Content for Today and Next Wednesday

Development from infancy to adulthood
  Concept of Development
  Modal model for describing cognitive processes
  Perception
  Attention
  Learning and Memory
  Language
  Problem Solving
  Role taking
  Erikson’s theory of personality development
  Moral Development
Concept of Development

• Cumulative change through the lifespan for which there is a normative timeline.
• Both qualitative and quantitative changes occur.
• Development is a constructive process.
• Product of interaction between heredity and environment (nature/nurture).
Thinking as Information Processing

- Information Processing Model
Perception -- The Mechanism for Information Input

- Naïve Realism
  - Why it is wrong
    - Dogs, bats, etc. and high pitched sound
    - Butterflies and light
- Illusions and why we study them
  - Waterfall illusion
  - Temperature illusions
  - Moon illusions
- On the next several slides say to yourself whether the two symbols are the same or different
Experience Effects on Perception and Perceptual Development

- Character Perception and familiarity
- Speech Perception in infants
- Lack of visual experience/blindness
  - Short-term effects
  - Long-term effects
- Strabismus
Visual search experiments

- **Looking for the target**
  
  - **Feature search**
    
    - This is easy because you find the target by looking for a single feature.
    
    - → you don’t need attention
  
  - **Conjunction search**
    
    - For this you need to combine two or more features (color and orientation)
    
    - → you need attention
• Conjunction search
  – For this you need to **combine** two or more features (color and orientation)
  – → you need attention

  – Because you can attend an item one at a time, the difficulty in the conjunction search increases proportional to the number of items in the stimulus frame.
  – This is not the case in the feature search.
Find Which is more difficult?
Find  

Which is more difficult?
Attention

• Focused attention - selective information processing
  – Single features can be processed in parallel, multiple features require serial processing
  – Arousal and complexity
• Development from externally determined to internally controlled attention.
Memory

- Where is the sun when the full moon rises?
Memory

- Where is the sun when the full moon rises?
Memory as an Active Process

- Digit span and memory capacity
- What you remember depends on how you process the information.
  - Levels of processing – how you process information is important for memory, intention to learn is not
  - Reading a textbook
- Memory is a constructive process, recall is a reconstructive process
Which of these sentences did you hear?

- 1. The car climbed the hill.
- 2. The girl who lives next door broke the window.
- 3. The old man who was smoking his pipe climbed the steep hill.
- 4. The tree was in the front yard.
- 5. The scared cat, running from the barking dog, jumped on the table.
- 6. The window was on the porch.
- 7. The barking dog jumped on the old car in the front yard.
- 8. The cat was running from the dog.
- 9. The old car pulled the trailer.
- 10. The tall tree in the front yard shaded the old car.
Basic Principles

- Information processing limits are set by the sense receptors and nervous system that are initially determined by genetic endowment.
- Experience affects both the structure of the nervous system and the ways in which we use it.
- Effective use of the Information Processing system depends on experience, practice, and effort.