

Hello students.

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This particular module is for the Bachelor of Arts, third year students in the subject psychology and the course title is developmental psychology.

The title of the unit is cognitive development and the module name is theories of cognitive development: Piaget.

Outline: to understand the cognitive theory of development by Piaget.

Learning outcomes: to examine the cognitive development theory by Piaget.

Let us now begin.

Cognitive theory: Piaget and information processing.

According to the cognitive theory, thoughts and expectations profoundly affect your attitudes, values, emotions, and actions. This may seem obvious to you now, but it is not always so clear.

Indeed, social scientists describe a cognitive revolution which occurred around the 1980s. Suddenly, how and what people think became very important. This added to psychoanalysis and behavioralism. A person's thoughts came between those impulses and actions, and they were critically important. The cognitive Revolution began decades ago, but it is not over contemporary. Researchers use new tools to study cognition with neuroscience, larger data, and the body mind connections.

To understand the impact of cognitive theory on development, we begin with Piaget.

Piaget stages of development: Jean Piaget transformed our understanding of cognition leading some people to consider him the greatest developmental psychologist of all times. His academic training was in biology.

Before Piaget, most scientists believed that babies could not think. But Piaget, used scientific observation with his own three infants, finding them curious and thoughtful, developing new concepts month by month. Later, he studied hundreds of schoolchildren. From his work beyond shape form the central thesis of the cognitive theory, that is how children think changes with time and experience and their thought processes affect their behavior.

According to cognitive theory, to understand humans of any age one must understand thinking.

Piaget maintained that cognitive development occurs in four age related periods or stages. That is senseney motor stage, pre operational stage, concrete operational stage and formal operational stage.

From birth to two years, it is considered to be the period of sensorimotor, two to six years, is pre operational 6 to 11 is concrete operational and 12 years through adulthood is called as the formal operational stage. Now let us begin studying each of these stages in detail.

The sensory motor stage: The sensorimotor stage lasts from birth to about two years of age. In this stage, infants construct an understanding of the world by coordinating sensory experiences with physical motor action, and hence it is termed as sensory motor. Piaget and divided the sensory motor stage into six substages: They are simple reflexes, First habits and primary circular reactions, Secondary circular reactions, Coordination of secondary circular reactions, Tertiary circular reactions, novelty and curiosity, and the last one is internalization of schemes.

Now let us talk about each of these in more detail. Simple reflexes, which is the first sensorimotor substage, corresponds to the first month after birth. In this substage sensation and action are coordinated primarily through reflexive behavior, such as rooting and sucking. For example, a newborn will suck a nipple or bottle only when it is placed directly in the baby's mouth or touched to the lips. But soon the infant might suck when a bottle or nipple is only nearby. Even in the first month of life, the infant is initiating action and actively structuring experiences.

The second, first habits and primary circular reactions is the second sensorimotor substage, which develops between one to two four months of age. In this substage, the infant coordinate sensation and two types of schemes, that is, habits and primary circular reaction. A habit is a scheme based on a reflex that has become completely separated from its eliciting stimulus. For example, infants in substage one suck when the bottles are put to their lips, or when they see a bottle. Infants in Substage 2 might suck even when no bottle is present. A circular reaction is a repetitive action. A primary circular reaction is a scheme based on an attempt to reproduce that event that initially occurred by chance. For example, suppose an infant accidentally sucks his fingers when they are placed near his mouth. Later he searches for his fingers to suck them again, but the fingers do not cooperate because the infant cannot coordinate visual and manual actions.

Secondary circular reaction is the third sensorimotor stage, which develops between four and eight months of age. In this substage, the infant becomes more object oriented, moving beyond preoccupation with the self. For example, by chance, an infant might shake or rattle the infant repeats this action for the sake of fascination. This is the secondary circular reaction and action that is repeated because of its consequences.

Coordination of secondary circular reaction is Piaget's fourth sensory motor substage, which develops between 8 and 12 months of age. To progress into this substage the infant must coordinate vision and touch, hand and eye movement actions become more outwardly directed.

Tertiary circular reactions, novelty and curiosity is Piaget's fifth, sensorimotor substage, which develops between 12 and 18 months of age. In this substage, infants become intrigued by many properties of objects, and by the many things that can happen to those objects. For example, a child might realize that a block can be made to fall, spin, hit another object, and slide on the ground.

Internalization of schemes is Piaget's 6th and final sensorimotor substage, which develops between 18 and 24 months of age in this sub stage, the infant develops the ability to use symbols. For Piaget, a symbol is an internalized sensory image or word that represents an event.

Object permanence: imagine how chaotic and unpredictable your life would be if you could not distinguish between yourself and the world. This is what the life of a newborn must be like. According to Piaget, there is no differentiation between the self and the world. Objects have no separate permanent existence. By the end of the sensory motor period objects are both separate from the self and permanent.

How would anyone know whether an infant had a sense of object permanence or not? The principal way that object permanence is studied is by watching an infant's reaction when an interesting object disappears. If the infant search for the object, it is assumed that they believe it continues to exist.

Next we go on to the next stage, which is the pre operational stage. The pre operational stage lasts from approximately 2 to 7 years of age and is the second stage. In this stage children begin to represent the world with words, images as well as drawings. They form stable concepts and begin to reason.

At the same time, remember that young children's cognitive world is dominated by egocentrism and magical beliefs. The label pre operational emphasizes that the children do not perform operations which are reversible mental actions. They allow children to do mentally what they could only do physically.

The pre operational stage can be divided into 2 the symbolic functions substage and the intuitive thought substage. The symbolic function substage is the first substage which it occurs roughly between the ages of two and four. In this substage, the young child gains the ability to mentally represent an object that was not present. Remember, this substage has two important limitations egocentrism and animism.

Egocentrism is the inability to distinguish between one's own perspective and someone else's perspective. Piaget and Barbel Inhelder (1969) initially studied young children egocentrism by devising the three mountain task the child walks around the model of the mountains and becomes familiar with what the mountains look like from different perspectives.

The child is then seated on one side of the table. The experimenter moves a doll to different locations. Around the table and at each location asked the child to select from a series of photographs the one photograph that most accurately reflects the view that the doll is seeing

Children in the preoperational stage often pick their own view rather than the dolls view. Preschool children frequently show the ability to take another's perspective on some tasks but not others.

Animism is another limitation of the pre operational thought is the belief that inanimate objects have lifelike qualities. For example, a child might say the tree pushed the leave off and it fell.

Intuitive thought: the intuitive thought Substage is the 2nd substage of Preoperational thought and occurs between four and seven years of age. In this sub stage children begin to use primitive reasoning and want to know answers to all sorts of questions. By the age of five, children had just about exhausted all the adults by asking them a number of why questions.

Centration and the limits of pre operational thought: One limitation of the pre operational thought is centration, a centering of attention on one characteristic to the exclusion of others. Centration is most clearly evidenced in young children.

Lack of conservation, the awareness that altering an object or substance appearance does not change its basic properties. The situation that Piaget devised to study conservation is his most famous task. In conservation the child are presented with two identical beakers, each filled with the same level of liquid. They are asked if the beakers have the same amount of liquid and they usually say yes. Then the liquid from one of the beakers is poured into a third beaker which is taller and thinner than the first two. The children are then asked if the amount of liquid in the tall thin beaker is equal to the one that remains in the original beaker. Children who are less than seven or eight usually say no and justify the answer in terms of differing height and width of the beakers. Older children usually answer yes and justify their answers.

For example, for adults it is obvious that the certain amount of liquid stays the same regardless of the containers shape. In addition to failing to conserve volume pre operational children also failed to conserve number matter length as well as area.

The next is the concrete operational stage. This stage lasts from approximately 7 to 11 years of age. And in this stage, children can perform concrete operations and they can reason logically as long as reasoning can be applied to specific or concrete examples. One important skill is the ability to classify or divide things into different sets or subsets and to consider their interrelations.

Children who reach the concrete operational stage are also capable observation. Another aspect of reasoning is the relation between the classes is transitivity, which is the ability to logically combine relations to understand certain conclusions and the last stage is the formal. Operational stage, which starts at around 11 years and this is the 4th and final stage of cognitive development.

The formal operational thought is more abstract and concrete operational, thought adolescents are no longer limited to actual concrete experiences as anchors for thought. They can conjure up, make, believe situations, abstract propositions as well as hypothetical events.

Another indication of the abstract quality of adolescents' thought is their increased tendency to think about thought itself.

Information processing: Piaget is credited with discovering that mental constructs affect behavior. However, many think that Piaget's theories were limited. Neuroscience, cross cultural studies and step-by-step understanding of cognition revealed problems in Piaget's theory.

A newer version of cognitive theory is called the information processing theory, inspired by the input programming, memory and output of Dell computer. Information processing is a framework characterized by a large number of research programs. Instead of interpreting responses by infants and children, as Piaget did, the cognitive theory focuses on the processes of thought. That is, when, why, and how neurons fire before a response.

Brain activity is traced back to what activated those neurons. Thus, cognition begins when input is picked up by one of the five senses, it proceeds. So the brain reactions, connections and stored memories and it concludes with some form of output.

As a person matures, these scientists study not only words but also hesitations, neuronal activities as well as bodily reactions. The latest technique to study the brain have produced insights from neuroscience on a sequence and the strength of neuronal communications, and have discovered patterns beyond those by early information processing theories.

However, the basic tenant of the cognitive theory is equally true for Piaget and neuroscience and information processing. That is, your ideas matter.

For more information, please refer to the book, the Developing Person through lifespan by Berger and lifespan development by Santrock.

Thank you.