Week 8

Long-term memory
Knowledge representation

10/17/2018
Roadmap

- Long-term memory
  - Implicit vs. explicit
  - Priming
  - Recall vs. recognition
  - Mnemonics
  - Forgetting
- Knowledge representation
  - What is concept?
More on implicit vs. explicit memory

• Test for implicit memory
  ➢ Repetition priming
    o Conscious
    o Unconscious
  • Semantic or identity prime
  • Homophone prime
More on implicit vs. explicit memory

• Test for explicit memory
  ➢ Recall
  ➢ Recognition

➔ What’s the difference?
LTM recall: state-dependent memory
LTM recall: context vs. state-dependent
Why and how does mnemonics help us store and recall better?

• Recoding
  ➢ Scattered pieces of info ➔ meaningful unit

• Involvement of working memory?
Other mnemonic techniques

- Method of loci
- Interacting images
- Pegword method
Long term memory – Forgetting

• Paired-associates task: Interference

  ➢ Proactive

Science – cat
Science – rain

Recall the new one: Science - ?
Long term memory – Forgetting

• Paired-associates task: Interference
  ➢ Retroactive
  Science – cat
  Science – rain
  Recall the old one: Science - ?
Paired associates task

• What might affect your recall?
• Did you use any mnemonic strategies?
Localization of interference in the brain

• Proactive interference (BA45) (Jonides & Lee, 2006)
• Predictive coding (BA47) (e.g., Lee et al., 2014)

Ungrammatical > Grammatical

Current results (n=10)
Amnesia

- Retrograde vs. Anterograde

- Amnesia and working memory
Knowledge representation

How do we describe “knowledge” stored in memory?

What is concept?
Knowledge representation
Hierarchical network model
Results supporting the hierarchical model
Spreading activation in connectionist models
John Anderson’s Adaptive Control of Thought (ACT) model
Concept

• Classical view
  ➢ List of features
  ➢ Binary distinction
  ➢ No goodness-of-fit

• Classical vs. Prototype vs. Exemplars