

## The Theories of Jean Piaget

Born in France in 1896, Jean Piaget became one of the most influential thinkers in the areas of education psychology and child development in the twentieth century. The primary thrust of his research revolved around the question: "How do human beings come to know?" His research culminated in the groundbreaking discovery of what he called "abstract symbolic reasoning." The basic idea behind this principle was that biology influences child development to a greater extent than does socialization. That is to say, Piaget concluded that younger children answered research questions differently than older ones not because they were less intelligent, but because their intelligence was at a lower stage of biological development.

Because he was a biologist, Piaget had a keen interest in the adaptation of organisms to their environment, and this preoccupation led to many astute observations. Piaget found that behavior in children was controlled by mental organizations called "schemes," which enable an individual to interpret his or her world and respond to situations. Piaget coined the term "equilibration" to describe the biological need of human beings to balance these schemes against the processes of environmental adaptation.

The French-born biologist postulated that schemes are innate since all children are born with these drives. Noting that while other animals continued to deploy their in-born schemes throughout the entire duration of their lives, Piaget hypothesized that human beings' pre-existing, innate schemes compete with and ultimately diverge from constructed schemes, which are socially-acquired in the environmental adaptation process.

As Piaget's research with children progressed, he identified four stages of cognitive development. In the first stage, which he termed the sensorimotor stage, Piaget noted that at the incipience of the child's mental development, intelligence is displayed by way of the infant's physical interactions with the world. That is, the child's intelligence is directly correlated to his or her mobility and motor activity. Children begin to develop some language skills, as well as memory, which Piaget called "object permanence," during this initial stage.

When the child becomes a toddler, he or she enters the pre-operational stage. During this stage the child is largely egocentric, meaning that intellectual and emotional energy is directed inwardly, rather than on other individuals. Although memory, language, and intelligence continue to develop during these years, thinking is illogical and inflexible on the whole.

Next, the child begins the concrete operational stage. Beginning roughly at age 5, this stage is characterized by the appearance of logical and systematic thought processes. In this stage, the child begins to conceptualize symbols and measurements relating to concrete objects, such as numbers, weights, lengths, and volumes. As the child's intelligence becomes more logical, egocentrism begins to dissipate.

At the commencement of the teenage years, the final stage, called the formal operational stage, is initiated. During this stage, the individual should be able to grasp abstract thought on a range of complex ideas and theories. Yet, unfortunately, recent research has shown that adults in many countries around the globe have failed to complete this stage, perhaps owing to poverty or poor educational opportunities.