fling creativity and independent exploration of their environment, become shameful and self doubting.

Between the ages of three and six, children pass through the stage Erikson refers to as “initiative versus guilt.” During this period of development, children seek to further explore their world by initiating new experiences. The guilt comes about when there are unexpected consequences involved in these initiations. The final stage of childhood development is called “industry versus inferiority,” and it lasts from age six to 12. Here, children seek to become industrious in all areas of life, from school to interpersonal relations. Mastery of these skills, with adequate support at home and in school, brings about a sense of overall competence, whereas failure brings about a sense of inferiority.

Another prominent theorist in developmental psychology was Jean Piaget, who developed the four stages of cognitive development. He theorized that people pass from one stage to another not just as a matter of course, but only when they are confronted with the correct type of stimulation to initiate a change. Piaget believed that in the absence of the correct kinds of stimulation, children would never reach their full potential.

According to Piaget, from birth to two years of age, children are in the “sensorimotor” stage of cognitive development. During this stage, children first begin to develop motor skills. They also have little or no ability for what is called symbolic representation, that is, the ability to conceive of things existing outside of their immediate vicinity. Piaget called this ability object permanence. Piaget’s next stage is called “preoperational” (from ages two to seven). In this stage, children begin to use language and other representational systems to conceive of, and even discuss, things or people who are not physically present. The chief marker of this stage is what Piaget called egocentric thought. That is, preoperational children can conceive of things that are not present, but they can not conceive of others perceiving what they can not. The classic example of this kind of thinking is the young child who in order to hide simply covers his eyes, thinking that since he can no longer see, no one else can either.

Piaget’s next stage is called “concrete operational” and covers the years 7 to 12. Here, children begin to develop clearer methods of thinking, and they start to overcome the egocentrism of the preoperational stage. They begin to better understand spatial relationships and matters of time, but they are largely bound by the concrete world and have trouble conceiving abstract thought. During the formal operational stage, from age 12 to adulthood, people develop the ability to think logically and systematically and to understand abstractions and the concepts of causality and choice. They see that different outcomes can proceed from different actions, and that they are free to choose between various actions depending on a desired outcome. According to Piaget, and to many who believe in his framework, not everyone reaches this stage of cognitive development. Some researchers assert that as few as 25 percent of the general population reaches the formal operational stage. Still others suggest that it is a culture-based phenomena and that in less technological societies, almost no one reaches the stage—mainly because such thinking is not valued or even necessary.

A final theory dealing with developmental psychology was devised by Lawrence Kohlberg and presented in his 1981 book The Philosophy of Moral Development: Moral Stages and the Idea of Justice. Kohlberg’s stages deal with how children formulate moral reasoning at various stages of cognitive development. He called the earliest stage the “preconventional.” Here, children base moral decisions on how they themselves are affected. Something is “right,” in other words, if they are not likely to be punished for doing it. The next level is the “conventional” stage. During this stage, people base their moral judgments on the conventions of society (or of family or religion or some other social order). Something is “right” during this stage of development if it is something most people would agree is right. Many people do not pass beyond the conventional level of moral reasoning. If they do, they arrive at what Kohlberg calls the “post-conventional level,” where moral judgments are based on personal beliefs. People in this stage of moral development will do what they consider is “right” even if it contradicts social norms.

See also Cognitive development; Psychosexual stages

Further Reading
of the philosophical movement called pragmatism, and his writings on educational theory and practice were widely read and accepted. He held that the disciplines of philosophy, pedagogy, and psychology should be understood as closely interrelated. Dewey came to believe in an “instrumentalist” theory of knowledge, in which ideas are seen to exist primarily as instruments for the solution of problems encountered in the environment.

Dewey’s work at the University of Chicago between 1894 and 1904—together with that of his colleague, Rowland Angell (1869-1949)—made that institution a world-renowned center of the functionalist movement in psychology. Dewey’s functionalism was influenced by Charles Darwin’s theory of evolution, as well as by the ideas of William James and by Dewey’s own instrumentalist philosophy. His 1896 paper, “The Reflex Arc Concept in Psychology,” is generally considered the first major statement establishing the functionalist school. In this work, Dewey attacked the prevailing reductionist methods of such figures as Wilhelm Wundt (1832-1920) and Edward Titchener (1867-1927), who used stimulus-response analysis as the basis for psychological theories that reduced human experience to the simplest and most basic units possible. Dewey considered their approach flawed because it ignored both the continuity of human behavior and its significance in terms of adaptation. In contrast, functionalism sought to consider the total organism as it functioned in the environment—an active perceiver rather than a passive receiver of stimuli.

Dewey was also an educational reformer and a pioneer in the field of educational psychology. Paralleling his philosophical and psychological theories, his concept of instrumentalism in education stressed learning by doing, as opposed to authoritarian teaching methods and rote learning. Dewey’s ideas have remained at the center of much educational philosophy in the United States. While at the University of Chicago, Dewey founded an experimental school to develop and study new educational methods, a project that won him both fame and controversy. He experimented with educational curricula and methods, successfully combining theory and practice, and also pioneered in advocating parental participation in the educational process. His first influential book on education, _The School and Society_ (1899), was adapted from a series of lectures to parents of the pupils in his school at the University of Chicago. During his time at Columbia, he continued working on the applications of psychology to problems in education, and his work influenced educational ideas and practices throughout the world.

Dewey wrote the first American psychology textbook, titled _Psychology_ (1886), which was followed by William James’s _The Principles of Psychology_ four years later. Dewey served as president of the American Psychological Association from 1899 to 1900 and was the first president of the American Association of University Professors in 1915. In 1920 he helped organize the American Civil Liberties Union. In the following years, Dewey surveyed educational practices in several foreign countries, including Turkey, Mexico, and the Soviet Union. After his retirement in 1930, Dewey continued his writing and his advocacy of political and educational causes, including the advancement of adult education. Among Dewey’s large body of writings are: _Applied Psychology: An Introduction to the Principles and Practice of Education_ (1889), _Interest as Related to Will_ (1896), _Studies in Logical Theory_ (1903), _How We Think_ (1910), _Democracy and Education_ (1916), _Experience and Nature_ (1925), _Philosophy and Civilization_ (1931), _Experience and Education_ (1938), and _Freedom and Culture_ (1939).

See also Assessment, psychological

Further Reading