Quick Question

• How has your cognitive development changed from the beginning of high school until now?

Developmental Psychology

• The study of changes that occur in people’s abilities and dispositions as they grow older
• In this chapter, you were introduced to:
  – How infants learn about the physical world
  – How infants develop cognitively
  – How infants acquire language
Learning about the Physical World

- Infants are active explorers from birth
- Using your own experience, can you think of an example of an infant exploring her world?

Core Physical Principles

- Object permanence
- Non-penetration of solid objects
- Animacy

Review: How We Learn about the Physical World

- Human infants learn about the physical environment through exploration
- There are certain properties of the physical world that infants can recognize from an early age
Major Theories of Cognitive Development

- Piaget’s physical approach
- Vygotsky’s sociocultural approach
- Information-processing approach

Piaget

- Infants use play and exploration to try to figure out what they can do with objects
- Schemes - mental representations of what a specific something does
  - Assimilation and accommodation
- Operations - reversible actions

Four Stages of Cognitive Development

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age Range</th>
<th>Principles Acquired</th>
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<tbody>
<tr>
<td>Sensorimotor</td>
<td>Birth to 2 years</td>
<td>Object permanence</td>
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<td>Preoperational</td>
<td>2 years to 5 years</td>
<td>Overcome egotistic thought</td>
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<td>Concrete Operational</td>
<td>5 years to 9 years</td>
<td>Logical thought</td>
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<tr>
<td>Formal Operational</td>
<td>9 years to 11 years</td>
<td>Abstract thought</td>
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Vygotsky’s Sociocultural Environment

- Language leads to higher thought
- Private speech paves the way for inner speech
- Zone of proximal development: Some activities require one to complete them alongside competent others, but not alone
- Dialogue promotes critical thinking and can later be substituted with self-dialogue

Information Processing Approach

- The ways that the mind, as a machine, changes over time
- Explicit memory
- Speed of processing improves with age, as does working memory

Understanding of Mind

- Young children describe others in terms of motives, desires, emotions
- Children first develop a sense of “make-believe”
- Children later develop Theory of Mind
  - The understanding that a person’s desires may differ from one’s own
Autism

• In what ways is a lack of understanding of mind related to autism?

Language Development

• Ways that languages are the same
  – Morphemes - arbitrary and discrete symbols, smallest unit of language
  – Hierarchical structure of units (sentences - phrases - morphemes - phonemes)
  – Grammar - rules, for phonology; morphology; syntax
  – Grammar is implicitly learned

How Language Develops

• Speech sound perception
• Cooing and babbling
• Comprehend language before producing it
• Rapid vocabulary acceleration
• Word extension to appropriate categories
• Grammatical rules
Internal Language Supports

• Chomsky’s innate language acquisition devise
  – Deficits in people with brain damage or genetic disorder
  – Inventing grammar - Creole and sign language
  – Critical period prior to age 10

External Language Supports

• Motherese - repetition, pitch variation, simplified speech
• Overhearing speech
• General learning abilities - chimpanzees and bonobos have the ability to learn language

Themes in Development

• At all stages, people are active participants in their development
• Individual development is also influenced by elements of the external world, including other people and physical elements
• We never stop developing!
Assessment

• What are three ways that language affects development?