

Day 1 (10/14)

Prenatal Development and the Newborn

- **Developmental psychology** examines our physical, cognitive, and social development across the lifespan
 - Study of how our behavior and thoughts change over time
 - 4 Areas of Concern: Physical, cognitive, moral, social
- Major Issues in Developmental Psych
 - Nature and nurture: How does our genetic inheritance (our nature) interact with our experiences (our nurture) to influence our development?
 - Continuity and stages: What parts of development are gradual and continuous, like riding an escalator? What parts change abruptly in separate stages, like climbing rungs on a ladder?
 - Stability and change: Which of our traits persist through life? How do we change as we age?
- Conception begins with egg and release of about 200 million sperm
 - Sperm seeks out egg and attempts to penetrate the egg's surface
 - Once the sperm penetrates the egg, the fertilized egg is called a zygote.
- Fewer than half of all fertilized eggs, called **zygotes**, survive beyond the first 2 weeks
 - 10 days after conception, the zygote attaches to the mother's uterine wall and the zygote's inner cells become the **embryo**.
 - Stage lasts 6 weeks
 - Heart begins to beat and organs begin to develop
 - The outer cells (outer part of the zygote) become the **placenta**, the life-link that transfers nutrients and oxygen from mother to embryo.
 - 9 weeks after conception, an embryo looks unmistakably human known as the **fetus**.
 - 6th month before the stomach and other organs have formed enough to survive outside of the mother
 - Can hear (and recognize) sounds and respond to light
 - Learning of language begins in the womb. Prefer mother's language and voice.
 - ZEF: Zygote → Embryo → Fetus
- Placenta screens out many harmful substances, but some slip by. **Teratogens**, agents such as viruses and drugs, can damage an embryo or fetus
 - Alcohol can cause **fetal alcohol syndrome (FAS)**, marked by a small, disproportionate head and lifelong brain abnormalities
 - Drugs

- Sexually transmitted infections (STIs) ex. HIV, herpes, genital warts
- **Habituation**—a decrease in responding with repeated stimulation

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Day 2 (10/18)

Infancy and Childhood

- **Reflexes:** Babies born with basic programming known as reflexes
 - **Rooting Reflex:** Touch on the cheek, baby will turn their head towards the touch
 - **Sucking Reflex:** The baby will suck on anything put in their mouth
 - **Grasping Reflex:** When something is placed in the palm of hand or foot, the baby will try to grab hold of it
 - **Babinski Reflex:** When baby's foot is stroked, they will spread their toes
- **Habituation:** A decrease in responding with repeated stimulation
 - Infants pay more attention to new objects than habituated ones, meaning they're learning
- **Maturation:** Physical growth, regardless of environment
 - Although the timing of growth may be different, sequence is almost always the same
 - 3 months: roll over
 - 5½ months: sit alone
 - 11½ months: stand alone
 - 12 months: walk alone
 - 17 months: walk up steps (most fall down steps)
- Earliest age of conscious memory is around 3½ years
 - 5 year old has a sense of self and an increased long-term memory, thus organization of memory is different from 3-4 years
- **Piaget's Stages of Cognitive Development (SPCOFO)**
 - Piaget believed that our cognitive development is shaped by the errors we make
 - **Schemas:** Mental molds into which we pour our experiences
 - Process of **assimilation** involves incorporating new experiences into our current understanding (schema)
 - Process of adjusting a schema and modifying it is called **accommodation**.

Piaget's Stages of Cognitive Development

Typical Age Range	Description of Stage	Developmental Phenomena
Birth to nearly 2 years	<i>Sensorimotor</i> Experiencing the world through senses and actions (looking, hearing, touching, mouthing, and grasping)	• Object permanence • Stranger anxiety
About 2 to about 6 or 7 years	<i>Preoperational</i> Representing things with words and images; using intuitive rather than logical reasoning	• Pretend play • Egocentrism
About 7 to 11 years	<i>Concrete operational</i> Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations	• Conservation • Mathematical transformations
About 12 through adulthood	<i>Formal operational</i> Abstract reasoning	• Abstract logic • Potential for mature moral reasoning

- In the **sensorimotor** stage, babies take in the world by looking, hearing, touching, mouthing, and grasping
 - Lack the concept of **object permanence** (an object still exists even if you can't see it)
 - Learn to follow objects with their eyes
 - Trial and error
 - Understand basic laws of physics and are amazed at how a ball can stop in midair or disappear, have some conceptual understanding of the world
 - Can also count
- Piaget suggested that from 2 years old to about 6-7 years old, children are in the **preoperational stage** - too young to perform mental operations
 - Children learn mostly by language and mental images
 - Preschool children are **egocentric**. They cannot perceive things from another's point of view.
 - Preschoolers, although still egocentric, develop the ability to understand another's mental state when they begin forming a **theory of mind**.
 - **Time concepts** (last to develop). 5 more minutes means more time to play for a preschooler. They have no concept of how long 5 minutes will last.

- **Animism:** Child in preoperational thinking believes that inanimate objects have human feelings and intentions
- Criticism: Showed that children as young as 3 years of age could use mental operations
- **Concrete operational stage:** 6 to 7 years old grasp conservation problems and mentally pour liquids back and forth into glasses of different shapes conserving their quantities
 - Know that $4+8=12$, $12-4=8$
- Around age 12, our reasoning ability expands from concrete thinking to abstract thinking. We can now use symbols and imagined realities to systematically reason. Called **formal operational** thinking.
 - Can think through very complex problems, find several solutions, and choose the most logical one.
 - Can understand abstract ideas like loyalty, freedom, and friendship
 - Criticism: Rudiments of such thinking begin earlier (age 7) than what Piaget suggested
- Reflecting on Piaget's Theory. Today, researchers believe the following:
 - Development is a continuous process
 - Children express their mental abilities and operations at an earlier age (than what Piaget predicted)
 - Formal logic is a smaller part of cognition

Day 3 (10/20)

Social Development

- Up until about a year, infants don't mind strange people
 - At about a year, infants develop **stranger anxiety**
- Harry Harlow (1971): Showed that infants bond with surrogate mothers because of bodily contact
 - Act of being held stronger attachment than nutrients
- **Critical Periods:** The optimal period shortly after birth when an organism's exposure to certain stimuli or experiences produce proper development.
 - Those who are deprived of touch have trouble forming attachment when they are older
 - Like bodily contact, **familiarity** is another factor that causes attachment
 - In some animals (goslings), **imprinting** is the cause of attachment
- **Mary Ainsworth's Strange Situation.** Three types of attachment:
 - 1. Secure: Nervous but comfortable mother will come back

- 2. Avoidant/Insecure: Not comfortable with the relationship with mother and freaks out, may think mother won't come back. Avoids the caregiver.
- 3. Anxious/Ambivalent: Child doesn't respond when the mother leaves and doesn't pay attention to the caregiver either. Just avoid the situation. Kids under stress but appear calm. Playing it cool.
- **Secure Attachment:** Developed through having a relaxed and attentive caregiver
- **Insecure Attachment:** Harlow's studies showed that monkeys experience great anxiety of their terry-cloth mother is removed
- Separation anxiety peaks at 13 months of age, regardless of whether the children are home or sent to daycare
 - Self-concept, a sense of one's identity and personal worth, emerges gradually around 6 months
 - Around 15-18 months, children can recognize themselves in the mirror
 - By 8-10 years, their self-image is stable
- **Prolonged Deprivation:** If parental or caregiver support is deprived for an extended period of time, children are at risk of physical, psychological, and social problems, including alterations in brain serotonin levels.
- **Child-Rearing Practices:**
 - **Authoritarian:** Parents impose rules and expect obedience
 - **Permissive:** Parents submit to children's demands
 - **Authoritative:** Parents are demanding but responsive to their children
 - **Uninvolved:** Parents display a lack of interest or affection for the child
 - Different kids need different parenting practices, not a different parenting style
- Other influences outside of parenting style
 - **Temperament** (or emotional excitability) is a result of heredity (nature):
 - **Easy Temperament** → Excited and outgoing
 - **Difficult Temperament** → Shy and overreactive
 - **Slow-to-warm-up temperament** → Inactive/low intensity
 - **Personality** is more a result of our experiences and social interactions (nurture)
 - Both interact to produce you
- Development is a life-long process
- **Adolescence** is the life between childhood and adulthood
 - Begins with **puberty** (sexual maturation)
 - Occurs earlier in females (11) than males (13)
 - During puberty **primary sexual characteristics** - the reproductive organs and external genitalia - develop rapidly
 - **Secondary sexual characteristics** - the non-reproductive traits such as breasts and hips in girls and facial hair and deepening of voice in boys develop. Pubic hair and armpit hair grow in both sexes

- Puberty's Landmarks: **Spermarche** for boys and **menarche** for girls
- **Brain Development:** Until puberty, neurons increase their connections. However, at adolescence, **selective pruning** of the neurons begins. Unused neuronal connections are lost to make other pathways more effective.
- Frontal Cortex: During adolescence, neurons in the frontal cortex grow **myelin**, which speeds up nerve conduction
 - Frontal cortex lags behind the **limbic system**'s development
 - Hormonal surges and the limbic system may explain occasional teen impulsiveness
- **Cognitive Development:** Adolescents' ability to reason gives them a new level of social awareness. IN particular, they may think about the following:
 - **Metacognition** - Their own thinking
 - **Theory of Mind** - What others are thinking
 - **Imaginary Audience:** What others are thinking about them
 - How ideals can be reached. They criticize society, parents, and even themselves.
- **Develop Reasoning Powers:** According to Piaget, adolescents can handle abstract powers, i.e., they can perform **formal operations**. Adolescents can judge good from evil, truth and justice, and think about spirituality in deeper terms.

Day 4 (10/22)

- Lawrence Kohlberg sought to describe the development of moral reasoning by posing moral dilemmas to children and adolescents such as
 - **Preconventional Morality:** Before age 9, children show morality to avoid punishment or to gain reward
 - **Conventional Morality:** By early adolescence, social rules and laws are upheld for their own sake
 - **Postconventional Morality:** Affirms people's agreed-upon rights or follows personally perceived ethical principles
- **Moral action** involves doing the right thing. People who engage in doing the right thing develop empathy for others and the self-discipline to resist their own impulses.
 - **Moral feeling** is more than moral thinking. When posed with simulated moral dilemmas, the brain's emotional areas only light up when the nature of the dilemmas is emotion-driven.
- Criticisms of Kohlberg: Carol Gilligan pointed that Kohlberg only tested boys
 - Boys tend to have more absolute value in morality
 - Girls tend to look at situational factors

Erikson's Stages of Psychosocial Development

Stage (approximate age)	Issue	Description of Task
Infancy (to 1 year)	Trust vs. mistrust	If needs are dependably met, infants develop a sense of basic trust.
Toddlerhood (1 to 3 years)	Autonomy vs. shame and doubt	Toddlers learn to exercise their will and do things for themselves, or they doubt their abilities.
Preschool (3 to 6 years)	Initiative vs. guilt	Preschoolers learn to initiate tasks and carry out plans, or they feel guilty about their efforts to be independent.
Elementary school (6 years to puberty)	Competence vs. inferiority	Children learn the pleasure of applying themselves to tasks, or they feel inferior.
Adolescence (teen years into 20s)	Identity vs. role confusion	Teenagers work at refining a sense of self by testing roles and then integrating them to form a single identity, or they become confused about who they are.
Young adulthood (20s to early 40s)	Intimacy vs. isolation	Young adults struggle to form close relationships and to gain the capacity for intimate love, or they feel socially isolated.
Middle adulthood (40s to 60s)	Generativity vs. stagnation	In middle age, people discover a sense of contributing to the world, usually through family and work, or they may feel a lack of purpose.
Late adulthood (late 60s and up)	Integrity vs. despair	Reflecting on his or her life, an older adult may feel a sense of satisfaction or failure.

- **Erik Erikson:** Thought our personality was influenced by our experiences with others
 - Called them the **8 stages of psychosocial development**. Each stage centered on a social conflict.
 - As part of intimacy: Believed that marriage was at least a 5 to 1 ratio of positive to negative interactions is a clear indicator of a healthy relationship

Day 5 (10/26)

- **Parent and Peer Influence:** Although teens become independent of their parents as they grow older, they still relate to their parents in a lot of ways, including religiosity and career choices.
 - **Peer approval** and relationships are also very important

- **Emerging Adulthood:** Spans age 18-25. During this time, young adults may live with their parents and attend college or work. On average, emerging adults marry in their mid-twenties
 - The peak of physical performance occurs around 20 years of age, after which it declines imperceptibly for most of us.
 - **Middle adulthood:** Muscular strength, reaction time, sensory abilities and cardiac output begin to decline after the mid-twenties. Around age 50, women go through menopause, and men experience decreased levels of hormones and fertility.
 - After age 70, hearing, distance perception, and the sense of smell diminish, as do muscle strength, reaction time, and stamina
 - After 80, neural processes slow down, especially for complex tasks
- Life expectancy at birth increased from 49 to 1950 to 67 in 2004 and to 80 in developed countries. Women outlive men and outnumber them at most ages.
- **Dementia:** General term for a decline in mental ability severe enough to interfere with daily life
 - Increasing age brings increasing risk of dementia
 - Dementia is NOT a normal part of growing old
 - **Alzheimer's** is the most common cause of dementia
 - The risk for developing Alzheimer's disease also increases with age. Individuals who are in the early stages of this disease show more MRI activity in the brain than do normal individuals of the same age.
- As we age, we remember some things well. Recent events, first two decades
 - However recalling names becomes increasingly difficult
 - **Recognition** memory does not decline with age, and material that is meaningful is recalled better than meaningless material. The same is true for **prospective memory**.
 - A number of cognitive abilities decline with age. However, vocabulary and general knowledge increase with age.
- **Longitudinal studies** (studies conducted on the same subjects over a long period of time) suggest that intelligence remains relative as we age
 - Today we believe that **fluid intelligence** (ability to reason speedily) declines with age, but **crystallized intelligence** (accumulated knowledge and skills) does not
- There is no "normal" reaction or series of grief stages after the death of a loved one
 - **Kubler-Ross' five stages of grief** is not a roadmap to recovery, but a way of understanding different types of experiences people may have with grief
 - Grief is more sudden if death occurs unexpectedly
 - People who reach a sense of integrity in life (Erikson's terms) see life as meaningful and worthwhile
- Lifelong development requires both stability and change

- Personality gradually stabilizes as people age. However, this does not mean that our traits do not change over a lifetime
- Some temperaments are more stable than others.
- **James Marcia's Theory of Identity**
 - Identity: The fact of being who or what a person is; one person as a whole
 - Commitment: The dedication to one's sense of self
 - Diffusion: Low exploration of identity, and low commitment
 - Foreclosure: Low exploration to identity, and high commitment
 - Moratorium: High exploration to identity, and low commitment
 - Achievement: High exploration to identity, and high commitment
- **Harlow's Attachment Theory** says that our biological needs must be met in order to develop properly (nature)
- **B.F. Skinner** (the most famous behaviorist) said that all actions and behaviors are learned (including attachment). (Nurture)
- **Teratogens** introduced into the womb can lead to changes in physical and cognitive development (Environment)
 - Maternal smoking during pregnancy can lead to:
 - Increased risk of miscarriage or stillbirth
 - Slower than average cognitive development
 - Increased risk of sudden infant death syndrome (SIDS)
 - Does not lead to heart defects
- The **proximodistal trend** refers to development of motor skills beginning at the center and radiating outward
- Human growth and development (even in utero) is based on a combination of biology and environment