

Prenatal Development and the Newborn

Prenatal Development

Developmental psychologists examine how we develop physically, cognitively, and socially, from conception to death. The life cycle begins when one sperm cell, out of the some 200 million ejaculated, unites with an egg to form a zygote. Attached to the uterine wall, the developing embryo begins to form body organs. By the ninth week, the fetus becomes recognizably human. The mother eats, drinks, and breathes for two, so that any teratogens she ingests can reach the developing child and place it at risk.

The Competent Newborn

Using new methods, researchers have discovered that newborns are born with sensory equipment and reflexes that facilitate their interacting with adults and securing nourishment. For example, they quickly learn to discriminate the smell and sound of their mothers.

Physical Development in Infancy and Childhood

Brain Development

Within the brain, nerve cells form before birth. Sculpted by maturation and experience, their interconnections multiply rapidly after birth.

Maturation and Infant Memory

We lose conscious memories of experiences from our earliest years. Experiments do, however, show that infants can retain learning over time.

Motor Development

Infants' more complex physical skills—sitting, standing, walking—develop in a predictable sequence whose actual timing is a function of individual maturation rate and culture.

Cognitive Development in Infancy and Childhood

Jean Piaget's observations of children convinced him—and almost everyone else—that the mind of the child is not that of a miniature adult. Piaget theorized that our mind develops by forming schemas that help us assimilate our experiences and that must occasionally be altered to accommodate new

information. In this way, children progress from the simplicity of the sensorimotor stage in the first two years to more complex stages of thinking, which include a developing "theory of mind."

Piaget believed that preschool children, in the preoperational stage, are egocentric and unable to perform simple logical operations. At about age 6 or 7 they enter the concrete operational stage and can perform concrete operations, such as those required to comprehend the principle of conservation. Finally, at about age 12, children enter the formal operational stage, in which abstract reasoning is within their grasp.

Recent research indicates that human cognition, regardless of culture, tends to unfold basically in the sequence Piaget proposed. However, young children are more capable, and development more continuous, than Piaget believed. The cognitive abilities that emerge at each stage apparently begin developing in a rudimentary form in the previous stage.

Social Development in Infancy and Childhood

Origins and Effects of Attachment

Attachment style in infancy predicts later social development. Infants become attached to their mothers and fathers not simply because mothers and fathers gratify biological needs but, more importantly, because they are comfortable, familiar, and responsive. If denied such care, both monkey and human infants may become pathetically withdrawn, anxious, and eventually abusive. Once an attachment forms, infants who are separated from their caregivers will, for a time, be distressed.

Self-Concept and Child-Rearing Practices

As with cognitive abilities, a self-concept develops gradually. By 18 months, infants recognize themselves in a mirror. By age 8 or 10, children's self-images are quite stable and are linked with their independence, optimism, and sociability. Children who develop a positive self-image and a happy, self-reliant manner tend to have been reared by parents who are neither permissive nor authoritarian, but authoritative while allowing their children a sense of control. The parenting-competence link is, however, correlational and does not explain cause and effect.

Adolescence

Physical Development

Due to earlier maturation and prolonged education, adolescence—the transition years between biological maturity and social independence—has lengthened in many countries.

Adolescence begins with a growth spurt that heralds the period of sexual maturation we call puberty and ends with the achievement of adult independence. Depending on how other people react, early or late maturation can influence adjustment, again illustrating how our genes and our environment interact in shaping us.

Cognitive Development

Piaget theorized that adolescents develop the capacity for formal operations, which enables them to reason abstractly. Today's developmentalists find the rudiments of formal logic appearing earlier than Piaget believed.

Following Piaget's lead, Lawrence Kohlberg contended that moral thinking likewise proceeds through a sequence of stages, from a preconventional morality of self-interest, to a conventional morality concerned with gaining others' approval or doing one's duty, to (in some people) a postconventional morality of agreed-upon rights or universal ethical principles. But morality also lies in actions, which are influenced by the social situation and inner attitudes as well as by moral reasoning. Moreover, say Kohlberg's critics, the postconventional level represents morality from the perspective of individualist, liberal-minded males. The social intuitionist perspective on morality suggests that moral feelings may precede moral judgments and influence our actions.

Social Development

Erik Erikson theorized that a chief task of adolescence is solidifying one's sense of self—one's identity. For many people, this struggle continues into the adult years as new relationships emerge and new roles are assumed.

Although adolescence has traditionally been viewed as a time of storm and stress, researchers have found that most teenagers relate to their parents

reasonably well and generally affirm their parents' beliefs and attitudes. Gender differences in connectedness and other traits tend to peak during late adolescence and early adulthood.

Adulthood

During early life, we sail a narrow channel, constrained by biological maturation. As the years pass, the channel widens, allowing us to diverge more and more. By adulthood, age no longer neatly predicts a person's life experience and traits. Yet in some ways our bodies, minds, and relationships still undergo predictable changes. As long as we live, we adapt.

Physical Development

The barely perceptible physical declines of early adulthood begin to accelerate during middle adulthood. For women, a significant physical change is menopause, which generally seems to be a smooth rather than rough transition. For both men and women perceptual acuity, strength, and stamina decline after 65, but short-term ailments are fewer. Neural processes slow, and except for those who suffer brain disease, such as the progressive deterioration of Alzheimer's disease, the brain remains healthy.

Cognitive Development

As the years pass, recognition memory remains strong, although recall begins to decline, especially for meaningless information. Research on how intelligence changes with age has progressed through several phases: cross-sectional studies suggesting a steady intellectual decline after early adulthood; longitudinal studies suggesting intellectual stability until very late in life; and today's view that fluid intelligence declines in later life, but crystallized intelligence does not.

Social Development

From close study of small samples of individuals, some theorists maintain that adults pass through an orderly sequence of life stages. Some theorists have contended that moving from one stage to the next entails recurring times of crisis, such as the transition to midlife during the early forties. But people are not so predictable. Adult life is influenced in unanticipated ways, not only by events involving love and work but also by chance occurrences.

Since 1960, marriage has been in decline, as reflected in later marriages, increased cohabitation, and doubled divorce rates.

Although few people grow old gratefully, most age gracefully, retaining a sense of well-being throughout life. Those who live to old age must, however, cope with the deaths of friends and family members and with the prospect of their own deaths. Our experience with death is influenced by our experiences in life.

Reflections on Two Major Developmental Issues

We have touched on two of developmental psychology's pervasive issues: continuity and discrete stages, and stability and change in personality. Although the stage theories of Piaget, Kohlberg, and Erikson have been modified in light of later research, each theory usefully alerts us to differences among people of different ages and helps us keep the life-span perspective in view. Research findings that reveal how people's traits continue to change in later life have helped create a new emphasis on lifelong development. Nevertheless, there is also an underlying consistency to most people's temperaments and personality traits.