Hello students, welcome to the program Bachelor of Arts, Third year,

Subject psychology and the course title is Developmental psychology.

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I'll be presenting on the topic ‘Infancy information processing and language development’, part one.

This particular module is from the third unit, that is cognitive development.

Outline of this presentation is Sensorimotor stage, which is further subdivided into six sub stages involving primary circular reactions, secondary circular reactions, and tertiary circular reactions.

At the end of this module you will be able to describe

Piaget’s theory of sensorimotor intelligence,

Will be able to explain the concepts of assimilation and accommodation

and also you will be able to discuss the major accomplishments in the sensorimotor period.

So let's begin.

Jean Piaget was a Swiss scientist, who was passionate about understanding how children think, how their cognitive abilities develop as well as how they acquire knowledge about the world.

He proposed a very elaborate theory of cognitive development.

In his theory he has proposed that children take an active role in the learning process, acting much like scientists as they perform experiments, make observations and learn about the world.

As kids interact with the world around them, they continually add new knowledge, build upon existing Knowledge and adapt previously held ideas to accommodate new information.

Piaget proposed that the cognitive development takes place in four discrete stages.

They are; Sensorimotor stage, which lasts from birth to two years and the second stage is

Preoperational stage which lasts from two to seven years and the third one is concrete operational stage which lasts from 7 to 11 years and the final stage in the cognitive development is formal operational stage that lasts from 11 years through adulthood.

Before we discuss about the six sub stages of this particular sensorimotor period in detail, let us look at two important concepts given by Jean Piaget, they are assimilation and accommodation.

Piaget believed that adaptation is a core of intelligence, and there are two types of adaptation.

They are assimilation and accommodation.

Assimilation is a process in which new experiences are interpreted to fit into or assimilate with old ideas.

And accommodation is the process in which old ideas are restructured to include or accommodating your experiences.

For instance, infant or child may learn a new word ‘car’ to identify the family vehicle.

But the child may start referring to every vehicle what he sees on the road, like buses, trucks or motorcycle as car. But with experiences it learns that the concept of car doesn't include other vehicles.

So, when car word is used for all other vehicles, it is a process of assimilation.

But soon after learning that car is a different concept and other vehicles have to be excluded from that, it is adapting the concept of car, which is known as accommodation.

Piaget used the term sensorimotor intelligence to refer to the ways infants think by using their senses and motor skills during the first period of cognitive development that is, the first two years of life.

Infants in this stage use their reflexes, senses and motor skills to develop their minds adapting to experiences.

Sensorimotor intelligence is further subdivided into six stages that include circular reactions.

Piaget described the interplay of sensation, perception, and cognition as circular reactions, emphasizing that, as in a circle there is no beginning and no end. Because each experience leads to the next, which loops back, that is, sensation leads to perception, perception leads to cognition, and cognition leads to sensation.

Now let us look at the sub stages of sensorimotor period in detail. Stage one and stage two of this sensorimotor period involve primary circular reactions, and these reactions involve the infant's own body, and they don't include any object or person from the environment.

So infants learn using their sensations and movements or reflexes.

Stage one is known as the stage of reflexes, which lasts from birth to one month.

In this stage, infants understand the world around them purely through inborn senses as well as motor reflexes. For example, sucking, grasping, looking, listening so on and so forth.

Sensation and actions are coordinated primarily through reflexive behaviours.

For example, the infant may show sucking reflex whenever something touches its lips or something is placed in their mouth, for example feeder or pacifier.

But soon the infant produces behaviours that resemble reflexes in the absence of the usual stimulus for the reflex.

As all of you know that reflexes are automatic responses to a particular stimulus in the environment.

But this sucking behaviour which is shown by the infant initially only to the stimulus that is, a pacifier or nipple or any object which is placed in its mouth.

But later on the infant may start or show sucking behaviour when the stimulus is not present.

And stage two is first acquired adaptations, which lasts from one to four months.

This stage is also called as stage of habits.

In this stage, the infant coordinates sensation and two types of schemes. They are habits and primary circular reactions.

Infant adapts reflexes through information from repeated responses.

For example, though they are reflexive behaviours, but these responses also may have to be modified to suit a particular stimulus. For instance, the infants learn to suck a pacifier differently from a nipple.

That means they adjust their reflexive behaviours to suit a particular stimulus.

Now let us look at stage three and stage four, which include secondary circular reactions.

Secondary circular reactions involve people and objects from the environment.

Infants respond to other people to toys or any other object in their surrounding which they can see, hear touch or move.

In this stage they usually repeat the actions that are pleasurable.

Stage three is from 4 to 8 months.

The infants become more object oriented, moving beyond preoccupation with the self.

That means they are attentive towards other things in their environment or in their surroundings.

The infant's schemes are not intentional or goal directed, that is, infant's actions are not goal directed, but they are just repeated because of their consequences.

For example, a child or infant may learn by shaking a rattle it can produce some sound.

It may repeatedly shake the rattle to hear the sound it produces.

Just infants try to produce some kind of actions which lead to pleasurable consequences.

Stage four is 8 to 12 months. And babies show signs of an ability to use their acquired knowledge to

reach a goal, they become more deliberate and purposeful in responding to people and objects.

So the actions become deliberate, just not automatic or mechanical repetition of actions.

So they are more deliberate and purposeful in their actions.

For instance, babies may ask for help to accomplish what they want by pointing at things or gesturing, or even sometimes fussing to get what they want.

In stage four there are major accomplishments. One of them is goal directed behaviour which we have just seen. Goal directed behaviours, first purposeful actions which are possible due to the motor skills resulting from brain maturation.

Another accomplishment of this stage four is object permanence. That is, realization that objects or people continue to exist when they are no longer in sight, which may occur at about 8 months and this is a time wherein babies enjoy playing peek-a-boo.

Before accomplishment of object permanence, babies may not make any effort to search for a thing which is out of its sight. Because they understand that something which is not there in their sight has disappeared. But the baby which has accomplished this object permanence will actively search for the things which are not seen, or which are hidden from them because they know that they still exist.

Now stage five and six, which include tertiary circular reactions, involve active exploration and experimentation, infants explore a range of new activities, using their responses as a way of learning about the world.

These last two stages are most creative, first with actions and then with ideas.

So stage five is from 12 to 18 months. It is called new means through active experimentation.

Here, the goal directed behaviours and purposeful activities become more extensive.

Their actions are intentional adaptation to specific situations.

For example, babies may explore with the toy by taking it apart and putting it back together, and they keep on doing new things, just learning to explore their environment and learn from that.

So Piaget calls this stage 5 toddlers as little scientists.

Because the toddler experiments using trial and error in active creative exploration.

The infant purposely explores new possibilities with objects continually doing new things with them and exploring the results.

That is, they try to understand that their actions lead to some consequences.

They are curious to know about what kind of consequence is produced by their actions, so they keep on doing new things.

For example, squeezing all the toothpaste from the tube, throwing the water on the floor or try taking apart the toys or objects.

This they are not doing to annoy the caregiver or the mother, but basically they are exploring their surrounding and trying to understand the world around them.

Stage 6 lasts from 18 to 24 months. Here is the beginning of symbolic thought.

Now toddlers can have mental representations and toddlers use mental combinations.

Intellectual experimentation via imagination and thinking before doing.

They use new ways of achieving the goal without resorting to trial and error. That is, they start thinking with their ideas.

Another major cognitive accomplishment in Sixth stage is that, toddlers can pretend.

That is, they can act like something which they are not. For instance, they will pretend to be a doctor or a policeman or a teacher and so on and so forth.

So pretend play becomes very prominent in this particular stage.

And also they know that, say for example doll is not a real baby but still they pretend that they can treat it as a baby and they can belt it into a stroller and take it for a walk.

Another accomplishment in this last stage of sensory motor period is deferred imitation.

Deferred imitation is copying a behaviour, something which they have seen some days or some weeks before.

So it's basically an intellectual accomplishment because it is indicative of a long term memory.

That is babies can store memories of events and things what they have seen and observed.

Deferred imitation is defined as a sequence in which an infant first perceives something done by someone else and then perform the same action hours or even days later.

With this we have come to the end of this presentation, in this module you have learnt about sensori motor period and in detail the six sub stages of sensorimotor intelligence.

For further reading you can refer to these books that is

The developing person through the lifespan by Berger K. S and

Lifespan development by J.W. Santrock and Child development by L. E. Berk .

Thank you.