2.1 Developmental psychology is the scientific study of changes that occur in human beings over the course of their life. Originally concerned with infants and children, the field has expanded to include adolescence, adult development, aging, and the entire lifespan. This field examines change across a broad range of topics including motor skills and other psycho-physiological processes; cognitive development involving areas such as problem solving, moral understanding, and conceptual understanding; language acquisition; social, personality, and emotional development; and self-concept and identity formation.

Developmental psychology examines issues such as the extent of development through gradual accumulation of knowledge versus stage-like development—and the extent to which children are born with innate mental structures, versus learning through experience. Many researchers are interested in the interaction between personal characteristics, the individual's behavior, and environmental factors including social context, and their impact on development; others take a more narrowly-focused approach.

Developmental psychology informs several applied fields, including: educational psychology, child psychopathology, and forensic developmental psychology. Developmental psychology complements several other basic research fields in psychology including social psychology, cognitive psychology, ecological psychology, and comparative psychology.

Historical antecedents[edit]

John Locke and Jean-Jacques Rousseau are typically cited as providing the foundations of modern form of developmental psychology. William Shakespeare had his melancholy character Jacques (in As You Like It) articulate the seven ages of man: these included three stages of childhood and four of adulthood. In the mid-18th century Jean Jacques Rousseau described three stages of childhood: infans (infancy), puer (childhood) and adolescence in Emile: Or, On Education. Rousseau's ideas were taken up strongly by educators at the time.

In the late 19th century, psychologists familiar with the evolutionary theory of Darwin began seeking an evolutionary description of psychological development; prominent here was the pioneering psychologist G. Stanley Hall, who attempted to correlate ages of childhood with previous ages of mankind. James Mark Baldwin who wrote essays on topics that included Imitation: A Chapter in the Natural
History of Consciousness and Mental Development in the Child and the Race: Methods and Processes. Baldwin was heavily involved in the theory of developmental psychology. Sigmund Freud, whose concepts were developmental, had a significant impact on public perceptions.

2.2 Theories

Attachment theory

Attachment theory, originally developed by John Bowlby, focuses on the importance of open, intimate, emotionally meaningful relationships. Attachment is described as a biological system or powerful survival impulse that evolved to ensure the survival of the infant. A child who is threatened or stressed will move toward caregivers who create a sense of physical, emotional and psychological safety for the individual. Attachment feeds on body contact and familiarity. Later Mary Ainsworth developed the Strange Situation protocol and the concept of the secure base.

There are four types of attachment styles: secure, anxious-avoidant, anxious-resistant, and disorganized. Secure attachment is a healthy attachment between the infant and the caregiver. It is characterized by trust. Anxious-avoidant is an insecure attachment between an infant and a caregiver. This is characterized by the infant's indifference toward the caregiver. Anxious-resistant is an insecure attachment between the infant and the caregiver characterized by distress from the infant when separated and anger when reunited. Disorganized is an attachment style without a consistent pattern of responses upon return of the parent.

A child can be hindered in its natural tendency to form attachments. Some babies are raised without the stimulation and attention of a regular caregiver, or locked away under conditions of abuse or extreme neglect. The possible short-term effects of this deprivation are anger, despair, detachment, and temporary delay in intellectual development. Long-term effects include increased aggression, clinging behavior, detachment, psychosomatic disorders, and an increased risk of depression as an adult.

Constructivism

Constructivism is a paradigm in psychology that characterizes learning as a process of actively constructing knowledge. Individuals create meaning for themselves or make sense of new information by selecting, organizing, and integrating information with other knowledge, often in the content of social interactions.
Constructivism can occur in two ways: individual and social. Individual constructivism is when a person constructs knowledge through cognitive processes of their own experiences rather than by memorizing facts provided by others. Social constructivism is when individuals construct knowledge through an interaction between the knowledge they bring to a situation and social or cultural exchanges within that content.

**Ecological systems theory**

Ecological systems theory, originally formulated by Urie Bronfenbrenner, specifies four types of nested environmental systems, with bi-directional influences within and between the systems. The four systems are microsystem, mesosystem, exosystem, and macrosystem. Each system contains roles, norms and rules that can powerfully shape development.

The microsystem is the immediate environment surrounding and influencing the individual (example: school or the home setting). The mesosystem is the combination of two microsystems and how they influence each other (example: sibling relationships at home vs. peer relationships at school). The exosystem is the interaction among two or more settings that are indirectly linked (example: a father's job requiring more overtime ends up influencing his daughter's performance in school because he can no longer help with her homework). The macrosystem is broader taking into account social economic status, culture, beliefs, customs and morals (example: a child from a wealthier family sees a peer from a less wealthy family as inferior for that reason). Lastly, the chronosystem refers to the chronological nature of life events and how they interact and change the individual and their circumstances through transition (example: a mother losing her own mother to illness and no longer having that support in her life).

Since its publication in 1979, Bronfenbrenner's major statement of this theory, *The Ecology of Human Development* has had widespread influence on the way psychologists and others approach the study of human beings and their environments. As a result of this conceptualization of development, these environments—from the family to economic and political structures—have come to be viewed as part of the life course from childhood through to adulthood.

**Psychosexual development**

Sigmund Freud believed that we all had a conscious, preconscious, and unconscious level. In the conscious we are aware of our mental process. The preconscious involves information that, though not currently in our thoughts, can
be brought into consciousness. Lastly, the unconscious includes mental processes we are unaware of.

He believed there is tension between the conscious and unconscious, because the conscious tries to hold back what the unconscious tries to express. To explain this he developed three personality structures: the id, ego, and superego. The id, the most primitive of the three, functions according to the pleasure principle: seek pleasure and avoid pain. The superego plays the critical and moralizing role; and the ego is the organized, realistic part that mediates between the desires of the id and the superego.

Based on this, he proposed five universal stages of development, that each are characterized by the erogenous zone that is the source of the child's psychosexual energy. The first is the oral stage, which occurs from birth to 12 months of age. The second is the anal stage, from one to three years of age. The third is the phallic stage, which occurs from three to five years of age (most of a person’s personality forms by this age). The fourth is the latency stage, which occurs from age five until puberty. Stage five is the genital stage, which takes place from puberty until adulthood.

**Stages of moral development**

Piaget claimed that logic and morality develop through constructive stages. Expanding on Piaget's work, Lawrence Kohlberg determined that the process of moral development was principally concerned with justice, and that it continued throughout the individual's lifetime.

He suggested three levels of moral reasoning: pre-conventional moral reasoning, conventional moral reasoning, and post-conventional moral reasoning. Pre-conventional moral reasoning is typical of children and is characterized by reasoning that is based on rewards and punishments associated with different courses of action. Conventional moral reason occurs during late childhood and early adolescence and is characterized by reasoning based on rules and conventions of society. Lastly, post-conventional moral reasoning is a stage during which the individual sees society’s rules and conventions as relative and subjective, rather than as authoritative.

**Stages of psychosocial development**

Erik Erikson reinterpreted Freud’s psychosexual stages by incorporating the social aspects of it. He came up with eight stages, each of which has two crisis (a positive
and a negative). Stage one is trust versus mistrust, which occurs during infancy. Stage two is autonomy versus shame and doubt, which occurs during early childhood. Stage three is initiative versus guilt, which occurs during play age. Stage four is industry versus inferiority, which occurs during school age. Stage five is identity versus identity diffusion, which occurs during adolescence. Stage six is intimacy versus isolation which occurs during young adulthood. Stage seven is generativity versus self-absorption which occurs during adulthood. Lastly, stage eight is integrity versus despair, which occurs in old age.

Each stage builds upon the successful completion of earlier stages. The challenges of stages not successfully completed may be expected to reappear as problems in the future. However, mastery of a stage is not required to advance to the next stage.

**Stages based on the model of hierarchical complexity**

Michael Commons enhanced and simplified Inhelder and Piaget’s developmental and offers a standard method of examining the universal pattern of development. The Model of Hierarchical Complexity (MHC) is not based on the assessment of domain specific information, It divides the Order of Hierarchical Complexity of tasks to be address from the Stage performance on those tasks. Stage is the order hierarchical complexity of the tasks the participant’s successfully addresses. He expanded Piaget’s original eight stage (counting the half stages) to fifteen stages. The stages are : 0 Calculatory; 1 Sensory & Motor; 2 Circular sensory-motor; 3 Sensory-motor; 4 Nominal; 5 Sentential; 6 Preoperational; 7 Primary; 8 Concrete; 9 Abstract; 10 Formal; 11 Systematic; 12 Metasystematic; 13 Paradigmatic; 14 Cross-paradigmatic; 15 Meta-Cross-paradigmatic. The order of hierarchical complexity of tasks predicts how difficult the performance is with a R ranging from 0.9 to 0.98.

In the MHC, there are three main axioms for an order to meet in order for the higher order task to coordinate the next lower order task. Axioms are rules that are followed to determine how the MHC orders actions to form a hierarchy. These axioms are: a) defined in terms of tasks at the next lower order of hierarchical complexity task action; b) defined as the higher order task action that organizes two or more less complex actions; that is, the more complex action specifies the way in which the less complex actions combine; c) defined as the lower order task actions have to be carried out non-arbitrarily.
Theories of cognitive development

Jean Piaget, a Swiss theorist, posited that children learn by actively constructing knowledge through hands-on experience.\textsuperscript{[16]} He suggested that the adult's role in helping the child learn was to provide appropriate materials that the child can interact with and use to construct. He used Socratic questioning to get children to reflect on what they were doing, and he tried to get them to see contradictions in their explanations.

Piaget believed that intellectual development takes place through a series of stages, which he described in his theory on cognitive development. Each stage consists of steps the child must master before moving to the next step. He believed that these stages are not separate from one another, but rather that each stage builds on the previous one in a continuous learning process. He proposed four stages: \textit{sensorimotor}, \textit{pre-operational}, \textit{concrete operational}, and \textit{formal operational}. Though he did not believe these stages occurred at any given age, many studies have determined when these cognitive abilities should take place.

Zone of proximal development[edit]

Lev Vygotsky was a Russian theorist from the Soviet era, who posited that children learn through hands-on experience and social interactions with members of his/her culture. Unlike Piaget, he claimed that timely and sensitive intervention by adults when a child is on the edge of learning a new task (called the "zone of proximal development") could help children learn new tasks. This adult role is often referred to as the skilled "master," whereas the child is considered the learning apprentice through an educational process often termed "cognitive apprenticeship." Martin Hill stated that "The world of reality does not apply to the mind of a child." This technique is called "scaffolding," because it builds upon knowledge children already have with new knowledge that adults can help the child learn. Vygotsky was strongly focused on the role of culture in determining the child's pattern of development, arguing that development moves from the social level to the individual level. In other words, Vygotsky claimed that psychology should focus on the progress of human consciousness through the relationship of an individual and their environment. He felt that if scholars continued to disregard this connection, then this disregard would inhibit the full comprehension of the human consciousness.