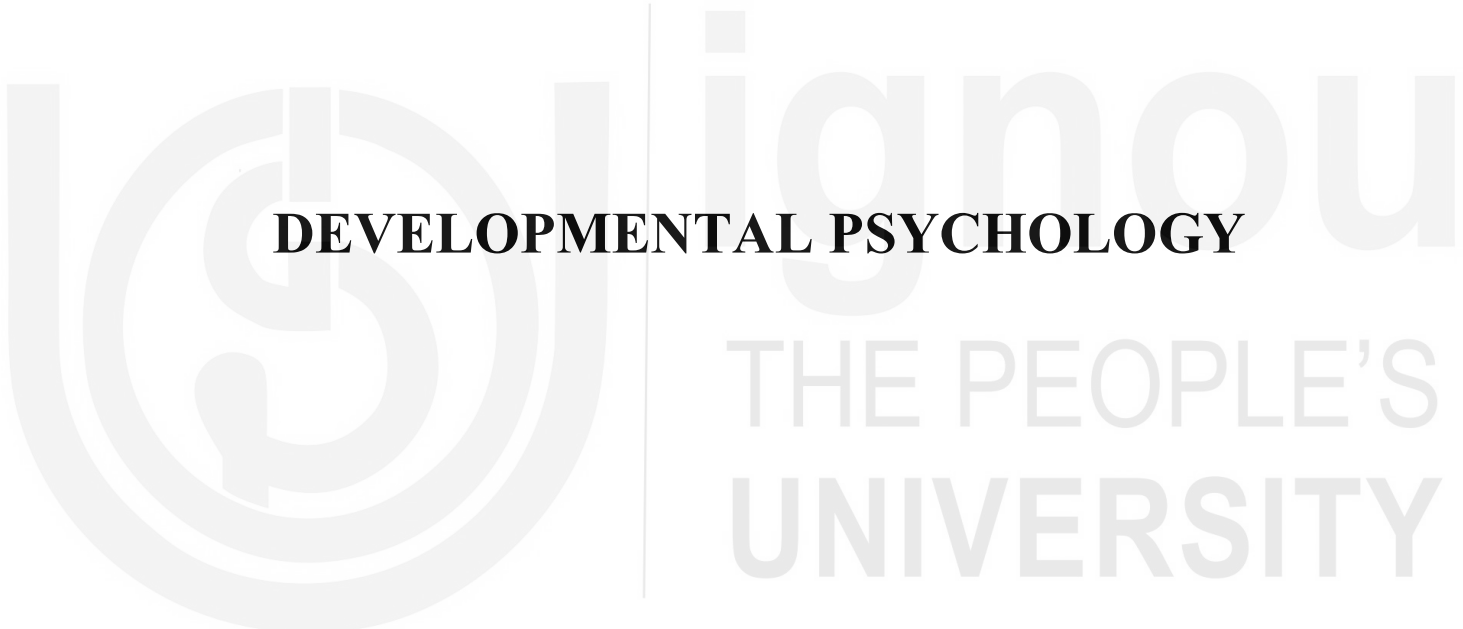




DEVELOPMENTAL PSYCHOLOGY

THE PEOPLE'S
UNIVERSITY

School of Social Sciences
Indira Gandhi National Open University

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BLOCK 4 APPLIED HUMAN DEVELOPMENT

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Developmental Psychology: How to Proceed in the Course?

The course on *Developmental Psychology* (BPCC 109) is one of the core courses offered in 4th Semester of BA Honours Programme of IGNOU. The course is of 06 Credits, comprising Theory (04 Credits) and Tutorial (02 Credits). The course is divided into four blocks. Each of these blocks represents a specific theme which is discussed in two to six units. The units are arranged in a logical sequence so as to cover the main aspects of each theme. Each unit contains a brief introduction in the beginning and a list of references and further reading, as well as, additional online resources in the end. The list of online resources has been mentioned for additional information on various topics. You are advised to read Course Introduction carefully, in order to know about the rationale and content of the course you have offered to read.

You have in your hands, all the four blocks and sixteen units of this course. Before proceeding to read the units, you are advised to go through instructions about how to read the course material. Given below is the explanation of the organization and sequencing of the unit. We will tell you what is contained in various sections of a unit, and you should go about completing different tasks involved while reading the course material.

Organization and Sequencing of a Unit

The unit starts with,

1.0 Learning Objectives

1.1 Introduction

1.2 Section (Theme of the section)

1.2.1 Subsection of 1

.....
Check your progress

1.3 Section (Theme of the section)

1.3.1 Subsection of 2

.....
Check your progress

The numbering and length of each section and subsections may vary from one unit to the other unit, depending upon the depth of information in each unit. The last three sections in each unit with the following headings are also numbered. They are as follows,

- Review Questions
- References and Further Reading
- Additional Online Resources

As the scheme suggests, each unit is divided into sections for easy reading and better comprehension. Each section is indicated by **BOLD CAPITALS** and each sub-section by a **relatively smaller but bold typeface**. Divisions within the sub-sections are in **relatively smaller bold typeface** so as to make it easy for you to understand.

Let us now discuss the **pedagogical features of a unit** as given in the self-learning material.

We begin each unit with the section **Learning Objectives**. It tells you briefly what we expect from you, once you complete the unit. In the section **Introduction**, we specify, the relationship of the present unit to the previous unit (if any), theme of the present unit, and the order of presentation of all the sections in the unit from Introduction to Summary. The section of each unit under the heading **Summary**, encapsulates the whole unit for the purpose of ready reference and recapitulation.

Sometimes certain topics may deal with abstract ideas and related concepts, as well as some case studies. Thus, it becomes necessary to explain these related concepts in a separate enclosure, which is called **Box**, in our units. This is added information which is necessary to comprehend the main text. These boxes may include (i) explanatory notes regarding concepts, (ii) information about main works of scientists/psychologists who have contributed to a particular topic, (iii) certain case-studies that are related to the concepts being discussed, (iv) reflective exercises, etc.

There are **illustrations** in the units in the form of pictures, figures, diagrams and images. The main purpose of these illustrations is to make the study comprehensive and interesting. We have been given self-check exercises under the caption **Check Your Progress** in between or at the end of main sections. To answer the Check Your Progress questions, you should, (i) write your answers using the space given below each question; (b) label the diagrams in the space provided (if asked). You will be tempted to have a glance of the main text as soon as you come across an exercise. But we do hope that you will resist this temptation and turn to the main text only after completing the answers. You should read each unit and note the important points in the margin provided in the course material. This will help in your study. It will also help you to answer the self-check exercises and the assignment questions, as well as help in revising your course before appearing for your Term End Examination.

Each unit has **Keywords** at the end of the unit, to explain the basic ideas, technical terms and difficult words. We have given a list of **References and Suggested Reading** at the end of each unit. This is a list of books and articles used by the course writers to prepare the units. This reflects that your course material is based on a wide spectrum of literature available on a particular theme, related to your course. This also informs you of the wide literature available in the particular area of study. If interested in widening your knowledge, you may look for the mentioned references. Each reference mentions the name of the author, year of publication, title of the book/article, name of publisher and place of publication.

Further reading helps you to increase your level of understanding of a particular theme in each unit, though it is not a compulsory reading.

In each Unit, we have given a list of **Additional Online Resources** on various topics. Apart from the text material, if you are interested in learning

more about the topic, then you may access the website as mentioned, for a particular topic.

Besides Check Your Progress, we have given **Review Questions** after Keywords section in each unit. You may practice these questions which will help you in answering assignments and Term End Examination Question Paper, though the pattern and style of questions asked may be different.

Some Units have been selected for the **audio and video** programmes to supplement the printed material. This will help you to understand the units with greater clarity. Apart from this, you may also access IGNOU's FM radio channel, Gyanvani (105.6 FM) which is available across many cities in India, for regular programmes, related to themes on Psychology. You can listen to the live discussions by faculty and experts on the topic of the day and interact with them through telephone, email, and through chat mode. You may also watch Gyandarshan TV channel (free to air educational channel), for programmes related to topics on Psychology. The schedule of Gyanvani and Gyandarshan is displayed on www.ignou.ac.in. The radio and TV channels may also be accessed on Gyandhara, webcast facility for Gyanvani and Gyandarshan, provided by the University.

The course on Developmental Psychology will include **Tutorial**. The tutorial activities will be given as a separate activity in the assignment. It is a compulsory activity of 02 Credits and will be evaluated by the academic counsellor separately. The tutorial activity will help you to develop an understanding of the different elements shaping human development, and methods of research in human development. There are a set of **assignments** for the whole course uploaded on www.ignou.ac.in>downloads>[assignments](#)> BA CBCS New>CoreCourses. You need to check the course code and title of the course carefully, before downloading the assignment. These are Tutor Marked Assignments, which are to be submitted to the respective Study Centre after completion. These assignments will be evaluated by academic counsellor from your Study Centre. Ensure that you complete all your assignments because the grades that you get in each of these assignments are included in the final evaluation of your degree (30%). Before answering the assignments, read all the units carefully. While working on the assignments, kindly ensure the following points,

- 1) Clearly write your enrollment number
- 2) Answer them in your handwriting and in your own words
- 3) Write clearly and neatly so that it is easy to read your answers
- 4) Leave margins on one side of your answer-sheets so that evaluator may write his/ her comments on your performance
- 5) You will submit the assignments at your Study Centre on or before the date mentioned as per the admission cycle. Kindly check the dates from www.ignou.ac.in or your Regional Centre website.

After reading and understanding the course material, as well as referring to the audio and video programmes, you will be writing the **Term End**

Examination (TEE) for the course. TEE carries 70% weightage in the evaluation scheme. Consider the following points while answering for TEE.

- 1) Questions should be replied in one's own words and should be focused.
- 2) Answer questions keeping in mind the word limit.

The syllabus of course material BPCC 109 is designed by an Expert Committee (see page 2 of this course) and prepared by **Course Preparation Team** which comprises the author(s) of units, content editor(s), language editor, and the course coordinator. The expert committee selected the themes and sub-themes of the blocks and units, keeping in view the prescribed syllabi of UGC (CBCS model). The authors of units have provided their expertise in elaborating them in the form of the main text of each unit. The content editor has carefully examined the course contents and has made an attempt to make the material clear and comprehensible.

For any query or feedback related to the course, you may contact the Course Coordinator at,

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COURSE INTRODUCTION: DEVELOPMENTAL PSYCHOLOGY

In continuation with the core courses offered in the earlier semesters, this course will present the foundations of human development. Developmental Psychology is a branch of psychology that focuses on child's development and the development of human behaviour across the lifespan from different perspectives. The course will help you in understanding the changes due to age, maturation or learning, as well as genetic and environmental variations. Developmental psychology is a scientific attempt to understand development in various domains like, cognitive, moral, emotional, social, physical, as well as development of self, identity and gender. A large number of professional bodies have focused their research on child development, lifespan developmental psychology and indigenous developmental theories. *Child Development*, *Developmental Psychology*, *Psychological Bulletin*, *Psychological Review*, *Psychological Sciences*, *Psychological Studies* (India), are some of the top international and national journals which disseminate research related to developmental psychology.

BLOCK INTRODUCTION

There are four blocks and sixteen units, in this course. Block 1 introduces you to the concepts of human development. The first unit presents an overview of life span development, its characteristics, stages of development, methods of research and obstacles in conducting research in this field. Next, we give an account of the dominant perspectives on human development, like psychoanalytic, psychodynamic, cognitive, and life cycle theory. Block 2 focuses on the changes in the domains like physical, perceptual, cognitive, moral, social and emotional. Block 3 explains practical issues related to developmental psychology like social structure and development, social problems related in school, and development of prosocial and antisocial behaviour during childhood. Finally, Block 4 presents an overview of developmental psychopathology. Some common forms of psychopathology described are attention deficit/hyperactivity disorder, oppositional defiant disorder, conduct disorder, anxiety, depression, autism spectrum disorder, specific learning disability and intellectual disability.

Block I gives an introduction to developmental psychology. It constitutes of 5 Units. **Unit 1** presents an overview of development psychology. It explains the principles of lifespan development, discusses the stages of human development and explains the research methods and issues in developmental psychology. **Unit 2** elucidates Freud's psychoanalytical perspective, Erikson's psychosocial perspective and Havighurst's developmental task theory. **Unit 3** describes the cognitive perspective of Piaget, Vygotsky, and information-processing approach on human development. **Unit 4** is concerned with Maslow and Rogers humanistic perspective, Lorenz's evolutionary perspective, Bronfenbrenner's biopsychosocial perspective and life course theory. **Unit 5** describes the various stages in lifespan

development, like, prenatal, birth, infancy, childhood, adolescence, and adulthood.

Block II introduces you to the various changes in different domains of human development. This block constitutes of six units (Unit 6, Unit 7, Unit 8, Unit 9, Unit 10 and Unit 11). **Unit 6** describes physical and perceptual development. An account of motor, sensory and perceptual development is presented in the Unit. **Unit 7** explains cognitive development as forwarded by Piaget, Vygostky, and information processing approach. **Unit 8** elaborates upon theories of language development, stages in language development and bilingualism. **Unit 9** introduces you to moral and social development. Piaget's theory of morality, Kohlberg's theory of moral reasoning and Gilligan's theory of morality of care are highlighted. Role of family, school, peers, play and media in social development is elucidated. Bowlby's attachment theory is also discussed in this Unit. **Unit 10** describes dimensions of socioemotional development. Then we discuss Harlow's experiment, and Ainsworth's argument on attachment patterns. Finally, an account of attachment across cultures is presented. **Unit 11** describes different concepts related to the development of self, identity and gender. Next, we discuss Freud, Erikson, Allport's conceptualization of identity and Marcia's identity status model along with their criticism.

Block 3 consists of three units (Unit 12, Unit 13, and Unit 14) with a focus on practical issues. **Unit 12** gives a description of the social structure and development in Indian context. The main factors covered that have an impact on development are caste, class, gender, ethnicity, poverty, inequality, and deprivation. The relationship between culture and development is also discussed. **Unit 13** explains social problems in schools like social pressure, victimization and bullying in school and school refusal. Finally, interventions are discussed to reduce social problems. **Unit 14** aims to uncover the development of prosocial behaviour and the biopsychosocial factors affecting prosocial behaviour. The text also focuses on development of aggression, and gender differences in aggression. An overview of common behavioural problems is also presented.

Block IV has two units (Unit 15, and Unit 16) that covers developmental psychopathology. **Unit 15** describes the developmental approach to the study of psychopathology. It explains the common forms of developmental psychopathology like anxiety, depression, attention deficit/hyperactivity disorder, intellectual disability and conduct disorder. The last Unit talks about autism spectrum disorder and discusses the risk factors and resiliency for the disorder. Finally, it describes specific learning disorder and its causal factors.

An attempt has been made to highlight the studies by Indian researchers in the field of development psychology, and such studies have been cited by the unit writers at relevant places. The content thus, will help you in framing ideas and views related to this particular branch of psychology.

Finally, the course has a Tutorial component. The tutorial activity will be included in Part B of the assignment.

BLOCK 1

**OVERVIEW AND PERSPECTIVES
IN HUMAN DEVELOPMENT**



UNIT 1 INTRODUCTION TO HUMAN DEVELOPMENT*

Structure

- 1.0 Introduction
- 1.1 Concept of Development and Growth
- 1.2 Understanding Lifespan Development
- 1.3 Lifespan Perspectives
- 1.4 Characteristics of Lifespan Development
- 1.5 Critical Period and Sensitive Period during Development
- 1.6 Domains of Human Development
- 1.7 Stages of Human Development
- 1.8 Facts of Development
- 1.9 Issues in Developmental Psychology
- 1.10 Research Methods for Developmental Psychology
- 1.11 Obstacles in Studying Developmental Psychology
- 1.12 Empirical Studies on Human Development: Indian Context
- 1.13 Summary
- 1.14 Keywords
- 1.15 Review Questions
- 1.16 References and Further Reading
- 1.17 Additional Online Resources

Learning Objectives

After go through this unit, you will be able to:

- define the concept of human development;
- differentiate between growth and development;
- explain life span perspectives;
- elucidate the issues involved in the process of human development;
- identify the stages and important domains of development;
- analyse the characteristic features of life span development; and
- explain the research methods and obstacles in studying the developmental psychology.

* Unit adapted from MPC 002 Lifespan Psychology; Block 1-Unit 1(written by Dr. Shobla Saxena, Consultant, Discipline of Psychology, SOSS) by Dr. Monika Misra, Discipline of Psychology, SOSS, IGNOU.

1.0 INTRODUCTION

From the moment the human child is first conceived, till the death, the individual keeps changing constantly and developing. While some of the changes humans undergo are as a result of chance incidents and personal choices, the vast majority of life changes and stages the human passes through, are due to certain common biological and psychological factors which are partly inherited and partly environmental.

Developmental changes may occur as a result of genetically-controlled processes known as maturation, or as a result of environmental factors and learning, but most commonly involves an interaction between the two. A systematic attempt has been made to study these changes which is known as *developmental psychology*. Life-span developmental psychology is the field of psychology that examines both constancy and changes in human behaviour across the lifespan (Baltes, 1987). The goal of developmental psychologists is to expand the knowledge about the general principles of development and the differences and similarities in development across individuals, from a variety of different perspectives. Thus, while studying different domains of development, different perspectives are considered to understand development. In the late nineteenth and early twentieth centuries, the area focused on the study of children. It emerged as an area of study in the beginning itself when psychology as a discipline was evolving. Charles Darwin (1877) is considered to be a pioneer in the study of child behaviour. He kept records of his infant son and tried to understand human development from the perspective of theory of evolution by natural selection. American psychologist G. Stanley Hall, was one of the first developmental psychologist whose research on child development focused on the question, ‘what do children know when they go to school?’ (Hall, 1891). In 1950s research started on adolescence stage and the relationship between child-rearing practices and adult personality. The historical roots of development studies from the west are the theories posited primarily by Piaget, Vygotsky, Erikson, and Kohlberg.

By reading the sub-branches of psychology till now, you must have realized that the research in psychology is from a European or an American perspective (since the discipline originated in the ‘West’). The Indian scholars in the beginnings were trained in the Western frameworks and relied heavily on experimentation. However, there are certain culture-specific concepts that have received the attention of Indian scholars and have thus been explored in the Indian context. Some of the important researches in the area of development psychology in India, have been highlighted in the end of unit. Also, important studies are cited at relevant places in the ensuing Units.

This unit thus, will introduce you to the concepts of development and growth. Then we describe developmental stages that humans go through, that are conceptions to birth, infancy, adolescence, adulthood, and old age. This unit will also focus on the principles of life-span development, its characteristics, and research methods in studying developing psychology. Finally, we will present some of the important empirical studies from an Indian perspective.

1.1 CONCEPT OF DEVELOPMENT AND GROWTH

Development describes the growth of humans throughout the lifespan, from conception to death. It refers to development as patterns of change over time. It does not just involve the biological and physical aspects of growth, but also the *cognitive* (changes in thought processes), *emotional* (changes in emotional understanding and experiences), and *social aspects* (relationships, self-concept and identity formation) related to development. The scientific study of human development seeks to understand and explain how and why people change throughout life. Thus, development occurs in different domains. Many developmental psychologists restrict themselves to *qualitative* reorganizations in the structure of a behaviour, skill or ability (Crain, 2000). Heinz Werner posited that development refers only to changes which increase the organization of functioning within a domain. Werner put forward two processes involved in development, namely, *integration* and *differentiation*. The former is a process that integrates more basic, previously acquired behaviours into new, higher-level structures. The latter is a process that involves progressive ability to make distinctions among things.

In other words, development is defined as a progression towards maturity. Even though development is a continuous process with competencies developing, then disappearing, only to appear at a later age, it is not continuous in the sense that it increases constantly but rather in a series of waves with whole segments of development reoccurring repetitively. For example, new born's walk, if held, and then this ability disappears only to reappear at eight or ten months of age.

From newborns to teenagers, parents often have questions if their children are developing normally. WHO is also coordinating an international effort to develop child growth standards for infants and young children (age 0-5 years). There is a process of child development, which makes a growth curve. **Growth curve** is defined as a statistical curve derived from plotting weight and height against chronological age for comparing an individual child's growth pattern with the average age of growth.

Increasing age by itself, contributes nothing to development. What is important here is maturation and changes that result from experience, intervening between different ages and stages of childhood. Maturation, thus refers to those aspects of development that are primarily under genetic control, and which are relatively influenced by the environment. Growth and development are in a way intertwined. Growth is a process that results in structural and physiological changes that are quantitative in nature. The changes maybe thus be progressive or regressive and may or may not involve development. Development on the other hand is a progressive change as a result of maturation and learning. The changes are thus qualitative in nature and are possible in absence of growth as well. In the words of Crow and Crow, "growth refers to structural and physiological change, while development refers to growth as well as those changes in behaviour which result from environmental stimulation." Another important characteristic is

that development is observed and growth can be measured. Growth also stops at maturity while development spreads across the lifespan.

As children grow up from one stage to another, they learn to make use of their body parts, learn how to express themselves and communicate with others. They also learn to form relationship with others. Over the years, people who study children have created theories to explain how children develop. While these theorists realise that every child is special and grows in his or her unique way, they also have recognised that there are general patterns that children tend to follow as they grow up, and these patterns have been documented by the theorists. For example, Gesell (published Gesell Development Schedule in 1925) believed that development is the result of genetic endowment (maturation). Gesell focused on norms that are characteristic of a child development, that is, when children typically acquire a given behaviour (like walking) and secondly, the extent to which many behaviours are affected by environmental factors (such as practice or training).

Related to growth and development, there are four areas in which a child's growth and development take place and these are discussed below.

1. **Physical:** Physical growth is perhaps the most obvious. Children grow in height and weight over the years and their appearance changes to a great extent during puberty. Children also develop certain physical abilities during their progression towards adulthood, including crawling, walking, running and (possibly) writing. Their motor coordination gradually becomes well refined.
2. **Psychological and cognitive:** Children also develop psychologically and cognitively as their brains absorb more information and they learn how to use that information. Literally, children have to learn how to think on purpose and to process or organise all the information that comes to them from the environment. They learn how to solve problems, to talk, and to complete mental tasks such as remembering telephone numbers or using computers.
3. **Social and emotional:** Children grow socially and emotionally. They learn how to interact, play, work, and live with other people such as family, friends, teachers, and significant others. They learn how to understand both their own feelings and that of others' emotions. They also learn ways of dealing with strong emotions. In order to function well as independent adults, children develop a sense of self-esteem as they go through the long process of figuring out one's identity. They also develop a sense of morality as they learn the difference between right and wrong.
4. **Sexuality and gender identity:** Children also develop sexually and form a gender identity. This development is unique because it spans development across the other physical, psychological, and social channels. Early on, children learn how their bodies works or looks and what it means to be a boy or a girl; they learn how boys and girls are different. As they grow older and enter adolescence and puberty, they

continue to learn how their bodies work sexually and how to responsibly handle their sexuality so as to balance their sexual desires and appropriate behaviour. They continue to decide for themselves what it means to be masculine or feminine throughout their lifespan.

Check Your Progress 1

- 1) Define developmental psychology.

.....
.....
.....

- 2) Differentiate between growth and development.

.....
.....
.....

- 3) List the main areas of growth and development.

.....
.....
.....

1.2 UNDERSTANDING LIFESPAN DEVELOPMENT

Human development is a multidisciplinary study of how people change and how they remain the same overtime. It reflects the complexity and uniqueness of each person, as well as their experiences, commonalities and patterns across people. There are four interactive forces that combine to shape human development and these are given below:

- 1) *Biological forces* include all genetic and health related factors that influence the development of a child. They provide raw materials (genes) and set boundary conditions (in the case of one's health) for development. Prenatal development, brain maturation, puberty, menopause, facial expression and change in cardio-vascular functioning, are the some of the examples of biological forces.
- 2) *Psychological forces* include all internal perceptual, cognitive, emotional and personality factors that affect the development of a child. Intelligence, self confidence, honesty and self esteem are some of the examples of psychological factors.
- 3) *Socio-cultural forces* include interpersonal, societal, cultural and ethnic factors that affect the development of a child. This is important to know that how people and environment interact with each other. The family, peers, coworkers, social institutions, culture and poverty are some of the examples for socio cultural forces.

- 4) *Life cycle forces* reflect differences in how the same event affects people of different ages. Each individual is a product of a unique combination of these forces. No two individuals even in the same family experience these forces in the same way.

1.3 LIFE SPAN PERSPECTIVES

Life span refers to the ongoing process that we go through while growing up. It is the period of time from conception extending to death. Studying life span development is very important because it helps in describing and explaining the mysteries of human development. Life span development includes issues such as the extent to which development occurs through the gradual accumulation of knowledge versus stage like development, or 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 behaviour, and environmental factors including social context, and their impact on development.

The scientific study of development is important not only to psychology, but also to sociology, education, and health care. By better understanding how and why people change and grow, one can then apply this knowledge to helping people live up to their full potential. Life span development is defined as the pattern of change that begins at conception and continues through the life cycle. It can also be defined as a methodical, intra-individual and inter-individual changes associated with progressions corresponding to the age. The development progresses in a manner implicating the level of functioning. Development occurs in different domains, such as the biological (changes in our physical being), social (changes in our social relationships), emotional (changes in our emotional understanding and experiences), and cognitive (changes in our thought processes).

Different theorists have argued for different perspectives on human development during the life span. Some developmental psychologists prefer to restrict the notion of development only to changes which lead to qualitative reorganisation in the structure of a behaviour, skill or ability (Crain, 2000). Piaget adopted an organismic approach that focused on the development of mental structures within the child's mind that determines how the child understood the world. On the other hand, Lev Vygotsky advanced his sociocultural theory of cognitive development and argued that a child's cognitive development occurred within the context of social interactions, thereby making cognitive development a social process. Some theorists believe that children develop smoothly and continuously, but other theorists believe that children develop more discretely in a series of stages, each of which is fairly stable. Thus, different theorists have come to different conclusions concerning how exactly children develop across the various developmental channels.

The developmental periods are conception to birth, infancy, childhood and adolescence, early adulthood, middle adulthood and late adulthood. The transition to each of the developmental periods, involves a necessary change

in the character of the individual's life and sometime this takes up to six years to complete the change (Smith, 2009).

1.4 CHARACTERISTICS OF LIFE SPAN DEVELOPMENT

The lifespan perspective argues that significant modifications take place throughout development. It consists of development of humans in multidimensional, multidirectional, plastic, multidisciplinary, and contextual factors. The development involves three factors i.e. growth, maintenance and regulation.

Changes that occur are interpreted in terms of the requirements of the culture and context of the occurrences. According to Paul Baltes, humans have the capacity, plasticity and the ability for positive change to the environmental demands that are being made on the individual constantly. Individual learns ways and means to compensate and overcome difficulties throughout the life. According to Baltes, positive characteristics of growing old such as learning, ways to compensate and overcome (Boyd and Bee, 2006) are considered important characteristics of old age. These characteristics form a family of beliefs which specify a coherent view of the nature of development. It is the application of these beliefs as a coordinated whole which characterises the life-span approach. The important characteristics of the life span approach are given below (Baltes, 1987):[†]

- 1) **Development is Lifelong** - According to the lifespan perspective, development is an ongoing, lifelong process. It does not occur only in certain phases of life, instead a range of changes within multiple domains (such as physical, cognitive and social-emotional) occur throughout the course of human lifespan. Each age period of development is characterised by its own demands, milestones and complexities which pave the way for many similarities as well as diversity in the human experience.
- 2) **Development is Multidimensional** - Development also unfolds along multiple dimensions i.e., it is a product of changes that emerge in the physical, cognitive, and social-emotional dimensions. Each dimension comprises multiple areas where changes are initiated as an individual moves from one stage of life to another. For example, changes in a person's height, motor skills and sensory abilities are a part of the physical dimension. Components such as memory, perception, and intelligence are involved in the cognitive dimension; and a person's social relationships, patterns of interactions, experiences of emotions are components of the social-emotional dimension of development.
- 3) **Development is Multidirectional** - Development is also proven to be multidirectional i.e., it does not imply only growth and increased

[†] Contributed by Bhumika Kapoor, Department of psychology, Jesus & Mary college, University of Delhi.

performance, it is also defined by decline and loss. For instance, gains in abilities or positive changes may be more salient during the early years of life, but as the individual ages certain losses may become evident. This multidirectionality is also evident within the different domains of development. For instance, an individual may experience a decline in their fluid intelligence as they enter late adulthood, but their crystallised intelligence may improve or remain stable as a result of their acquired experiences (Daniels et al., 2006).

- 4) **Development is Plastic** - As per the lifespan perspective, development is plastic which implies that people possess the capacity to be flexible across the various domains of development during all phases of life. For example - regaining the ability to speak after a stroke indicates the brain's potential for plasticity. However, plasticity is affected by many factors related to both biology and environment; it also varies significantly across individuals.
- 5) **Development is Contextual** - Another important characteristic of the lifespan perspective pertains to its focus on the multiple contextual influences on development. Researchers in the field recognise that all development occurs within a context, often within multiple contexts at the same time. These contexts are the setting within which an individual is embedded and comprises multiple entities such as culture, families, peers, schools, neighbourhoods, communities, poverty, socioeconomic status and so on. Each of these settings are further influenced by various interacting historical, economic, social and cultural factors. Based on their combination, these influences can be arranged in three categories:
 - a) *Age-Graded Influences* - are common for people in a particular age-group. These may be biological (e.g., onset of puberty) as well as mediated by socio-cultural processes (e.g., getting a driver's license at the age of 18 years).
 - b) *History-Graded Influences* - affect people who have been impacted by the events of a particular historical era. This may include people growing up during periods of economic prosperity or depression, technological advancements, medical challenges, war-time, etc. Such individuals who are born around the same time (also referred to as a cohort), amidst common historical influences usually tend to be similar to each other; thereby, accounting for the emergence of generational differences.
 - c) *Non-Normative Influences* - While age-graded and history-graded influences are normative i.e., they impact a large number of people in a similar fashion, there are certain influences which are unique to particular individuals. These include unique life-events - both positive and negative - with considerable potential to impact a person's course of development. For instance - a child who lost their parents and grew up in an institutional setting may not experience healthy social-emotional development.

Table 1.1 Which generation (cohort) are you?

Generation born between ...	
Silent Generation	1928 and 1945
Baby Boomers	1946 and 1964
Generation X	1965 and 1980
Millennials	1981 and 1996
Generation Z	1997-Present

Check Your Progress 2

1. Define lifespan development.

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2. How is development plastic?

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.....

.....

1.5 CRITICAL PERIOD AND SENSITIVE PERIOD DURING DEVELOPMENT

There are certain periods of development known as difficult periods or critical periods. It is said that children who do not get certain kind of environmental stimuli during their time of receptivity, may not develop normally. For instance, during prenatal development, the critical period for the development of ears and arms is around 6 weeks after conception. If the mother uses substances during this period, it may result into malformation of the organs.

A sensitive period is a point of development where the presence or absence of particular stimuli may hinder development, but the deficits can be overcome by later experiences. Children learn to trust their parents or caregivers if they are consistently loving, affectionate and give the child care and love unconditionally. In such cases, the child learns to trust their parent(s) or caregivers and from their onwards it is transferred to other adults in the environment. However, if the child is neglected and abused, not given the care, affection and love, they may develop distrust of parent(s) or caregiver and this distrust will be transferred to other adults in the environment. It must be remembered that even though the child's development may have been adversely affected, if given an opportunity to be with significant others who

care and love the child, the latter develops the capacity to trust other adults too in course of time.

1.6 DOMAINS OF HUMAN DEVELOPMENT

The domains of development are categories used by scientists. The categories include physical, cognitive and social domains which all characterise human development. The physical domain is characterised by how humans grow and change physically, at all stages of development especially during childhood and adolescence. When the physical changes are maximum, this domain includes how humans view the world as development progresses as a result of physical development and interactions.

Cognitive domain focuses on learning, attention, perception and memory etc. The manner in which learning takes place and how the child makes progress in school and home are of great importance in the child's growth and development. How these components of cognitive domain functions and improves, indicate the progress the child makes. The cognitive domain is also concerned with how learning occurs and why memory deteriorates during old age.

The social domain deals with the adjustment to people that are with others and learn the right ways of interactions. The social domain is related to adjustment in variables within social situations such as personality, social skills and developing relationships. Adjustment is the process which is essential for survival of the organism. The child has to learn to suck, ingest food, eliminate, breath on own, eliminate on own etc, which activities were taken care of when the child was still within the mother's womb. Adjustment also is required as the child grows up to learn to eat on own, eliminate as is required and not as the child wishes. The child has to learn to talk, walk, express, communicate and so on. All these adjustments are again necessary if the child has to survive. Adjustment to self, others and environment are important tasks which become increasingly complex as the child grows up, and which one to be mastered and accomplished by the child. Success leads to healthy adjustment while failure leads to maladjustment. All the domains operate together and are affected by each other (Boyd & Bee, 2006).

1.7 STAGES OF DEVELOPMENT

Often, developmental stages are defined by milestones. The term *milestone* refers to the development that has to take place according to the age of the child. For instance, almost all children start standing and walking at the age of 1 year and more, start saying a few words by the time they are one and half to two years, etc.

That a developmental stage has been successfully passed is indicated by the child mastering the developmental tasks of the particular period of development. Often, special milestones mark children's accomplishments, such as walking in infancy and entering school in early childhood, and these milestones can help mark children's movement inside and between

developmental stages. Individuals pass various stages throughout their life. There are systematic progressions in a certain order through a series of phases. Step by step they move closer to some form of adult status. This movement can be seen as involving changes in intellectual and physical powers (example, changes in intelligence, expertise and ability to reason) and the impact of life events and experiences).

The main developmental periods of a human being are:

1. Prenatal: starts at conception and ends at birth. It has three stages: germinal stage; embryonic stage and fetal stage.
2. Infancy or Toddlerhood: starts at birth and continues until 2 years.
3. Early childhood: starts from 2 years until 6 years of age.
4. Middle and late childhood: starts at 6 years and continues till the onset of puberty.
5. Adolescence: begins with the onset of puberty until 18 years.
6. Emerging adulthood: starts around 18 years until 25 years (psited by Jeffrey Arnet in 200).
7. Early adulthood: starts around 25 years until around 45 years.
8. Middle adulthood: starts around 45 years until 65 years.
9. Late adulthood: starts at 65 years onward.

Check Your Progress 3

State whether the statement is *True or False*.

1. Changes occurs from conception to death. ()
2. Children learn from the society, surroundings and one's experiences. ()
3. There are four areas in which children grow. ()
4. As the child grows ups adjustment to self, others and environment are important tasks which become increasingly complex. ()
5. Social domain focuses on adjustment of the individual to the environment. ()

1.8 FACTS OF DEVELOPMENT

Some significant facts must be taken into consideration to understand the pattern of development. Each of these has important implications. They are explained as follows:

1. **Early foundations are critical:** Early foundations are critical because attitudes, habits and pattern of behaviour established during early years determine to a large extent how successfully the individual will adjust in their later life.
2. **Role of maturation and learning in development:** Maturation and learning play a significant role in the development. Maturation is

unfolding individual's inherent traits. Learning is development that occurs from experience and efforts on the individual's part. Maturation provides the raw material for learning. Generally, development is influenced by the interaction of both.

3. **Development follows a definite and predictable pattern:** Development follows a definite and predictable pattern of physical, motor, intellectual and speech development. It is governed by certain laws: (i) Cephalocaudal (in *Latin*, 'head to tail') Law – It means that development spreads over the body from head to foot. Development first comes in the head region followed by trunk region and finally the leg region; and (ii) Proximodistal (in *Latin*, 'near to far') Law – It means that development spreads outward from the central axis of the body to extremities. In fetus, the head and trunk develop first followed by the limbs.

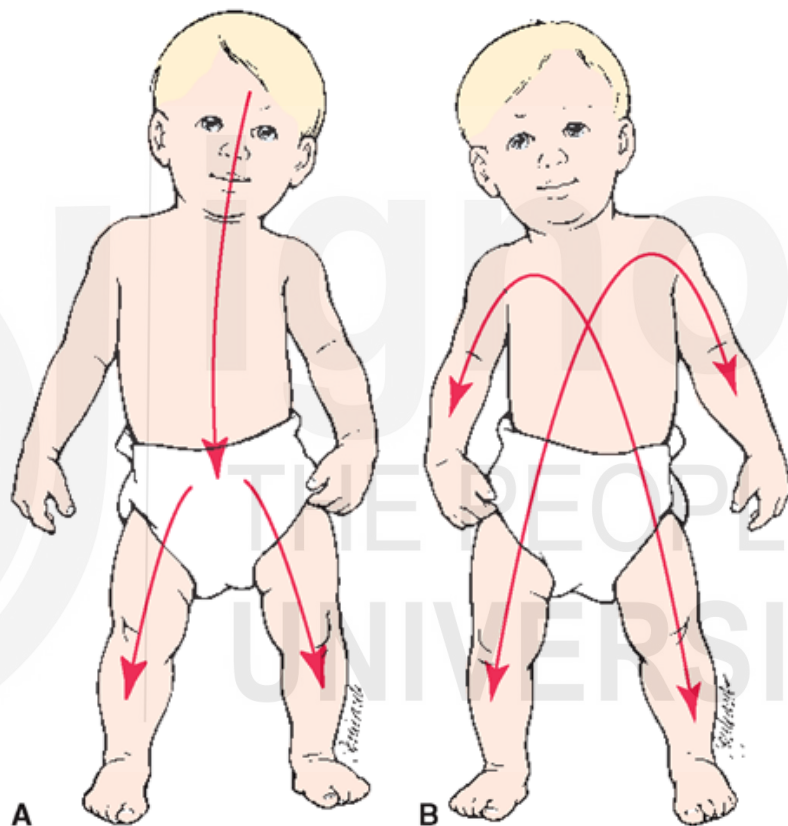


Figure 1.1 Pattern of development: A) Cephalocaudal B) Proximodistal

Source: A: Cephalocaudal pattern B: Proximodistal pattern | Sutori

4. **All individuals are different:** No two people react in the same way to the same environmental stimuli and, one can never predict with accuracy how people will react to a situation. These individual differences are significant because they are responsible for individuality in personality make up.
5. **Each phase of development has characteristic behaviour:** Each phase has certain characteristic behaviours. The patterns are marked by periods of equilibrium, when individuals adapt easily to environmental demands and as a result make good personal and social adjustment and by periods of disequilibrium, when they experience difficulty in adaptation, make poor personal and social adjustment.

6. **Hazards in each phase:** Each stage is related to certain hazards such as physical, psychological and environment. These hazards inevitably involve adjustment problems. We should be aware of these hazards because awareness of these makes it possible to prevent or to at least alleviate these.
7. **Development is aided by stimulation:** While most development occurs as a result of maturation and environmental experiences; much can be done to aid development so that it will reach its full potential. Stimulation is especially effective at the time when ability is normally developing, though it is important at all times.
8. **Cultural changes affect the development:** An individual's development is molded to conform to cultural standards and norms, while changes in these standards affect the developmental pattern.
9. **Every stage has certain societal expectation.** The individual will be successful in fulfilling those expectations only if s/he is adhering to the rules and regulations of the family and society.
10. **Traditional beliefs:** Traditional beliefs about physical and psychological characteristics affect the judgments of others as well as their self evaluation. So long as these beliefs persist, they have a profound influence on the development pattern.

1.9 ISSUES IN DEVELOPMENT PSYCHOLOGY

A number of major issues have emerged in the study of human development. These issues include the following: Is development due more to genetics or environment? Does development occur slowly and smoothly, or do changes happen in stages? Do early childhood experiences have the greatest impact on development, or are later events equally important? Let us try to get an answer.

1. **Continuity vs Discontinuity:** The question of whether development is solely and evenly continuous, or whether it is marked by age-specific periods. Developmental psychologists who advocate the continuous model describe development as a relatively smooth process, without sharp or distinct stages, through which an individual must pass. That is, development is conceived of as a process of the gradual accumulation of a behaviour, skill, or knowledge. In contrast, those who hold to the second view would suggest that developmental change is best characterised as discontinuous in nature. They describe development as a series of discrete stages, each of which is characterised by what had gone on in the past and how well the child was able to master the developmental tasks of that period etc. These theorists suggest that behaviours or skills often change qualitatively across time, and that new organisations of behaviours, skills, or knowledge emerge in a rather abrupt or discrete fashion.
2. **Stability vs Change:** Another issue which is of importance to developmental psychologists is the issue of stability versus change. The

question here is whether development is best characterised by stability, for example, does a behaviour or trait such as shyness stay stable in its expression over time; or change, for example could a person's degree of shyness fluctuate across the life span? Aspects of development like, attachment bond to one's parents on personality traits one found to be stable. While as, temperament can change because of environmental factors.

3. **Nature vs. Nurture:** Whether the behaviour ultimately developed by the child is due to hereditary factors or environmental factors, is of great importance to psychologists. The debate over the relative contributions of inheritance and the environment is one of the oldest issues in both philosophy and psychology. This debate concerns the relative degree to which heredity and learning affect the behaviour of the individual. Both genetic traits and environmental circumstances are involved in an individual's development, although the amount of influence the two have, is not clearly evident. In fact, it may be stated that the individual and his/her circumstances decide how much of the behaviour is influenced by heredity factors and how much by environmental factors. Today, most psychologists believe that it is an interaction between these two forces that causes development. Some aspects of development are distinctly biological, such as sexual development during puberty. However, the onset of puberty can be affected by environmental factors such as diet and nutrition.

1.10 RESEARCH METHODS FOR DEVELOPMENTAL PSYCHOLOGY

As you know development is a continuous process a child. It occurs over a life time period; thus, special techniques are employed to study developmental psychology. These techniques are discussed here:

1. **Longitudinal research:** For the study of developmental pathways in the same age-group or an individual, over a period of time, this method is useful. The same-age group individual is tested repeatedly over a period of time. It is a long-term study hence, requires a great deal of time and effort. Attrition is high in this method.
2. **Cross-sectional research:** This method studies the development changes by testing individuals of different ages at the same time only once. This method helps to get the norms or standards of typical pattern of development for different age. This is faster and cheaper method than longitudinal method. It does not loose subjects who dropout of the study since the subjects are tested only once. Example for this method is eating behaviour of 5 years old.
3. **Sequential method:** To overcome the drawback of longitudinal and cross-sectional method this method is used. This is the best method which combines the longitudinal and cross-sectional method. In this, sample are tested more than once and the results are analysed to

determine the differences that show up overtime for the different groups of participants. This method gives a more realistic assessment.

4. **Time lag method:** This method is used in studying the development of different age groups in different years to determine the effect of historical events on behaviour. This method is rarely used in developmental psychology, because it takes a longer time and large numbers of participants are required, who are of the same age at the time of testing.

1.11 OBSTACLES IN STUDYING DEVELOPMENTAL PSYCHOLOGY

There are some obstacles in the study of developmental psychology. The five major obstacles are discussed in the following section:

1. **Representative Sample:** The representative sample is the first obstacle for studying the developmental period. The different age levels of the participants, is the main concern for the researcher. The data collection from the school children is easy for the researcher but in the case of new born or infant, it is not that much easy. They often face strong parental objection. Getting older adolescents and young adults who are not attending school to volunteer as a participants is also difficult because they may not be available for study at any one particular place. The difficulty arises with the young adult, middle aged adults, or old age person, when many persons shy away from the testing situation. They do not want to disclose their personal details to the researcher, even when they are paid off.
2. **Establishing rapport with the participant:** Establishing personal rapport with the participant is the second difficult task for the researcher. It is rather difficult to get full personal details about the participant. It is also observed that personal rapports vary from one stage to another stage. Even school children and college students, who often fill tests as a part of their class work, mostly fill false information. There is no guarantee to the information being accurate. As a result, it is questionable whether data obtained from the participants is the true picture of their attitude, feelings, and values. This obstacle may be reduced only by the personal rapport with the participant.
3. **Appropriate Methodology:** Adaptation of an appropriate methodology is the main concern of a researcher. We take different age-group participants in a study, sometimes our target group may be one child, sometimes the participant may be an adult or sometimes the participant maybe an older adult. Because of the wide age range of participants and the variety of different areas of development that must be studied to give a composite picture, assorted methods have to be used. Cross-sectional method is the problem for researcher. Cultural changes always play a role in the patterns of physical and mental development of a child. These changes affect values of the participant.

4. **Accuracy of data:** Accuracy of data is the fourth obstacle in studying the life span developmental psychology. The data obtained from the studies should be accurate. Inaccuracy of the data may show the picture of false information of normal development at a particular age given by the participants. The data may vary in many cases, such as in regard to intelligence being studied by different methods, or using observational method for studying the behaviour, well-being, life satisfaction or happiness. The data varies for different age levels. The accuracy of such measures is questionable. Even though the longitudinal approach has a methodology advantage over the cross-sectional approach, the problem of accuracy is still ever present.
5. **Ethical aspects:** The ethical aspect are of concern in the study of developmental psychology, as the rights of the participant is to be considered by the researcher, even if they are being paid by the researcher for the study. Consent of the participants, if adult and consent of parents/ guardians, if a child, is an important and necessary step before data collection. These considerations apply to all participants irrespective of one's age.

1.12 EMPIRICAL STUDIES ON HUMAN DEVELOPMENT: INDIAN CONTEXT

Culture and context have a bearing on human development. The studies conducted from Indian perspective takes into account the social cultural fabric of the society which influence the developmental task, goals, and socialization process. Seminal works on indigenous developmental frameworks have been taken up to T.S Saraswathi, durganand Sinha, S. Anandalakshmy, Girishwar Misra, Sudhir Kakar, Malvika Kapur and others in India. Several important journal articles, research reports, books, monographs, and bibliographies have been published on indigenous developmental frameworks which are fundamental for the area. The factors like social and cultural patterns in families, school, economic status, poverty, employment status, etc. have been taken up by Indian scholars, The studies are either domain specific or from lifespan perspective, few of them are highlighted in this section.

Durganand Sinha points out to the differences in Eastern and Western perspectives on the structure and nature of reality as well as knowledge construction by the interaction of humans and their world in one's cultural context. Researches have focused on varied aspects like the notions of childhood as cultural constructions (Misra, Srivastava, & Gupta, 1999), its dynamic nature (Anandalakshmy, 1998), childhood and education from a cultural lens (Anandalakshmy, 2013), the psychoanalytic perspective of the Hindu child in India, and some of the rituals commonly practiced in families (Kakar, 1980). Roopnaraine, et al (1990) focused on socialization of children. Chakrath (2013) forwards the Hindu, model as Indian framework of human development that describes the 'man', and 'human development' based on *Purusasukta* and ten *avatara* of God Visnu. The model is embedded on the classical Indian psychology (*Sanikhya* or knowledge based on salvation), the

guna theory, and the four central goals of human life (*dharma, artha, kama, moksha*). Kakar's (1978) view on Hindu adulthood, comprises of two stages, the first marks the completion of individual socialization and preparation of life and the second stage is the process of desocialization and preparation for death. Saraswathi (1999) has reflected on Indian socialization process in the contemporary context that sheds light on the new forces of social changes and the adaptations made by the Indian family.

The Indian-Hindu worldview of adolescence in urban- middle class along with adolescent- parent relationship in India and across cultures has also been explored (Kapadia, 2017). An interesting work by Kapur (2018) examines childcare in the indigenous health systems (Ayurveda, Unani, Siddha, Tibetan medicine) through the lens of developmental and health psychology. Development of self from a Hindu perspective has been explored by Saraswathi (2005). Kakar (1968) in his seminal work compared the 'factual' theory of the human life cycle to an 'ideal' theory forwarded between sixth to third BCE in India. Significant research has been conducted on issues among older adults like interpersonal relationships of elderly (Kalavar & Jamuna, 2008), ageing of Indian women (Kalavar & Jamuna, 2011), elder abuse in India (Kalavar, Jamuna, & Ejaz, 2013) and Geropsychology in India (Ramamurthi & Jamuna 2010).

The above are just a few significant works by Indian psychologists who have situated developmental factors in Indian socio-cultural milieu.

Check Your Progress 4

1. Differentiate between cephalocaudal and proximodistal development.
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2. How is longitudinal study conducted in developmental psychology?
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3. List the main obstacles in while conducting research in developmental psychology.
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1.13 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- Growth is a process that results in structural and physiological changes that are quantitative in nature. The changes may be thus be progressive or regressive and may or may not involve development. Development on the other hand is a progressive change as a result of maturation and learning.
- There are four areas, in which children grow, i.e. (i) physical, (ii) psychological and cognitive, (iii) social and emotional and (iv) sexuality and gender identity.
- There are four interactive forces that combine to shape human development and these are (i) biological forces, (ii) psychological forces, (iii) socio-cultural forces and (iv) life cycle forces.
- The main issues in developmental are psychology continuity vs discontinuity, nature vs nurture, stability vs instability. To understand the pattern of development, certain fundamental facts must be taken into consideration. Each of these have important implications.
- Some of the important research methods, employed in developmental psychology are longitudinal method, cross-sectional method, sequential and time lag method. There are some obstacles while conducting research in the area. In some cases, there is difficulty in establishing rapport with the participant and yet in certain other cases, the methodology used is not appropriate. Thus, the accuracy of data becomes questionable. In some cases, the ethical aspects of research create difficulty in getting the participant to cooperate and the researcher to collect the data.

1.14 KEYWORDS

Growth A process that results in structural and physiological changes that are quantitative in nature

Lifespan Developmental Psychology Field of psychology which involves the examination of both constancy and change in human behaviour across the entire life span, that is, from conception to death

Cephalocaudal Law Development spreads over the body from head to foot.

Proximodistal Law Development spreads outward from the central axis of the body to extremities

Cohort People who are born roughly at the same period of time in a society

Time lag method This method for studying the development of different age groups in different years to determine the effect of historical events on behaviour

1.15 REVIEW QUESTIONS

1. What is life span development?
2. Explain the characteristics of development.

3. What are the major issues involved in the process of development?
4. Describe significant facts about development.
5. What are the different periods of development?
6. Discuss the various domains of human development?

1.16 REFERENCES AND FURTHER READING

Amborn S.R. (1975) *Child Development*. Rinehart Press/Holt, Rinehart and Winston, San Francisco

Baltes, P. B., Reese, H. and Lipsett, L. (1980) 'Lifespan developmental psychology', *Annual Review of Psychology* 31: 65 - 110.

Boyd, D. and Bee, H. (2006). *Lifespan Development* (4th ed.). Upper Saddle River, NJ: Pearson.

Hurlock, Elizabeth B. (1980) *Developmental Psychology: A Life-Span Approach*, Mc Graw Hill company.

Hurlock, E. B. (1980). *Developmental Psychology* (5th edition) Tata McGraw- Hill Publishing Company Ltd.

Mussen, P. H, Conger, J.J & et.al (1984) *Child Development and Personality* (6th edition) Harper & Row, Publishers, New York

Rutter, M. and Rutter, M. (1992) *Developing Minds. Challenge and continuity across the life span*, London: Penguin.

Some portion has taken been from Mamta Sharma (B.A. course 2, block 1, unit 1.) and Varsha Godbole (B.A. course 9, group I, block 2, unit 1), IGNOU course materials (2010) New Delhi.

1.17 ADDITIONAL ONLINE RESOURCES

- Baltes P. (1987) Theoretical propositions of Life-span Developmental Psychology: On the dynamics between growth and decline. *Developmental Psychology* 1987, Vol. 2.1, No. 5, 611-626

Baltes 87 LS Dev theory copy.pdf (udayton.edu)

Answers to Check Your Progress 1

True or False

- 1) True, 2) True, 3) True, 4) True, 5) True.

UNIT 2 PERSPECTIVES ON HUMAN DEVELOPMENT I- PSYCHOANALYTIC AND PSYCHOSOCIAL PERSPECTIVES; DEVELOPMENTAL TASK THEORY¹

Structure

2.0 Introduction

2.1 Perspectives on Human Development

2.1.1 Psychoanalytic Perspective- Freud's Legacy

2.1.2 Neo Freudian- Erikson's Psychosocial Theory

2.1.3 Havighurst's Developmental Task Theory

2.2 Summary

2.3 Keywords

2.4 Review Questions

2.5 References and Further Reading

2.6 Additional Online Resources

Learning Objectives

After having read this Unit, you will be able to:

- explain the psychoanalytic perspective to lifespan development;
- elucidate the psychosocial perspective to lifespan development;
- summarize the developmental task theory;
- compare and critically analyze the different perspectives on human development;
- gain holistic understanding of the field of developmental psychology; and
- critically review the theoretical perspectives in the evidence-based framework.

2.0 INTRODUCTION

There are a number of important perspectives or theoretical positions related to human development. Most of the theories of human development are based on at least one of the two philosophical models of **organicism** and **mechanism**. The assumption underlying organicism is on qualitative features of development change and emphasize the organism's role in bringing about these changes. The mechanistic perspective stresses on the quantitative changes in behaviour and emphasizes that factors outside the control of the

organism play an important role in developmental change. Developmental theories are not based exclusively on one of these philosophical models, rather have adopted elements of both organicism and mechanism. Another important aspect is the theory being **contextual**. Developmental psychologists recognize that children and adults behave differently in different contexts. The contextual perspective takes into account a child's community and society, and tries to understand how culture and society impacts that child's development.

Some of the important theories reviewed in this Unit are Freud's psychoanalytic theory of development, Erikson's psychosocial development, and Havighurst's developmental task theory.

2.1 PERSPECTIVES ON HUMAN DEVELOPMENT

Case Vignette

Meera, an 18-year-old currently living in Delhi, shifted to the metropolitan from Saharanpur for higher education. Life in this city seemed way different than in her hometown. Initially, it took her a lot of time adjusting. Her patriarchal joint family members were not too pleased when she announced the idea to migrate to Delhi to pursue her higher education. They conceded as they did not have a choice. She scored very well in her board exam and now wanted to pursue Economics Honours degree from a reputed college in the capital. However, in second year, her grades started dropping and she started communicating less and less with her family members. They started worrying about her. What could have gone wrong? How would one explain such changes in an individual?

Life span development attempts to answer some of these questions within the realm of various paradigms that have been proposed by developmental psychologists, over the years. The developmental psychologists don their theoretical lens to understand, control and predict behaviors. While we all try theorizing about people, behaviors and events-developmental psychologists do it more scientifically or empirically so to say. Their theories are mostly based on collected evidence and consolidation of research supporting their respective hypotheses. One of the most influential perspective was the psychodynamic perspective that led to the development of major contemporary approaches to the understanding of the life span development across various cultures.

2.1.1 Psychoanalytic Perspective-Freud's legacy

Sigmund Freud (6 May 1856-23 September 1939) an Austrian neurologist was the founder of psychoanalysis and revolutionized the fields of psychiatry and psychology by proposing his psychosexual stages of life span development. Freud's ideas about human behavior and development centered around the notion of the unconscious mind. According to Freud, every

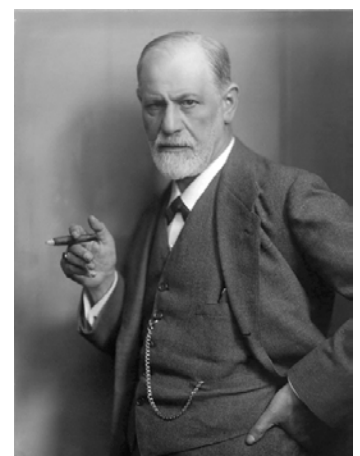


Figure 2.1 Sigmund Freud
Source: <https://www.britannica.com/biography/Sigmund-Freud>

behavior, desire, thought is motivated by the unconscious mind and humans have basic biological urges or needs that must be met. For instance, a girl brought up in a conservative set up may indulge in all kinds of experimental behaviours when on her own. A boy not having studied for his final term exams may pledge supplication in a temple if he manages to pass. These and many more examples from our lives throw light on Freud's theoretical influence in everyday life.

The Id, Ego and the Super Ego

According to Sigmund Freud (1933) every individual has a fixed amount of psychic energy that helps or impedes in the process of personality development by either satisfying certain urges and impulses or by fighting against the impulses or urges. Freud proposed three parts of the personality: the id, the ego and the super ego. These three define the personality development according to Freud.

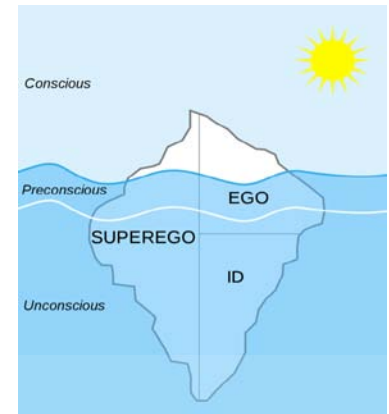


Figure 2.2 The Id, Ego & Superego

Source: <https://upload.wikimedia.org/wikipedia/commons/thumb/b/be/Structural-Iceberg.svg/1200px-Structural-Iceberg.svg.png>

The Id

The id is the warehouse of the forbidden- all the hidden desires, dreams and urges are driven by id. The id is the raw and organic part of personality present since birth. The id operates on the pleasure principle and wants instant gratification and does not care about the consequences.

The Super Ego

The super ego helps us be humane and guards us against the impulses of id by showing us the right from the wrong. It's the moral police that helps us do the right thing in the given cultural context.

The Ego

The ego balances the id and the super ego and operates on the reality principle. The 'iceberg' metaphor (Refer Figure 2.2) is often used to explain the three states of consciousness and the id, ego and superego.

The conscious mind is what is evident and, in the awareness, the preconscious is within the realms of the unknown but can be brought into awareness and the unconscious is embedded deep down as in the iceberg and is the largest part of the psyche. The ego keeps free floating across the states, but id is largely governed by the unconscious and super ego by the preconscious state. The conflict between the three states can cause a lot of distress and unless resolved it will put the organism in a state of tension.

Freud also gave the psychosexual stages of development. He opined that there are six stages of development starting from birth till adulthood that can explain the development of an individual and the conflicts that are going to be present if the stages are not successfully passed. As the child matures biologically, the *libido* (psychic energy) moves from one part of the body to

another, to seek physical gratification. The shifting of libido from one stage to another transcends across the five stages of psychosexual development. If the upbringing is too harsh or the caregivers are too strict with the baby, then the baby may get fixated at a certain stage and may start relying on unhelpful coping mechanisms to deal with the anxiety. In the **oral stage**, the erogenous zone is the mouth. If gratification is not achieved at this stage, for example if the weaning is done abruptly and the baby is shamed for asking for breast milk or bottle feeder, the baby may remain fixated at this stage and may manifest behaviours like thumb sucking etc. at developmentally inappropriate stage of life. Similarly, in the **anal stage**, the toddler may pay more attention to their anal regions and the acts of holding on and letting go. If parents are too reprimanding and punitive, then the toddler may become rebellious to authority figures in later years of their life. As the child moves on, the pleasure shifts from the **anal stage** to the **phallic stage** where the child develops an incestuous desire for his mother, in the case of a male child and for her father, in the case of a female child. Freud called this **Oedipus and Electra Complexes** borrowing the concepts from the Greek mythology. While the desire for his mother may be strong, the boy may also be fearful of his father, hence he starts identifying with the father to resolve the conflict. In the case of a girl, because the mother has all of the father's attention and is perceived as a rival, hence she may start identifying with her. In the process of this identification, girls and boys start incorporating the gender roles and values exhibited by their parents and find gratification in doing so. Freud perceived this stage as being pertinent in the development of morality and gender identity. This gives way to the **latency stage**, where the child is more tamed and civil and invests his/her/their energy in the mundane and monotonous. School and work find a central place in their lives only to be flummoxed by a burst of psychic energy as they move on to the next and final stage of psychosexual development- the **genital stage**. This stage also marks the advent of puberty where the adolescents may find it difficult to adjust with their sexuality and some old conflicts with their parents may reappear. For Freud, this marks the end of development and the adults remains in this stage forever.

The ego develops some coping **defense mechanisms** to deal with the conflicts and anxieties created in the process of development. Freud's work in the area has been very influential (Freud, 1915; 1961). He elaborated upon how ego guarded itself against internal conflicts and sexual desires that were inappropriate for the ego. One of the primary purposes of defense mechanisms is to distort reality in a way that it becomes more bearable or acceptable for the ego. While these defenses are helpful, over usage of these may amplify pathology.

Table 2.1 Some of the commonly used defense mechanisms

Name	Description	Research evidence
Repression	An unconscious mechanism by the ego to keep painful, disturbing or threatening thoughts from	Boden & Baumeister (1997) in their research showed that repressors respond to threatening or upsetting stimuli

	becoming conscious	by spontaneously generating positive thoughts that are unrelated to the upsetting event.
Projection	Attributing one's own unacceptable thoughts, feelings and motives to others	Ross, Greene & House's (1977) work on the false consensus effect is an evidence towards the idea of projection. It is a tendency to assume that more people than not have similar opinions, thoughts, motives, behaviours as us.
Displacement	Satisfying an impulse fueled by id, by indulging in a substitute act/object or in other words altering the target of an impulse.	Scapegoating may qualify as an apt example. In a classical study, Hoveland and Sears (1940) reported how increase in lynching incidents in the American South was negatively correlated to increase in cotton prices.
Denial	Blocking external painful or threatening events from awareness. An outright refusal to accept the reality.	Suls and Fletcher, (1985) meta-analyzed several studies and concluded that denial may produce positive outcomes in the shorter run but is not a very efficient coping mechanism in the longer run. Janoff-Bulman (1992) suggest that denial may be adaptive in dealing with trauma as it allows for reinterpretation.
Reaction Formation	Converting a socially unacceptable impulse into its diametrically opposite behaviour.	Morokoff (1985) assessed sex guilt and then exposed female participants to erotic stimuli. Females high on guilt reported lesser levels of arousal, however, physiological measures showed higher level of arousal in the identified participants.

Freud without doubt was one of the most influential figures of his times and continues to influence a lot of psychological thinkers including contemporary psychoanalysts from India like Sudhir Kakar and Salman Akhtar. However, despite its popularity and charm, psychoanalysis could not withstand the scientific vigour of the emerging field and failed appallingly to provide convincing evidence in support of its claim or theoretical model. As a result,

a number of neo-psychoanalysts started looking at different theoretical models for explanation of the human behaviour.

Sigmund Freud's contribution to certain areas in psychology cannot be dismissed. Many of his theoretical insights have strongly helped in the development of theories of life span development, psychotherapy and personality as well (Fonagy & Target, 2000; Newman & Newman, 2016; Westen et al., 2008). Freud's emphasis on the importance of unconscious processes have found support in many contemporary and neuroscientific research (Bargh & Morsella, 2008; Westen et al., 2008). He was one of the pioneer psychologists to have laid a lot of emphasis on early experiences as the foundation for optimal development later in life. Psychologists such as Erikson, Ainsworth, Bowlby, Klein, Winnicott built upon his theory and came up with more rational explanation of the developmental milestones in social and emotional development. He also emphasized the importance of emotional conflicts in life span development and defense mechanisms as coping strategies for dealing with these conflicts. Fisher & Greenberg (1996) undertook a detailed review of the scientific evidence for various aspects of Freud's theory. They also support the notion of Freud's theory being extremely androcentric and ignoring the emotions development of females. Freud has also been criticized for being 'sexist' in his approach by various other researchers. He also highlighted the importance of subjective experiences which was rejected by the psychologists at the time as unscientific (Fisher & Greenberg, 1996). Many applaud him for stressing upon the importance of childhood experiences, especially in identifying instances of abuse. While, his claims were lacking an evidence base, international data suggest that around 25 percent of girls and 8 per cent boys are sexually abused in their childhood (World Health Organization, 2001).

Freud exercised formidable influence in the development of modern psychology. However, some recent evaluations have been intensely conflicting, for example, Kihlstrom (2009) declared him "*dead*" and Lothane (2006) declared him as "*the greatest psychologist since Aristotle*"!

Check Your Progress 1

1. Differentiate between id, ego and superego.

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2. Define defense mechanism. List the commonly used defense mechanisms.

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3. Explain Electra and Oedipus complexes.

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2.1.2 Neo Freudian-Erikson's Psychosocial Theory



Figure 2.3 Erik Erikson

Source: <https://www.blendspace.com/lessons/vYtldZLRjdWXWA/copy-of-erik-erikson-stages-of-psycho-social-development>

Contemporary psychoanalytic approaches have manifested a marked shift from the classical Freudian paradigm in terms of their interpretation or acceptance of Freud's theoretical assumptions. Erik Erikson was one such neo-psychoanalyst who was critical of Freud's deterministic view and stressed upon the importance of social and emotional components of development. Though his theory was influenced by Freudian theory, however his approach was much broader and inclusive of the socio-cultural context. He proposed his eight staged theory of development, that later was expanded to a ninth stage, posthumously, by his wife, Joan Erikson.

Every stage for Erikson, produces a conflict or a crisis and the resolution or non-resolution leads to either positive or negative outcomes. The stages emphasize the importance of relationships and social interactions in making a meaningful transition from one stage to the other. Erikson was influenced by Freud's conceptualization but his approach (1978) was more encompassing and covered the entire life span, unlike Freud. His most influential works included *Childhood and Society* (1963) and *Identity, Youth and Crisis* (1968).

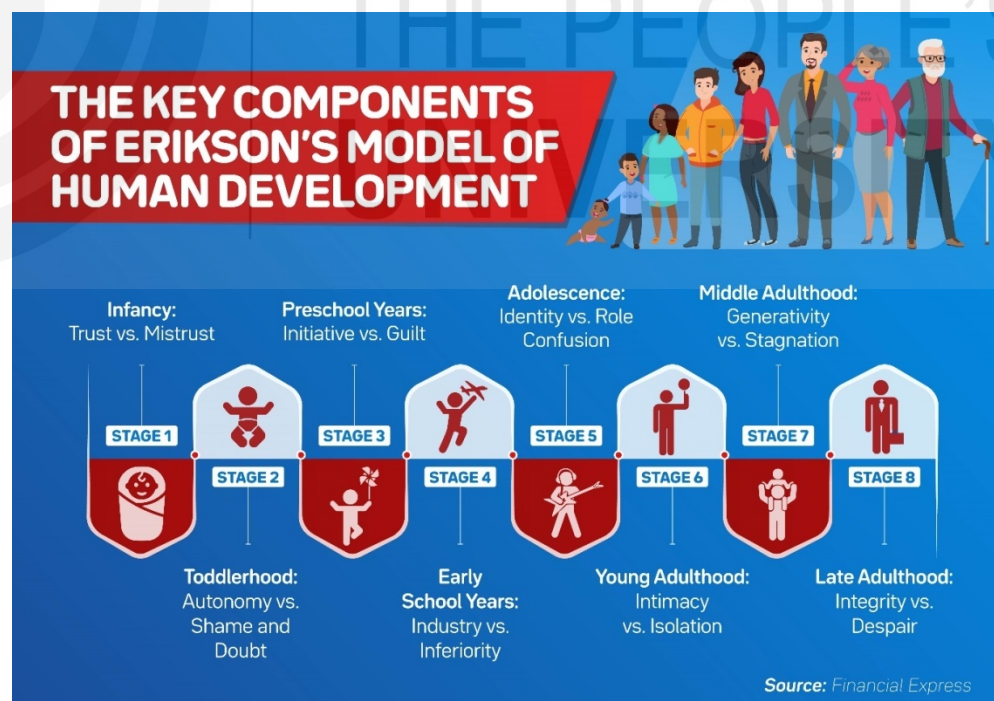


Figure 2.4 Stages in Erikson's Psychosocial Theory

Source: Stages of Human Development: What It Is & Why It's Important (maryville.edu)

In the first stage (birth-12 to 18 months) *trust vs.mistrust*, the baby either learns to trust in the world around him/her/them or feels insecure due to

his /her/their interactions with the significant others. The infants require the caregivers not just to feed them but to respond to all their needs in ways that may help them develop a sense of trust in their surroundings. Make them believe that the world around is a warm place to be in. If the caregivers fail to respond or rejects or respond inconsistently to their needs, then the infants may acquire a sense of misgiving in the world around them. While trust should always outweigh mistrust, overindulgence may lead to unhealthy outcomes. Hence, there should be a fine balance between the two, in order for the infant to develop in a healthy way.

Table 2.5 Comparing Freud's and Erikson's Perspective on Life Span Development

Age	Freud's Stages of Psychosexual Development	Central ideas of Freud's Stages	Erikson's Stages of Psychosocial Development, Conflicts & Values	Outcomes of Erikson's Stages
Birth to 12–18 months	Oral	Interest in oral gratification from sucking, eating, mouthing, biting	Trust vs. Mistrust	Positive: Feelings of trust from environmental support Negative: Fear and concern regarding others
12–18 months to 3 years	Anal	Gratification from expelling and withholding faeces; coming to terms with society's controls relating to toilet training	Autonomy vs. Shame and Doubt	Positive: Self-sufficiency if exploration is encouraged Negative: Doubts about self, lack of independence
3 to 5–6 years	Phallic	Interest in the genitals; coming to terms with Oedipal conflict, leading to identification with same-sex parent	Initiative vs. Guilt	Positive: Discovery of ways to initiate actions Negative: Guilt from actions and thoughts

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5–6 years to adolescence	Latency	Sexual concerns largely unimportant	Industry vs. Inferiority	Positive: Development of sense of competence Negative: Feelings of inferiority, no sense of mastery
Adolescence to adulthood (Freud) Adolescence (Erikson)	Genital	Reemergence of sexual interests and establishment of mature sexual relationships	Identity vs. Role diffusion	Positive: Awareness of uniqueness of self, knowledge of role to be followed Negative: Inability to identify appropriate roles in life
Early adulthood (Erikson)	-		Intimacy vs. Isolation	Positive: Development of loving, sexual relationships and close friendships Negative: Fear of relationships with others
Middle adulthood (Erikson)	-		Generativity vs. Stagnation	Resolution leads to: Sense of contribution to continuity of life Conflict: Trivialization of one's activities
Late adulthood (Erikson)	-		Ego-integrity vs. Despair	Positive: Sense of unity in life's accomplishments Negative: Regret over lost opportunities of life
Old age (Erikson & Joan Erikson)	-		Gerotranscendence	New perspective towards the world that leans towards spirituality



Figure 2.5 Joan & Erik Erikson in happy times

Source: <https://thethirdtable.files.wordpress.com/2009/10/joan-erikson1.jpg?w=584>

In second stage (12-18 months-3 years) *autonomy vs. shame*, the toddler feels a sense of efficacy and mastery if they are allowed to explore and be independent. If not allowed to be independent or explore the surroundings, they develop a sense of self-doubt and lack of confidence in one's abilities. If conflicts are successfully resolved at this crucial stage, the toddler learns to trust one's sense of self and independence.

The third stage, *initiative vs. guilt* (3 years -5 to 6 years), follows successfully if the resolutions have been met for the previous stages. Children who have developed confidence in their sense of self-have the ability to initiative bigger goals and venture.

The fourth stage, *industry vs. inferiority* (6-11 years) is a succession to the previous one and involvement in bigger projects and goals lead to a sense of industry and lack of it lead to inferiority and doubts about the self. Successful resolution leads to a sense of mastery and social achievement in academic and social endeavours.

The next stage in the Eriksonian framework was also the stage that he is most famously known for *identity vs. role diffusion* (adolescence). If the conflicts are amicably resolved before this stage, the adolescent finds confidence in his/her/their identify and moves forward with self-assurance and a vision they believe in. This is the stage where the adolescent goes through "identity crisis", questions the long-established rules, norms, expectations about one's identity, sexuality, gender roles, and experiments with what syncs in with his/her/their sensibilities rather than community or societal expectations.

The next stage *intimacy vs. isolation* (young adulthood) marks the advent of cultivating meaning relationships in life if the previous conflicts are successfully resolved. This is where the young adult prepares self to share his/her/their identity with another to create a life together. This often

culminates in a promise of a long-time relationship, that may or may not stand the storms of time but in that moment of time, the individual feels ready to commit.

After having found a grounding, the next stage *generativity vs. stagnation* (middle adulthood) leads to investing in creating ideas, values or legacy that may outlive the individual. This may conclude with successfully leaving behind a career legacy, rearing up children with the right values or creating opportunities leading to community growth, volunteering and making a difference to people's life.

The next stage *ego integrity vs. despair* (late adulthood) is successively resolved if looking back retrospectively makes one feel valuable and contributing member of the community, and life in general, vis a vis, if one feels that he/she/they may not have made it count or made a value difference to the community then it adds to despair.

Posthumously, Erikson's wife Joan Erikson also added a ninth stage to his theory that she elaborated as *gerotranscendence*. The idea was originally developed by her husband and later expanded by Tornstam (2011). Joan Erikson proposed that gerotranscendence occurs during the 80s and 90s for most older adults (Erikson, 1997; Braam, et al, 2006; Dalby, 2006). The task of this stage is to develop a new perspective of the world, which often increasingly lean towards spirituality (Erikson, 1997; Dalby, 2006). Gerotranscendence primarily deals with wisdom, maturity, coping mechanisms, identity and revisiting previous stages. Gerotranscendence though typically experienced by older adults, is a lifelong progressive process (Lewin, 2001; Tornstam, 2011).

Erikson was heavily influenced by Freud, but his theoretical positioning differed from him in several ways. Erikson's theory had a sociological component and he relied profoundly on the importance of relationships while Freud's main emphasis was on the impact of unconscious. Erikson's lens of human development is more optimistic and humanistically oriented whereas Freud's is more negative. Erikson has elaborated upon how the resolution of conflicts can lead to value development in life, however Freud elaborated more on the manifestation of the conflicts in terms of ego defense mechanisms. Erikson provided cross cultural evidence for his theory. It is interesting that he studied Mahatama Gandhi's life from a psychosocial perspective (Erikson, 1969). He also studied the Sioux and Yurok American Indians using his developmental lens (Erikson, 1963). Erikson's theory was very psychosocial in nature and paid due attention to factors outside the psyche as well, unlike Freud. He saw the ego, not just as a mediating influence inside the human psyche, but as an active advocate of optimal development under socio-cultural influences and context.

Check Your Progress 2

1. What is gerotranscendence?
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2. Explain the basic premise of Erikson's psychosocial theory of human development.
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2.1.3 Havighurst's Developmental Tasks Theory

Robert J. Havighurst, a developmental psychologist, was born in Wisconsin and graduated from Ohio Wesleyan University and later received his doctorate degree from Ohio State University in the year 1924. By training he was a chemist and physicist, but was essentially interested in the broader aspects of general education. He taught at Miami University, the University of Wisconsin, Ohio State University and finally became a professor of education and psychology at the University of Chicago where he worked for more than 40 years. Though he retired in 1983 but continued to work till 1990. Havighurst died at the age of 90 in 1991.



Figure 2.6: Robert J. Havighurst

Source:

https://halloffame.outreach.ou.edu/media/filer_public_thumbnails/filer_public/eb/7f/eb7ff8c0-1b76-4f61-894b-a088216d064c/havighur.gif__281x414_q85_crop_subsampling-2_upscale.jpg

Havighurst gave his highly influential developmental task theory in 1943 to explain the process of development across life span and continued to develop it across his career span. He is best known for proposing a theory of development that views development as a series of cultural roles and tasks that an individual learns, acquires and dispenses over the course of her/his/their life. According to Havighurst (1948) a developmental task is one "which arises at or about a certain period in the life of an individual, successful achievement of which leads to happiness and to success with later tasks, while failure leads to unhappiness in the individual and difficulty with later tasks" (pg.2).

He described developmental tasks as skills, knowledge, functions or attitudes normally acquired by individuals during specific periods in life. According to him these "teachable moments" are moments in which the individual is most receptive to acquire this new skill/functions. Thus, if a task is not learnt at this period, it will become challenging to acquire it later.

Developmental Stage - 1 (0-2 years). During the infancy period the developmental tasks are mostly centered around *physical, sensory-motor task and socio-emotional domains*. Infants are expected to master motor tasks and then becoming more independent and mastering complex tasks like walking. The reflexes are developed into sensory-motor intelligence.

Developmental Stage -2 (2-4 years). Children at this age show more *advanced locomotive and language skills*. Toddler's start mastering learning to run, jump, take the stairs and do more advanced motor movements. Additionally, other developmental tasks at this stage are *developing more complex vocabulary, learning social communication and forming complex sentences*. An interesting developmental task for this age is *fantasy play*. Toddlers are also expected to master physical control like control over their bowel movement and being socially sensitive.

Developmental Stage -3 (4-6 years). During this stage, one of the major *developmental tasks is to understand gender identity, gender knowledge and gender preference*. They start understanding the concept of reinforcement. They start consolidating their idea around self and the social world and start developing empathy to form peer relationships later in life.

Developmental Stage -4 (6-12 years). In this age, the *cognitive developmental tasks include computational tasks, reading, comprehending, integrating logic into day-to-day decision making, using problem solving etc*. Socially the tasks center around taking more responsibility and perspective taking as children start realizing the importance of teamwork, cooperation and resisting peer pressure to consolidate their own identity and understand the social world better.

Developmental Stage-5 (12-18 years). The onset of puberty (menarche/spermarche) brings in a *lot many physically changes to adjust to, and this becomes a major developmental task for the young adolescents*. The growth spurts and changes in voice and body lead to newer ways of understanding self and others too. Social cognition reaches a new level of sophistication and adolescents develop the ability to form complex friendships and comprehend the social world in a better way. They understand group dynamics and acquire understanding that fosters group membership. They develop the ability to form intimate relationships and have better understanding of their own needs.

The developmental task of emotional regulation and impulse control gain salience as they need to resolve this continuing challenge due to their new found sexuality, hormonal shifts and an expanding sense of freedom and independence. Attaining some semblance in terms of life goals and vision also becomes pertinent as they have to make important career and education related choices. He proposed that the adolescent prefers the approval of the larger community than just her/his/their peers. If they do not receive the approval or reinforcement from the larger community, they fail to optimally socialize within the community. He believed that school plays a major role in rewarding or reinforcing the youths and therefore must play a significant role in rewarding the adolescents especially minority or youths from disadvantageous backgrounds.

Havighurst was a pioneering advocate of an inclusive education system and believed that schools were pivotal in creating opportunities for children from difficult socio-economic backgrounds. He proposed that children's

performance at schools is influenced more by the character of the schools than by the socioeconomic status of the family.

Developmental Stage -6 (18-24 years). In this emerging adulthood phase, the most important developmental task is to *gain independence and attain autonomy from the family of origin and establish oneself as capable of starting on one's own independently*. However, this is more in sync with the Western cultural script. This developmental task involves attaining maturity in all domains of development i.e., physical, emotional, social and functional. Career becomes a cardinal focus and individuals are expected to take active steps to attain their goals and achieve financial independence as well.

Developmental Stage -7 (24-34 years). Adult social responsibilities take precedence during this stage. Adults are expected to have developmental tasks that define appropriate social and developmental roles that fit in the trajectory and define lifestyle choices. Getting secure paid employment and having secure and stable career path becomes salient during this stage and adds to attaining autonomy and a sense of identity. At this stage young adults are expected to attain emotional maturity and work towards cultivating intimate and relationships and foster friendships. A major developmental task is to form mutually supportive and emotionally satisfying relationships within and outside the family. Social roles like being a partner or a parent is also shaped by the successful attainment of these developmental tasks.

Developmental Stage - 8 (34- 60 years). Middle adulthood primarily *centers around the management of changing roles and dynamics at workplace and home*. At home, adults are expected to deal with growing up children with maturity and patience and there is increased diversity in terms of responsibilities at the work front too. An overall sense of nurturance and balance is a major developmental task and successful attainment adds on to an overall sense of satisfaction and self-worth.

Developmental Stage - 9 (60-74 years). This is a *time for reflection and retrospection on the attainment of life satisfaction and fulfillment in terms of life goals*. A major developmental task is to adjust to the rapid changes in physical, social and emotional domains in life and attaining refinement in newer roles at home and work like being a grandparent and rethinking life goals post retirement from active work.

Developmental Stage - 10 (75 years- end of life). A major development task is *to age successfully and process the loss of loved ones* that becomes a challenge as the body becomes fragile and limits the individual's functioning in various ways and losing a partner or a friend is difficult too. While the individual is expected to refine the social roles, it also becomes difficult to nurture and maintain social networks. Since this is a retrospective period, it is often expected that the individual will acquire and share wisdom- that also marks the attainment of a stage specific developmental task.

Havighurst also elaborated on the sociological facets of aging and retirement and he identified and discussed the need for older adults to develop new roles as they age and newer ways of engaging and obtaining satisfaction once

active involvement in work is no longer available. His work became a premise for other psychologists to build upon later adult development models. His work contributes to the understanding of human development from the perspective of roles in life. Havighurst proposed a theory of development that anchored specific developmental periods to specific age-related behaviours. Havighurst was one of the pioneering researchers to put forth the “link between age-appropriate tasks and behaviors and the fostering of learning activities for adults...he termed the “teachable moment” (Merriam & Cafferella, 1999, p. 102). By successful attainment of these normatively arranged developmental tasks, the individual is prepared for the next successive task and this goes on for the entire life cycle. These “teachable moments” during the sensitive period help the individual in acquiring confidence and moving on to a more advanced developmental task. There may, however, be considerable individual difference in attainment of these tasks as it will be impacted by the environmental and personal challenges and attributes the individual is bestowed with.

While most developmental psychologist stress upon children’s developmental tasks and processes, Havighurst professed that children’s developmental processes are a product of biological maturation whereas the developmental processes of adults are primarily based on the kind of social roles they take up or are expected to dispense (Havighurst, 1953, 1957, 1973; Havighurst & Albrecht, 1953; Havighurst, Munnichs, Neugarten, & Tomae, 1969). The construct of social role refers to an array of behaviours and attitude related to a certain function or position as defined and expected by the society and culture. These social roles are those societal conventions to which adults are expected to conform and a major part of adult life is spent functioning in the various roles (Havighurst & Orr, 1956).

Havighurst (1973) argued that an adult spends more than 90% of his/her/their waking time in dispensing these roles. His research team identified around 16 distinctive social roles in a series of research studies (Havighurst & Albrecht, 1953; Havighurst et al., 1969; Havighurst & Orr, 1956). These social roles were: Parent, Homemaker, Citizen, Spouse, Neighbor, Friend, Acquaintance, Grandparent, Kin, Worker, User of Leisure, Church Member, Club or Association Member, Child of Aging Parents, Great Grandparent, and Colleague at Work. He also believed that people can be educated through structured programs to help improve their performance of such roles.

Havighurst and Orr (1956) also proposed that these specific social roles provided strong motivation for people to perform well. The identified roles that provided the strongest motivation to perform well were Worker, Parent and User of Leisure Time, conversely, the roles that created the lowest motivation were Citizen, Church Member, and Club or Association Member. While Havighurst tried his best to give a very comprehensive theory elaborating upon the developmental tasks associated with various levels or stages of development, unfortunately, his theory is complex and lacks clarity in terms of concepts and ideations. He dwells upon the importance of developmental tasks and how every individual face issues and difficulties that are related with these tasks; however, he has not talked about the resolution

of the emergent issues. The applicability of his theory seems questionable as it lacks in evidence base. Not many theorists were impressed or influenced by his work and that probably led to its slow demise. Some of the most popular textbooks on life span development do not mention about his work at all. His legacy and contribution seem to have dwindled over the years as it did not generate debates or questions for the contemporary field.

Check Your Progress 3

1. What is a developmental task?

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2. Define 'teachable moments'.

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2.2 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- The classical psychoanalytic perspective emphasizes upon the unconscious urges, desires and conflict that dictate the course of human development. Sexual energy plays a pivotal role in conceptualizing the classical theoretical model. It is also called the psychosexual stages of development.
- To mitigate the tension between the conflict arising from the clashes between the id, ego and super ego, the ego operates certain unconscious coping mechanisms called the ego defense mechanisms.
- Erikson's psychosocial framework criticized Freud's work for having missed paying attention to the importance of the social world in the development of an individual.
- While Erikson's is also a stage model, but he talks about the importance of relationships at every stage of development and how the resolution of the stage leads to the emergence of a new virtue.
- Havighurst proposed a theory of development that centers on developmental tasks that are vital to every stage of development and every individual has certain social roles and dispenses the developmental tasks with reference to the special social role.

2.3 KEY WORDS

Psychoanalysis The classical school of thought developed by Sigmund Freud that emphasized upon the unconscious and its influence upon the motives, desires and feelings.

Psychosexual Stages of Development Stages of child development as proposed by Freud in which child's pleasure-seeking tendencies or urges are focused on specific erogenous zones.

Fixation Being 'stuck' or fixated at early psychosexual stages development where id's pleasure-seeking tendencies are left unmet or unresolved and influence later development.

Ego Defense Mechanisms Ego's unconscious operation to deal with the conflict between the Id and the Super Ego by indulging in more appropriate and socially acceptable ways of behaving and protecting a individual from internal conflicts.

Neo Freudians Theorists who were influenced by Freud but rejected or modified parts of his theory and offered their own interpretation in explaining the development of the life span.

Eric Erikson An influential Neo-Freudian who laid emphasis on the psychosocial component of life span development.

Gerotranscendence The 9th stage in Erikson's framework that was elaborated by his wife Joan Erikson posthumously and explain the changes during the 80s and 90s.

Developmental Tasks Tasks arising at various developmental stages in life, the resolution and mastery of which leads to satisfaction and happiness.

Teachable Moment Moments when the individual is most receptive to learn about a new skill or developmental task. If it's not acquired during this critical phase then the individual will have difficulty in acquiring it later.

2.4 REVIEW QUESTIONS

1. Compare and contrast the classical psychoanalytic stages of development with Erikson's psychosocial stages of development.
2. Freud led to the development of contemporary approaches to understanding the stages of development. Reflect and elaborate.
3. Citing relevant cultural examples, elucidate the psychosocial stages of development as proposed by Erikson.
4. Critically evaluate Havighurst's developmental task theory.
5. What are teachable moments? Give a critical overview of the developmental tasks across the life span.

2.5 REFERENCES AND FURTHER READING

- Bargh, J. A., & Morsella, E. (2008). *The unconscious mind. Perspectives on Psychological Science*, 3, 73–79.
- Boden, J., & Baumeister, R. (1997). Repressive coping: Distraction using pleasant thoughts and memories. *Journal of Personality and Social Psychology*, 73, 45–62. doi:10.1037/0022-3514.73.1.45
- Braam, A. W., Bramsen, I., van Tilburg, T. G., van der Ploeg, H. M., & Deeg, D. J. H. (2006). Cosmic transcendence and framework of meaning in life: Patterns among older adults in the Netherlands. *Journal of Gerontology*, 61B(3), S121–S128.
- Branje, S., & Koper, N. (2018). Psychosocial development. In M. Bornstein (Ed.), *The SAGE encyclopedia of lifespan human development* (pp. 1772–1774). SAGE Publications, Inc., <https://www.doi.org/10.4135/9781506307633.n661>
- Dalby, P. (2006). Is there a process of spiritual change or development associated with aging? A critical review of research. *Aging & Mental Health*, 10(1), 4–12.
- Erikson, E. (1978). *Adulthood*. New York: Norton.
- Erikson, J. M. (1997). *The life cycle completed: Extended version with new chapters on the ninth stage of development*. New York: W. W. Norton & Company, Inc.
- Fisher, S., & Greenberg, R. P. (1996). *Freud scientifically reappraised: Testing the theories and therapy*. John Wiley & Sons.
- Fonagy, P., & Target, M. (2000). The place of psychodynamic theory in developmental psychopathology. *Development and Psychopathology*, 12, 407–425.
- Havighurst, R. J. (1948) *Developmental tasks and education*. Chicago, IL: University of Chicago Press.
- Havighurst, R. J. (1953) *Human development and education*. New York, NY: Longmans, Greens
- Havighurst, R. J. (1970). Changing status and roles during the adult life cycle: Significance for adult education. In R. W. Burnes (Eds.), *Sociological backgrounds of adult education* (pp. 17–38). Syracuse, NY: Center for the Study of Liberal Education for Adults.
- Havighurst, R. J. (1970). Minority subcultures and the law of effect. *American Psychologist*, 25, 313–322.
- Havighurst, R. J. (1973). Social roles, work, leisure, and education. In C. Eisdorfer, M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 598–618). Washington, DC: American Psychological Association.
- Havighurst, R. J., & Albrecht R. (1953). *Older people*. New York: Longmans, Green.

- Havighurst, R. J., Munnichs J. M. A., Neugarten B., & Thomae H. (1969). *Adjustment to retirement: A cross-national study*. Assen, Netherlands: Royal Van Gorcum.
- Havighurst, R. J., & Orr B. (1956). *Adult education and adult needs*. Chicago: Center for the Study of Liberal Education for Adults.
- Hovland, C.I., & Sears, R.R. (1940) Minor Studies of Aggression: VI. Correlation of Lynchings with Economic Indices, *The Journal of Psychology*, 9:2, 301-310, DOI: 10.1080/00223980.1940.9917696
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.
- Kihlstrom, J.F. (2009). *Is Freud still alive? No, not really*. Available at: <https://www.ocf.berkeley.edu/~jfkihlstrom/freuddead.htm> Accessed on 15th June 2021
- Lewin, F. A. (2001). Gerotranscendence and different cultural settings. *Aging and Society*, 21, 395-415.
- Merriam S. B., Cafferella R. S. (1999). *Learning in adulthood: A comprehensive guide* (2nd ed.). San Francisco: Jossey-Bass.
- Morokoff, P. J. (1985). Effects of sex guilt, repression, sexual "arousability," and sexual experience on female sexual arousal during erotica and fantasy. *Journal of Personality and Social Psychology*, 49(1), 177-187. <https://doi.org/10.1037/0022-3514.49.1.177>
- Newman, B. M., & Newman, P. R. (2016). *Theories of human development* (2nd ed.). New York, NY: Psychology Press.
- Ross, L., Greene, D., & House, P. (May 1977). The 'false consensus effect': An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology*. 13 (3): 279-301. doi:10.1016/0022-1031(77)90049-X.
- Suls, J., & Fletcher, B. (1985). The relative efficacy of avoidant and nonavoidant coping strategies: A meta-analysis. *Health Psychology*, 4(3), 249-288. <https://doi.org/10.1037/0278-6133.4.3.249>
- Tornstam, L. (1999). Transcendence in later life. *Generations* 23(4), 10-14.
- Tornstam, L. (2011). Maturing into gerotranscendence. *Journal of Transpersonal Psychology* 43(2), 166-180.
- Westen, D., Gabbard, G. O., & Ortigo, K. M. (2008). Psychoanalytic approaches to personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality theory and research* (3rd ed.). New York, NY: Guilford.

2.6 ADDITIONAL ONLINE RESOURCES

For more information on Freud:

<https://www.britannica.com/biography/Sigmund-Freud>

https://ed.ted.com/best_of_web/J8Nekd8A

<https://www.secretintelligenceservice.org/wp-content/uploads/2016/02/Freudian-defense-mechanisms.pdf>

For more information on Erikson:

<https://www.britannica.com/biography/Erik-Erikson>

<https://courses.lumenlearning.com/wmopen-lifespandevelopment/chapter/theories-of-adult-psychosocial-development/>

<https://www.youtube.com/watch?v=00DUXNQLAjQ>

<https://www.youtube.com/watch?v=158CneVeJkk>

For more information on Indian perspective on Psychoanalysis (Sudhir Kakar):

https://www.youtube.com/watch?v=UoHJ_6YekOk

For more information on Havighurst:

<https://education.stateuniversity.com/pages/2032/Havighurst-Robert-J-1900-1991.html>

<http://egyankosh.ac.in/bitstream/123456789/23374/1/Unit-2.pdf>

How Millennials compare with prior generations | Pew Research Center

UNIT 3 PERSPECTIVES ON HUMAN DEVELOPMENT II: COGNITIVE PERSPECTIVE³

Structure

3.0 Introduction

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LEARNING OBJECTIVES:

After reading this Unit, you will be able to:

- explain cognitive perspective to development;
- elucidate Piaget's conceptualization of cognitive development;
- describe the four developmental stages and give examples to explain each stage;
- critically evaluate Piaget's constructivist approach considering evidence from India as well;
- explain Vygotsky's socio-cultural perspective to cognitive development;
- describe major concepts like zone of proximal development, scaffolding, guided participation with examples;
- discuss the applications of Vygotsky's sociocultural approach;
- critically evaluate Vygotsky's sociocultural approach; and
- explain information processing approach to cognitive development.

3.0 INTRODUCTION

The process of cognitive development is lifelong and involves dynamic changes in the content of cognitions or thoughts and the processes that regulate this mechanism. Cognitive development is a complex process and reflects the interplay of biological capabilities and the ability to acquire new skills by adapting to the environment using social cues, support, and cultural knowledge. Various theorists have tried explaining the process of development from their own theoretical positions and have used a variety of methods to study this process. Most of the research has focused on cognitive development during childhood and adolescence as the development stabilizes relatively during the adult years. Recent developments in the field have paid cognizance to the role of cultural factors in contributing to the development of the cognitive world of an individual. The skills, abilities and values that are appreciated in one culture, gain competence over other less desirable skills over time, thus making it clear that the process is adaptive. Thus, the process of cognitive development is embedded in the sociocultural fabric of the community in which the child grows up. In this Unit, the focus will be on cognitive perspectives on human development as posited by Piaget, Vygotsky, and information processing approach.

3.1 PIAGET'S THEORY ON COGNITIVE DEVELOPMENT: THE STRUCTURAL ORGANISMIC VIEW

Jean Piaget (1896-1980), a Swiss developmental psychologist was one of the most significant figures of twentieth century developmental psychology. He proposed the structural-organismic view, that is cognitive development is embedded in biology and emerges from experiences as children slowly and

steadily adapt their thoughts to optimally function in the world. This entire process undergoes qualitative changes, and each stage is a stepping stone to the next one. The stages are same for all species and therefore universal. He proposed four basic stages: *sensorimotor*, *pre-operational*, *concrete operational* and *formal operations*.



Figure 3.1: Jean Piaget

Source: http://t1.gstatic.com/licensed-image?q=tbn:ANd9GcTGjJjtQfiDycoMFr7XXbcuTmjs8oLF_8Ei2yD5r0RbYh-cWyT2u2Y0ymZnDPAJ

Piaget in his theory suggested that there may be some common and universally found characteristics in the process of a child's cognitive development. Piaget said that on encountering novel and challenging experiences or the state of "cognitive disequilibria" in the early developmental years of childhood, individuals respond by attempting to gain new knowledge and insight about those experiences, that would in turn lead to intellectual maturation and restoration of equilibrium. He defined intelligence as a "*basic life function*" and that all mental activities function to reach "*cognitive equilibrium*" by adapting to one's surrounding environment. He described it as a state of balance between one's cognitive processes and the environment, and named the process "equilibration" (1950, pg.6). He described a child to be a "*constructivist*" or one who makes sense of their reality by interacting with the objects available in the external environment.

Elkind (1974), identified three major phases in Piaget's theory.

1. Beginning from 1922 to 1928, Piaget was concerned about the ideas that children held about the physical world.

2. In the second phase in 1929, Piaget studied children's mental growth primarily by his interest in his own children's growth.
3. In the third phase, beginning in 1940s he dealt with children's understanding of concepts such as quantity, numbers and speed.

3.1.1 Cognitive Schemes

According to Piaget and Inhelder (1969), a child's mental abilities progress with the development of organized systems of knowledge which he called "cognitive schemes" that otherwise cannot be located or identified by means of observation. These organized reserves of knowledge represent the totality of a child's construction or understanding of reality. The cognitive schemes or structures aid in the child's ongoing interactions with the surrounding environment, which resultantly further expands these knowledge systems.

Piaget said that the formation of these cognitive structures happened because of two inborn mental processes: *organization* and *adaptation*. *Organization* has been described as the process by which a child integrates existing knowledge systems to form sophisticated and coherent cognitive structures. He also said it is a continuous and ongoing process that occurs to *adapt* to the new experiences in the environment. The underlying activities in the process of *adaptation* are *assimilation*, i.e, making meaning of new stimuli by using existing cognitive structures as points of reference; and *accommodation*, which is, integrating new knowledge and redefining the existing cognitive in order to form a linkage between new and old structures and new knowledge. Piaget believed that the formation of earliest cognitive schemes is governed by an infant's inborn reflexes, which are its available means of exploration up to two years of age.

3.1.2 Stages of Cognitive Development

Piaget suggested that an individual's cognitive development happens in the course of four sequential stages. Each stage upgrades the cognitive skills of the child and helps her/him/them move on to the next.

Table 3.1: Piaget's stages of cognitive development

<i>Age</i>	<i>Cognitive Stage</i>	<i>Primary characteristics</i>
0-2 years	Sensorimotor stage	Understanding the world primarily through the senses. Object concept is acquired.
2-6 years	Pre operational stage	Beginning of thought and language but from an ego centric perspective.
6-12 years	Concrete Operational stage	Mental manipulation is possible at this stage but is tied to concrete operations.
12 years and above	Formal operational stage	Abstract ideas, logical systematic thinking and reflective thought.

Sensorimotor stage (0-2 years)- Understanding of the world is formed through coordination of sensory experiences and motor activities. The child's basic method of knowing is through the actions she/he/they perform on the world through their senses.

Substages of the Sensorimotor period

- a) **Simple Reflexes:** In the first month after birth, all sensory experiences and motor actions are governed by reflexive behaviors in response to external stimuli. For instance, sucking as a reflexive behavior at the time of breastfeeding. Such reflexes can occur even in the absence of direct stimulation, such as when the infant reaches out to suck an object when it is within their reach.
- b) **First habits or Primary Circular Reactions:** In the second substage, infants between 1 to 4 months display what Piaget called first habits i.e., first set of voluntary behaviours evolved from reflexive behaviours that are imitative of the latter. For instance, sucking thumb is imitative of sucking behaviours during feeding. Such behaviours are centered around the infant's own body. They are called circular because they are repetitive in nature; and these actions are repetitive because the infant finds pleasure in being able to control its behaviors.
- c) **Secondary Circular Reactions:** Between 4 to 8 months, the infant displays circular or repetitive behaviour on other objects, such as toys, etc. The sudden discovery of his/her/their ability to exercise control over external objects apart from their own body is pleasurable for the infant.
- d) **Coordination of Secondary Reactions:** Between 8 to 12 months, infants first display fully intentional behaviours. Prior to this, simple motor activities are discovered to be pleasurable; however, in this stage, otherwise unrelated and non-pleasurable motor activities such as grasping, and sucking are coordinated to achieve simple goals. For instance, an infant may reach out and grasp the feeding bottle kept nearby on its own when hungry.
- e) **Tertiary Circular Reactions:** Between 12 to 18 months of age, infants begin to display exploratory behaviours. Through an infant's advancing cognitive abilities, he/she learns through trial and error how different actions can produce different results. In this stage, the infant can alter or form new cognitive schemas to produce desired results in a given situation. For instance, the infant may realize how creating different oral sounds may elicit different reactions from the caregiver.
- f) **Symbolic Problem Solving:** Between 18 months to 24 months, infants are able to symbolically engage in problem solving and carry out inner experimentation instead of trial and error to achieve simple objectives. Play becomes progressively symbolic and important. A kitchen utensil is not just a utensil; it can be transformed into a stool to sit or a bathtub for the doll or robot in the child's mind.

3.1.3 Cognitive abilities in the Sensorimotor Stage

Deferred Imitation: Piaget talked at length about the role of imitation in the development of cognitive abilities. Throughout the sensory motor stage, infant displays imitative behaviours of different degrees, from imitating reflexive actions in the first habits stage, to imitating the behaviours of a model. Up until 12 months of age, the infant imitates behaviors of a model, such as the caregiver, while they are present at the same time. However, later, the infant becomes capable of performing deferred imitation, which is, imitating the behaviours of an absent model.

Object permanence: By the end of sensory motor stage, the infant gains insight regarding the existence of an external object as a separate, permanently existing entity. Before this insight, infants lack an awareness of objects existing even when they can no longer see or hear them. For instance, the game *Peek A Boo*, which is often played with infants, illustrates the same idea. Each time the infant sees the face of the caregiver pop up from hiding, he/she/they displays expressions of amusement and wonder.

3.1.4 Cognitive abilities in the Preoperational stage

At this stage, children form an understanding of the world. The child is able to recognize, label and differentiate between different objects. In other words, the child is able to form stable concepts. However, what the child is not capable of doing is mentally engaging or manipulating information, hence the name, pre operation. Operations being the ability to perform the same set of actions mentally that the child is able to perform physically.

Preoperational stage is marked by two major developments: ***symbolic function and representational insight***. Symbolic function is the child's ability to use symbols to represent objects and images (for example, words or images) and representational insight refers to the insight that the child develops that the object can represent anything other than itself.

The Symbolic Function Stage: Between 2 to 4 years, children are able to form concepts and schemas about external objects that may not be present in front of them. This stage is also marked by *language development* and *pretend play*. Symbolism in language is displayed by the age of 18 months and only gains sophistication hence forth. The child is able to express her/his/their ideas through words and images. In *pretend or symbolic play* children create imaginary characters and play with them. These imaginary characters are represented through symbols such as words. Clouds can have wings; houses can be in the air, and drawings can be full of imaginary things that are not connected with reality.

Intuitive Thought Substage: This is the second substage and occurs between 4 to 7 years of age approximately. Children begin to use intuitive, primitive reasoning and will keep bombarding others with never ending questions! This is termed as intuitive by Piaget as they know things but do not know how they know those things. For example, it is difficult for them to answer questions that put them in two categories simultaneously. So, if you would ask the child if they were a girl or boy and Indian or Japanese. They probably

would answer in terms of only being a boy or a girl or being an Indian or Japanese. Most 4-year-olds would not be able to put the two categories together and say 'I am an Indian boy/girl'. Such thought process exemplifies **centration**. Centration as per Piaget, is the focusing of attention on only one characteristic or aspect, at the cost of exclusion of the others. Children at this stage lack **conservation**. Conservation is the belief that certain attributes remain permanently within an object or situation, despite the superficial changes. Piaget's famous experiment on conservation is described in the next stage.

3.1.4.1 Major Deficits in Preoperational Reasoning

Piaget called this stage pre operational as he believed that the child is still not mature enough to reach the concrete operational stage. She/he/they had certain deficiencies in their thinking. Some of these have been elaborated by him.

Egocentrism is a salient deficit of the preoperational stage. The child is unable to decenter and focus on other's perspective or world view. In other words, it is his/her/their inability to distinguish between self and other's perspective. Piaget and Inhelder (1969) gave the children the three-mountain task to study egocentrism. They first familiarized the children with the mountain scene and then asked them to describe what an observer on the other side of the mountain would see as he/she/they looked at the scene. Most 3- and 4-year-old children described what they were able to see from their side. For instance, if five-years old is asked of what she was doing. Often, the child would reply, 'I am playing "here" with "this" (probably pointing out to the location and the object, oblivious to the fact that the other person has no idea about her "here" and "this"!)'.

Animism is another deficit in this stage. Children in this stage, often display a willingness to attribute lifelike characteristics to inanimate objects. As a child and even now, many of us adults enjoy Watterson's Calvin and Hobbes comic strips. Calvin is six-year-old boy who is inseparable from Hobbes, his 'stuffed tiger'. Calvin often takes flights of fantasy with Hobbes and indulge in adventures and mischiefs. For Calvin, Hobbes is *anthropomorphic* and he had all his conversations with him.

Another deficit is the **appearance /reality distinction**. DeVries's (1969) classical study on appearance/reality distinction explains this deficit. Children between the ages of 3 and 6 years were introduced to a cat and petted it for a while. After that the experimenters put a dog's mask on the cat's head and asked the children about the animal's identity. Almost all 3-years old replied that it was a dog and most six-years old were able to distinguish the appearance from reality and said that it was a cat with a dog's mask.

Thus, according to Piaget, children at this stage are largely *centered*. During this stage children are unable to indulge in conservation as they lack decentration and reversibility, cognitive skills that they will pick up in the concrete operations stage.

Box 3.1 In support of Piaget: New Delhi's 'Hole-in the Wall Computers'

This is an excellent example to support Piaget's view about children actively supporting their own development. In the year 1999, Dr. Sugata Mitra, a physicist not a psychologist, began his educational experiment in a street adjoining a slum area in Delhi. He and his team placed, 'hole in the wall computers'. The children had no knowledge or education as to how to use or operate these machines. Yet within a short span of days, they could draft documents, paint, and browse the internet on their own. The project was later expanded across India and other countries as well (Mitra, 2006). Extending Mirta's work, Inamdar (2004) reported that rural children who learned computers by using the hole in the wall computers scored only marginally lower on their grade 8 computer science exams as compared with those who studied it formally as part of their curriculum.

3.1.5 Cognitive abilities in Concrete Operational Stage

Operational thinking is one of the key concepts given by Piaget and one of the most researched area of Piaget's theory. Operational thinking is the ability to hold an idea or a thought in one's head while one is dealing with a problem. The ideas must be present physically hence concrete operations.

Conservation. Piaget's classical experiment on conservation of quantity is an apt example. A tall jar is filled in a child's presence. The water is then transferred into a wider jar. The child is asked, which jar, has more water. Children in the preoperational stage said the tall jar as water seems more in the tall jar. Whereas concrete operators have now developed the capacity to *decenter* by simultaneously focusing on both the height and width, they are also able to indulge in **reversibility**- the mental ability to undo the transfer process and imagine the water in its original container. Concrete operators are armed with the ability to decenter and reversible thinking and hence use logic to reach the conclusion and not to be fooled by the appearance of objects. The dimensions of conservation are numbers, matter, length, volume and area.

Relational logic. The understanding of quantitative relations and relational logic. Children at this stage are capable of *mental seriation*. This is the ability to mentally arrange things or objects as per a prerequisite dimension like big, small, tall, short etc. and this is only mastered in the concrete operational stage. At this stage, young thinkers also acquire the skill of *transitivity*, i.e., the relations among elements in a series. As an example, if ball C is smaller than ball D and ball A is smaller than ball C, then which is the smallest of all? Some of the specific cognitive abilities that develop during this phase are listed in the table below.

Table 3.2 Cognitive abilities during Concrete Operational Stage

<i>Cognitive ability</i>	<i>Examples from day-to-day life</i>
Spatial thinking	5-year-old Dhruv can find his way back to his society tower from the bus stop; he is able to remember way to his friend's house; he knows the shortest route to the playground.
Conservation	7-year-old Sara knows that when her <i>slime ball</i> is rolled into a different shape, say a zig-zag line, the quantity of it is still the same. The zig-zag line, bigger than the ball isn't more <i>slime</i> .
Inductive and deductive reasoning	6-year-old Tom has three friends who have pets, Tom thinks all his friends must be having pets (inductive reasoning); deductive reasoning just starts surfacing up, Tom is still learning.
Seriation and transitivity	5-year-old Ashi, can arrange her pencils in order of their height and can compare and pinpoint the tallest/shortest/equal in the arrangement.
Cause and effect	7-year-old Meher, is able to explain why you get 8 bananas in one kg and 15 in two kgs: the more the weight, the more the numbers.
Classification	Ali who is 5-year-old, can sort his crayons as per their type (wax/paster/plastic/pencil) into their respective boxes; he can also sort different shapes and sizes.

Badakar et.al.(2017), compared the relevance of Piaget's theory among 4-to 7-year old parented and orphaned children in Belagavi city, Karnataka, India. The 240 participants were assessed on various characteristics like egocentrism, centration, lack of conservation, reversibility using experiments and comparisons between groups. They found significant differences in the cognitive development of the parented and orphaned children. Parented children were better on most tasks than the orphaned children in the study. Though Piaget has not laid any emphasis on the socio-cultural factors.

3.1.6 Cognitive abilities in Formal Operational Stage

This stage is very important in the overall development of the child. This is the stage at which children start to develop the ability to think in abstract

terms. Piaget suggested that individuals reach this stage at the start of adolescence, around the age of 11 or 12 years. At this age a child/adolescent acquires the ability to think in abstract terms. They are able to think in terms of what *might be* in place of what *is*. They have the ability to imagine possibilities and formulate and test hypotheses; this is the development of **hypothetical-deductive reasoning**.

“The great novelty of this stage is that by means of a differentiation of form and content the subject (i.e. the adolescent) becomes capable of reasoning correctly about propositions he does not believe, or at least, not yet: that is propositions that he considers pure hypotheses. He becomes capable of drying the necessary conclusions from truth which are merely possible”, Inhelder & Piaget (1958).

3.1.7 Beyond Piaget’s theory: Post-formal reasoning

Many researchers have felt that Piaget did not provide closure to his theory by not integrating the stage for adulthood. Research post 1970s has suggested that mature thinking may be far richer than abstract manipulations as proposed by Piaget (Labouvie-Vief, 1985,1990; Sinnott, 1984, ,2003,2009). They introduced the term **post-formal reasoning**.

Jan Sinnott (1984,2003,2009) has proposed some salient characteristics of post formal reasoning that makes it more advanced than simple abstract logic of adolescence.

- **Shifting gears:** The ability to move back and forth in abstract reasoning and practical, real-life considerations.
- **Multiple causality, multiple solutions:** Recognition that most problems have multiple causes and multiple solutions.
- **Pragmatism:** Of all the possible choices, the ability to choose the best solution and recognizing a criterion for choosing.
- **Awareness of Paradox:** Having the awareness that a problem or a solution involves inherent conflict.

As evident post-formal reasoning is embedded in the social context of the individual. Empirical evidence to support the value of post-formal thinking has been provided by Morton et.al.(2000) who did a longitudinal study of 130 medical students. The freshman students degree of tolerance for ambiguity, along with their empathy, predicted their clinical performance.

3.1.8 Contribution

Piaget’s contribution to psychology has been huge though he described himself not as a psychologist but an epistemologist who used examples from children’s cognitive development to put his point through (Smith,1995). In India, the first systematic review of developmental studies was published in 1972. Parameswaran (1972) cited 139 studies and out of which 21 focussed on intelligence. Later in 1980, Anandalakshmy reported studies in India that utilized Piaget’s tasks and procedures, however, Piaget’s stages and measures of cognitive development were not used much- “...Indian researchers have,

on the whole, been slow to take up Piagetian replications” (Anandalakshmy, 1980, pg.186). Children at different stages of cognitive development manifest certain behavioral features, which are sometimes absent or less observed at other stages. Researchers have reported significant age-related changes for pre operational, concrete operational and moral judgement tasks (Bevli et al. 1990; Sharma and Kaur 1992; Upadhyay and Shukla 2001). In a cross-cultural study based on Piaget’s conceptualization, Parameshwaran (2003) tested 6–12-year-old children from southern India and mid-west America. They were asked to draw a map of their school neighborhood. While Indian children depicted more features than American children, American children drew more coordinated maps and showed features further away from their school.

3.1.9 Piaget’s approach: Critical lens

Piaget has been criticized for proposing that cognitive development happens the same way universally. It’s like a step-by-step progress through the stages. He was negligent towards individual differences yet; one cannot ignore the influence of differences in abilities from one person to the next. Going by Piaget’s logic, every person should perform consistently well after reaching a particular stage of development (Siegler, 1994).

The stage formulation also implies that cognitive growth is relatively rapid shift from one stage to another. Many psychologists are critical of this idea and propose that cognitive development proceeds in a more continuous way.

Piaget also has been criticized to have underestimated the age at which certain capabilities emerge in children. Increasing evidence suggests that infants and children develop faster and are more sophisticated than what Piaget proposed (Bornstein & Lamb, 2005; Kenny, 2013).

Howard Gardner (2000;2006) was critical of Piaget’s views on thinking and knowing and asserted these were very narrowly defined.

Piaget’s experimental method of clinical interview has also been criticized as being too subjective and value laden. Many critics have questioned the reliance on introspection of young immature minds (Shute & Slee, 2003).

Labouvie-Vief & Diehl, (2000) in critique of Piaget proposed the *post formal thinking*. Labouvie-Vief (1986) argued that the intricacy of the contemporary society requires a kind of thinking that is flexible and leaves room for interpretive processes. Thus, formal operations do not represent the highest order thinking and more sophisticated forms emerge as the person moves towards adulthood.

His theory has also been criticized for ignoring the socio-cultural component of the child’s world. Piaget has been attacked for being negligent towards social competence of the child and the role of others as social partners. Vygotsky’s theory was a detailed critique of this deficit (Vygotsky, 1972; Xu & Kushnir, 2013).

Thelen and Smith (1994) argued that the theory fails to capture the “complexity and messiness of cognitive development in detail...cognitive

development does not look like a marching band; it looks more like a teeming mob” (pg.21-22)

Despite these criticisms, one cannot negate the tremendous influence the man alone had in the field of cognitive development in children. His contributions cannot be ignored. To borrow from Gardner’s (1979) view-“*Whatever its ultimate scientific fate, Piaget’s contribution has over the past few decades provided a major impetus for research in developmental psychology*” (pg.73-74).

3.2 VYGOTSKY’S SOCIOCULTURAL PERSPECTIVE ON COGNITIVE DEVELOPMENT



Figure 3.2: Lev Semenovich Vygotsky

Source: <http://t1.gstatic.com/licensed-image?q=tbn:ANd9GcT45DookvK7F8Bq97daaCC-L8DTxSV7sM264mDxe6agk0TmBzN3BF-xgbyhLBwww>

Piaget’s theoretical positioning has been challenged by all those theorists who thought that cognitive development cannot be conceptualized in the absence of the context of the sociocultural world in which the child grows up. Lev Semenovich Vygotsky (1896-1934), a Russian psychologist and a contemporary for Piaget (actually born in the same year) was one such forerunner in the field who criticized Piaget for ignoring the sociocultural contributing factors. It is intriguing that his entire work was in Russian and was not published until after his death due to tuberculosis in 1934, at the young age of 37. The relations between U.S.- Soviet relations were strained due to the cold war, hence his ideas were not translated until the late 1960s and 1970s.

Vygotsky emphasized upon the importance of **cognitive tools** that are shaped by the culture in which the child lives. These tools include language, writing, number system and scientific concepts. He rejected the reductionist model of cognitive development as proposed by the behaviouristically oriented psychologists and strongly believed that the child was an active constructor of one’s own knowledge. Vygotsky’s theoretical position was based on the idea that children’s development can only be understood if we pay full cognizance to their social context and culture. While significant others like parents, teachers, friends, peers play a significant role in the development, the influence of larger sociocultural aspects like art, language, culture cannot be negated. He proposed that there is a complex interaction between the individual, the interpersonal world, and the larger sociocultural domains.

Piaget on the other hand laid more importance on the child's physical world than the sociocultural world. He emphasized the importance of discovery learning through play material, whereas Vygotsky emphasized the importance of interaction with other children and adults through social learning, direct support, and instructions.

There are two major premises of Vygotsky's theory (Tavassolie & Winsler, 2018).

- Cognitive processes are socially constructed,
- History, language and culture play a significant role in creating a link between social phenomenon and psychological functioning, and
- Learning and development of higher mental functioning takes place within one's zone of proximal development.

3.2.1 Major concepts of Vygotsky's approach

The major concepts in Vygotsky's sociocultural theory of development are as follows:

3.2.1.1 Types of Development

Vygotsky asserted that development can be explained in terms of four interrelated levels in interaction with children's environment. These are *microgenetic*, *ontogenetic*, *phylogenetic* and *sociohistorical development*. Microgenetic development refers to changes that occur over relatively short periods of time, like in seconds, or hours or days as compared with larger scale changes. Ontogenetic development encompasses development on an individual over the lifetime. Phylogenetic development refers to changes over evolutionary time, measured in millions of years. Vygotsky was of the view that studying and understanding the species history can provide meaningful insight into child development (Bjorklund & Pelligrini 2002). Historical changes occurring in human mental functions as a result of new cultural tools and sociocultural activities was given importance (Vygotsky and Luria 1930/1993).

3.2.1.2 Tools of Intellectual Adaptation

Vygotsky maintained that infants were born with very limited and mental functions like sensation, perception, attention, and memory. These functions are transformed into more sophisticated higher order functions by the intervention of sociocultural factors. Culture provides children the ability for divergent thinking. Children acquire thinking and problem-solving strategies from their interactions with the significant others in their sociocultural world. These tools of intellectual adaptation help them to use the basic functions in more sophisticated ways that help them to adapt better with the contemporary challenges.

3.2.1.3 Zone of Proximal Development

According to Vygotsky's sociocultural positioning children learn primarily from other people in their social world. He elaborated upon the concept of

zone of proximal development. Zone of proximal development (ZPD) is very important in the acquisition of abstract concepts. Zone of proximal development refers to the development that the child can reach with adult guidance and the level at which the child functions without their help. Here ‘proximal’ refers to ‘what comes next’. Vygotsky gave a lot of importance to the role of adults in a child’s life. According to him, adults help the child in engaging in challenging thoughts yet at the same time being mindful of their development level. Children learn and internalize knowledge from the adults, later they de-contextualize it and use it as and when required. In this manner, adults are instrumental in helping them learn and reach their full intellectual potential that may not have been attained by working independently. He pointed out that the skills developed as part of cognitive development are those that are needed to function in the sociocultural world in which the child is growing. For instance, contemporary culture around the world requires one to process numbers, to read, to write to be tech-savvy to a certain degree. However, these were not always required. The development of all these skills is an indication that socio-cultural changes and learning help in acquiring these skills that are not biological.

3.2.1.4 Scaffolding

The child can take the next step in cognitive development when they are aided by an adult. This sort of assistance is known as *scaffolding* (Wood et al., 1976; Rogoff, 1990). Cognitive development requires informal hand holding as discovery is not enough. Vygotsky (1978) stated: *“The zone of proximal development defines those functions that have not yet matured but are in the process (of doing so) ...what is the zone of proximal development today will be the actual developmental level tomorrow- that is, what a child can do with assistance today she will be able to by herself tomorrow”*.

A common example of scaffolding is when you would sit with an infant and help her/him/sort his blocks or crayons by colours. She/he/they completely enjoys the mixed stack of the blocks or crayons but once when you teach them how, they will actively engage in sorting them by themselves. Another example might be when the child sits with an adult like a grandparent and reads a story book with them. The adult may only point and ask the child to describe what might be happening or what is written. This helps the child’s progressively growing ability to relate the concepts in the story and the pictorial representations. These example of scaffolding shows actions that improves a child’s chances of acquiring skills and being successful at the task. These skills will help the child in applying this new knowledge in a novel context.

3.2.1.5 Guided participation

In many cultures children do not go through formal schooling or are not formally taught at home as well, they basically learn by “hands on” experience. The term guided participation has been proposed by Barbara Rogoff (1998) and it may be defined as one of the mechanisms employed to advance a sociocultural lens to view human development. Rogoff (1998) opines, “Cognitive development occurs as new generations collaborate with

older generations in varying forms of interpersonal engagements and institutional practices”. Guided participation is therefore, an act where in children develop by their engagement and involvement in the practices of their community.

3.2.1.6 Culture and Thought

Vygotsky and his colleagues studied several contexts to see the impact of culture on development. Luria (1961), a colleague of Vygotsky tested children (between 9-12 years of age), living in different social environment. They were given a free association task where they were to name the first thing that came to their mind after hearing the target word. Most children from rural background gave similar responses and children growing up in large cities gave diversified, distinct responses. The researchers believed that this difference was due to the diverse and extra exposure of city children to various cultures. Children acquire these cognitive tools by interacting with parents and other experienced adult members of the culture and by trying to adopt their language and knowledge (Callaghan & Corbit, 2015). An interesting example of the epigenetic influence of collective culture unfolds from an ongoing ethnographic rural context case study of three-year-old children in India. Ashu (five-year-old) was inseparable from her elder sister Reshu (three-year-old). Reshu seemed almost lost without her sister and would answer simple questions with-“I don’t know”, if Ashu was separated. Her presence became imperative so much so that the researchers had to allow her to be around. She would keep looking at her for cues and was obviously disappointed and awkward that her sister was not allowed to speak (Chaudhary, 2013).

3.2.1.7 Language and Thought

Vygotsky was of the view that higher order cognitive abilities begin in the social world and then become integrated into the child’s psychological arena. The mechanism of this kind of acquisition is embedded in language. As per Vygotsky, language is a cultural tool to transmit thoughts, ideas, and beliefs from the sociocultural world to the self. Children internalize language that they use in their social world by virtue of *private speech* or *self-talk*. Private talk helps in reorganization of the mind in early childhood. Since native language is deeply rooted in culture it helps in promoting cultural values and customs. Underlying this theory, is the construct of the *genetic law of cultural development*. According to this theory, all cultural development occurs on two planes: first social plane and then on the psychological plane. Internalization helps in moving from the social plane to the psychological plane. Pillai (2012) has done an interesting research in understanding children’s construing of the word truth, and has reported in her research that the use of the Hindi word for truth- ‘*sach*’ was semantically loaded in the local language, with ideas of morality, fact-based thinking and parent-centric. As reported by a five-year-old in her study, “*Whatever makes Mummy happy is the truth*” (Pillai, 2012). Here, we can observe how a child’s understanding of the concept has been internalized and will be used later independently by her in novel situations. It has also been reported by Mohanty (2000;2001;2003) that language socialization in India, encourages the

development of competent multilingualism. Nelson (2015) who has researched in the area of language and thought for over 40 years, agrees with Vygotsky's notion of private speech. Table 3.3 gives a brief comparison of the theoretical positioning of both Piaget and Vygotsky on some comparable parallels in their respective research.

Table 3.3 Comparison between Vygotsky's and Piaget view on Cognitive Development

Major Issue	Vygotsky's position	Piaget's position
Source of cognitive development	Primarily culture that is transmitted by social interactions	An inbuilt tendency and inquisitiveness for active self-discovery
Role of culture	Pertinent and cognitive development varies across cultures	Cognitive development is by and large universal across cultures
Social change agent	Adults are especially important as social change agents	Peers are especially important as social change agents.
Concept acquisition	Results from the child's social experience	A stand-alone process of adaptation of schemas
Role of instruction	Increases scope of cognitive development by enabling learning.	Aids learning but not cognitive development per se
Language and thought	Social speech leads to development of verbal thoughts	Language is an outcome of cognitive development.
Learning	Learning precedes development (<i>tools</i> are internalized)	Development precedes learning (cognitive structures are pre-requisites for children to master certain tasks)
Individual differences	Moderately strong emphasis	No major emphasis
Stages	No stages of development	Cognitive stages are very important

3.2.1.8 Application of Vygotsky's theory

There are a wide variety of real-world applications of Vygotsky's theory. In line with the ZPD, parents themselves may tutor or hire a tutor to provide extra scaffolding for their children to succeed in any area. Alternatively, teachers may even use peer tutoring in classroom settings. Over the course of time, less skilled start performing better independently in classroom or on home assignments.

Learning goals may even be created to help the child. These goals must be within her/his/their abilities, yet not too easy achieved that the child does not

have the room to stretch those abilities to reach the learning goals. This is simply explained by the fact that if the task is too easy the child will get bored very quickly and if the task is too difficult then she/he/they may feel frustrated and eventually give up on it.

Vygotsky's theory also stresses upon valuing one's culture as it is fundamental to a child's optimal development. These values are passed on intergenerationally through conversations and interactions, mostly in the native language and helps in preserving the essence of one's cultural identity.

Vygotsky's contribution in the acquisition of second language also has implications. Adults who are trying to learn a second language can be more successful if they are rooted in a culture and thus have to use the second language compulsorily. This context helps the adult learner to learn a non-native language through tools that are embedded in the cultural context.

Vygotsky's work has also shaped how educational systems incorporate his concepts and make the learning experience richer and contextual. He stressed upon how upon how sociocultural factors influence development.

His idea of *dynamic assessment*, an interactive approach to psychological or psychoeducational assessment, is often used to understand the underlying issues that are making the learning process challenging for the learners in different domains across diverse groups.

3.2.1.9 Vygotsky's theory: Critical lens

Vygotsky's ideas were very intriguing to researchers worldwide but because of his early demise he could not tie up his theory together. While Piaget has been criticized of giving too much attention to the child and not enough to the social environment, Vygotsky has been criticized of the opposite by paying too much attention to the sociocultural environment and the instructing adult at the cost of the child. He did not pay attention to individual differences in learning processes, motivation, or emotional regulation skills that the child brings in the interaction that will impact the quality and pace of learning.

Vygotsky has not elaborated upon the developmental stages or how age impacts the sociocultural development in his theory. His concepts are intriguing but at what age one benefits the most with using the specific cultural tools, has not been paid due attention. To his defense, one may argue that had he not died at such a young age, he might have presented a more holistic representation and application of his position.

Vygotsky's work has found application in the field of education and his contribution has been immense, however, his views about adult as an instructor and child as learner has undergone some modifications over the course of past decades. The contemporary view is that the child is an active agent- a participant in this interaction, helping in contribution to the nature of this interaction and also structuring it. He also believed that adults were best role models to help the child and scaffolding was also related with adult behaviour. However, children can learn from children and teach children too.

Group learning and peer to peer tutoring can be very helpful in learning as the child passes through the zone of proximal development.

In many ways conventional research in psychology has paid more importance to intrapersonal factors and often eluded the role of collective beliefs, shared knowledge and interpersonal perspective taking (Chaudhary & Pillai, 2016), this may especially be important in a culture like ours. Sociocultural theorists, like Vygotsky, Wood, Rogoff propagated the idea that cognitive growth and development can only be understood if one acknowledges the role and contribution of sociocultural factors. Cognitive processes are culturally embedded and sociocultural factors go a long way in unfolding the developmental trajectory. Rowe and Wertsch (2002), conclude it very beautifully and aptly, *'Study of the "I" is thus abandoned in favour of study of the social, cultural and historically situated ways by which "we" create "I's".'*

Check Your Progress 2

1. Define zone of proximal development.

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2. What is guided participation?

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3. What is private speech?

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4. State the main difference between Piaget and Vygotsky.

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3.3 INFORMATION PROCESSING APPROACH TO COGNITIVE DEVELOPMENT

In the age of super computers, artificial intelligence (AI), and 'bitcoins', it's imperative to discuss the information processing approach to cognitive development. Information processing model of cognitive development focuses on ways that helps an individual to take in, use and process information. The quantitative changes in the infant's abilities to manage and organize the information symbolizes cognitive advancement or development. For example, an infant is introduced to a new colour, is able to identify it at a

later time. After some days she/he/they are able to choose the colour over other colours or develop a preference for it is an example of information processing approach. To be more precise, information processing approach is not a theory of cognition, rather a generic framework that comprises of theories sharing certain core assumptions. The first assumption is that all cognitive activities engage mental processes that function over real time on *internal symbolic representations of information*. To put it simply, all the information stored in your brain including what you had for lunch yesterday, which is your favourite movie, what book will be released next week, what is the weather forecast for today, etc. are stored and coded as mental representations with specific structural properties. The second assumption relates with the *cognitive architecture*, the general structural characteristics of the information processing system. An example might be the amount of information that can be activated at any given time. The mental processes and representations exist within an organized system with inherent properties and limitations. Another assumption is that development occurs via *self-modification* of the information processing system.

Box 3.2 To reflect upon!

Have you effortlessly reached out to *Alexa* to play music for you or sought help to switch off the lights? Have you felt bored enough to ask *Siri* to recommend movies? Have you relied on ‘Google maps’ when you didn’t know the topography of an unknown area? Have you relied on some of this ‘external aid’ to make your life a little easier and comfortable? Say thank you to AI 😊!

For the proponents of the information processing approach, the computer seemed to provide a good analogy to the development of the human mind. AI now helps in learning to drive, race, run, playing chess, ludo, cards and so many other games and helps in solving complex problems as efficiently as humans (almost!) and this has helped neuroscientists to understand the limitations and strengths of the human cognition (Newell & Simon, 1995). As per the information processing approach, cognitive growth is described by progressive sophistication, speed, and capacity in processing the information received from multiple sources. The approach lays emphasis on the types of “mental program” that people inherently use when indulge in solving problems (Fagan & Ployhart, 2015). The basic model to understand the information processing approach is a computer.

Mayer (2003) has recognized two major perspectives on information processing: the classical view and the constructivist view, though there are a lot of other models too. The classical view has been very popular and construes the human mind as analogous to a computer- with an information encoding, storage, and retrieval process. However, the classical view was propagated in the early 60s and 70s lacked a meaningful approach to the overall understanding. The constructivist view considers an active role of the human in this process and views humans as a progressively complex and

sophisticated ‘computer’ with better abilities and more capacity to process this information.

To simplify, the model constitutes of simple processes like encoding, storage and retrieval.

Encoding: Encoding is a process in which an information received is initially recorded in the brain. All humans are exposed to tons of information every minute of the day. If we start processing it all, in no time we will be experiencing burn out. Hence, we selectively attend to information that may help us make sense of the environment around.

Storage: Even if we have encoded some information, there is no guarantee that we will utilize it later. It is pertinent that the information must have also been stored in the memory. Storage refers the placement of the material into the faculty of memory.

Retrieval: Retrieval is the process by which the stored material is relocated, brought into awareness, and used by the individual. As evident, the process of encoding, storage and retrieval are analogous to different parts or functioning of a computer. When you put information with the help of your keyboard it is encoding; that information is then stored in the computer’s hard drive and retrieval is analogous to the software that helps in accessing the information for display on the screen. All three processes help in processing the information.

Automatization: Sometimes the processes of encoding, storing and retrieving is automatic and while at other times these are deliberate. Automatization is the extent to which an activity requires attention; processes that require less attention are automatic and processes that require a lot of attention are controlled. Some activities become automatic with time like driving directions, using cutlery, walking etc. All these activities require full attention in the beginning. Automatization helps children in processing their initial encounters with the world. Without actually intending to or being aware about it, infants develop a sense of how often different stimuli appear simultaneously. This helps them in cultivating an understanding of concepts, categories, events, or people who share some commonality. For example, children encode information that barking sound, wagging tail, four legs are often found together and learn early the concept of “dog”. Children do not have it in their awareness as to how they encode this information. Some of the things that we learn automatic and complex.

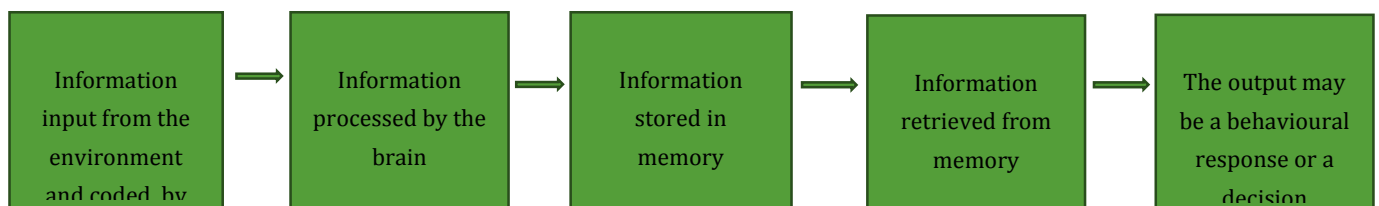


Figure 3.1 Information processing approach to cognitive development

The model (Figure 3.1) does represent a mechanistic view of mind as it seems to be governed by rules similar to a computer.

3.3.1 Siegler's Information Processing Approach: An example

Robert Siegler's approach is a befitting example of the information processing approach as used by children. Based on his studies, he concluded that children's cognitive development is characterized by progressively complex rules to solve problems (Siegler, 1976, 1978). He used the weight balance scale to demonstrate this. After the experimenter had adjusted the weight on the scale, the task for the children was to predict if the scale would tip left or right or remained balanced if the lever was removed. He was able to identify certain rules that governed children's problem solving at around five years of age. To accurately predict the weight, children had to factor in both weight and distance. Younger children initially focused on the weight but as they were guided and provide feedback, they were able to progress and encoded more sophisticated rules in their learning (Siegler, 1984).

3.3.2 Information Processing Approach: Critical Lens

The information processing approach to cognitive development is one of the dominant perspectives in psychology due to advances in the neuroscientific research. Children have been found to handle information with increasing sophistication as they grow and evolve in their cognitive functioning (Kail, 2003; Zelazo et al., 2003). Lemerise and Arsenio (2000) reviewed research related with social information processing and have reported that new developments in the field have tried integrating social and cognitive aspects in children's development in order to provide a comprehensive understanding of their behavior. Another interesting application has been the development of the Cognitive Assessment System (CAS) by Das and Naglieri (1997). In this assessment, tasks from the information processing research have been adapted to assess four aspects of processing (planning, attention, simultaneous processing and successive processing) that are based on Aleksandr Luria's theory. In yet another study, Dhillon (1998) explored the behaviour of experts and novices on physics problems and reported that the problem-solving strategies could be analyzed in terms of fourteen different processes. Experts and novices systematically differed in the use and sequence of these processes. Results were applied to formulate problem solving instructions for high school and university students. Despite its applications in so many subfields of development and human cognition, the approach has been attacked for some inherent weaknesses.

The approach has been looked at as too mechanistic and often focuses on mental processes than resulting behavioural outcomes. The experiments that are used as evidence in support of the information processing model tend to be theoretical and abstract and lack ecological validity. The information processing approach has constantly used the computer analogy to human cognitive growth, leading to a mechanical view that lacks basic humanity. Human attributes seem to contribute substantially in influencing the

processing of this information and this has been sporadically addressed by most theorists.

Thus, these three approaches explain the nature and process of cognitive development using their own theoretical positions. While all the approaches have contributed to the understanding of cognitive development in children, the influence of Piaget and Vygotsky has been unparalleled in the development of the field.

Check Your Progress 3

1. What is the information processing model?

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2. How is your brain similar to a computer?

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3. What is a major drawback of the information processing approach?

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4. Explain with an example how you use the information processing model in your day-to-day life.

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3.4 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- Jean Piaget developed a theory of how children understand the world by constructing their own schemas through their own exploration.
- Piaget used experiments and question and answer techniques, to formulate his four stages of cognitive development in which children construct their reality progressively.
- According to Piaget, infants are active and not passive in their development. They develop and think differently during different phases of their development.

- Lev Vygotsky emphasized upon the importance of sociocultural factors in the cognitive development of children.
- Children acquire sophisticated strategies, tools, beliefs by indulging in collaborative dialogue with skilled adults and later internalize the instructions to master tasks in an optimal way within their zone of proximal development.
- Optimal learning occurs when the skilled adult properly scaffolds their intervention or help.
- Cognitive growth is best achieved when the individual's sociocultural factors and context is attended to.
- Language is a very important cultural tool that is used by adults to pass on culturally valued thinking inter-generationally.
- Information processing approach attempts to explain cognitive development in terms of encoding information from the environment, storing it in the brain and retrieving it, when need be, to produce an output in terms of a behavioral response.

3.5 KEYWORDS

Preoperational Stage Piaget's second stage of cognitive development where children develop skills for symbolic thought but can still not use logic.

Symbolic Function Ability to use mental representations to which a child has already attached meaning.

Intuitive Thought Thinking that shows a child's use of primitive reasoning and their enthusiastic acquisition of knowledge about the world.

Conservation The recognition that some properties of an object or substance do not change when its external appearance is altered in some way.

Zone of Proximal Development According to Vygotsky, the stage at which a child can almost but not fully, perform a task independently, but can do so with the help of an adult.

Scaffolding The help extended by an adult to help the child in acquiring new skills.

Private Speech Self talk without any underlying intent to communicate with others

Information Processing Approach An approach to the study of cognitive development that emphasizes the role of fundamental mental processes in comprehending the world.

Encoding Process through which information is stored in the brain with the aid of the senses.

Storage Retention of concepts, events, memories etc. for future use.

Retrieval Process through which information is accessed from the memory storage.

3.6 REVIEW QUESTIONS

1. Critically analyze the cognitive development of a child using Piaget's approach.
2. What are the major differences between the four cognitive stages described by Piaget?
3. Describe the major concepts in Vygotsky's sociocultural theory.
4. Critically compare Vygotsky and Piaget's theory of cognitive development.
5. What are the defining features of the information processing approach to cognitive development?

3.7 REFERENCES AND FURTHER READING

Anandalakshmy, S. (1980). Developmental processes. In U. Pareek (Ed.), *A survey of research in psychology, 1971–76, Part I* (pp. 168–207). New Delhi: Indian Council of Social Science Research.

Xu, F., & Kushnir, T. (2013). Infants Are Rational Constructivist Learners. *Current Directions in Psychological Science*, 22(1), 28–32. <https://doi.org/10.1177/0963721412469396>

Thelen, E., & Smith, L. B. (1994). *A dynamic systems approach to the development of cognition and action*. The MIT Press.

Badakar, C. M., Thakkar, P.J., Hugar, S.M., Kukreja, P., Assudani, H.G., & Gokhale, N. (2017). Evaluation of the relevance of Piaget's cognitive principles among parented and orphan children in belagavi city, karnataka, india: A comparative study. *International Journal of Clinical Pediatric Dentistry*, 10(4), 346-350. <https://doi.org/10.5005/jp-journals-10005-1463>

Bevli, U. K. (1989). Development of concept of speed in Indian children – Eco-cultural context. In U. K. Bevli, P. A. S. Ghuman, & P. R. Dasen (Eds.), *Cognitive development of the Indian child* (pp. 179–198). New Delhi: National Council of Educational Research and Training.

Bjorklund, D. F., & Pellegrini, A. D. (2002). *The origins of human nature: Evolutionary developmental psychology*. American Psychological Association. <https://doi.org/10.1037/10425-000>

Callaghan, T., & Corbit, J. (2015). The development of symbolic representation. In L. S. Liben, U. Müller, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Cognitive processes* (pp. 250–295). John Wiley & Sons, Inc.. <https://doi.org/10.1002/9781118963418.childpsy207>

Chaudhary, N. (2013). Parents' beliefs, socialisation practices and children's development in Indian families. Unpublished report of major research project for the University Grants Commission, New Delhi.

Chaudhary, N., & Pillai, P. (2016). Research and the young child in India: Shifting from alienation to adaptability using an expanded

- framework. *European Journal of Psychology of Education*, 31(1), 29-42. doi:<http://dx.doi.org.libproxy.lib.unc.edu/10.1007/s10212-014-0221-x>
- Das, J.P., & Naglieri, J.A. (1997). *The Cognitive Assessment System*. Itasca, IL: Riverside Publishing.
- De Vries, R. (1969). Constancy of generic identity in the years three to six. *Monographs of the Society for Research in Child Development*, 34(3), 56–60. <https://doi.org/10.2307/1165683>
- Dhillon, A.S. (1998). Individual Differences Within Problem-Solving Strategies Used in Physics. *Science Education* 82:379–405.
- Elkind, D. (1974). *Children and adolescents: Interpretive essays on Jean Piaget* (2nd ed.). Oxford U. Press.
- Inamdar, P. (2004). Computer skills development by children using 'hole in the wall' facilities in rural India. *Australasian Journal of Educational Technology*, 20 (3), 337-350.
- Inhelder, B., & Piaget, J. (1958). *The growth of logical thinking: From childhood to adolescence*. (A. Parsons & S. Milgram, Trans.). Basic Books. <https://doi.org/10.1037/10034-000>
- Johnson, M. (2003). *A philosophy of second language acquisition*. ProQuest Ebook Central <https://ebookcentral-proquest-com.libproxy.lib.unc.edu>
- Smith, L. (1995) Introduction to Piaget's Sociological Studies. In J. Piaget Sociological Studies (London: Routledge), pp. 1–21.
- Labouvie-Vief, G. (1985). Intelligence and cognition. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (pp. 500–530). Van Nostrand Reinhold Co.
- Labouvie-Vief, G. (1990). Modes of knowledge and the organization of development. In M. L. Commons, C. Armon, L. Kohlberg, F. A. Richards, T. A. Grotzer, & J. D. Sinnott (Eds.), *Adult development, Vol. 2. Models and methods in the study of adolescent and adult thought* (pp. 43–62). Praeger Publishers.
- Labouvie-Vief, G., & Diehl, M. (2000). Cognitive complexity and cognitive–affective integration: Related or separate domains of adult development? *Psychology & Aging*, 15, 490–504.
- Luria, A. R. (1961). An objective approach to the study of the abnormal child. *Journal of the American Orthopsychiatric Association*, 31, 1–16.
- Mitra, S. (2006). *The hole in the wall: Self-organising systems in education*. New Delhi: New York, NY.
- Morton, K., Worthley, J., Nitch, S.R., Lamberton, H., Loo, L., & Testerman, J. (2000). Integration of Cognition and Emotion: A Postformal Operations Model of Physician-Patient Interaction. *Journal of Adult Development*, 7, 151-160.
- Parameswaran, E. G. (1972). *Developmental psychology*. In S. K. Mitra (Ed.), *A survey of research in psychology* (pp. 56–79). Bombay: Popular Prakashan.

Parameswaran, G. (2003). Experimenter instructions as a mediator in the effects of culture on mapping one's neighborhood. *Journal of Environmental Psychology*, 23, 409–417.

Piaget, J. (1929). *The child's conception of the world*. New York: Harcourt Brace.

Piaget, J. (1930). *The child's conception of physical causality*. New York: Harcourt Brace.

Piaget, J. (1952). *The origins of intelligence in children*. New York: International University Press.

Piaget, J. (1973). *The psychology of intelligence*. Totowa, NJ: Littlefield & Adams.

Piaget, J. (1977). *The development of thought: Equilibration of cognitive structures*. New York: Viking.

Piaget, J. and Inhelder, B. (1969) *The Psychology of the Child*. Basic Books, New York.

Piaget, J., & Inhelder, B. (1956). *The child's conception of space*. London: Routledge & Kegan Paul.

Piaget, J. (1952). *The child's concept of number*. New York: W. W. Norton.

Pick, A.D., & Frankel, G.W. (1973). A study of strategies of visual attention in children. *Developmental Psychology*, 4, 348–357.

Poehner, M. E., & Lantolf, J. P. (2005). Dynamic assessment in the language classroom. *Language Teaching Research*, 9(3), 1–33.

Rogoff, B. (1998). Cognition as a collaborative process. In D. Kuhn & R.S. Siegler (eds), *Handbook of child psychology: Vol. 2. Cognition, perception and language* (pp. 619–144). New York: Wiley.

Salkind, N. J. (2005). Cognitive development. In *Encyclopedia of human development* (Vol. 1, pp. 276-280). SAGE Publications, Inc., <https://www-doi-org.libproxy.lib.unc.edu/10.4135/9781412952484.n138>

Schaffer, H. R. (2006). Social cognition. In *Key concepts in developmental psychology* (pp. 123-152). SAGE Publications Ltd, <https://www-doi-org.libproxy.lib.unc.edu/10.4135/9781446278826.n7>

Sharma, V., & Kaur, K. (1992). Moral judgement as a function of intelligence, birth order and age of the children. *Psychologia*, 35, 121–124.

Siegler, R. S. (1983). Five generalizations about cognitive development. *American Psychologist*, 38(3), 263–277. <https://doi.org/10.1037/0003-066X.38.3.263>

Siegler, R. S. (1987). The perils of averaging data over strategies: An example from children's addition. *Journal of Experimental Psychology: General*, 116(3), 250–264. <https://doi.org/10.1037/0096-3445.116.3.250>

Siegler, R. S. (2009). Improving preschoolers' number sense using information-processing theory. In O. A. Barbarin & B. H. Wasik

(Eds.), *Handbook of child development and early education: Research to practice* (pp. 429–454). The Guilford Press.

Siegler, R.S. (1991). *Children's thinking* (2nd ed). Englewood Cliffs, NJ: Prentice-Hall.

Siegler, R.S., & Jenkins, E. (1989). *How children discover new strategies*. Hillsdale, NJ: Erlbaum.

Sinnott, J. D. (2003). Postformal Thought and Adult Development: Living in Balance. In J. Demick & C. Andreoletti (Eds.), *Handbook of adult development* (pp. 221–238). Kluwer Academic/Plenum Publishers. https://doi.org/10.1007/978-1-4615-0617-1_12

Sinnott, J. D. (2009). Cognitive development as the dance of adaptive transformation: Neo-Piagetian perspectives on adult cognitive development. In C. M. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development*. New York: Routledge/Taylor & Francis Group.

Tavassolie, T., & Winsler, A. (2018). Vygotsky's sociocultural theory. In M. Bornstein (Ed.), *The SAGE encyclopedia of lifespan human development* (pp. 2307–2310). SAGE Publications, Inc., <https://www-doi-org.libproxy.lib.unc.edu/10.4135/9781506307633.n858>

Upadhyay, H., & Shukla, A. (2001). A study of relationship of Piagetian stages of cognitive development and intelligence to creative thinking. *Psycho Lingua*, 31, 21–24

Vygotsky, L. S. (1962). *Thought and language* (E. Hanfmann & G. Vakar, Eds. & Trans.). Cambridge, MA: MIT Press. (Original work published 1934)

Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Cambridge, MA: Harvard University Press. (Original work published 1930–1935)

Vygotsky, L. S. (1986). *Thought and language*. In A. Kozulin (Ed.), *Vygotsky in context* (pp. 11–56). Cambridge, MA: MIT.

Vygotsky, L. S. (1994). The problem of the cultural development of the child. In R. Van derVeer & J. Valsiner (Eds.), *The Vygotsky Reader* (pp. 57–72). Cambridge, MA: Blackwell.

Vygotsky, L. S. (1997). The crisis in psychology. In R. W. Rieber (Ed.), *The collected works of L. S. Vygotsky: Problems of the theory and history of psychology* (Vol. 3, pp. 233–343). New York, NY: Plenum.

Vygotsky, L.S. (1955/1978). *Mind in society: The development higher psychological processes*. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds. & Trans.). Cambridge, MA: Harvard University Press (Original work published in 1955).

3.8 ADDITIONAL ONLINE RESOURCES

- To know more about Piaget's theory:

<https://www.youtube.com/watch?v=0XwjIruMI94>

<https://www.britannica.com/topic/human-behavior/Piagets-theory>

- *To know more about 'Hole in the wall computers':*

<https://www.ted.com/participate/ted-prize/prize-winning-wishes/school-in-the-cloud>

- *To know more about Vygotsky's life and theory:*

<http://www.kolar.org/vygotsky>

<http://www.marxists.org/archive/vygotsky>

<http://www.sk.com.br/sk-vygot.html>

- *To know more about information processing approach:*

<https://education.stateuniversity.com/pages/1910/Developmental-Theory-COGNITIVE-INFORMATION-PROCESSING.html>

https://edge.sagepub.com/sites/default/files/9.4_Information_Processing_Theory.pdf



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UNIT 4 PERSPECTIVES ON HUMAN DEVELOPMENT III- HUMANISTIC; ETHOLOGICAL & EVOLUTIONARY; BIOECOLOGICAL AND LIFE COURSE THEORY⁴

Structure

- 4.0 Introduction
- 4.1 Humanistic Perspective
 - 4.1.1 Abraham Maslow's Need Hierarchy Theory
 - 4.1.2 Carl Rogers' Approach
 - 4.1.3 Humanistic Perspective: Critical lens
- 4.2 Ethological and Evolutionary Perspective
 - 4.2.1 Konrad Lorenz
 - 4.2.2 The 'imprinting experiments'
 - 4.2.3 Ethological Perspective and Human Development
 - 4.2.4 Evolutionary Perspective: Critical Lens
- 4.3 Bioecological Model
 - 4.3.1 Urie Bronfenbrenner
 - 4.3.2 Bioecological Model: Critical Lens
- 4.4 Life Course Theory
 - 4.4.1 Basic concepts in the Life Course Model
 - 4.4.2 Life Course Theory: Critical Lens
- 4.5 Summary
- 4.6 Keywords
- 4.7 Review Questions
- 4.8 References and Further Reading
- 4.9 Additional Online Resources

Learning Objectives

After having read this Unit, you will be able to:

- explain the humanistic perspective as the 'third force' in psychology;
- differentiate between ethological and evolutionary perspective;
- elucidate the contextually embedded systems approach;

- summarize the life course theory of development;
- identify the strengths and fallacies of the different approaches to human development; and
- critically analyze the perspectives in the light of current development in the field.

4.0 INTRODUCTION

It should be apparent by now, that there many theories of human development. In the previous units, an overview of psychoanalytic theory, psychosocial theory, developmental task theory, cognitive perspectives of Piaget, Vygotsky and information processing approach were presented. This Unit will focus on humanistic, evolutionary and ethological perspectives, bioecological model and life course theory. All these theories or perspectives are not mutually exclusive, but mostly focus on specific parts of the life span (infancy or adolescence), or different domains of human development (cognitive, or emotion). The coverage of the theories is not all-inclusive, but in fact, are most commonly discussed to understand human development. Developing knowledge of different perspectives or theoretical positions, will help you to understand the different facets of human development.

4.1 Humanistic Perspective

‘A musician must make music, an artist must paint, a poet must write if he is to be ultimately at peace with himself. What a man can be, he must be. This need, we may call self-actualization.’

Abraham Maslow (1954)

Box 4.1 Activity

Consider for a moment...how has your life shaped? What is it that is engaging your time? Think about the relationships you have cultivated. Think about your academic or professional pursuits? Think about your choices in life? Are you able to decide for yourself? Are you able to follow your *calling*? Are you happy and contented in this moment?

If Maslow or Rogers were alive, they would ask you and everyone these questions if you would seek their advice about living a fulfilling life. While there are many theories that help one understand how to optimize potential of children and adolescents, humanistic theories stand apart as one that is extremely positive and growth oriented as compared to other theories in the area of life span development.

Essentially, humanistic perspective has three basic assumptions. First, each person has the power to exercise free will and has considerable control over what she/he/they think, feel, and behave. Second, people are by and large rational and conscious beings who are not driven by unconscious and primitive urges and instincts. Third, person’s subjective view of the world is

of utmost importance to understand her/his/their objective reality (Pennington, McLoughlin, Smithson, Robinson & Bosewell, (2003). These basic principles underlie any of the theories that are driven by the humanistic school of thought. Humanistic school has been so powerful that it has been named as the 'third force' in psychology after psychoanalysis and behaviourism. We shall discuss two major proponents of this perspective: Abraham Maslow and Carl Rogers.

4.1.1 Abraham Maslow's Need Hierarchy Theory



Figure 4.1: Abraham Maslow

Source: <https://upload.wikimedia.org/wikipedia/en/thumbnail/mb/e/e0/>

Abraham Maslow proposed his own theory to make people understand life span development and motivation. He was born in 1908 in New York. As a child and an adolescent, he was introverted and shy. He studied psychology after law and did his doctoral work under Harlow (famous for the *contact comfort* experiment). Maslow rose to fame in the 1960s with his hierarchical theory of human needs. He found the biological, evolutionary, psychoanalytic, and behaviouristic perspectives extremely limited in their approach and very deterministic in nature.

He published (Maslow, 1968;1987) his need hierarchy theory that focused beyond the biological and social needs and included higher order need for fulfillment of one's potential that he termed as **self-actualization**. However, he remained a shy and introverted individual and disliked public appearances and speaking. He criticized the past perspectives as focusing on only biological or basic needs such as hunger, thirst, sex. As an alternative he proposed his famous five-level pyramid theory that talks about progressive needs from basic to higher order ones. The humanistic perspective talks about every individual having free will and having the ability to reach their highest potential. Free will is the ability that helps individuals make choices and decide about what's best for them rather than being dictated by societal norms and standards. His theoretical position is based on the following propositions (Maslow, 1968):

- Human behavior cannot be merely explained as reactions to external events and conditions. It is always motivated.
- The motivation is always driven by their felt needs. All individuals strive hard to fulfill their needs.
- A whole spectrum of behaviour can be explained with a relatively small set of fundamental needs.
- The fundamental needs are inborn and universal and are applicable to people of all ages and cultures.

- For an individual to survive, thrive and flourish; all needs should be partially or fully fulfilled.
- Unsatisfied needs motivate behaviour, once it is satisfied, it ceases to motivate the individual.
- Needs are structured in a hierarchy and move from basic needs to more complex ones.
- When a lower order need is satiated, the next level is activated and so on.

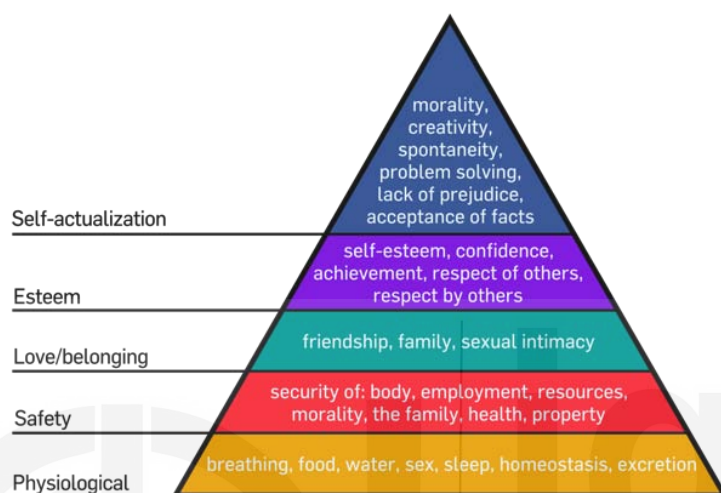


Figure 4.2: Maslow's Need Hierarchy

Source: https://drsaraheaton.files.wordpress.com/2012/08/1200px-maslows_hierarchy_of_needs-svg.png

Maslow conceptualized needs as of five different types: physiological needs, safety needs, belongingness and love needs, self-esteem needs, and self-actualization needs. Physiological needs are basic or primary needs that stem from physiological deficits that relate to the survival of the individual, needs like food and nutrition, water, sex etc. The second in the order are the safety needs that encompass need for security, stability, protection and most importantly a state of freedom from fear. Third in the hierarchy is the need to be loved and belong. This need is embedded in the ideation that people are innately social in nature and they need to be loved and cared for by others. They need to have meaningful and fulfilling relationships in life to feel happy and contented. Then comes the self esteem needs. These are focused on self-worth, self-respect and need for validation of this worth from others. The topmost need in the hierarchy is the need for self-actualization. Self-actualization is the need to realize one's true and full potential. According to Abraham Maslow, the first four needs are **deficit needs** or **D-needs**, and must be met and the person must feel satisfied before she/he/they can attempt to satisfy their self-actualizing needs. This is the last level and is referred as **being needs** or **B-needs**. Maslow (1999) proposed several interdependent qualities of self-actualizing people:

'Clearer, more efficient perception of reality; more openness to experience; increased integration, wholeness, and unity of the person; increased spontaneity, expressiveness, full functioning, aliveness; a real self, firm

identity, autonomy, uniqueness; increased objectivity, detachment, transcendence of self; recovery of creativeness; ability to fuse concreteness and abstractness; democratic character structure; ability to love, etc.' (pp.172-173).

Maslow (1968;1987) conducted extensive research that has not been classified as very scientific, on people whom he thought were self-actualizers. He elaborated that there were three preconditions for an individual to reach self-actualization. There should be absence of restraints, no distractions from lower order deficiency needs and a good insight into oneself. In the process of self-actualization, Maslow also introduced the idea of peak experiences. These experiences are feelings of ecstasy or fulfillment that transcends beyond time and feels like a timeless moment.

4.1.2 Carl Rogers' Approach

Carl Rogers was originally trained in religion and that paved his way to psychology. He was trained in clinical psychology and was committed to the development of theory and practice. In the year 1963 he founded the Centre for the Studies of the Person, in California, USA. He was very active throughout his life and contributed to the development of the humanistic perspective. He died at the age of 85 in 1987. His daughter, Natalie Rogers extended his work with an expressive Arts orientation.



Figure 4.3: Carl Rogers

Source: <https://counsellingtutor.com/wp-content/>

Carl Rogers propagated the idea of the **fully functioning person**. Like Maslow, he too believed that people are free to choose their decisions and every person has the potential to achieve their potential, goals and desires. Rogers (1961) referred to people who were able to attain their potential and follow their goals in life as fully functioning persons, a concept like Maslow's self-actualization. What it means is the person is in touch with himself/herself/themselves, in the 'here and now' and understands his/her/their subjective experience and continue to evolve to be a better version of themselves every day. Their growth is progressive. Rogers regarded the fully functioning person as an ideal person and acknowledged that being that person is difficult for people. He looked at life as a process of becoming and identified five potent characteristics of a fully functioning person (see Table 4.1).

Rogers proposed that the way we think about ourselves will go a long way in help us become a fully functioning person. Our self-worth is of fundamental importance to our psychological health and overall wellbeing and helps us move closer to our authentic self. Rogers (1959) believed that a person who has high self-worth can accept self, has confidence in their ability, is positive towards oneself and faces life challenges as they come. A person low on self-worth may not accept these challenges and may be defensive and guarded in

his/her/their approach to living. According to Rogers, family and care givers play a pivotal role in creating this self-worth or lack of it too.

Table 4.1 Rogers' (1961) characteristics of a Fully Functioning Person

Identified characteristics of the fully functioning person	Description of the characteristic
Openness to experience	The person is open to both positive and negative experiences and emotions. Negative emotions are also accepted, and the person strives through to create a better life.
Existential living	The person lives in the 'here and now' and is in touch with different experiences as they occur in life and avoids assuming or pre-judging.
Trust feelings	The person pays attention to and trusts her/his/their gut and feelings, instincts.
Creativity	The person is creative and indulges in divergent thinking, is open to risk-taking and does not play it safe all the time.
Fulfilled life	The person has an overall sense of contentment and feels happy about life and looks forward to new experiences even if they are challenging

The kind of messages that the child receives from their significant others, shapes their beliefs about themselves later in life too. Significant others like mother, father, other family members, teachers, friends, can influence the self-worth of an individual. Rogers contends that young children have two basic needs: **positive regard from others** and **positive self-worth**. Positive regard is an important contributor to a child's growth and refers to how other people evaluate or judge us in social situations or interactions. Rogers emphasized upon the importance of **unconditional positive regard** and differentiated it from conditional positive regard. Unconditional positive regard is when significant others give love and support to the child for what she/he/they are. Unconditional positive regard is not withdrawn when the child does something wrong. According to Rogers, this gives the child the freedom to explore and try out new things in life. On the contrary conditional positive regard is limited by the child's good behaviour. Approval, praise, or positive regard is only provided when the child indulges in 'good' behaviours. These are called 'conditions of worth' and restrict the child's vision and growth. "if you obey me, you are a good boy", "if you wear what I tell you, you are a good daughter", "If you study for 6 hours, you are my darling child". If the child does something that is desirable as per the significant other's judgement, then he/she/they are worthy of love!

4.1.3 Humanistic Perspective: Critical lens

Both Maslow and Rogers emphasized upon personal growth, freewill, studied people from a holistic perspective and their theories had a substantial influence upon the development of later schools. However, both the scholars were criticized for being unscientific in their approach to study human development. Critics have attacked Maslow for employing a very non-scientific approach to study the process of self-actualization. Critics have also pointed that his theory is based on white middle class North American values. Nevertheless, his theory has remained very influential. Very few psychologists acknowledge Maslow as a developmental psychologist. Not just him but the entire humanistic movement do not find a decent mention in developmental psychology textbooks (DeRobertis, 2008). While most psychologists agree that lower order needs are innate, Maslow has been criticized for considering the higher order needs as innate as well. He has been accused of downgrading the role of environment in the development of the psyche (Geller, 1982; Daniels, 1982). He believed that environment just provides support to nurture the innate higher and lower order needs. While most psychologist agree that lower order needs are innate, Maslow has been criticized for considering the higher order needs as innate as well. He has been accused of downgrading the role of environment in the development of the psyche (Geller, 1982; Daniels, 1982). While Maslow's need hierarchy theory was criticized for being too simplistic in nature, Rogers also invited flak for not generating enough empirical research. His lack of scientific vigour and reliance on subjectivity is evident in his own words-

'Experience is, for me, the highest authority. The touchstone of validity is my own experience. No other person's ideas, and none of my own ideas, are as authoritative as my experience. It is to experience that I must return again and again, to discover a closer approximation to truth as it is in the process of becoming in me' (Carl Rogers (1961), On Becoming a Person).

Thus, as evident the over emphasis on the subjectivity of the experience may have led him to ignore social factors and other personality variables that contribute substantially to the overall growth of an individual. In terms of application, Rogers in his clinical practice gave more salience to values and attitude as compared to actual skills. He was also an ardent believer in a non-directive approach that according to a lot of critics made his theory 'directionless'. Rogers himself admitted that his approach was not very effective to assist serious patients (McLeod, 2005).

Despite all the criticism, the humanistic school of thought in life span development has added valuable insights about what a positive environment can do to a child's optimal development.

Check Your Progress 1

1. What is self-actualization?

.....
.....

2. What are lower order needs?

3. How would you define a fully functioning person?

4. What is unconditional positive regard?

4.2 EVOLUTIONARY AND THE ETHOLOGICAL PERSPECTIVE

Charles Darwin (1809-1882) paved the way for ethologists by investing in his groundbreaking work on the theory of evolution. Darwin proposed his theory of evolution that explained how the characteristics of a species changes and evolves over time and how new species evolve and adapt to the changing demands of the environment (Darwin, 1859). The theory has had its share of controversy, but it has also been supported by a huge body of research evidence from biology, psychology, and other fields (Buss, 2012). Darwin's theory makes the following assertions:

- All species differ genetically.
- Some genes help in the process of adaptation more than other genes.
- Helpful genes that support their bearers in adapting are more likely to be passed on from one generation to the other. This is principle of 'natural selection'. Nature selects the resilient members of the species to survive that help in adapting to a new environment. Genes that amplify the chances of surviving and reproducing will become more recurrent over time because they will be passed to the offspring. The changes over generations, are gradual but sufficient to produce a new species.

Modern evolutionary psychology is the application of Darwinian evolutionary theory to understand why humans think and behave as they do and how genes contribute to adapting to the changing environment. The evolutionary theory proposes that humans like any other species are as they are because they share genetic pool and have a shared species heredity that evolves over time through the **process of natural selection**. However, contemporary evolutionary psychologists and developmentalist believe that

there is no scope for ‘nature versus nurture’ debate as the two aspects were completely interwoven over the span of an individual’s life (Lickliter & Honeycutt, 2015). Bjorklund (2003) has defined evolutionary developmental psychology as primarily the application-based field of the study of the basic principles of evolution to explain contemporary human development within the context of the environment.

It involves the study of the genetic and environmental mechanisms that underlie the universal development of social and cognitive competencies and the evolved epigenetic (gene– environment interactions) processes that adapt these competencies to local conditions; it assumes that not only are behaviors and cognitions that characterize adults the product of selection pressures operating over the course of evolution, but so also are characteristics of children’s behaviors and minds (Bjorklund & Pellegrini, 2002, pg. 4).

The authors have elaborated upon the concept of cultural revolution. Cultural evolution refers to the process where we “inherit” a typical human environment and tested ways of adapting to it, invent more functional ways of adapting and pass on the new learnings to the next generations. The concept of cultural evolution has been thought of by some psychologists as very significant in the contemporary world as learning and socialization of the youngsters works more rapidly and efficiently than biological evolution that is much slower (Bjorklund & Pellegrini, 2002).

Natural selection operates more strongly during the early stages of life span development. An advanced area in term of evolution is the high level of cognitive, behavioural, and neural plasticity that helps children in adapting to a wide range of social and physical environment. The evolutionary lens might provide a better understanding of contemporary human development, predicting approximate adult behaviours and describing how changes and evolution in our ancestors have produced modern-day human beings (Bjorklund, 2020).

4.2.1 Konrad Lorenz

A rather overlapping field of **ethology** was developed as scientists began to test Darwinian theory. Ethology was originally described as the study of animal behaviour within the framework put forth by Konrad Lorenz (1903-1989) and Niko Tinbergen (1907-1988). At a later time, it was used to describe any study of animals in relation to their natural environment. A more contemporary and inclusion term for the discipline is behavioral biology (Bolhuis & Hogan, 2017). Ethology, thus is the study of the behaviour of various species and their natural environment and how the evolution has led to changes in behaviour (Archer, 1992). It has strong evolutionary overtones. Many developmental psychologists have been influenced by the ethological perspective and proposed that life span development can be best explained by using this lens. This perspective is largely influenced by the Darwinian theory of evolution. Our behaviour thus is a product of our biological structure and the survival instincts.



Figure 4.4: Konrad Lorenz

Source: <https://www.famouspsychologists.org/psychologists/konrad-lorenz.jpg>

There are certain assumptions that ethologists make: (1) all animal species are born with several “biologically programmed behaviours”, (2) these behaviour patterns are product of evolution, (3) they contribute to survival and are hence adaptive. Niko Tinbergen, another important contributor to the ethological position, stated in his seminal paper, that to understand why animals behave as they do, ethologists need to ask questions about the behavior’s causation, development, function and evolution (Tinbergen, 1963). Konrad Lorenz, the celebrated zoologist and Nobel laureate contributed to the development of this perspective by proposing his work based on experiments with graylag geese.

4.2.2 The ‘imprinting experiments’

Lorenz (1937) started studying behaviour patterns in graylag geese that were supposedly programmed within the bird’s genes. A newly hatched gosling of a graylag geese seems to inherently follow it’s mother, as if it’s wired in her system since birth. Many observations of newly hatched goslings showed that they could follow their mama goose as soon as they are born. Lorenz however, disagreed with the notion and proved it wrong. In an incredible series of experiments, he separated the eggs laid by one goose into two separate groups. One group was returned to the goose, to be hatched by her and the other group was put in an incubator for hatching. The goslings with the mama goose, performed as predicted; they followed mama goose as soon as they were hatched. The second group saw Lorenz as soon as they were hatched and followed him everywhere, as if he were their ‘mama goose’! Next, Lorenz marked the goslings and put them under a box. Mama goose and ‘mama Lorenz’ were standing as the box was lifted. Each group identified their mother and went directly to their mamas. Lorenz called this process as **imprinting**. Imprinting is the innate, brisk learning response within a limited critical period that involves instant attachment to the first moving object seen.



Figure 4.5: Imprinting behaviour in graylag geese

Source: https://sciencemusicvideos.com/wp-content/uploads/2019/05/7e_conrad-lorenz-and-imprinted-goslings-e1557876390792.jpg

The ethologist also stressed upon the importance of the **critical period**. Critical period is the fixed time in the early phase of development where certain behaviour patterns optimally emerge. Lorenz concluded that imprinting was an adaptive response for survival because if young birds follow their mothers, they would eventually be led to food, shelter, and safety. On the other hand, if they stray away, they struggle to survive. Hence, over the course of generations the imprinting behaviour becomes innate that helps in creating a bond between a young fledgling and its mother.

4.2.3 Ethological Perspective and Human Development

Lorenz (1943) in the context of human development suggested that a baby's "kewpie doll" appearance has evolutionary value and makes the infant appear cute or lovable to the caregivers. Some researchers even contend that the more attractive the baby, more favourably mother and others respond to her/him/them (Barden et.al., 1989; Langlois et.al., 1995). Psychologists like John Bowlby borrowed from the ethological perspective and elaborated upon their own ideas in the field of human development. Bowlby (1969) believed that infants and children show a lot of preprogrammed behaviours and many of these responses are adaptive in nature and have survival value. For instance, the baby's cry is a distress signal, that seem to be biologically programmed in the infant, that helps in grabbing the attention of the care giver. The adaptive and survival value of the infant's cry ensures that the infants basic needs are met, and the infant will have sufficient degree of human interactions to form emotional attachments (Bowlby, 1973). Ainsworth work in separation and stranger anxiety add evidence to support Bowlby's claim. For a critical appraisal of the attachment perspective, read Unit 10. Ethologists have laid emphasis on the importance of early life experiences. While critical periods might be important for certain specific skills and attributes, many ethologists believe that sensitive period is a more appropriate term to use. Sensitive period refers to a time that is the optimal period for the development of skills or attributes in which the individual is

specifically sensitive to environment influences. The time frame for sensitive period is not as rigid as critical period and it is flexible in that, development can occur outside this window, but it just gets difficult to nurture (Bjorklund & Pellegrini, 2002). Bowlby (1963) believed that first 3 years of an infant's life are a sensitive period for the optimal development of certain social and emotional competencies. Human attachment is more complex but is also biological based as given by the ethological perspective.

4.2.4 Evolutionary Perspective: Critical Lens

Evolutionary developmental perspective has been very influential in the development of contemporary theories in life span development. Evolutionary developmental psychology endeavours to amalgamate different branches of psychology by unifying evolutionary perspective and developmental theory and laying a more sophisticated framework for the understanding of life span development (Machluf, Liddle & Bjorklund, 2014). However, critics have been skeptical of its focus on biological basis of behaviour that pays insufficient attention to the environmental and sociological aspects in shaping behaviour. Others criticize the approach as its difficult to prove it using vigorous scientific methods. Despite the lack of vigor, the approach has stimulated significant research about the biological inheritance and how it impacts our traits and behaviours (Bjorklund, 2006; Baptista et al., 2008; Del Giudice, 2015).

Check Your Progress 2

1. What is the evolutionary perspective to life span development?
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2. What do you understand by “natural selection” in the context of development?
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3. What is imprinting?
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.....
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4. What is critical period and how does it impact development?
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.....

4.3 THE BIOECOLOGICAL PERSPECTIVE

Bronfenbrenner's bioecological model of human development has received a considerable amount of attention from developmental psychologists. He was a strong critic of lab research and emphasized that the proper study of development requires one to observe children and adults in their actual environment or in natural contexts. He further added that the lab-based research cannot be generalized to the everyday contexts in which humans live and grow.

4.3.1 Urie Bronfenbrenner



Figure 4.6: Urie Bronfenbrenner

Source: https://stor.artstor.org/stor/5166018f-e32b-41e4-b7aa-e974d1b19fb3_size3

Urie Bronfenbrenner (1917-2005), a Russian born American development psychologist was a major proponent of the contextual approach to the study of developmental psychology. Many critics felt that majority theories of twentieth century focused on childhood as an individual process, and continued neglecting social and cultural contexts (Oakley, 1972). Bronfenbrenner became a major critic of the existing theories in the area of developmental psychology and criticized developmental psychology as 'the study of the strange behaviour of children in strange situations with strange adults for the briefest possible period of time' (Bronfenbrenner, 1977). For him, it was impossible to study lifespan

development without factoring in the multiple contexts in which the child's life is embedded. Urie Bronfenbrenner and many like minded contextual and systems theorists believed that the transactions between the person and the environment shaped life span development (Bronfenbrenner, 1977, 1979, 1989; Bronfenbrenner & Morris, 2006; Rosa & Tudge, 2013; Wachs, 2015).

According to him 'the ecology of human development involves the scientific study of the progressive mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which, the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded' (pg.21). In Bronfenbrenner's view, the developing individual, with her/his/their given genetic makeup and biological characteristics is rooted in a series of environment or ecological systems. Bronfenbrenner proposed the bioecological approach that suggests five different interconnected levels in the ecological development of an individual. These systems interact with one another and with the individual to influence and impact development. These influences may be bidirectional or reciprocal in operation.

The Microsystem: This is the regular, everyday environment of an individual and comprises of home, significant caregivers, friends, teachers who influence the child, but the child is not passive in the process and is actively constructing the outer world for all the others.

The Mesosystem: This connects the various levels of the microsystem. It connects children to parents, students to teachers, friends to friends, peers to peers and employees to bosses. This level entails in validating all the connections between the stakeholders.

The Exosystem: This is about the influence of the indirect environment. Societal institutions like schools, places of worship, local governments, community, and local media forces. All these institutions impact the development of the individual in major ways and have a cascading impact on the operation of the micro and mesosystem.

The Macrosystem: This contextual field represents the larger cultural forces that influence the individual, society, community, government etc.

The Chronosystem: This was added by Bronfenbrenner (2000) later and the idea is that chronosystem underlies all the different levels. It involves how different significant historical events impact the individual and all the other levels or systems in the model. This newly added time dimension captures immediate changes, changes during the lifetime and historical changes across generations. You must have heard from your grand or great grandparents, stories about partition or some riots they must have lived through. You will also have pandemic stories to share with children, decades from now, later in life.

Bronfenbrenner emphasized upon how all these subsystems are interconnected and the model is dynamic as changes in one system, impacts the other system. He also talked about the importance of socio-cultural factors that play a vital role in helping the individual navigate through these levels.

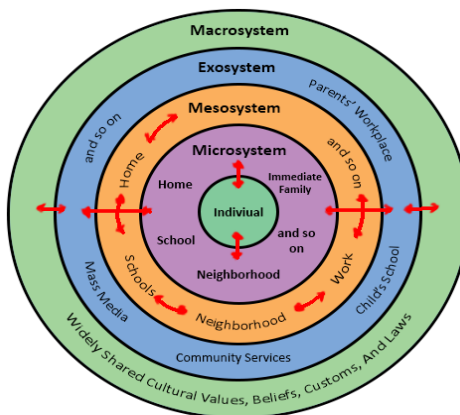


Figure 4.7: The Bioecological Model

Source: https://static.wikia.nocookie.net/psychology/images/f/f6/Urie_Bronfenbrenners_Bioecological_Model.png/revision/latest?cb=20130802031930

Case Vignette

Mira is 18-year-old and lives in a loving and cohesive joint family in East Delhi. Till about two years back she enjoyed her life and was very excited about joining college, but the pandemic has changed everything for her. Her classes have been happening online since last one year. She has not seen her campus yet. The pandemic has also impacted her immediate family, she lost her Uncle to it and his daughter is only a year old. Her Aunt is distraught with the sudden loss and Mira feels very disturbed by her condition. She feels very sorry for family and herself as well. Can you explain Mira's life situation with the help of the bioecological approach?

4.3.2 Bioecological Model: Critical lens

Bronfenbrenner's model has been very influential in the field of developmental psychology. Increasing number of developmentally oriented thinkers are adopting a system based or contextual approach to development (Overton, 2015). It's complexity and nuanced approach have been looked at as its strength as the interactions between the individual and the ecology explains the complex interactions in the socialcultural milieu (Newman & Newman, 2016). Yet the approach is amenable to criticism as it has not clearly explained how development occurs and does not provide a comprehensive explanation to understanding development across the life span.

Many critics feel that human development may be more predictable than Bronfenbrenner implies. Most children with similar biological abilities, grow up in typical human environments and may change in similar ways, at similar ages (Hoare, 2009). Some theorists contend that its possible to conceptualize humans as transcending in orderly and similar ways in many aspects of development while also retaining the uniqueness of the sociocultural and contextual influences upon development (Goldhaber, 2012).

Check Your Progress 3

1. What is the bioecological approach?

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2. What is the micro and mesosystem, cite an example?

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3. How does chronosystem work?

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4.4 LIFE COURSE THEORY

Like Bronfenbrenner's model, life course theory also emphasizes on the role of time in human development. Life course theory (LCT) is a relatively contemporary, emerging interdisciplinary theory that attempts to explain and understand life span development using multiple socio-cultural and historical lens. The holistic factors that shape people's life from birth to death and how these are intertwined in the person's sociocultural and historical environment (Hutchinson, 2011). The LCT was originally conceived in the context of the Great Depression and posits that "historical forces shape the social trajectories of family, education, and work, and they in turn influence behavior and particular lines of development" (Elder, 1998, pg2).

4.4.1 Basic concepts in the Life Course Model

Cohort

A cohort is a group of persons who are born at the same historical time and experience specific sociocultural changes within a given time. They differ in several important ways; in size and these impact opportunities for education, work and family size. According to Newman (2008) cohort develop strategies to cope with challenges. For example, children who had to join formal school during 2020-21, have not had a chance to visit and experience school. We do not know when they will be back to school but imagine their experience is going to be exclusive to their cohort. Will this impact their developmental trajectories? In all probability, yes!

Transitions

Life course theory proposes that each individual experiences several transitions in roles and statuses across the life span. Many of these roles are related with family like marriage, births, divorce, deaths etc. Each role brings with itself a new set of challenges and responsibilities. Many parts of India celebrate puberty, especially the onset of menarche in girls.

Trajectories

Trajectories combine multiple transactions and involve long term patterns of stability and change in an individual's life. Transitions are always entrenched in trajectories and trajectories may not be linear but do have continuity in the direction. Human life is embedded in multiple roles so individuals have multiple intersecting trajectories. Some examples can be of family life trajectories, work life trajectories, health related trajectories, activism trajectories and so on and so forth, depending on the life course of an individual.

Life events

A life event is significant happening in the life course of an individual involving a relatively abrupt alteration that may create significant and long-lasting impact. Life events are major occurrences and require adaptation, there by producing stress.

Turning Point

A turning point is a time when significant change occurs in the life course trajectory of an individual. It may have an element of transformation as to how an individual may view herself/himself/themselves in relation to the world around and in terms of how she/he/they respond to opportunities and risks. Turning points bring in lasting changes and become obvious as time passes (George, 2009).

An essential assumption of the life course approach to human development is the idea that human beings live their life in an organized and systematic manner in configurations shaped by age, historical dynamism and social structure (Elder, 1994; Elder, 1998; & Elder & Johnson, 2003). The theory has five distinct principles: (1) time and place; (2) lifespan development; (3) timing; (4) agency; and (5) linked lives.

1. **Time and place-** The principle of time and place are foundational to life course theory as human lives are shaped by questions embedded in the socio historical context. Cultural nuances define a specific place in time (Gieryn, 2000)
2. **Life span development-** This is the second principle in the life course approach. Lifespan development implies that humans develop in biologically, socially, and psychologically meaningful ways beyond the span of childhood (Elder et.al., 2003). Past experiences shape new experiences in adulthood (Marshall & Mueller, 2003).
3. **Timing-** The principle of time in the theory refers to the chronological order of the incidents. The age to start school, the age to vote, the age to retire and so on. Life course theorists are interested in the age at which specific life events and transitions occur which they refer to as timing of lives.
4. **Agency-** The idea of agency assumes that human beings are not passive recipients of predetermined life course, rather they make choices and decisions that determine the shape and course of their lives. Decisions are induced by a sense of temporality. Some decisions require intense focus on the present while others are influenced by the long-term goals (Hitlin & Elder, 2007).
5. **Linked lives-** This principle is embedded in the idea that lives are lived interdependently and reflect the socio-historical influences on this interconnectedness (Marshall & Mueller, 2003). The principle connotes to an integration of social relationships beyond the familiar ties like family, friends, neighbours, colleagues etc. who provide a “distinct orienting context” (Marshall & Mueller, pg.11). These connections help us in interpreting our positionality and life events. People differ in the degree of this sense of connectedness with relationships, social norms and institutions. Many a times integration may be discontinuous or disintegrated due to certain life circumstances (Giele & Elder, 1998)

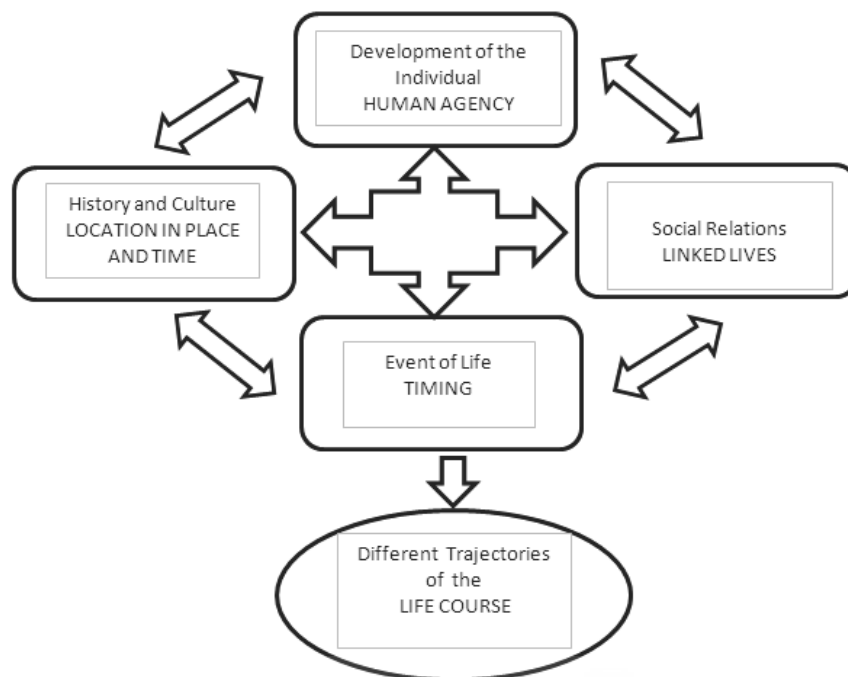


Figure 4.8: Key Elements of LCT (Giele & Elder, 1998)

Source: [https://www.researchgate.net/publication/227377569/figure/fig1/](https://www.researchgate.net/publication/227377569/figure/fig1/AS:398178089226243@1471944462354/)

AS:398178089226243@1471944462354/

Key-elements-of-the-Life-Course-Paradigm-Source-Giele-and-Elder-1998-p-11.png

Case Vignette

Till about two years back, Gauri was doing fantastically well at work. She was very proud of herself as she was a first-generation learner. She came from a very conservative small-town family in Gujrat and established herself after years of hard work and fighting many prejudices. She cultivated a circle of friends and was popular among her colleagues too. She was happy with her partner and she had a one and half year-old toddler who was doing well too. Then the pandemic happened. After six months of pay cuts, Gauri was asked to resign as the company was about to shut down. This had a devastating impact on Gauri's life as her partner had lost his job too. She did not see it coming. After years of hard work, she found herself jobless! She had responsibilities...Keeping the life course perspective in mind, can you explain what was going on with Gauri's life?

Life course theory has found its application in the present difficult times as well. Researchers have explored the stressors that impact the wellbeing of adolescents. These encompass disruptions to parents' work life and financial circumstances (Ananat & Gassman-Pines, 2020), reduction in childcare facilities (Yoshikawa et al., 2020) and schools going online for the youth (Rothstein, 2020). In the context of the LCT, a recent study found that Chinese American parents and their children and adolescents, reported high levels of COVID-19 related direct and vicarious discrimination and there by less optimal mental health (Cheah et.al., 2020).

4.4.2 Life Course Theory: Critical Lens

LCT is a very compressive approach to understanding life span development. Life course researchers have started incorporating intersectionality theory to explain and understand diversity in life course trajectories (Warner & Brown, 2011). Intersectionality recognizes that all of us are collectively and parallelly members of several socially constructed identity groups, such as gender, race, ethnicity, class, sexual orientation, age, religion etc. Our social agency is at the intersection of our multiple identity groups, hence providing an effective framework for culturally sensitive interventions. LCT is not deterministic in its approach and acknowledges people's strength and capacity for change. Additionally, LCT opens the floor to discussion about cumulative advantage and disadvantage. The impact of power and privilege to suggest strategies for social justice (Hutchison, 2011).

While heterogeneity and diversity inclusive is LCT's greatest strength, it is also its biggest challenge as it takes consistent longitudinal research to recognize these patterns in complex societies. Another disadvantage is that LCT has not been able to gather a lot of cross-cultural validation across the globe. The research has been mostly coming in from wealthy advanced industrial nations. It has also failed to adequately link the microworld of an individual to the macroworld of social institutions. Most researchers have studied these worlds in isolation (Hutchison, 2011).

All in all, LCT's comprehensive framework and emphasis on interdependence on human life is in line with contemporary research and the theory is well supported by extensive longitudinal research.

Check Your Progress 4

1. What is the life course theory (LCT)? Explain with an example.

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2. What are the key dimensions of LCT?

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3. What is the strength of LCT?

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4.5 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- The humanistic perspective offers a positive view of understanding and explaining human behavior and focuses on the strengths of an individual rather than his weaknesses or flaws.
- Maslow and Rogers popularized the notions of self-actualization and fully functional person that focuses on abilities and potential for creating a fulfilling and authentic life.
- The evolutionary and the ethological perspective derive their foundation from the Darwinian theory and attempts to explain human behaviour in terms of the genetic-behavioral link and their adaptive value in the context of the environmental influences.
- Urie Bronfenbrenner's bioecological model explains the individual's existence in the context of various subsystems and how the influence is bidirectional in nature (microsystem, mesosystem, exosystem, macrosystem and chronosystem) and helps an individual to grow.
- The life course theory is an evolving, interdisciplinary framework that factors in life events, chronology, transitions, interdependent lives and socio-cultural contexts to explain life span development.

4.6 KEYWORDS

Self-actualization A concept propagated by Abraham Maslow, is the actualization of one's potential that leads to positive feelings and appreciation of life.

Fully Functioning Person This concept propagated by Carl Rogers and refers to people who are in touch with their deepest emotions, desires and feelings and place deep trust in their instincts and gut feelings.

Unconditional Positive Regard Part of Rogers theory, that refers to providing complete support and acceptance to a person regardless of his behaviour, thoughts, or actions.

Conditions of Worth These are conditions that we put on our children or significant people in our life, that they need to qualify, to be worthy of our affection, love or regard.

Evolutionary Psychology Explains human behaviour in terms of adapted, evolved mechanisms and elaborates upon the gene-behavioural nexus.

Imprinting A phase sensitive learning process where a young one of a social animal starts attaching itself to the first person or object it is exposed to post birth.

Critical Period A maturational stage during which the nervous system is especially sensitive to certain environmental stimuli. Certain functions become difficult or impossible to acquire later in life if not acquired during the critical period.

Microsystem The immediate environment in which the person interacts and socializes.

Mesosystem The mesosystem is the connections among the microsystems.

Exosystem The exosystem comprises of settings that impact the individual.

Chronosystem The designing over time of historical life events that take place and influence the individual.

Life Course Theory An emerging interdisciplinary theory that explains life span development by taking in multiple factors into account and embedding the individual in cultural and historical context to understand his growth throughout the life span.

Cohort Group of persons born during the same period and experience similar social phenomena within a given cultural framework and at the same age.

Linked live Human lives are interdependent and family plays a pivotal role in understanding wider sociocultural and historical phenomena.

4.7 REVIEW QUESTIONS

1. Critically compare Maslow's and Rogers' ideas in area of human development
2. How has the evolutionary and ethological perspective added to our understanding of developmental psychology?
3. How is the bioecological approach different from other schools you have studied?
4. Discuss the life course theory in the context of the situation around you.
5. Compare the life course theory with Urie Bronfenbrenner's bioecological model.

4.8 REFERENCES AND FURTHER READING

Ananat, E., & Gassman-Pines, A. (2020, March 30). Snapshot of the COVID crisis impact on working families. Medford, MA: Econofact, The Fletcher School, Tufts University. Retrieved from <https://econofact.org/snapshot-of-the-covid-crisis-impact-on-working-families>.

Asian Pacific Policy and Planning Council and Chinese for Affirmative Action. (2020). *Anti-Asian incidents across U.S. near 1,900 over 8-week period*. Los Angeles, CA: Asian Pacific Policy and Planning Council. Retrieved from http://www.asianpacificpolicyandplanningcouncil.org/wp-content/uploads/Press_Release_6_9_20.pdf

Baptista, T., Aldana, E., Angeles, F., & Beaulieu, S. (2008). Evolution theory: An overview of its applications in psychiatry. *Psychopathology* 41 (1): 17-27 doi: 10.1159/000109951

Bjorklund, D. F. (2003). Evolutionary psychology from a developmental systems perspective: Comment on Lickliter and Honeycutt (2003) *American Psychological Association*. doi:10.1037/0033-2909.129.6.836

Bjorklund, D. F. (2020). *Child development in evolutionary perspective*. New York : Cambridge University Press. <https://doi.org/10.1017/9781108866187>.

- Bjorklund, D. F., & Pellegrini, A. D. (2002). *The origins of human nature: Evolutionary developmental psychology*. Washington, DC: American Psychological Association.
- Bolhuis, J. J., & Hogan, J. A. (2017). Ethological theories. In B. Hopkins, & R. G. Barr (Eds.), *The Cambridge encyclopedia of child development* (2nd ed.). Cambridge University Press.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513–531.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of child development: Vol. 6. Theories of child development: Revised formulations and current issues*. Greenwich, CT: JAI Press.
- Bronfenbrenner, U., & Ceci, S. J. (1994). Nature–nurture reconceptualized: A bioecological model. *Psychological Review*, 101, 568–586.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds. in Chief) & R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed.).
- Buss, D. M. (2012). *Evolutionary psychology: The new science of the mind* (4th ed.). Boston: Allyn & Bacon.
- Cheah, C. S. L., Wang, C., Ren, H., Zong, X., Cho, H. S., & Xue, X. (2020). COVID-19 racism and mental health in Chinese American families. *Pediatrics*, e2020021816. <https://doi.org/10.1542/peds.2020-021816>
- Daniels, M. (1982). The development of the concept of self-actualization in the writings of abraham Maslow. *Current Psychological Reviews* 2, 61–75. <https://doi.org/10.1007/BF02684455>
- Del Giudice, M. (2015). Self-regulation in an evolutionary perspective. In G. E. Gendolla, M. Tops, S. L. Koole, G. E. Gendolla, M. Tops, & S. L. Koole (Eds.), *Handbook of biobehavioral approaches to self-regulation*. New York: Springer Science + Business Media.
- DeRobertis, E. M. (2008). *Humanizing child developmental theory: A holistic approach*. Bloomington, IN: iUniverse.
- Elder Jr., G. (1974). *Children of the great depression*. University of Chicago Press: Chicago.
- Elder, G., & Giele, J. (2009). Life course studies: An evolving field. In G. Edler & J. Giele (Eds.), *The craft of life course research* (pp. 1–24). New York: Guilford.
- Elder, G., Jr. (1974). *Children of the Great Depression*. Chicago: University of Chicago Press.
- Elder, G., Jr. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, 57 (1), 4–15.

- Elder, G., Jr. (1998). The life course as development theory. *Child Development*, 69 (1), 1–12.
- Elder, Jr. G. H., & Giele, J. Z. (2009). *The craft of life course research*. New York, NY: Guilford.
- Geller, L. (1982). The Failure of Self-Actualization Theory: A Critique of Carl Rogers and Abraham Maslow. *Journal of Humanistic Psychology*, 22(2), 56–73. <https://doi.org/10.1177/00221678822222004>
- George, L. (2009). *Conceptualizing and measuring trajectories*. In G. Elder Jr.; J. Giele (Eds.), *The craft of life course research* (pp. 163–186). Guilford New York.
- Giele, J.Z., & Elder, G.H., Jr. (1998) Life course research: Development of a field. In: Giele JZ, Elder GH Jr., editors. *Methods of life course research: Qualitative and quantitative approaches*. Sage; Thousand Oaks, CA: pp. 5–27.
- Gieryn, T.F. (2000). A space for place in sociology. *Annual Review of Sociology*. 26:463–496.
- Goldhaber, D. (2012). *The nature-nurture debates: Bridging the gap*. New York, NY: Cambridge University Press.
- Hitlin, S. & Elder, G. H. Jr. 2007. “Agency: An Empirical Model of an Abstract Concept.” Pp. 33–67 In *Advances in Life Course Research*, Vol. 11, edited by R. Macmillan. Netherlands: Elsevier/JAI Press.
- Hoare, C. (2009). Models of adult development in Bronfenbrenner’s bioecological theory and Erikson’s biopsychosocial life stage theory: Moving to a more complete three-model view. In M. C. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development* (pp. 68–102). New York, NY: Routledge.
- Hutchison E.D. (2011) Life Course Theory. In: Levesque R.J.R. (eds) *Encyclopedia of Adolescence*. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1695-2_13
- Machluf, K., Liddle, J. R., & Bjorklund, D. F. (2014). *An Introduction to Evolutionary Developmental Psychology*. *Evolutionary Psychology*. <https://doi.org/10.1177/147470491401200201>
- Marshall, V., & Mueller, M. (2003). *Theoretical roots of the life-course perspective*. In: Heinz W, Marshall V, editors. *Social dynamics of the life course*. Aldine DeGruyter; New York: pp. 3–32.
- Maslow, A. H. (1999). *Toward a psychology of being* (3rd ed.). New York, NY: Wiley.
- Maslow, A.H. (1968) *Toward a Psychology of Being*; Van Nostrand: New York, NY, USA.
- Maslow, A.H. (1987) *Motivation and Personality*, 3rd ed.; Longman: London, UK.
- Newman, B. M., & Newman, P. R. (2016). *Theories of human development* (2nd ed.). New York, NY: Psychology Press.

Newman, K. (2008). Ties that bind: Cultural interpretations of delayed adulthood in Western Europe and Japan. *Sociological Forum*, 23(4), 645-669.

Overton, W. F. (2015). Processes, relations, and relational-developmental-systems. In W. F. Overton, P. C. M. Molenaar, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Theory and method* (pp. 9-62). John Wiley & Sons, Inc.. <https://doi.org/10.1002/9781118963418.childpsy102>

overview of its applications in psychiatry. *Psychopathology*, 41, 17-27.

Pennington, D. C., McLoughlin, J., Smithson, R., Robinson, D., & Bosewell, R. (2003). *Advanced Psychology*. Hodder Education Group. London, UK.

Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology. *Journal of Family Theory & Review*, 5, 243-258.

Rothstein, R. (2020, April 14). The coronavirus will explode achievement gaps in education. Retrieved from <https://www.epi.org/blog/the-coronavirus-will-explode-achievement-gaps-in-education>.

Tinbergen N (1963) On aims and methods of ethology. *Zeitschrift für Tierpsychologie* 20: 410-433.

Wachs, T. D. (2015). Assessing bioecological influences. In M. H. Bornstein (Vol. Ed.), T. Leventhal (Vol. Ed.), & R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 811-846). Hoboken, NJ: Wiley.

Warner, D. & Brown, T. (2011). Understanding how race/ethnicity and gender define age-trajectories of disability. An intersectionality approach. *Social Science & Medicine*, 72, 1236-1248.

Yoshikawa, H., Wuermli, A. J., Britto, P. R., Dreyer, B., Leckman, J. F., Lye, S. J., ... Stein, A. (2020). Effects of the global COVID-19 pandemic on early childhood development: Short- and long-term risks and mitigating program and policy actions. *The Journal of Pediatrics*, 223, P188-P193. <https://doi.org/10.1016/j.jpeds.2020.05.020>

4.9 ADDITIONAL ONLINE RESOURCES

- *For more information on Maslow:*

<https://psychclassics.yorku.ca/Maslow/motivation.htm>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3161123/pdf/nihms310276.pdf>

<https://www.youtube.com/watch?v=sKHeA8We5pI>

- *For more information on Carl Rogers:*

<https://www.britannica.com/biography/Carl-Rogers>

<http://carlrogers.org/video.html>

<https://www.youtube.com/watch?v=vNZPVTswrhs>

<https://www.youtube.com/watch?v=l-ZdeOYwjgY>

- *For more information on Lorenz and Imprinting experiments:*

<https://www.britannica.com/biography/Konrad-Lorenz>

<https://www.youtube.com/watch?v=JGyfcBfSj4M>

- *For more information on Urie Bronfenbrenner:*

<https://www.britannica.com/biography/Urie-Bronfenbrenner>

<http://www.blc.cornell.edu/>

<https://www.youtube.com/watch?v=xaQHgVaeKrc>

- *For more information on Life course theory:*

<http://lifecourse.anu.edu.au/>

<http://www.projectresilience.com/>

<http://www.mpib-berlin.mpg.de/en/forschung/bag>

https://www.sagepub.com/sites/default/files/upm-binaries/36521_CLC_Chapter1.pdf



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UNIT 5 STAGES IN LIFESPAN DEVELOPMENT⁵

Structure

- 5.1 Introduction
- 5.2 Lifespan Development
 - 5.2.1 Domains of Human Development
- 5.3 Stages in Lifespan Development
 - 5.3.1 Prenatal Period (Conception to Birth)
 - 5.3.2 Birth and Infancy (0 – 2 Years)
 - 5.3.3 Childhood (2 – 11 Years)
 - 5.3.4 Adolescence (11 – 18 Years)
 - 5.3.5 Adulthood (18 years and beyond)
- 5.4 Summary
- 5.5 Key Words
- 5.6 Review Questions
- 5.7 References and Further Reading
- 5.8 Additional Online Resources

Learning Objectives

After reading this Unit, you will be able to:

- explain the concept of lifespan development;
- identify the various domains of human development;
- discern the different stages in lifespan development; and
- analyse the processes involved as an individual moves from one stage to another.

5.1 INTRODUCTION

Humans undergo numerous changes from the moment they are conceived till the end of their lives. Although there are many commonalities among the factors responsible for these changes and the ways in which these changes manifest in people, there are also many variations. Furthermore, while there are many periods marked by change, there are also periods of considerable constancy where people experience relatively limited change. Therefore, in order to improve people's lives and outcomes, it becomes important to undertake systematic measures to comprehend the dynamicity of such changes and understand the general course of human development. Extensive

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research in this area has highlighted the broad domains in which development occurs and also the various factors (both within the individual and outside them) responsible for the same.

Thus, in this Unit, we will explore the concept of lifespan development vis-a-vis the changes humans experience across the major domains of development as they move along different stages of life.

5.2 LIFESPAN DEVELOPMENT

As already explained in Unit 1, the term development can be described as “the pattern of change that begins at conception and continues through the lifespan” (Santrock, 2019). Although most development includes growth, it also involves decline that occurs due to aging and dying. Moreover, development is not limited to certain phases in life as it was earlier believed (due to it being more prominent during the first two decades of life), instead it involves ongoing processes as people move from one stage of life to another. This change in the assumptions surrounding development emerged as a result of increasing average life expectancy mainly due to improvements in medicine, sanitation, and nutrition. Keeping this in mind, a lifespan perspective of human development offers greater insight and has emerged as a scientific field of study in its own right.

Lifespan development, thus, is a field of study which adopts a scientific and interdisciplinary approach towards understanding the patterns of growth, change and constancy that govern human development. The field derives its knowledge by employing scientific methods to develop theories about development, which are systematically validated to check for their accuracy (Feldman, 2015). It also adopts a system perspective to ensure that the network of influences (e.g., biological, psychological and social) which impact development, is carefully considered.

According to Paul Baltes (1987, 2003), a key figure in the area of lifespan development, the life-span perspective is characterised by some key assumptions about human development (discussed in Unit 1). It views development as lifelong, multidimensional, multidirectional, plastic and contextual (Baltes, Lindenberger, & Staudinger, 2006).

5.2.1 Domains of Human Development

Developmental psychologists have identified three major domains which characterise human development. These include physical development, cognitive development, and social-emotional development.

Physical Development - The domain of physical development pertains to the ways in which humans change and grow physically over the course of the lifespan. It involves the various aspects of the body's makeup and mechanisms such the workings of the brain, nervous system, sensory processes, use of muscles, etc., while also focusing on certain biological needs such as eating, drinking and sleeping.

Cognitive Development - The cognitive domain involves the development and changes in people's cognitive abilities and processes and the ways in which these impact their behavior. Researchers working in this area study processes such as learning, memory, intelligence, problem-solving, perception, etc. They try to seek answers to questions such as, "How do children learn in school?" and "Why does memory decline during late adulthood?"

Social-Emotional Development - The social-emotional domain of development comprises changes in people's interpersonal relationships, social skills, emotions, and personality. "How do people learn to regulate their behavior?" and "What factors influence the development of identity?" are some examples of the questions that this domain covers.

It should be noted that all three domains are inter-linked and may influence each other. Furthermore, during some stages of life, rapid development may be evident in one of the domains, while in others all domains may undergo important transformations. For instance, during the developmental phase of adolescence, adolescents experience a wide range of physiological changes (such as the development of secondary sex characteristics) emerging as a result of the onset of puberty. During this time, adolescents also mature cognitively, becoming capable of abstract thought and hypothetico-deductive reasoning. These physiological and cognitive changes also impact adolescents' social-emotional development by changing the ways in which adolescents see themselves, thus having implications for the development of their identity, body-image, self-esteem and associated emotions.

Check Your Progress I

1) Define life-span development.

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2) What are the main domains of human development?

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5.3 STAGES IN LIFESPAN DEVELOPMENT

As stated in the earlier section, development is not dominated by any single period. Instead, the processes linked to the physical, cognitive, and social-emotional domains of development create specific changes and milestones

across different periods of life. In order to better understand the nature and trajectory of these changes, developmental psychologists have identified a number of stages (also known as developmental periods) covering a range of years in a person's life during which development takes place. It is important to note that some of the stages cover a singular period of life (e.g., the prenatal period), whereas others can be further divided into shorter periods (for instance, childhood can be further divided into early and middle childhood). Similarly, the life stage of adulthood can also be sectioned into early, middle and late adulthood). Each stage is also governed by certain demands, milestones and conflicts, successful achievement and resolution of which is crucial for smooth transitioning from one stage to the next. As children master what is required of them in a particular stage, it sets the foundation of the abilities they can acquire in the next stage and the newly acquired skills and abilities are then assimilated with previous learnings.

Furthermore, even though research has highlighted the emergence of certain milestones during specific time-frames, it is important to acknowledge the role of individual differences and contextual/environmental influences in playing a crucial mediating role. For instance, while it may be common for girls to experience menarche during the early years of adolescence, it is possible that the same may be delayed or occurs earlier for some girls due to variations in certain biological conditions, nutrition, exercise or other possible factors. A detailed explanation of each stage vis-a-vis the changes that occur during the same is given below.

5.3.1 Prenatal Period (Conception to Birth)

The prenatal period is an approximately 9-month period beginning from conception till the birth of the baby. During this time, the embryo evolves from being a single-celled entity to a full-fledged organism replete with the potential to survive outside the womb. It all starts with the moment of fertilization or conception, which is when the male's sperm fertilizes the female's ovum to produce a single-celled zygote. Over the course of the next 38 to 40 weeks (approximately 9 months), the zygote undergoes dynamic transformation to create a healthy baby.

The Phases of Prenatal Development

The phase of prenatal development can be further divided into three periods: the germinal, embryonic and fetal period. (Refer Figure 5.1)

The Germinal Period - covers the first two weeks after conception. It involves the creation of the zygote, the process of cell division and the attachment of the zygote to the uterine wall. During this phase, the zygote rapidly multiplies and creates a blastocyst that contains an inner mass of cells that will ultimately turn into an embryo. These cells are protected by an outer layer known as the trophoblast that becomes the source of nutrition for the embryo. Finally, close to ten days, the blastocyst attaches into the uterine wall and structures start to form, such as the amnion, placenta and umbilical cord.

The Embryonic Period - occurs between two to eight weeks after conception. At this point, the blastocyst is known as an embryo and faces rapid development of cells and major organs. The embryonic disk comprises three layers: (i) the *ectoderm* - the outer layer which form the skin, hair, teeth, and the nervous system; (ii) the *mesoderm* - which will develop the muscles, bones, circulatory system, and other internal organs; and (iii) the *endoderm* - the inner layer which turns into the digestive system, respiratory system, urinary tract, and glands. These three layers together create the full organism. By the end of this period, most external structures and internal organs are formed.

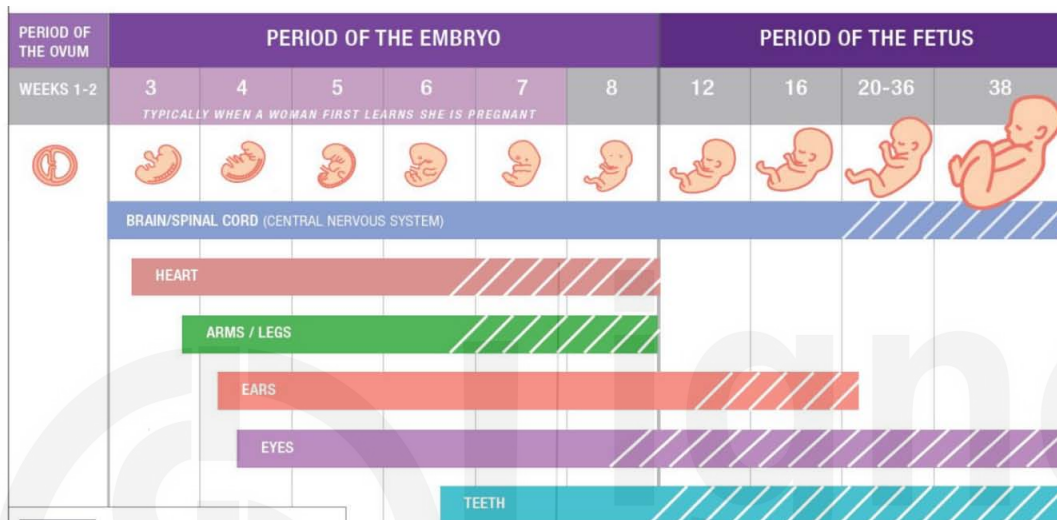


Figure 5.1 Phases of Prenatal

Source: <https://mothertobaby.org/fact-sheets/critical-periods-development/>

The Fetal Period - begins from eight/nine weeks and goes on till birth. Now called a fetus, the baby rapidly continues to grow in size and major organs become differentiated and begin to operate. By the third month, the first trimester gets completed and the baby becomes capable of moving inside the womb and the sex of the baby can also be ascertained. In the second trimester, brain weight increases as neurons begin to form synapses at a rapid pace. Finally, during the third trimester, the fetus becomes viable between 22 to 26 weeks. Brain, heart, kidneys and the respiratory systems continue to develop and the baby achieves more control over bodily movements. During the final two months, the fetus grows longer as well as gains a considerable amount of weight.

Role of Prenatal Environmental Influences

A major concern during prenatal development is to ensure that the fetus is protected from negative environmental influences. Such environmental influences with a potential to damage the fetus are referred to as *teratogens*. There are many possible teratogens which can lead to physical birth defects or the impairment of cognitive and behavioral functioning of the child. It is important to understand that not all damage by teratogens is immediately

visible at birth, some consequences may emerge much later when the child is older.

The common teratogens include prescription and non-prescription drugs, illegal substances, caffeine, tobacco, alcohol, environmental pollution, radiation, and infectious diseases (Brent & Beckman, 1990). Furthermore, many maternal factors such as nutrition (e.g., Preston, Reynolds, & Pearson, 2018), emotional stress (e.g., Dunkel-Schetter & Lobel, 2012), age (e.g., Kingsbury, Plotnikova, & Najman, 2018), and Rh factor incompatibility (e.g., Fasano, 2017) also play a crucial role and need to be monitored. Hence, expectant mothers and their families should remain careful in ensuring that the fetus is protected from negative influences, while making sure that the mother receives optimal prenatal care.

5.3.2 Birth and Infancy (0 - 2 Years)

As the gestation period comes to an end, the mother enters labour as the baby becomes ready to be delivered.

The Birth Process

The process of birth can be divided in three stages: The first stage involves the contractions of the uterus which cause the cervix to dilate enough for the baby to move from the uterus to the birth canal. This is typically the longest part of the process and can last on an average from 12 to 14 hours for the first birth and less for subsequent births. The second stage involves the complete delivery of the baby and usually lasts around 45 to 60 minutes. Finally, labour ends with afterbirth during which the mother delivers the placenta and other membranes. This is the shortest part of the birth process and takes roughly 5 to 10 minutes.

Although the process of delivery is stressful for the baby, the stress hormones released during this time serve an adaptive function as they allow the baby to combat oxygen deprivation and allow them to breathe better. As soon as the baby is delivered, they are weighed and assessed on a number of health indicators such as heart rate, respiratory function, color, muscle tone and reflex irritability. This is usually done via the *Apgar Scale* at one minute after birth and then again at five minutes after birth. The newborn is given a score of 0, 1, or 2 on each of these five parameters, with a total score of 7 or above indicating that the newborn's condition is good. A score between 4 to 6 entails that the baby requires assistance, while a score of 3 or below signals that the baby is in danger (Apgar, 1952).

Methods of Childbirth - There are many potential approaches to childbirth. While delivering the baby in the hospital setting is common across many societies, there are still many cultural variations in birthing practices. For instance, in many societies, such as in many villages in India, the birth process is facilitated by *midwives*. In other contexts, the delivery process may be assisted by a *doula*. Both midwives and doulas allow women to have home births. Studies show that mothers who receive such support for the delivery have better outcomes in terms of less complications, shorter labours and higher Apgar scores for their babies (e.g., Campbell et al., 2007; Gruber,

Cupito, & Dobson, 2013). However, the Janani Suraksha Yojna was launched on April 12, 2005, by the government of India with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among poor pregnant women the Janani Suraksha Yojna was launched.

Furthermore, women may choose from many birthing procedures. They may opt for natural or prepared childbirth, involving a group of techniques which aims to reduce pain by targeting the mother's fear by educating her about the anatomy and the birthing process and teaching her to use breathing and relaxation techniques during delivery. However, in some circumstances, it may not be possible to have a normal delivery; such that the baby may be in breech position or any other complication may arise that threatens the mother's and/or baby's life. In such a scenario, the baby is delivered by making an incision in the mother's abdomen.

Infancy

The developmental period of infancy begins with birth and continues till the first 18 to 24 months of life. Although this developmental phase is one of the shortest, it is still marked with rapid development and the achievement of many milestones across various domains. In the span of these two years, infants develop many competencies physically, cognitively as well as socially. A detailed overview is given below:

Physical Development in Infancy

The following changes mark the trajectory of physical development during infancy. Infants evolve from being totally dependent on their caregivers to becoming stronger, more mobile and independent as they move through this stage.

Body Growth - At birth, most newborns are on an average around 20 inches long and weigh close to 3 kgs, although many variations exist. The newborn's head is generally large as compared to the trunk and the legs, and they do not have enough strength to support their bodies. Growth occurs in two patterns - the *cephalocaudal pattern* influences the direction of growth from top to bottom, and the *proximodistal pattern* is marked by growth starting in the center of the body and then moving onto the extremities. As the baby nears the end of the first year, their body grows 50% greater than their height at birth. By the end of two years, it becomes 75% greater. Similarly, the baby's weight also triples by the first year and increases by 4 times by the end of year two. Both sex and ethnic differences exist in this regard.

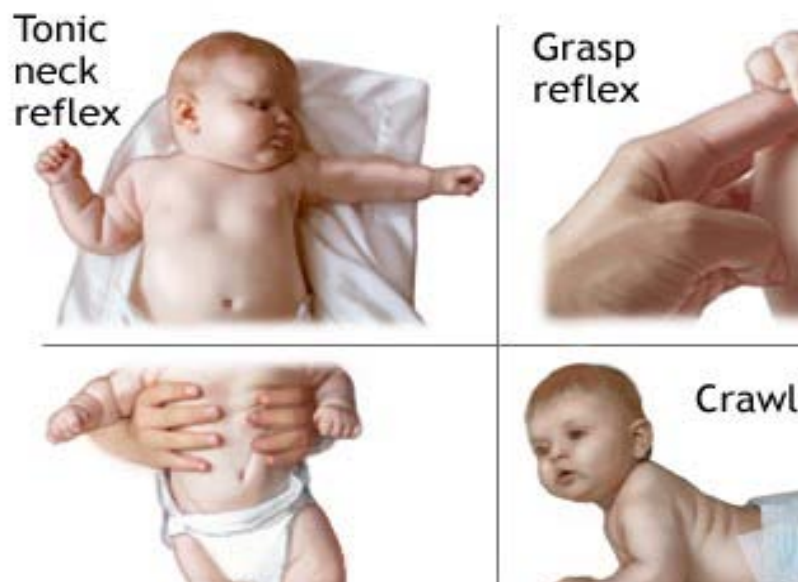
Brain Development - Brain development occurs at a rapid pace during infancy, with exponential increase in neural fibers and synapses (Gilmore et al., 2012). Glial cells which are responsible for myelination multiply rapidly through the second year and contribute to gains in brain weight; whereas neurons which are insufficiently stimulated also experience loss of their synapses (this process is known as *synaptic pruning*).

Development of the Cerebral Cortex - Another major set of changes take place in the cerebral cortex. During the first year, the areas in the cortex which are responsible for hearing, vision, and body movements show considerable activity. The prefrontal cortex i.e., responsible for complex thought also starts functioning more effectively from the age of 2 months. With time, the hemispheres of the cerebral cortex undergo the process of lateralization which allows them to specialize. It is during this time that the brain remains its most plastic and possesses a high ability to adapt to changing experiences.

Advances in Sensory Abilities - At birth, sensory capacities related to smell, taste, touch and sound are already developed, however, vision and the ability to focus are fairly limited. Vision becomes 20/20 by 6 months, and depth perception and recognition of patterns, shapes, faces and color also becomes possible hereon.

Motor Development - As per the dynamic systems model of motor development, motor skills emerge from the interaction between many systems, with many separate factors combining to produce specific responses. The onset of motor development is firmly rooted in the early reflex exhibited by infants. A *reflex* is an automatic response generated against specific forms of stimulation. Right from the beginning, reflexes present the newborn's organized patterns of behavior. Some reflexes have survival value. For instance, the *rooting reflex* is stimulated by stroking the area near the mouth. This helps the child find the mother's nipple in order to be fed. Other reflexes facilitate parent-child interactions and allow the development of more complex skills later (e.g., the *tonic neck reflex* and the *stepping reflex*).

Gradually with time, infants start achieving milestones in motor skills - they first learn to use gross-motor skills involving large muscle activity which supports behaviors such as sitting, crawling, standing and then gradually walking. More finely tuned movements occur as fine-motor skills develop and infants become capable of reaching and grasping, with them developing *palmar grasp* initially and then turning it into the *pincer grasp* by the end of these two years (Santrock, 2019).



Cognitive Development in Infancy

Infants undergo significant improvements in the domain of cognitive development during these two years. Major trends in this domain are explained below.

Piaget's Theory of Cognitive Development - Pioneering work by Swiss theorist Jean Piaget (1964) has highlighted that infant actively constructs their understanding by forming mental representations of the world around them (as schemas). Through the processes of assimilation, accommodation, and organization, (refer Unit 7) children gain more sophisticated cognitive capacities. Piaget proposed a stage-wise model of cognitive development. Out of which, the first stage is the sensorimotor stage which covers the infancy period; Piaget further divided this stage in six substages (explained briefly below).

Table 5.1 Substages under the Sensorimotor Stage of Cognitive Development

Substage	Description
Simple reflexes (birth - 1 month)	Display of simple reflexive behaviors, such as sucking, rooting, etc.
Primary circular reactions (1 - 4 months)	Involves simple motor habits and repeating actions that occurred by chance; limited to the infant's body.
Secondary circular reactions (4 - 8 months)	Repeating interesting actions in the outer world. Infants become more object-oriented.
Coordination of secondary circular reactions (8 - 12 months)	Emergence of goal-directed behavior, better anticipation of events, improved hand-eye coordination. <i>Object permanence</i> appears.
Tertiary circular reactions (12 - 18 months)	Experimentation with new behaviors, improvements in capacity to imitate.
Mental representation (18 - 24 months)	Develop internal imitation of stimuli, become capable of make-believe play and deferred imitation.

Although Piaget's work initiated much-needed research in this domain, many researchers suggested different ideas. Further research has highlighted that many cognitive abilities appear much earlier than Piaget believed. For instance, Baillargeon (2016) found that object permanence appears when infants are as young as 3 to 4 months old. Furthermore, Elizabeth Spelke

(2003) emphasized a core knowledge approach, which suggests that infants are born with innate domain-specific knowledge systems that aid them in making sense of the world. Other researchers have also criticized Piaget's suggestion that cognitive development takes place in a series of stages, instead they believe that cognitive development mainly occurs in a continuous fashion.

Development of Language - Cognitive development in childhood is also accompanied by development of language. Slowly and gradually, infants become capable of effectively communicating with others around them. In this regard, a number of approaches towards language development have been identified.

According to Noam Chomsky's (1957) nativist theory, humans are biologically predisposed to develop language. He suggested that infants are naturally equipped with a language acquisition device (LAD) containing a set of rules which are common to all languages. On the other hand, the interactionist perspective posits that language development is a product of the interaction between people's inner capacities as well as environmental differences. Parents and caregivers also play a crucial role in providing stimulating opportunities and facilitating these processes. Many adults often speak in infant-directed speech which helps the child in learning joint-attention, turn-taking, etc.

Like cognitive development, language development can also be understood in terms of accomplishment of a series of milestones. In the initial days, infants attempt to communicate mainly by *crying*. At two months, infants make cooing and vowel sounds, while *babbling* appears around 6 months. Between 8 to 12 months, infants become capable of joint attention, participate in turn-taking and exhibit gestures. Their first word appears mostly around 12 months (*holophrastic speech*); gradually two-word sentences (also called *telegraphic speech*) become evident by 18 - 24 months.

Social-Emotional Development in Infancy

Apart from physical and cognitive development, infants also experience rapid changes in the ways in which they relate to others, experience and express emotions, and develop a sense of self.

Development of Emotions - While the display of emotions is somewhat limited in the early days after birth, infants soon become dynamic in the way they use emotions. Primary emotions emerge during the first 6 months of life and are considered to have a biological basis; these include emotions such as joy, anger, sadness, fear, surprise, interest and disgust (Lewis, 2007). On the other hand, self-conscious emotions such as embarrassment, pride, shame, empathy, jealousy and guilt emerge halfway through the second year and onwards (Lewis, 2014).

These emotions serve an important communicative function and become the basis of parent-child interactions, since language development has not taken place as of now. In the beginning, smiles and cries are especially important. Different types of cries communicate different biological experiences,

signaling hunger, anger, and pain. Two types of smiles are also easily identifiable in infants: *reflexive smiles* which usually emerge in the first month, and *social smiles* that occur as a reaction to another person and first appear around 2 months of age. Another important expression pertains to the experience of fear. As infants enter the second year, they exhibit more caution in unfamiliar situations. This is especially true when infants come in the vicinity of unfamiliar adults, where they usually experience a fear response known as *stranger anxiety*. Throughout infancy, babies also become increasingly capable of emotional regulation.

Temperament - Temperament can be described as the patterns of reactivity and self-regulation that appear early in life and sets the stage for individual differences among individuals (Rothbart & Bates, 2006). Largely attributable to biological influences, temperamental differences emerge soon after birth and remain fairly consistent as people age. Pioneering work in this area was undertaken by Alexander Chess and Stella Thomas (Thomas & Chess, 1977), who identified three basic types of temperament:

- a) An **easy child** (40% of the sample) generally exhibits a positive mood, quickly establishes regular routines in infancy, and adapts easily to new experiences.
- b) A **difficult child** (10% of the sample) responds negatively, is irregular in daily routines, and is slow to accept new experiences.
- c) A **slow-to-warm-up child** (15% of the sample) is usually inactive, displays a somewhat negative mood, and adjusts slowly to new environments.

Whereas, 35% of the sample did not fit into any of these categories. Further research in this area has highlighted the implications of different temperaments. More recently, Rothbart (2003) has expanded upon the earlier work and posited that three dimensions comprise temperament: (1) emotion, (2) attention, and (3) action. Most commonly, temperament is assessed through interviews and behavioral ratings elicited from parents, teachers, pediatricians and other people familiar with the child.

The Emergence of Self and Personality - With the development of emotions and temperament, the origins of personality also take shape. The term personality refers to the relatively permanent ways of thinking, feeling and behaving that characterizes an individual. According to Erik Erikson (1968), the development of personality occurs vis-a-vis the various changes that take place as the individual moves from one stage of life to another. During infancy, the conflict surrounding the development of trust plays a crucial role. In this stage, infants develop a sense of trust if they receive warm and consistent caregiving. If not, then they are likely to develop a sense of mistrust with potential negative outcomes as the child ages. Furthermore, Erikson believed that in the second year of life, a need for independence is important. As their motor and physical abilities expand, children develop autonomy and pride for their evolving capacities. However, harsh, punitive parenting may give rise to feelings of shame and doubt. It is also during this time that a sense of self begins to emerge in the infant. Around 18 months of

age, infants start recognizing themselves in the mirror and as they enter the 2nd and 3rd year of life, their language reflects an increasing awareness of themselves and emotions.

Social Understanding - Research highlights that human possess an intrinsic tendency to engage in social interactions. Early on, infants depict a capacity for joint attention and face-to-face play with caregivers. As they start exploring their surroundings on their own during the second year, social referencing becomes visible. Another major social aspect of development pertains to the formation of attachment during infancy. In this context, research by John Bowlby (1969) and Mary Ainsworth & Colleagues (1978) is especially critical. Research shows that attuned caregiving is largely responsible for the development of secure attachment.

Check Your Progress 2

- 1) Name the phases of prenatal development.

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- 2) List the various methods of childbirth.

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- 3) Describe the various types of temperaments.

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5.3.3 Childhood (2 - 11 Years)

The phase of childhood begins around the age of two years with the conclusion of the infancy period. It is further divided in two phases - *early childhood* (between the ages of 2 to 6 years) and *middle childhood* (between 6 to 11 years of age). The period of early childhood is also known as the “*play years*” or the “*preschool period*”, while middle childhood is usually referred to as “*school years*” in most societies; both stages involve many significant changes across the different domains of development.

Physical Development in Childhood

Changes in the Body and Brain - Children experience rapid physical changes during childhood. Although they may resemble infants during the beginning of early childhood, they soon grow in height and weight and tend to lose their baby fat as they age. Their bodies become more muscular and leaner, with growth being more rapid during early childhood and getting slightly slower during middle childhood. Many changes in the brain also happen simultaneously due to myelination and the frontal-cortical areas also

undergo rapid transformations which improves language development and executive function. Changes in the brain facilitate many competencies such as improved attention, reasoning, alertness, memory, problem-solving and information processing (Santrock, 2019).

Due to increased myelination of the central nervous system, children's gross motor skills and fine motor skills continue to improve substantially. By 3 to 4 years, children actively engage in running, jumping, throwing, etc. Between the ages of 5 to 6 years, they display greater physical prowess. Finally, close to the age of 9 - 11, a growth spurt may occur for many children as they approach adolescence.

Health, Exercise and Nutrition - Although for most children, childhood mostly involves an optimal health status, there are several factors which may impact the same. For example, unhealthy dietary intake is a primary cause of most health risks during this stage. The problem of obesity is rising at a fast pace and is impacted by both heredity and environmental factors. Specifically, unhealthy eating habits, lack of sleep, and lack of exercise play a major role. Moreover, a diet devoid of essential components such as protein, vitamins, and minerals, is associated with stunted physical growth, attention and memory difficulties, as well as behavioral problems. Malnourishment experienced by children living in deprived contexts also pose a major concern. Research has consistently shown a positive association between exercise and children's health status. In this context, children's play activities are important to consider. In recent years, children's leisure activities have changed drastically. They now spend more time using computers, video-games and television which negatively impacts their level of physical activity. Parents can play a crucial role in encouraging their children to be physically active.

Cognitive Development in Childhood

Various prominent theorists have pointed out the ways in which cognitive development takes place during childhood. These are explained below:

Theories of Cognitive Development - During the preschool years, the child is considered to be in Piaget's preoperational stage of development. In this stage children exhibit *egocentric thinking*, *make-belief play* and are capable of only focusing on one aspect of an object (i.e., *centration*). Many aspects of cognition such as their attention span, symbolic thinking, memory and language also show improvement. (refer Unit 7)

By the time children reach the age of 7, they enter the concrete operational stage of cognitive development and continue to be in it until they reach adolescence. Piaget employed a number of concrete tasks to assess children's cognitive improvements (see Figure 5.3). At this point in their development, children can now engage in concrete operations and develop an understanding of *conservation*, *seriation*, *decentration* and *transitivity*. Although Piaget's work is considered as exemplary in this area, many scholars have suggested that many of these abilities emerge even earlier than

Piaget suggested and in a large part also depend on the experiences of a child (see Morrison, 2018).

More recently, researchers have shifted focus to other aspects of cognition, such as children's speed and accuracy of information processing, use of problem-solving strategies, capacity of working memory and long-term memory, etc (Diamond & Lee, 2011). During middle childhood, as the prefrontal cortex continues to develop, children undergo a remarkable improvement in executive functioning - which facilitate their performance in multiple areas (and very importantly, in academic and school-related work).

Tests of Various Types of Conservation		
Type of Conservation	Initial Presentation	Transform
Volume	Two equal glasses of liquid. 	Pour one into narrower gl 
Number	Two equal lines of checkers. 	Increase spa checkers in 
Matter	Two equal balls of clay. 	Squeeze one a long, thin 

Figure 5.3 Types of Conservation Tasks

Source: <https://www.simplypsychology.org/concrete-operational.html>

Another theory which focuses on cognitive development in childhood is Vygotsky's theory (1962). According to Vygotsky, children construct knowledge via social interaction and make use of language (as private speech and eventually inner speech) to aid problem-solving. Vygotsky introduced the concept of a *zone of proximal development* which includes all those tasks that are difficult for the child to understand on their own but they can be learnt when given assistance by older people. He also emphasized on the role of scaffolding to improve a child's performance.

Development of Language - In terms of language development, during early childhood children show greater sensitivity to spoken language, they learn how to apply the rules of syntax and experience dramatic increases in their vocabulary (Bryant, 2012; Clarke, 2017). In middle childhood, these competencies become further refined and other linguistic expressions such as reading and writing become expanded.

Social-Emotional Development in Childhood

Children experience many strides in the development of self, emotions, personality and many other related facets under this domain. According to Erikson (1950), during early childhood, children have to deal with the psychological conflict pertaining to initiative and guilt. As their social world expands, they now engage in new tasks and embark upon new relationships (such as with their peers). This stage also corresponds with the phallic stage under Freud's psychoanalytic theory - and thus becomes crucial for the development of a moral code of conduct. As per Erikson, pressures during this phase can induce a feeling of guilt which can manifest in various ways. This is followed by the stage of industry versus inferiority in middle childhood, which is resolved as the child learns to master increasing tasks and skills. As this is the time when children become immersed in the school setting, it brings them numerous opportunities for developing certain competencies.

The Self-Concept - During the preschool years, children also begin to develop a self-concept that allows them to define themselves and recognize themselves as distinct from other individuals. This is easily seen among 3- to 5-year-olds as they start to identify themselves in terms of certain observable characteristics. Self-esteem also emerges at this time and becomes more differentiated in middle childhood.

Emotional Development - During this time, children also show a rapid rise in using language which expresses their increasing understanding of emotions and attitudes. By age 3 to 4 years, children also learn to engage in emotional self-regulation and start experiencing self-conscious emotions. Expression of empathy is also seen during this stage. Around ages to 6 - 7 years, children start recognizing the complexity surrounding emotions and their expression and learn to identify contradictory emotional cues. Between the ages of 9 to 11, they also learn many problem-focused and emotion-focused coping strategies for regulating emotions.

Family and Peer Relations - Relationships with family exert tremendous influences on children's experiences. Parents may adopt different child-rearing practices (namely, authoritarian, authoritative, permissive and uninvolved), each including a different level of involvement, control and autonomy allowed to the child. Research shows that as compared to the other styles, the authoritative style promotes better outcomes for children's development. As children go through middle and late childhood, they spend less time with their parents but co-regulation increases. Research also shows the benefits of possessing a secure attachment between children and their parents; the role of the mother especially has received considerable attention.

In the Indian context, Sudhir Kakar (1978) in his book - *The Inner World: A Psychoanalytic Study of Childhood and Society in India* described similar conflicts. Kakar pointed out the impact of close attachments that Indian children usually experience with their mothers, often coupled with an aloof stance maintained by the father. Such patterns of interactions especially between Indian boys and mothers lead to the internalization of an ambivalent

representation of the mother. Kakar also posited that such prolonged attachment with the mother may lead to the development of a weak ego impacting the child's relationships with other authority figures (Bhatia, 2006). Describing the oppressive structures of patriarchy, Kakar also posited that Indian mothers often try to satisfy their own unmet needs vis-a-vis their children. Such a scenario may lead to conflicts between the two and may influence the son's psychosexual development.

A big part of social relationships in early childhood pertains to increasing interactions with peers who pose as important agents of socialization and information. *Cooperative play* activities also become increasingly prominent. As children age, firmer friendships evolve and become based on mutual trust. Most children become immersed in particular peer groups.

Moral Development - As stated previously, during this stage children also develop a moral code of conduct. While Freud recognized the development of the superego as important for this, Piaget analyzed moral reasoning and asserted that between the ages of 4 - 7, children gauge the morality of a behavior based on its consequences. Other behavioral and social-cognitive theorists emphasize the role of imitation, reinforcement and punishment as important determinants of moral development. However, by middle childhood, children learn to internalize notions of morality and develop a more nuanced knowledge of how intentions and context influences people's behavior.

5.3.4 Adolescence (11 - 18 Years)

The stage of adolescence is said to be a transition period between childhood and adulthood. As the period of childhood comes to an end, it brings with it a flux of changes. These changes range from biological (signaling the onset of puberty), cognitive (e.g., improvements in abstract thought) and relational (as adolescents' relationships with parents, peers and other people in their lives transform). Not only this, adolescents also experience a marked shift in the way they see themselves.

Physical Development in Adolescence

Bodily Changes and Sexual Maturation - The beginning of adolescence is marked by the onset of puberty, triggering rapid physical changes that result in body growth and sexual maturation. During this time, boys and girls experience many changes in primary and secondary sexual characteristics - some of these changes are common for both sexes, while others are not. Common changes include growth of height (the growth spurt for girls occurs usually around age 10, while for boys around age 12), changes in weight, appearance of public hair and armpit hair, etc. Furthermore, males also experience voice changes, increase in penis and testicle size, and *spermarche*. On the other hand, other specific changes for females include menarche, enlargement of breasts, and widening of the hips.

Adolescents also experience a surge in hormones. In boys, testosterone is involved in the many physical changes that take place, while in girls, estradiol plays a crucial role. Due to these various changes, it is common for

adolescents to go through heightened awareness of their body image, especially during early adolescence (Hoffman & Warschburger, 2017). Developing body image issues are more prevalent among girls, in part due to societal emphasis on women's appearance as well as certain kinds of media portrayals of women's bodies.

Changes in the Brain - Another important aspect of physical changes during adolescence pertain to the changes in the structure of the brain. Research shows that the corpus callosum thickens in adolescence, improving adolescents' ability to process information. The prefrontal cortex also undergoes several advances, although this process is not usually completed by the time people are in their mid-twenties (Cohen & Casey, 2017). Also, the levels of neurotransmitters also change during this period. For example, the neurotransmitter dopamine increases in both the prefrontal cortex and the limbic system during adolescence (Cohen & Casey, 2017), and is linked with reward seeking during adolescence (Dubol et al., 2018).

It is important to note that these physical changes are influenced by many factors such as heredity, exercise, nutrition, and overall family experiences of the adolescents. Adolescents are also more prone to certain health issues such as heightened risk of eating disorders and unsafe sexual practices.

Cognitive Development in Adolescence

The developmental stage of adolescence corresponds to Piaget's final stage of cognitive development i.e., the *formal operational stage*. During this stage, thinking becomes more abstract and adolescents no longer need concrete objects to aid their thinking processes. They now become capable of *hypothetico-deductive reasoning*, which means they can solve problems in more systematic ways by forming testable hypotheses and testing them out in a logical fashion. They can now also employ propositional thought. Furthermore, their exposure to academic contexts also helps improve their verbal, mathematical as well as spatial skills.

These developments are also accompanied by the emergence of adolescent egocentrism, which is the heightened self-consciousness experienced by adolescents. According to David Elkind (1976), adolescent egocentrism comprises two components - *imaginary audience* and *personal fable*. This may also give adolescents a false perception of being invulnerable. Idealistic thought also increases during the teenage years.

Additionally, the information-processing theorists believe that a number of mechanisms underlie cognitive gains in adolescence, such as increased working memory, more selective and flexible attention, thinking critically, better planning and strategizing, increased knowledge, enhanced metacognition, and improved cognitive self-regulation.

Social-Emotional Development in Adolescence

Self-Esteem and Identity - As adolescents' experiences diversify, so does their understanding of themselves. Their self-concept becomes organized and self-esteem becomes differentiated. For many adolescents, onset of pubertal

changes may lower their self-esteem, however it tends to rise during mid-to-late adolescence as they advance in school, form close-connected peer relationships and get comfortable with their physical appearance.

The key task during this stage is to form an identity (Erikson, 1968). According to Erikson, adolescents often experience an *identity crisis* — a period of turmoil as they try to figure out who they are and what they stand for. He called it the psychological conflict of adolescence identity versus role confusion and believed that its successful resolution is important for success during adulthood.

The process of identity development was also studied by James Marcia (1980). He identified two key criteria for understanding identity development - *exploration* and *commitment*. Its various combinations yield four identity statuses:

- a) Identity achievement - committing to values and goals after a period of exploration;
- b) Identity moratorium - exploration but without reaching commitment;
- c) Identity foreclosure - making a commitment without exploration; and
- d) Identity diffusion - lacking both exploration and commitment.

Marcia believed that in this way development of identity can follow many paths. Some remain stable, while others do not. However, they pose diverse consequences for adolescents' psychological well-being.

Relationship with Family - Among the many changes faced by young people during this stage, their relationship with their family also takes a different form. As adolescents become more capable and autonomous, their parents face newer sets of challenges. It is important to parents to monitor their children at this time as they are especially vulnerable, but without quenching their quest for autonomy. Most adolescents now begin to rely more on their own judgment, rather than depend on their parents. Effective parenting in this context includes a balanced mix of both connection and separation. Furthermore, it becomes crucial to communicate to them that they are trusted by the parents; such displays of confidence by the parents enable more self-disclosure by the children, thereby contributing positively to the parent-child relationship. This is associated with many positive implications - high self-reliance, positive self-esteem, improved academic performance, and adolescent well-being (see Eisenberg et al., 2005; Lippold et al., 2014; Wang, Pomerantz, & Chen, 2007).

However, parent-adolescent conflict also increases during this stage. For most families, this conflict may be mild-to-moderate and usually short-lived, with even potential benefits to the adolescents as they become their own person. But in case of high unresolved parent-child conflict, adolescents may experience many negative outcomes.

Furthermore, like their relationship with the parents, adolescents' relationships with their siblings also change. As they become more involved in social interactions and activities outside the family, they may reduce

interactions and find less in common with their siblings. Nevertheless, the attachment with siblings remains strong for most people.

Role of Peers - Peers provide an important context for development during this stage. As compared to the family, for many adolescents their peers take on a more prominent role in their lives. Interactions with peers are marked with more intimacy and self-disclosure, and young people take their friends' opinions more seriously than other influences around them. Peers become an important source of social comparison and contribute to the adolescent's quest for identity. Close friendships offer many beneficial outcomes, such as enhanced perspective-taking, promotion of empathy and prosocial behavior, school-adjustment, higher achievement motivation, and better social adjustment. However, for many adolescents, the need to fit-in becomes more salient and with that they feel an increase in peer pressure and the need to conform.

For most adolescents, an interest in dating and sexual exploration also emerges during this time. Early onset of dating and sexual activity is linked with poor outcomes. However, the cultural context plays a crucial role in this regard.

5.3.5 Adulthood (18 years and beyond)

The transition from adolescence to adulthood is known as *emerging adulthood* and covers the ages between 18 to 25 years (Arnett, 2000). Studies show that this period is marked by experimentation and exploration as young people figure out their notions of love, work and identity. Following this period, people are considered as having reached adulthood. Most developmental psychologists divide adulthood in three subphases - *young adulthood* (20 - 40 years of age), *middle adulthood* (40 - 65 years) and *late adulthood* (65 years and beyond).

Physical Development in Adulthood

For the majority of the population, their young adulthood signifies a peak in their physical capabilities, especially during the first half of this period. However, in the early thirties a decline in physical abilities becomes noticeable. As the individual ages, many systems such as the immune system, respiratory system, cardiovascular capacity and metabolic rate begin to slow down. During the 30s to 40s, women's reproductive ability also declines.

Physical changes become especially noticeable as a person enters middle adulthood. Senses such as vision and hearing decline, strength starts deteriorating, and weight gain may take place. A major physiological change experienced by women during middle adulthood is the cessation of menstruation i.e., menopause. Some Indian studies highlight that women embrace menopause as it liberates them from pregnancy and many social taboos that surround it (Indira, 1980; Prakash, 1989). Men's reproductive systems also change.

By the time people reach late adulthood, they start experiencing even more physical difficulties. People experience a recession in their height, women

become especially prone to osteoporosis. Senses become poorer and reaction time for most tasks slows down. Chronic diseases such as heart diseases and diabetes may prove to be especially difficult during this time and concerns pertaining to mental health, such as depression and dementia may also occur.

A study by Prakash, Choudhary & Singh (2004) reported a prevalence of ophthalmic problems of 70% with cataract (44%) and refractory error (24.71%) among the elderly. Respiratory diseases were also found in 36 percent of the participants. Many factors are responsible for these changes, namely, one's genetic predisposition, life-style, nutrition, access to healthcare, and the natural process of aging, etc.

Cognitive Development in Adulthood

With the onset of adulthood and the accompanying life changes, people's experiences expand leading to many positive cognitive consequences. Young adults become more creative, flexible and pragmatic in their thinking, and develop more nuanced and complex problem-solving abilities. During this time, people also settle on their career and vocational choices, thereby leading to even further development of domain-specific abilities. As the individual reaches middle adulthood, their crystallized intelligence (i.e., accumulated knowledge) continues to rise, but fluid intelligence (abstract reasoning) shows a decline (Horn & Donaldson, 1980). Furthermore, aspects of executive function (such as working memory, focusing attention, speed of information processing, etc.) also show deterioration but may be compensated by people's acquired experience.

By the time the individual enters late adulthood, further decline in memory occurs, especially in explicit memory. The elderly person's capacity for language production also slows down as well as their capacity for hypothetical problem solving, although they experience considerable gains in wisdom. Finally, if enough practice and training is employed then existing levels of cognitive functioning can be maintained.

Social-Emotional Development in Adulthood

With the onset of young adulthood, people enter Erikson's stage of intimacy versus isolation. The major task during this stage is to form a close relationship with a partner; Erikson posited that failing to do so may lead to the negative outcome of loneliness and self-absorption. Another important feature of this stage is for the individual to arrive at a stable identity and become independent. Elaborating on Kakar's work (as previously discussed in the section on childhood), he emphasized that Indian children's experiences with their parents often lead to become dependent on authority figures' guidance and expect emotional nurturance even in adulthood (Bhatia, 2006). In most post-industrial societies, many individuals are still invested in gaining an education; during this time, people leave home and live independently and invest heavily in their careers. People gradually start looking for more stable romantic relationships, which often turn into cohabitation, marriage, as well as parenthood. By the time people are in their

40s, they are often invested in their filial, occupational and community commitments.

In middle adulthood, people become interested in generativity. According to Erikson, the opposite outcome of this involves experiencing stagnation. People experience greater autonomy, self-acceptance as well as their capacity to deal with stress gets better. Middle-aged individuals also often get tasked with the dual responsibility of caring for their children as well as their own aging parents.

Finally, in late adulthood, people enter Erikson's last stage of psychosocial development i.e., ego integrity versus despair - which involves coming to terms with one's life. The experience of integrity is dependent on feeling satisfied with one's achievements, whereas despair occurs when people feel that they have too little time to experience integrity. This phase of life is also characterized by many social changes. For instance, people retire, may experience the loss of their spouse, see a decline in their social support networks, etc. While many people may still seek personal growth by exploring new possibilities, others may prefer solace in spirituality and faith.

In the Indian context, the area of aging did not receive much focus earlier, however it has slowly picked up over the last couple of decades. In this context, the works of P.V. Ramamurti and D. Jamuna are prominent. Looking at the later years of life, Ramamurti & Jamuna (1993) found that satisfaction with one's life and current state is essential for experiencing happy aging.

In a study of 250 aged individuals from Madras, Ramamurti (1970) identified that people experience the first decline in their life-satisfaction during their early 50s due to their changing physical and psychological status, and later again see a fall in the same as they enter their 60s (most likely due to retirement). Research shows that for most middle aged and older adults, the level of life satisfaction is dependent on factors such as health, social support and socioeconomic status (Paliwal & Mathur, 2007). Prakash (1998) indicated changing health status as having a huge impact on life satisfaction among the elderly population in both urban and rural Indian settings. Mental health concerns may also emerge during this time, with depression appearing to be particularly common among women as compared to men (Prakash, Choudhary & Singh, 2004).

Chadha & Nagpal (1991) highlighted ample support for a positive association life satisfaction and having a strong social support network. In their work, they compared institutionalized and non-institutionalized elderly and found that the former's social support networks were significantly smaller than the latter. Thus, their perceived life satisfaction also appeared to be comparatively lower. In this context, the shift towards modernization and urbanization and the resultant weakening of the joint family system also influences the status of older adults and the kind of care available to them (Jamuna, 1997; Ramamurti & Jamuna, 1991).

Focusing on support systems, Jamuna (1990) also attempted to identify elderly parents' preferences regarding which of their children they would

want to live with. Participants reported closer attachment to their daughters than sons and expected better care from them. In fact, in a study by Jamuna, Lalitha, & Ramamurti (2003), 81% participants preferred living alone or to stay with daughters rather than sons. Another important factor to consider here is the relationship between the mother-in-law and daughter-in-law. Jamuna (1991, 1995, 1999) and Ramamurti et al., (1992) stressed the treatment meted by the mother-in-law to her daughter-in-law during the early years will influence the reciprocity and care shown by the latter as the older woman ages. In a similar study, looking at the status of the older adults in 'pay and stay' homes in multiple cities in India, Kalavar & Jamuna (2008) interviewed 150 seniors and discovered strained intergenerational relationships and childlessness as main reasons for living away from home.

Furthermore, Jamuna (1984) and Ramamurti (1989) stressed the importance of security that people experience due to having enough money. According to them, life satisfaction is in a large part also impacted by one's socio-economic status. Interestingly, their work also shed light on certain notions derived from Indian philosophy. For instance, Ramamurti, Jamuna and colleagues (1993) stressed that belief in karma philosophy is ingrained in Indian culture and poses a source of comfort for many individuals.

Check Your Progress 3

- 1) What are the different identity statuses as defined by James Marcia?
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- 2) Name the eight stages under Erikson's theory of psychosocial development.
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- 3) Briefly describe the socio-emotional changes that take place during adulthood.
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5.4 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- Humans go through a plethora of changes during the course of their lifetime across multiple domains of development i.e., physical, cognitive

and socio-emotional. The scientific approach for studying these changes is referred to as lifespan development.

- As per the lifespan perspective, development is life-long, multidimensional, multidirectional, plastic and effected by contextual forces.
- The sequence of development is divided in terms of five separate stages, namely, the prenatal period, birth and infancy, childhood, adolescence, and adulthood. Each period sees changes in the three major domains mentioned above.
- The prenatal period begins with conception and goes on till roughly 9 months. It is divided over three phases - the germinal, embryonic and fetal period – over the course of which a fully formed baby is created. However, it is important to monitor the impact of environmental forces during this period.
- As the gestation period ends, the mother experiences contractions in her uterus and the birth process is initiated. Since the beginning of the labor till the baby is delivered can take many hours. Many methods of childbirth can be used depending on the preferences of the parents and the contingencies surrounding the pregnancy.
- The first and the shortest stage of development i.e., infancy starts with birth and goes on till the 2 years of age. In the span of these two years, infants develop many competencies physically (e.g., body growth, brain development, development of the cerebral cortex, advances in sensory abilities and motor development), cognitively (e.g., moving from performing simple reflexive behaviors to becoming capable of internal representation of stimuli, object permanence, make-belief play and deferred imitation) as well as socially (e.g., exhibits emotional experience, temporary, development of self and personality and the onset of social understanding).
- The phase of childhood begins around the age of two years and is divided in two phases - early childhood (between the ages of 2 to 6 years) and middle childhood (between 6 to 11 years of age). During this time, children experience rapid physical changes. Cognitively, they reach the preoperational stage to the concrete operational stage of development. Many strides in language become possible due to academic exposure. Finally, they experience the emergence of self, emotional development, notions of morality and changes in family and peer relations.
- During the next stage of adolescence i.e., the transition period between childhood and adulthood, youngsters experience further changes. These changes range from biological (signaling the onset of puberty), cognitive (e.g., improvements in abstract thought) and relational (as adolescents' relationships with parents, peers and other people in their lives transform). Not only this, adolescents also experience a marked shift in the way they see themselves.

- Finally, in the last stage of adulthood (from the age of 18 onwards), people move from - young adulthood (20 - 40 years of age), middle adulthood (40 - 65 years) to late adulthood (65 years to death). During this time, people first experience a surge in most domains during the phase of early adulthood. However, from middle adulthood onwards, a decline in most domains occurs as a natural part of development.

5.5 KEY WORDS

Lifespan Development	A scientific and interdisciplinary approach towards understanding the patterns of growth, change and constancy that govern human development.
Domains of Development	Specific areas which undergo growth and change throughout the course of the lifespan.
Teratogens	Environmental influences with a potential to damage the fetus.
Infancy	The developmental period beginning with birth and continuing till the first 18 to 24 months of life.
Childhood	The phase of childhood begins around the age of two years with the conclusion of the infancy period. It is further divided in two phases – early childhood (between the ages of 2 to 6 years) and middle childhood (between 6 to 11 years of age).
Adolescence	The transition period between childhood and adulthood, starting around the age of 11 till young adulthood years.
Adulthood	A period in life-span development in which individuals are said to attain maturity. It comprises three phases: young adulthood (20 - 40 years of age), middle adulthood (40 - 65 years) to late adulthood (65 years to death).

5.6 REVIEW QUESTIONS

1. Elucidate the various characteristics of lifespan development.
2. Describe the major teratogens that can damage the fetus.
3. Describe the milestones in physical development as experienced by infants.
4. Explain the changes related to socio-emotional development during childhood.
5. Explain the different conflicts faced by an individual in Erikson's psychosocial stages of development.
6. What are the major cognitive changes experienced during adolescence?
7. Explain the changing nature of cognitive development during adulthood.

8. Citing research evidence, explain the experiences of the older adults in the Indian context.

5.7 REFERENCES AND FURTHER READING

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.

Apgar, V. (1952). A proposal for a new method of evaluation of the newborn. *Classic Papers in Critical Care*, 32(449), 97.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, 55(5), 469.

Baillargeon, R. (2016). Cognitive development in infancy. *Annual Review of Psychology* (Vol. 67). Palo Alto, CA: Annual Reviews.

Baltes, P.B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, 23, 611–626.

Baltes, P.B. (2003). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation for developmental theory. In U.M. Staudinger & U. Lindenberger (Eds.), *Understanding human development*. Boston: Kluwer

Baltes, P.B., Lindenberger, U., & Staudinger, U. (2006). Life-span theory in developmental psychology. In W. Damon & R. Lerner (Eds.), *Handbook of child psychology* (6th ed.), New York: Wiley

Bhatia, S. (2006). Reinterpreting the inner self in global India: 'Malevolent mothers', 'distant fathers' and the development of children's identity. *Culture & Psychology*, 12(3), 378-392.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.

Brent, R. L., & Beckman, D. A. (1990). Environmental teratogens. *Bulletin of the New York Academy of Medicine*, 66(2), 123.

Bryant, J.B. (2012). Pragmatic development. In E.L. Bavin (Ed.), *Cambridge Handbook of Child language*. New York: Cambridge University Press.

Campbell, D. A., Scott, K. D., Klaus, M. H., & Falk, M. (2007). Female relatives or friends

trained as labor doulas: Outcomes at 6 to 8 weeks postpartum. *Birth*, 34, 220–227.

Chadha, N.K. and Nagpal, N. (1991). Social Support and Life satisfaction among the aged. *Indian Journal of Psychometry and Education*, 22(2), 91–100.

Chomsky, N. (1957). *Syntactic structures*. The Hague: Mouton.

Clark, E.V. (2017). *Language in children*. New York: Psychology Press.

- Cohen, A.O., & Casey, B.J. (2017). The neurobiology of adolescent self-control. In T. Egner (Ed.), *Wiley handbook of cognitive control*. New York: Wiley.
- Daniels, K., Toth, J., & Jacoby, J. (2006). The aging of executive functions. In E. Bialystok & F. I. M Craik (Eds.), *Lifespan cognition: Mechanisms of change* (pp. 96 - 111). New York: Oxford University Press.
- Diamond, A., & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, 333, 959–964.
- Dubol, M., Trichard, C., Leroy, C., Sandu, A. L., Rahim, M., Granger, B., ... & Artiges, E. (2018). Dopamine transporter and reward anticipation in a dimensional perspective: a multimodal brain imaging study. *Neuropsychopharmacology*, 43(4), 820-827.
- Dunkel-Shetter, C., & Lobel, M. (2012). Pregnancy and birth: A multilevel analysis of stress and birth weight. In T. A. Revenson, A. Baum, & J. Singer (Eds.), *Handbook of health psychology* (2nd ed., pp. 431–463). London: Psychology Press.
- Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development*, 76, 1055–1071.
- Erikson, E. H. (1950). *Childhood and society*. New York: Norton.
- Erikson, E. H. (1968). *Identity, youth, and crisis*. New York: Norton.
- Hoffman, S., & Warschburger, P. (2017). Weight, shape, and muscularity concerns in male and female adolescents: Predictors of change and influences on eating disorders. *International Journal of Eating Disorders*, 50, 139–147.
- Fasano, R.M. (2017). Hemolytic disease of the fetus and newborn in the molecular era. *Seminars in Fetal and Neonatal Medicine*, 21, 28–34.
- Feldman, R. S. (2015). *Discovering the Life Span* (3rd ed.). Pearson Education.
- Gilmore, J. H., Shi, F., Woolson, S. L., Knickmeyer, R. C., Short, S. J., Lin, W., et al. (2012). Longitudinal development of cortical and subcortical gray matter from birth to 2 years. *Cerebral Cortex*, 22, 2478–2485.
- Gruber, K.J., Cupito, S.H., & Dobson, C.F. (2013). Impact of doulas on healthy birth outcomes. *Journal of Perinatal Education*, 22, 49–58.
- Indira, S. N. (1980). *Midlife crisis: A Psycho social study of Menopause*. Unpublished Doctoral dissertation submitted to Bangalore university.
- Horn, J.L., & Donaldson, G. (1980). Cognitive development II: Adulthood development of human abilities. In O.G. Brim & J. Kagan (Eds.), *Constancy and change in human development*. Cambridge, MA: Harvard University Press.
- Jamuna D. (1984). A study of some factors related to adjustment of middle aged and older women, *Doctoral Dissertation*, S.V. University, Tirupati.

- Jamuna, D. (1990). Caring for elderly women: Perspectives of the turn of the century. *Journal of the Indian Academy of Applied Psychology*, 16(2), 17-22.
- Jamuna, D. (1991). Perception of the problems of the elderly in three generational households. *Journal of Psychological Researches*, 35, 99-103.
- Jamuna, D. (1995). Psychosocial Correlates of Quality Caregiving of the elderly in an Indian context. *Tirupati: Project Report, Center for Research on Aging, Dept. of Psychology, SV University*.
- Jamuna, D. (1997). Public perception on Caregiving—Then (1984) and Now (1994): An evaluation. *Chakravarti (Ed.), Life in Twilight Years. Calcutta: Kwaliti Book Company*, 365-374.
- Jamuna, D. (1999). Elder care in India. Conflicting tradition and modernization. In *Aging societies in a new millennium. Proceedings of 3rd international conference of IAHS* (pp. 33-35).
- Jamuna, D., Lalitha, K., & Ramamurti, P.V. (2003). Future of Elder Care in India: Hope or Despair Some Alternative Care Models. *Indian Journal of Gerontology*, 17, 147-156.
- Kakar, S. (1978). *The inner world: A psychoanalytic study of childhood and society in India*. Delhi, India: Oxford University Press.
- Kalavar, J. M., & Jamuna, D. (2008). Interpersonal relationships of elderly in selected old age homes in urban India. *Interpersona: An International Journal on Personal Relationships*, 2(2), 193-215.
- Kingsbury, A.M., Plotnikova, M., & Najman, J.M. (2018). Commonly occurring adverse birth outcomes and maternal depression: A longitudinal study. *Public Health*, 155, 45–54.
- Lewis, M. (2007). Early emotional development. In A. Slater & M. Lewis (Eds.), *Introduction to infant development*. Malden, MA: Blackwell
- Lewis, M. (2014). *The rise of consciousness and the development of emotional life*. New York: Guilford.
- Lippold, M. A., Greenberg, M. T., Graham, J. W., & Feinberg, M. E. (2014). Unpacking the effect of parental monitoring on early adolescent problem behavior: Mediation by parental knowledge and moderation by parent–youth warmth. *Journal of Family Issues*, 35, 1800–1823.
- Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 159–187). New York: Wiley.
- Morrison, G.S. (2018). *Early childhood education today* (14th ed.). Upper Saddle River, NJ: Pearson.
- Paliwal, M., & Mathur, M. (2007). Life Satisfaction and Its Correlates Among Aging Adults Human Development. *Indian Journal of Gerontology*, 21(4), 454-462.
- Piaget, J. (1964). Cognitive development in children: Piaget. *Journal of research in science teaching*, 2(3), 176-186.
- Prakash, I. J. (1989). *Life cycle changes in aging Indian women*. Monograph submitted to HelpAge India.

- Prakash, I. J. (1998). Maintenance of competence in daily living and well-being of elderly. *Research and Development Journal*, 4(2&3), 26-32.
- Prakash, R., Choudhary, S. K., & Singh, U. S. (2004). A study of morbidity pattern among geriatric population in an urban area of Udaipur Rajasthan. *Indian Journal of community medicine*, 29(1), 35
- Preston, J. D., Reynolds, L. J., & Pearson, K. J. (2018). Developmental origins of health span and life span: a mini-review. *Gerontology*, 64(3), 237-245.
- Ramamurti, P. V. (1970). Life Satisfaction in the Older Years. *Indian Journal of Gerontology*, 2(3), 4.
- Ramamurthi, P.V. (1989). The status, psychological, adjustment and mental health of middle aged and older widows. *Project Report Submitted to ICSSR*, New Delhi.
- Ramamurti, P.V. & Jamuna, D. (1991). Social Supports Inventory for the Elderly. *Journal of Psychological Researches*, 36(2), 133-136.
- Ramamurti, P. V., & Jamuna, D. (1993). Some predictors of satisfaction with present life in an Indian sample. *Indian Journal of Gerontology*, 7(3&4), 96-103.
- Ramamurti, P. V., Jamuna, D., Palmore, E. B., Whittington, F., & Kunkel, S. (1993).
- Development and Research on ageing in India. *Development and research on ageing. An International Handbook*. West Port: Greenwood Press.
- Ramamurti, P. V., Jamuna, D., & Reddy, L. K. (1992). Psychological aspects of caregiving and disability among the elderly in India. *The Elderly Population in Developed and Developing World: Policies, Problems and Perspectives*. New Delhi: DK Publishers, 471-482.
- Rothbart, M. K. (2003). Temperament and the pursuit of an integrated developmental psychology. *Merrill-Palmer Quarterly*, 50, 492–505
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In N. Eisenberg (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 99–166). Hoboken, NJ: Wiley.
- Santrock, J. W. (2019). *Life-Span Development* (17th ed.). New York: McGraw-Hill Education.
- Spelke, E.S. (2003). Developing knowledge of space: Core systems and new combinations. In S.M. Kosslyn & A. Galaburda (Eds.), *Languages of the brain*. Cambridge, MA: Harvard University Press.
- Thomas, A., & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.
- Vygotsky, L.S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Wang, Q., Pomerantz, E. M., & Chen, H. (2007). The role of parents' control in early adolescents' psychological functioning: A longitudinal investigation in the United States and China. *Child Development*, 78, 1592–1610.

5.8 ADDITIONAL ONLINE RESOURCES

For more information on lifespan development:

- <https://www.apadivisions.org/division-20/education/lifespan-developmental>
- <https://courses.lumenlearning.com/wmopen-psychology/chapter/what-is-lifespan-development/>

For more information on Erikson's theory of psychosocial development:

- <https://www.verywellmind.com/erik-eriksons-stages-of-psychosocial-development-2795740>

For more information on cognitive development:

- <https://courses.lumenlearning.com/wsu-sandbox/chapter/lifespan-theories-cognitive-development/>
- <https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=90&ContentID=P01594>
- <https://www.ncbi.nlm.nih.gov/books/NBK216774/>