

How Does Our Thinking Change With Age?

Chapter 9- Cognitive Development



CLASS OBJECTIVES:

- How does our thinking change as we develop?
- What are Piaget's 4 stages Cognitive Development?

Get out some paper...class survey!
What would you do?

If you were given a third eye to put anywhere on your body where would you put the extra eye and why?



It was once accepted that because babies cannot speak, then they must not think.

Jean Piaget examined the development of thought in children.



How does thought develop?

- ❖ Piaget's theory focuses on how people think rather than what they think.
- ❖ Piaget believed that children play an active role in their cognitive development.
- Piaget's theories emphasized biology, which allow them to be applied to any culture

Piagetian Stage Approach

- ❖ Piaget claimed that all children pass through a series of four universal stages:
 - Sensorimotor (birth to 2 years)
 - Preoperational (2 to 7 years)
 - Concrete operational (7 to 12 years)
 - Formal operational (12 years and beyond)


Piaget believed that infants spend a LOT of time trying to make sense of the world.

- ❖ A schema is a mental structure
 - a way of organizing and categorizing thoughts and experiences.
- ❖ Schemas allow children to make comparable generalizations.

Schema

- ❖ Piaget believed that children develop and modify *schema* by two processes:
 - Assimilation
 - Accommodation

- ❖ Assimilation incorporates new experiences into existing mental structures and behaviors
- ❖ Example: a baby who is familiar with grasping will soon discover that the grasping works for toys as well as blocks, balls, and other small objects.



Wait...I changed my mind!

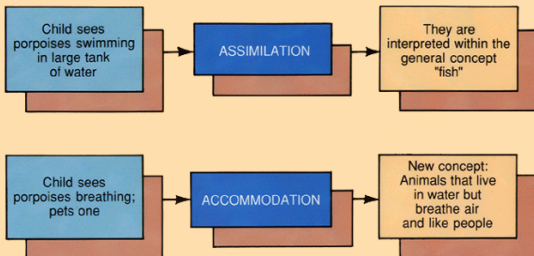
- ❖ Accommodation occurs when a child's theories are modified based on an experience
- ❖ Example- The baby with a schema of dogs is surprised the first time she sees a cat- it resembles a dog, but meows instead of barks and rubs up against her rather than licking
- ❖ The baby must **REVISE** her previous theory to include this new kind of animal

John has a dog...the schema for dog is an animal with four legs and a tail. One afternoon John is bitten by a neighbor's dog

How could his schema change to accommodate this new info?



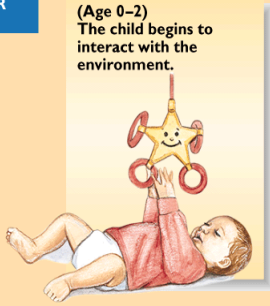
Assimilation and Accommodation in Cognitive Development



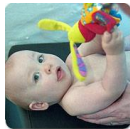
Piaget's Stages of Cognitive Development
(Part I)

SENSORIMOTOR
STAGE

(Age 0-2)
The child begins to
interact with the
environment.



This form of thought begins
with the infant
experiencing the world
through their reflexes



Sensorimotor Stage (birth-2yrs)

- ❖ Infants learn to coordinate their reflexes and make purposeful actions.
- ❖ Piaget believed that the foundation for all cognitive development is established during this period

Infants begin to interact with people and objects to produce exciting experiences

Realizing that a rattle makes noise - they shake their arms and laugh whenever someone puts a rattle in their hand



Why is peek-a-boo fun for babies?



This is a cognitive milestone that develops in the Sensorimotor stage called *Object Permanence*



Out of Sight, Out of Mind...

- *Object Permanence* allows infants to now recognize that objects continue to exist even when they are out of sight.

- This usually develops around 8 months

Piaget's Stages of Cognitive Development (Part II)

PREOPERATIONAL STAGE

(Age 2-6 or 7)
The child begins to represent the world symbolically.



Preoperational Period (2-7years)



❖ The period in which children become able to represent reality in language and *symbolic thought*

- Words, gestures, pictures

❖ Children think about specifics rather than abstracts.

What games did you play at this age?

- ❖ Children play with objects in new ways and try to represent reality through symbolic thought, by playing “pretend”



Me, Me, Me....

- ❖ A key element in this stage is egocentrism
 - which is the inability to perceive a situation from another’s point of view.
- ❖ Children in this stage:
 - Cannot see your point of view
 - Are not able to understand that the world does not exist to meet their needs.

Is this Egocentric?

- ❖ Three-year-old Jamila loves talking to Grandma Powell on the telephone. When Grandma Powell asks a question, Jamila often replies by nodding her head. Jamila’s dad has explained that Grandma Powell can’t see her nodding, that she needs to say “yes” or “no.” But, no luck. Jamila returns to head-nodding.



Does this ever change?

❖ Yes...at the end of the stage, *Decentration* begins.

- Which is a change from a self-oriented view to recognizing the view of others.

Name that Cognitive Milestone!

❖ A child in this stage saw a classmate crying and someone asked, "why is Marcus crying?" What cognitive milestone is the child displaying?

❖ The child responds by saying, "I don't know...I'm OK."

❖ With the same scenario, a child responds, "Marcus is sad"

Preoperational thinking is *animistic*: the belief that all things are living

They believe that objects such as the sun, trees, and clouds have motives, feelings, and intentions

"dark clouds are angry"
"soap sinks because it is tired"



**Piaget's Stages of Cognitive Development
(Part III)**

CONCRETE OPERATIONAL STAGE

(Age 7-11 or 12)
The child learns rules such as conservation.



Concrete Operational Stage

- ❖ A milestone of this stage is understanding Conservation
- ❖ The recognition that objects can be transformed visually or physically, yet still be the same in number, weight, substance, or volume.



Conservation Tasks

Type of Conservation	Starting Configuration	Transformation	Final Configuration
Liquid quantity	 Is there the same amount of water in each glass?	Pour water from one glass into a shorter, wider glass.	 Now is there the same amount of water in each glass, or does one have more?
Number	 Are there the same number of pennies in each row?	Stretch out the top row of pennies, push together the bottom row.	 Now are there the same number of pennies in each row, or does one row have more?
Length	 Are these sticks the same length?	Move one stick to the left and the other to the right.	 Now are the sticks the same length, or is one longer?
Mass	 Does each ball have the same amount of clay?	Roll one ball so that it looks like a sausage.	 Now does each piece have the same amount of clay, or does one have more?
Area	 Does each cow have the same amount of grass to eat?	Spread out the squares in one field.	 Now does each cow have the same amount to eat, or does one cow have more?

Piaget's Stages of Cognitive Development (Part IV)

FORMAL OPERATIONAL STAGE

(Age 12-adulthood) The adolescent can transcend concrete situations and think about the future.



Formal Operational Stage 12+

- ❖ In this stage, the individual can think hypothetically, consider future possibilities, and use deductive logic

Children understand that reality is not the only possibility

Capable of deductive reasoning and complex thought




The return of egocentrism!

- ❖ Adolescents can display very logical thought, but are not known for this use.
- ❖ Analyzing private thoughts and feelings reflect the enhanced capacity for self-centeredness, which characterizes this period of life.

- You just don't understand ME!




Back to the survey....



What does your thinking say about you?

- ❖ Concrete Operational Child (9-year-old)
 - All of these children placed their third eye on the forehead between their two natural eyes
- ❖ Formal Operational Child (12-year-old)
 - These children gave a wide variety of answers with imaginative rationales
 - Some answered palm of the hand or inside the mouth and explained why.



What's Next?

- ❖ What is Personality?
