memories

- 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

956

Psyc 362 - Spring 2018

## Bahrnick's Results



957

Psyc 362 - Spring 2018