Stages of Development: Guided Notes Part 1

**Biological Review:**

Prenatal: A newly fertilized egg is called a **zygote.** During this stage, **cells** begin **dividing**, and then **differentiating** into different types, such as brain cells, muscle cells, etc. **Genes** direct the differentiation process. Around ten days after fertilization, the zygote attaches to the uterine wall. If the zygote survives to the fourteen day milestone, which only 50% do, then it becomes an **embryo.** The embryonic stage lasts between **two and eight weeks**, and during that time, the baby will not only **develop a noticeable heartbeat**, but most of the **body’s organs will have formed**. At nine weeks, the developing baby becomes a **fetus.** It will remain in the fetal stage until birth.

While in the womb, a fetus gets oxygen and nutrients via the **placenta**. While the placenta screens out most harmful substances to a fetus, some substances, known as **teratogens**, cross the placental barrier and cause the fetus to **develop abnormally**. Some come in the form of **viruses**, others in the form of **chemicals**. Mothers who **smoke** **while pregnant** often have babies with **low birth weight, abnormal fetal heart rates, and have a higher risk of miscarriage**. Women who **drink heavily while pregnant** risk having a child born with **Fetal Alcohol Syndrome**. In addition to **cognitive** **abnormalities, babies may be born with physical mis-proportions, especially in the face**. Mothers with **STD’s** are more likely to have children with **mental retardation and blindness**.

Newborns are automatically able to **turn their head towards the sound of a voice**, or a human face. Reflexes such as **sucking, swallowing and grasping** are instinctive behaviors that come automatically. Babies even have a **rooting reflex**, where if they are touched on the cheek, they will open their mouth and search for a nipple to latch on. **Temperament** of a baby is often visible within hours, and is a relatively stable personality aspect.

From infancy, we continually grow and develop neural connections and build mental processes. Even though babies **develop nerve cells at the rate of 4,000 per second**, an infant’s nervous system is still immature. The continual growth of neural networks is what allows babies to learn to **roll over, sit up, then crawl, then walk, then talk**. The building of neural pathways paired with muscular development and motor skills to determine when each child will meet developmental milestones. **Even toilet training is a result of neural development**. This is also the reason that **cognitive memory begins around age five**. This biological growth process, which continues through adolescence, is called maturation.

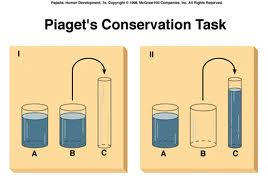
**Piaget:**

**Cognition** refers to all mental activities associated with thinking, knowing, and remembering. Jean Piaget, through his research in intelligence tests, advanced the belief that **the way children think and solve problems depends on their stage of cognitive development**. According to Piaget, we continually develop **schemas, or mental frameworks** to organize and interpret information. Our schemas are based on one of two things:

1. Assimilation: **Interpreting your new experiences in terms of your existing schemas**
2. Accommodation: **Adapting your current schemas to incorporate new information.**

Stages of Development:

Piaget divided child development into **four basic stages**. The first, the **sensorimotor stage, occurs from birth to age 2**. At this stage, **children develop their schemas via their five** **senses**. One of the key features of the sensorimotor stage is the development of **object permanence: the awareness that an object still exists even if they can’t be seen or heard**. Piaget assumed this cognitive ability developed around the age of eight months, however, research has since proven that babies have potential to develop memory and object permanence much earlier in life.

Ages 2-7 is what Piaget defined as the **preoperational stage.** During this stage, **children learn to talk, but still have skewed logic**. One notable finding is that children at this age **lack conservation, the principle that properties such as mass, volume, and number remain the same even if the object’s form changes**. If you look at the drawing to the right, children in the preoperational stage will often say that there is more liquid in beaker C because it is taller. They often **have a difficult time seeing the world through other people’s eyes, making them egocentric**. While Piaget believed the ability to take another’s viewpoint didn’t come until later in childhood, recent studies have shown that children as young as three are able to display this level of symbolic thinking.

According to Piaget, the **concrete operational stage** of development occurs from age 7 to age 11. By this age, children have **developed logical thought about concrete events, and now understand the principle of conservation.** Piaget also thought that children at this stage could understand mathematical transformations.

Piaget’s last stage is called the **formal operational stage**. This is for ages 12 and up. Piaget believed that by this age, children **could think logically about abstract concepts and form opinions about things they may have not yet experienced.** They become capable of **solving hypothetical problems**, understanding higher level math such as algebra or geometry, and strategizing to solve problems to their benefit, like in a game of chess. Recent research has again shown the children develop formal operational thought much younger than Piaget intended.

When analyzing Piaget, it is clear that he **underestimated children’s abilities at every stage of development**. Furthermore, **modern day psychologists believe that development is continuous, rather that divided into discrete stages** like Piaget envisioned. Despite the flaws in his research, Piaget taught us that **we learn best when the lesson builds on what we already know (schemas)**. Similarly, he taught us that **new reasoning abilities are built upon existing reasoning abilities**. Finally, Piaget reminded us that **children can’t reason using adult logic.** Piaget’s research served as a foundation upon which cognitive psychologists have built their theories of development.

**Vygotsky:**

Even though he only lived 38 years, Vygotsky had a significant impact on developmental psychology. **While Piaget believed that development proceeded learning, Vygotsky conversely believed that social learning fuels development**. Vygotsky’s socio-cultural approach to cognitive development is known as **Social Development Theory**. He asserts that an individual’s **social community plays a significant role in learning and making meaning**, much like the old adage: it takes a village to raise a child. While he agrees that biological functions are present at birth, he believes that **attention, sensation, perception, and memory** all develop as a function of the social environment in which a child is raised. According to Vygotsky, children transition from **elementary mental functions** to **higher mental functions** **using tools of intellectual adaptation.** These tools are socially and culturally determined, and **allow children to use basic skills more effectively**.

Both Piaget and Vygotsky believed that children are curious. **Piaget focused on self initiated discovery**, while **Vygotsky** is more interested in **the community’s impact on social development.** Specifically, he focuses on a **more knowledgeable other,** whether it be a parent, teacher, or someone who works with an individual child. **This person explains a new task** to the child, they talk about it, try it out and **this collaborative working environment facilitates growth**. This process doesn’t just work with children, but with people of all ages, as it is a common theory associated with teaching and learning. The more knowledgeable other could be a child teaching a parent about the latest teenage fashion.

In order to help a child grow, the more knowledgeable other has to understand the child’s **zone of proximal development**. The zone of proximal development is **the difference between what a child can achieve independently and what a child can achieve with guidance.** By teaching new skills or concepts in the zone of proximal development, children **build confidence in what they are able to achieve on their own**. Many of Vygotsky’s techniques are still used by education colleges in the training of teachers. For example, Vygotsky was a proponent of **mixed ability grouping**. In this setting, those who struggle can learn from their peers who are more knowledgeable and the more knowledgeable peers learn at a deeper level by trying to explain their peers. In addition, concepts like **scaffolding,** providing temporary support then removing it once the skill is learned, are also derived from Vygotsky’s school of thought.

Vygotsky wasn’t scrutinized nearly as much as Piaget. With that said, the **most common criticism** of his theories is that he **made assumptions about socialization, and that it will work the same way in all cultures.**

**Primary differences between Piaget and Vygotsky:**

1. **Piaget focused on stages of development, whereas Vygotsky focused on the impact of culture on social development.**
2. **Vygotsky puts significantly more focus on the role of social factors in cognitive development, while Piaget was criticized for underestimating this.**
3. **Vygotsky put strong emphasis on the role of language in cognitive development, while Piaget was criticized for not focusing on it.**

**Social Development:**

By the age of eight months, babies have developed schemas for familiar faces. When faced with unfamiliar faces, many infants display **stranger anxiety**. They become uncomfortable and afraid of people they don’t know. This is all part of the attachment process. **Attachment involves an emotional tie with another person** shown by seeking closeness when they are around, and showing distress upon separation.

When referring to infant-parent attachment, body contact, familiarity and responsiveness are crucial to fostering healthy levels of attachment. **Body contact is characterized by a combination of being held and being fed.** Attachment develops with the satiation of nourishment, and the security of warm, cuddly parents. Another piece of the attachment puzzle is familiarity. With some animals, especially birds, attachment develops during a critical period immediately after birth. They **become attached to the first thing they see**, which is usually their mother. This process, called **imprinting**, ensures they will have nourishment and be safe. **Humans,** unlike birds, do not imprint, and **develop attachment over time**. Indeed many **adopted children develop unbreakable bonds with their caregivers.** The final component of attachment is **responsiveness of the parent**. An unresponsive parent would ignore the needs of their child, perhaps only helping intermittently. This determines whether or not the child is securely attached. If a child is **insecurely attached**, they will not explore their environment, even when their primary caregiver is around. They are either overly clingy, or show complete indifference to their parents. **Securely attached** children **will explore the environment** around them if their parent is nearby. They are sad when their parents leave, and happy when they return, but not to excess.

**Effects of Attachment:**

**Secure attachment predicts social competence:** Children who are securely attached are more likely to be more outgoing, more confident, and more persistent in solving challenging problems.

**Deprivation of attachment is linked to negative outcomes**. Babies who grow in institutions without a primary caregiver have a hard time forming normal attachments to people and often appear withdrawn and frightened. Physical and emotional abuse is another factor that disrupts attachment. It is important to know that many children are resilient and do not show violence towards others. However, many who are abusive towards children were abused as children themselves.

**A responsive environment helps most infants recover from attachment disruption.** If an infant is neglected and adopted shortly their after, they will at first struggle to adapt. However, a positive environment filled with unconditional love will help the child develop a secure attachment to the new family.

While it is important for parents to be responsive, the way they respond also has an impact on attachment. Different types of parenting styles have shown to impact child development. **Authoritarian parenting** is marked by **impossible rules and expected obedience.** **Discipline is strict** and often physical. There is little warmth or dialogue. The parent communicates expectations, and the child follows. Maturity expectations are high. On the flipside, there is **permissive parenting, marked by parents giving into their kids desires, and rarely disciplining them.** While these parents show a great deal of warmth and kindness to their children, the **lack of discipline leads to lower level maturity expectations**. The best of both worlds is a style called **authoritative parenting**. This parenting style is marked by **making demands, being responsive, enforcing rules, and discussing the reasons behind the rules. Moderate discipline and a great deal of warmth lead to greater communication** between parent and child. Maturity expectations are moderate. Studies have additionally shown that children of **authoritative parents** often have **more self-esteem, self-reliance, and social competence**. They are usually are **more successful, happy, and generous** with others. Researchers think this comes from the fact that authoritative parents allow their children to develop a sense of self control over their lives.

It is important to know that parenting is far more complex than choosing one of three styles. **It is important to know a child**. A bolder, more aggressive child may need more restrictive parenting, whereas a demure, fearful child may respond better to gentleness. **Cultural norms can also impact the style of parenting** throughout the world.

**Key Developmental Issues:**

Continuity vs. Stages: In some ways, like our **motor skills and mobility development, we certainly develop in stages.** However, **cognitive development and attachment are more of a continuous process**.

Stability vs. Change: Throughout the life span, we change in many ways. Indeed we **change physically, cognitively, and socially** and we grow up. Yet, **individual temperament is the one thing that remains relatively constant** throughout an individual’s life.

Nature vs. Nurture: It is clear that **nature and nurture work together to affect our overall development**. In the womb, a healthy environment positively impacts fetal growth. However, if a mother drinks excessively while pregnant, her child’s environment is altered, and therefore its development will be altered. Her child will likely be born with fetal alcohol syndrome. Once out of the womb, the desire for attachment broadens the connection between nature and nurture. If well nurtured, babies become securely attached, learn to trust, and will explore their own environment. While a responsive environment certainly impacts growth and development, temperament is more ingrained, in spite of a child’s circumstances.