Cultural differences and cognition

12/10/2018
Roadmap

• Learning styles and individual differences
• Cultural differences and cognition
• Schooling and literacy on cognition
• Situated cognition
• Cognitive aging
• Wrap up
Learning objectives

1. Why do we care about cultural effect on cognition?
2. How do cultural differences influence different aspects of cognition?
3. How does literacy training influence cognition?
4. How does schooling influences cognition?
5. What is situated cognition?
6. What are some factors contributing to cognitive aging?
Learning styles and individual differences

Honey & Mufford (1992): Learning Style Questionnaire (LSQ)

1. Activists: learning by doing

2. Reflectors: learning by reflection

3. Theorists: learning from models and concepts

4. Pragmatists: learning by putting theories into practice
Culture and individual differences in cognition

• What is culture?

• Why do we care about cultural effect on cognition?

➢ Cultural relativism

➢ Cultural universality
Culture and individual differences in cognition

• Learning styles
• Memory recall
• Categorization
• Naming tasks
• Perception
• Sense of quantity
Cultural influence in learning styles

- Educational system
- Teacher-student relationship
- Family education
- Social attitude
Cultural differences in memory recall

• Object frequency

Squid
Chopsticks
Sea cucumber
Tripe
Paella
Sashimi
Tenpura
Cultural differences in memory recall

- Categorization
  - Knowledge-based
  - Cultural and educational influence on knowledge
  - Influence on categorization

Hat, gloves, glasses

bucket, ice, knife
Cultural differences in memory recall

- Naming task
Cultural influence in perception

- Which line is longer?
Cultural influence in perception

• Which horizontal line is longer?

The Müller-Lyer illusion
Cultural influence in perception

- Which line is longer?
Cultural influence in perception

• Which line is longer?
  Horizontal – Vertical illusion
Cultural influence in perception

• Name 6 things that first come to your mind from seeing the shape below. (30 seconds)
How schooling influences cognition

• Knowledge representation
• Literacy training
• Arithmetic skills
• Problem-solving
• Reasoning
• Social norms
Culture and individual differences in cognition

Vygotsky

1. Co-occurrence of events or problems

2. Frequency of events

3. Context-dependent task difficulty
How literacy influences cognition

• Reasoning (Luria 1976)
  ➢ Illiterates treats premises as experiences
  ➢ Illiterates treats premises as independent information

→ Lack of training through schooling
→ Poorer temporary storage of information
How literacy influences perception

• Two transcription systems to transcribe Mandarin

  ➢ Pinyin (Roman alphabet)

  gai ‘cover’

  ➢ Zhuyin (character-based system)

  ㄍㄞ‘cover’
How literacy influences perception

- Phoneme monitoring task: detect if the syllable contains the sound [i] (as in “bee”) (Lin & Lin 2012)

- Pinyin (Roman alphabet)
  - more “yes” responses

  gai ‘cover’

- Zhuyin (character-based system)
  - More “no” responses

  ㄍㄢ ‘cover’
How literacy influences perception

- Phoneme monitoring task: detect if the syllable contains the sound [i] (as in “bee”) (Lin & Lin 2012)

Implications

- Literacy training alters how listeners perceive speech
- Even speaking the same native language, different transcription systems impact perception
Situated cognition

• Context-specific cognitive processes

➤ Working intelligence (Scribner 1984)

With or without a practical purpose...

○ Practical thought

○ Theoretical thought

• Are you more efficient when taking an exam than doing other things with no time pressure?
Cognitive aging

https://goo.gl/vU9BD9
Cognitive aging

• Everyone follows the same pattern of cognitive decline?

• What may contribute to cognitive aging?
Cognitive aging

- What may contribute to individual diff. in cognitive aging?

To name just a few:

- Living environment
- Stimulus
- Education
- Health history
- Cognitive style
Wrap up

• What have we learned this semester?

➢ Read the syllabus again!

• What’s the ultimate goal of the study of cognition?

• Why do we need to know X in order to understand human cognition?
Wrap up

- Cognition since birth
  - Physiological maturation

- Experiences
  - Sensory input
  - Interaction with others

- Social

- Cultural
Plan for Wednesday

• Review lecture
• Group discussion for review
• Q&A sessions