Lesson 4
Development of Thought and Language

Introduction: Connecting Your Learning

The first part of Lesson 4 explores the development of thought processes in children. You will study in some depth the cognitive development theory of Swiss psychologist Jean Piaget (1896-1980) and the social development theory of Russian psychologist Lev Vygotsky (1896-1934).

The second part of this lesson explores the development of language. You will study universal characteristics of human language, language development, and the mechanics of language learning. Also, you will study language learning by non-humans.

Lectures and Readings

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<tr>
<th>Media Lecture</th>
<th>Textbook Readings</th>
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<tr>
<td>Yale Open Source Video: <em>What Is It Like to Be a Baby: The Development of Thought</em></td>
<td>Chapter 11 – &quot;The Development of Thought and Language&quot;</td>
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<tr>
<td>Yale Open Source Video: <em>How Do We Communicate?: The Development of Thought</em></td>
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Focusing Your Learning

Course Competencies covered in this lesson:

- Describe the basic theories of human development and language in children.

Lesson Objectives

By the end of this lesson, you should be able to:

1. Define developmental psychology.
2. Compare and contrast Piaget’s and Vygotsky’s theories of child development.
3. Describe the influences of the sociocultural environment in development.
4. Discuss Chomsky’s language-acquisition device.
5. Discuss the influences of the language-acquisition support system.
6. Compare the inborn mechanisms of humans and apes.

Approaching the Objectives
Developmental psychology is the study of physical, mental, and social changes in people over time. Some studies begin as early as the embryonic stage. People never stop growing, and challenges and changes occur in every major stage of life. Basically, the human mind is an active and dynamic process on a journey through time. In fact, in this fast-paced and changing world, you probably have to go through more changes than your parents and ancestors did.

Chapter 11 introduces you to developmental changes from infancy through adulthood. Piaget proposed a universal stage theory of childhood cognitive development. Children learn by interacting with their physical environment. Piaget refers to them as "explorers" or "little scientists." Children incorporate new information through processes of assimilation and accommodation. Assimilation is the incorporation of new information into existing schemes or mental categories. Accommodation is the process of changing existing mental categories to incorporate new experiences.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Age</th>
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<tbody>
<tr>
<td>Sensorimotor Scheme</td>
<td>Explores objects through concrete actions.</td>
<td>Birth to 2 years old</td>
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<tr>
<td></td>
<td>Represents absent objects. Understands properties based on appearance and not principles.</td>
<td>2 years old to 7 years old</td>
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<tr>
<td>Preoperational Scheme</td>
<td>Reasoning ability is based on actual experiences or tangible concepts.</td>
<td>7 years old to 12 years old</td>
</tr>
<tr>
<td>Concrete-Operational Scheme</td>
<td>Reasoning incorporates abstract concepts.</td>
<td>Adolescence to Adulthood</td>
</tr>
<tr>
<td>Formal-Operational Scheme</td>
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</table>

Consider this!

Give an example of each stage by describing the behavior:

- Sensorimotor Scheme
- Preoperational Scheme
- Concrete-Operational Scheme
- Formal-Operational Scheme

Vygotsky challenges Piaget's development theory by countering with his own sociocultural theory. He does not provide an elaborate stage-progression theory of cognitive development, transitioning from simple tasks to more complex ones. Children develop cognitively by interacting with their social environment. Children internalize symbols, knowledge, and ideas through culture and language.
Bloom refers to an experiment by Andrew Meltzoff in which newborn babies mimic the behavior of sticking out their tongues, insinuating a social connection from birth. Psychological and social research have provided evidence to support the theory that all humans do not go through the stages in the order that Piaget proposed.

**Consider this!**

Compare the theories of Piaget and Vygotsky.

Bloom shows several videos in the classroom that are not viewable due to copyright permissions. The videos relate to "Children's Understanding of Minds." (See pp. 414-417 in the textbook.) The video below provides similar information to the one mentioned in the lecture.

**Piaget & Vygotsky**

### What Is Language?

Is language innate? How do children learn a language? How do non-humans communicate?

Bloom states that all normal humans possess a language, *a complex set of symbols, which are entities that represent other entities*. Language is part of your neurological makeup, as studied in Lesson 2. The left hemisphere is the language area of the brain that allows for the production and understanding of sets of symbols and their meaning.

Distinguishing the differences between languages, particularly that of sound, is probably much easier than recognizing the similarities. Some languages consist of universal characteristics.

### Universal Characteristics of Human Language

- Vocabulary consists of a set of symbols, which are entities that represent other entities
- Hierarchical in structure
- Learned implicitly and not explicitly
Consider this!
Explain the three universal characteristics of human language.

Four Stages of Language Development in Children

- Babies six months and younger can distinguish any two phonemes.
- Babies from birth to eight months coo and babble to prepare the vocal apparatus for speech.
- Babies from 10 to 12 months recognize words.
- Children from 18 to 24 months demonstrate knowledge of word-order rules.

Consider this!
Review the table on page 326 in your textbook.
Explain the four stages of language development. Incorporate in your discussion the universal characteristics of language.

American linguist Noam Chomsky (1928-d.) believes language development is innate. Chomsky pioneered the concept of an innate language learning mechanism, language-acquisition device (LAD). LAD guides children's language development and includes the foundations for universal grammar.

Steven Pinker on Noam Chomsky's theory of Linguistics & Politics (Part 1)

Consider this!
Explain the contribution of Chomsky's LAD in developmental psychology.
Most theorists agree with Chomsky's LAD theory but some hold views similar to Vygotsky's idea that social systems play a much larger role.

Consider this!

What evidence supports the sociocultural role in language development? Explain cross-cultural differences in language development.

Further discussion by Bloom addresses a developmental disorder, autism. View the video Understanding Autism: Dr Temple Grandin. Also, read the text on "Autism: A Disorder in Understanding Minds."

Consider this!

Explain how developmental psychology contributes to the understanding of mental states and behavior. Include a discussion of developmental disorders in your reflective essay.

Bloom will conclude his lecture on language learning in Lesson 5. However, you can continue reading Gray's discussion on research in language learning by non-humans on pages 430-432.

Consider this!

Discuss the ongoing debate about whether or not the apes in the research study actually learned human language and relevance of the research findings to developmental psychology.

Summarizing Your Learning

- Go to the PsychSim5 Web site. Once there, select Cognitive Development. You can review at your own pace by selecting the NEXT button to the right of the screen.