Lecture Overview

• Studying Development
• Physical Development
• Cognitive Development

Studying Development

• Developmental Psychology: studies age-related changes in behavior and mental processes from conception to death
Life Span Development

<table>
<thead>
<tr>
<th>Stage</th>
<th>Approximate Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenatal</td>
<td>Conception to birth</td>
</tr>
<tr>
<td>Infancy</td>
<td>Birth to 18 months</td>
</tr>
<tr>
<td>Early childhood</td>
<td>18 months to 6 years</td>
</tr>
<tr>
<td>Middle childhood</td>
<td>6–12 years</td>
</tr>
<tr>
<td>Adolescence</td>
<td>12–20 years</td>
</tr>
<tr>
<td>Young adulthood</td>
<td>20–45 years</td>
</tr>
<tr>
<td>Middle adulthood</td>
<td>45–60 years</td>
</tr>
<tr>
<td>Later adulthood</td>
<td>60 years to death</td>
</tr>
</tbody>
</table>

Studying Development—Key Theoretical Debates

- **Nature vs. Nurture:** heredity vs. environment
- **Plato:** Born with innate knowledge & abilities
- **Aristotle:** Learning occurs through the senses

**Nature vs. Nurture**

- **Maturation:** Development governed by genetically predetermined signals
- **Critical period:** A period of special sensitivity to specific types of learning that shapes the capacity for future development
  - Imprinting
- **Tabula rasa:** Blank slate
Studying Development

- Continuity vs. Stages: continuous & gradual vs. periods of abrupt change followed by periods of little change
- Stability vs. Change: characteristics maintained vs. characteristics vary over time

What are the Key Theoretical Debates?

- Nature vs. Nurture
- Continuity vs. Stages
- Stability vs. Change

Studying Development (Continued)

- What position on these three debates is most correct? Most psychologists support the interactionist perspective, which recently evolved into the biopsychosocial model.
Pause & Reflect: Critical Thinking

- Behaviorist John Watson said: “Give me a dozen healthy infants, well-formed, & my own specified world to bring them up in, & I'll guarantee to take anyone at random & train them to become any type of specialist I might select-- doctor, lawyer, artist, merchant-chief, & yes, even beggar man & thief, regardless of his talents, penchants, tendencies, abilities, vocations, & race of his ancestors.” (Boakes, 1984, pp. 226) Do you agree? Why or why not?

Studying Development: Research Methods

CROSS-SECTIONAL RESEARCH
- Different participants of different ages are compared at one point in time to determine differences.

LONGITUDINAL RESEARCH
- Same participants are assessed at several points of time to observe changes.

Which results are “true”? Figure 9.2

Cross-sectional studies have shown that reasoning and intelligence reach their peak in early adulthood and then gradually decline. In contrast, longitudinal studies have found that a marked decline does not begin until about age 50. (Adapted from Schaie, 1994, with permission.)

cohort effects
1. Briefly describe the three key areas of debate in developmental psychology.

2. What are the key differences between cross-sectional & longitudinal research?
Physical Development: Three Stages of Prenatal Development

1. Germinal Period: conception to uterine implantation
2. Embryonic Period: uterine implantation through the eighth week
3. Fetal Period: eighth week until birth

Physical Development: Hazards to Prenatal Development

- Teratogens: environmental agents that cause damage during prenatal development
- Categories of teratogens:
  - Legal & illegal drugs
  - Diseases & malnutrition
  - Exposure to X-rays & stress
Physical Development: Hazards to Prenatal Development

<table>
<thead>
<tr>
<th>Hazardous Factor</th>
<th>Possible Effects on Fetus, Infants, Newborns, or Young Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Factors</td>
<td></td>
</tr>
<tr>
<td>Malnutrition</td>
<td>Low birth weight, malformations, low developed brain, poor reactivity to disease</td>
</tr>
<tr>
<td>Stress exposure</td>
<td>Low birth weight, hyperactivity, anxiety, feeding difficulties</td>
</tr>
<tr>
<td>Exposure to X-rays</td>
<td>Malformations, cancer</td>
</tr>
<tr>
<td>Legal and Illegitimate drugs</td>
<td>Malformations of brain growth, lowering IQ, low birth weight, brain and kidney malformations, and death</td>
</tr>
<tr>
<td>Diseases</td>
<td>Congenital anomalies, mental retardation, heart defects, malformations, brain malformations, preeclampsia</td>
</tr>
</tbody>
</table>

Physical Development: Early Childhood

- Three key areas of early childhood development:
  - Brain
  - Motor
  - Sensory/perceptual

Physical Development: Prenatal Brain Development
Lifespan Changes in Body Proportions

As a child develops, his or her neurons grow in size & the number of dendrites & axons increase.

Smell, taste, touch, & hearing are well developed at birth.

Vision is poorly developed at birth.
Prenatal Development

Touch & sense of pain highly developed
Taste & smell well developed

During the last few months, the child can hear sounds outside the womb.
Newborns can easily recognize mothers’ voices
Preference for stories that were read to them in utero

Physical Development: Early Childhood

• Milestones in motor development

Physical Development: Adolescence & Puberty
Physical Development: Adolescent Growth Spurt

Physical Development: Adulthood

- Middle Age:
  - Female Menopause
  - Male Climacteric

Physical Development: Adulthood

- Late Adulthood:
  - Primary Aging: gradual, inevitable changes
  - Secondary Aging: changes due to disease, disuse, or neglect
Physical Development: Adulthood

- Alzheimer’s disease
- Information processing
- Theories on aging & death
  - Programmed theory
  - Damage theory

1. Teratogens are environmental agents that may lead to birth defects.

2. The senses of Smell, taste, touch, & hearing and ___________ are all well developed at birth.
Cognitive Development

• Jean Piaget believed infants begin at a cognitively “primitive” level & progress in distinct stages.

• Piaget’s schemas are the most basic unit of intellect, which act as patterns that organize interactions with the environment.

Cognitive Development (Continued)

• Schemas grow & change due to:
  - Assimilation: absorbing new information into existing schemas
  - Accommodation: adjusting old schemas or developing new ones to better fit with new information

Cognitive Development (Continued)

• Can you draw this “impossible figure”? If not, it’s likely that you have not developed the required artistic schema.
Pause & Reflect: Assessment

1. Schemas act as patterns that organize interactions with the environment. Absorb new info into existing schemas.
2. Assimilation occurs when schemas absorb new info into existing schemas, whereas accommodation involves adjusting old schemas or developing new ones.

Cognitive Development:
Piaget’s Four Stages

- Sensorimotor: birth-2 years
- Preoperational: 2-7 years
- Concrete Operational: 7-11 years
- Formal Operational: 11 years & up
Testing Object Permanence

- Operations
- Egocentrism
- Animism
• Adolescent egocentrism
• Personal fable
• Risk taking
• Imaginary audience

Brain Changes in Adolescence

3 – 6 yrs
7 – 15 yrs
16 – 20 yrs

Pause & Reflect: Critical Thinking

• Can you explain how this type of risk taking may be an example of the “adolescent personal fable”?
Cognitive Development: Assessing Piaget’s Theory

Two Major Criticisms
- Underestimated abilities (e.g., newborns can imitate facial expressions)
- Underestimated genetic & cultural influences

Piaget

Pause & Reflect: Assessment

- Fill-in-the-blanks with the correct label for each of Piaget’s four stages of cognitive development.

(sensorimotor, preoperational, concrete operational, formal operational)