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HDFS COMPENDIUM

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INDEX

Childhood Development 3 (2+1)

Objectives

1. To make students aware about the fundamental as well as overall development of the child from conception to late childhood

 2. To understand human development and its significance

3. To create awareness about the process of human growth and development

4. To identify the genetic and environmental influences on human life

 5. To study the inter-relatedness of physical, cognitive, social, emotional and motor development

6. To understand the theories of human development

Theory

 Concept of human development, Stages of human development, Domains of human development and its characteristics, Definition of growth and development, Determinants of human growth and development, Principles of human growth and development-Concept of heredity and environment, the role of heredity and environment on development–perspectives on development: Naturalism, environmentalism, maturational, need, ecological, ethological, cognitive, psycho-analytical, social (socio-cultural and social learning), language, behaviour, psycho-social, intelligence and moral reasoning -Prenatal, peri- natal and postnatal stages- conception, care during pregnancy, labour/ birth, Early Childhood {birth to eight yrs}-Physical, motor, social, emotional, cognitive and language development of infancy, babyhood, preschool and early school yrs- Late childhood (eight to 14 yrs): Physical, motor, social, emotional, cognitive and language development. Guidance to parents for promoting holistic development of children.

Practical

Observational visits to well-baby clinics to observe full term and preterm babies and observe/ record its characteristics. Visit to Early Childhood Centers, study physical, motor, social, emotional, intellectual, language, moral and personality development at different stages and prepare interpretive reports. Collect and evaluate reports/ article / news / other secondary data related to

recent issues, trends and challenges of Human development and write an analytical report. Case study of individuals in different stages of development - Infancy, early childhood, and late child hood Critical analysis of case study reports. Preparation of Resource file.

Suggested Readings

1. Bronfenbrenner, V. 1979. The ecology of human development. Cambridge, Harvard Univ. Press. 2. Berk, E. L. 2013. Exploring life span development.3rded. McGraw Hill, New York. 3. David, M.T., Garavan, L. and Dooley, M. 2012.Fundamentals of human resource development. SAGE Publications Ltd 4. Hall, Calvin S and Lindzey. G. 1978. Theories of personality. John Wiley and Sons 5. Harris, J.R. and Liebert, R.M. 1987. The child. Prentice Hall, Inc. 6. Munsinger, H. 1971. Fundamentals of child development. Holt, Reinhart and Winston, Inc. 7. Papalia, D.E. and Olds, SW. 2008. Human development. 11th edn. McGraw Hill. New York.

❖ Child development as an interdisciplinary, Applied field basic themes and issues

Organisms versus mechanistic child continuity versus discontinuity in development nature versus nature a balanced point of view. Historical foundations.

Medieval times the reformation philosophies of the enlightenment Charles Darwin theory of evolution early scientific beginnings. Mid-Twentieth Century Influences.

Psychoanalytic theory, behaviourism and social learning theory, piaget's cognitive development theory.

- Recent Perspectives

Information processing ethology, ecology, system theory cross-cultural research and vygotsky's sociocultural perspective. Comparing child development theories studying the child.

Common methods used to study children. General research design. Developmental research design. Ethics in research with children.

- The Chronological approach of the book

Not long ago, I left my Midwestern home to live for a year near the small city in northern California where I spent my childhood years. One morning, I visited the neighbourhood where I grew up- a place to which I had not returned since I was 12 years old. I stood at the entrance to my old school yards. Buildings and grounds that looked large to
me as a child now seemed strangely small from my grown-up vantage point. I eered through the window of my first grade classroom. The desks were no longer arranged in rows, but grouped in intimate cluster around the room.
A computer rested against the far wall, near the spot where I once sat. I walked my old route home from school, the distance shrunken by my larger striede. I stopped in front of my best friend Kathryn's house, where we once drew sidewalk pictures. As I walked, reflected on early experiences that contributed two who I am and what I am like today weekends helping

my father in his downtown clothing shop, the year during which my mother studied too become a high school teacher, moments of champion ship and rivalry with my sister and brother.

Child development:-A field of study devoted to understanding all aspects of human growth from conception through adolescence.

Human development:-A field of study that includes all changes human beings experience throughout the life span.

- Child development as an interdisciplinary, applied field

Research about development has also been stimulated by social pressures to better the lives of children. For example, the beginning of public education in the early part of this century led to a demand for knowledge about what and how to teach children of different ages.

Basic themes and issues:-A theory as an orderly, integrated set of statements that describes, explains, and predicts behaviour. For example:-A good theory of infant-mother attachment ,affection, comfort of their mothers around 6 to 8 months of age.Theories are important for two reasons first,they provide organizing frame-works for our observations of the child. They interpret and give meaning to what we see. Second theories provide us with a sound basis for practical action. Once a theory helps us understand development. We are in a much better position to know what to do in our effects to improve the welfare and treatment of children.As we will see later on, theories are influenced by the cultural values and belief systems of their times. But

theories differ in one important way from opinion and belief: a theory's continued existence depends on scientific verification.

In the field of chid development, there are many theories with very different ideas about what children are like and how they develop. As yet, no single theory has been able to explain all these aspects. Finally, the existence of many theories helps advance our knowledge, since researchers are continually trying to support contradict, and integrate these different points of view.

In this chapter, we will introduce the major child development theories and the research strategies that have been used to test them. Although there are many theories, we can easily

organize them, since almost every theory takes a stand on three basic issues about childhood and child development.

1.Organismic theory:-

A theory that assumes the ex-istence of psychological structures inside the child that underlie and control development.

2.Mechanistic theory:-

A theory that regards thechild as a passive reactor to environmental inputs.

3.Continuous development:-

A view that regards development as a cumulative process of adding on more of the same types of skills that were there to begin with.

- **Organismic versus mechanistic child-**Organismic theories assume that change is stimulated from within the organism-more specifically, that psychological structures exits inside the child that underlie and control development. Children are viewed as active, purposeful beings who make sense of their, world and determine their own learning. In contrast, mechanistic theories focus on relationship between environmental inputs and behavioural outputs.Change is stimulated by the environment, which shapes the behaviour of the when angelo's playmate says "brinmmm," angelo responds in alike wishway. Development is treated as a straightforward, predictable consequence of events in the surrounding words.

- **Continuity versus discontinuity in development-**How can we best describe the differences in skills and behaviour that exist between small infants, young children, adolescents, and adults? There are two possibilities.On the one hand, babies and preschoolers may respond to the world in much the same way as adults. The difference between the

immature and mature being may simply be one of amount or complexity of behaviour.Continuous- a process that consists of gradually adding on more of the same types of skills that were there to begin with.On the other hand. Angelo may have unique ways of thinking, feeling, and behaving that must be understood on their own terms- once quite different from our own. If so, then development is a discontinuous process in which new ways of understanding and responding to the world emerge at particular time periods from this perspective.Theories that accept the discontinuous perspective include a viral developmental concept; the concept of stage. Stages are qualitative changes in thinking, feeling, and behaving that characterize particular time periods of development, in stage theories, development is much like climbing a staircase, with each step corresponding to a more mature, reorganized way of functioning than the one that came before.

- **Nature versus nature :-**Are genetic or environmental factors the most important influences on development? This is the age-old nature- nurture controversy. By nature we mean inborn biological gives- the hereditary information. We receive from our parents at the moments of conception that signals the body to grow and affects all our characteristics and signals the body

Brief review child development is a field of study devoted to understanding human growth and change from conception through adolescence. Amost all theories take a stand on three basic issues about what children are like and how they develop:

1.Is the child an organismic or mechanisit being?

2.Is development a continuous or discontinuous process?

3.Is nature or nature more important in development?

- Medieval Times

In medieval times (the sixth through the fifteenth centuries), little importance was placed on childhood as a separate phase of the life cycle. The idea accepted by many theorists today, that the child's nature is unique and different from that of youths and adults, was much less common then.

BRIFF REVIEW-The modern field of child development has roots dating far back into the past. In medieval times, children were regarded as miniature adults. By the century, childhood became a distinct phase of the lifecycle. During the seventeenth- century enlightenment, Locke's "blank state" and Rousseau's "inherently good" child promoted more human views of children. Out of the normative tradition arose binet's first successful intelligence test and a concern with individual differences among children.

1.Psychoanalytical theory

By the 1930s and 1940s, many parents came to psychiatrists and social workers with children like sam, who suffered from serious emotional stress and difficulties in family and their relations. The earlier normative movement hadanswered the question, "what are children like??"But child guidance professionals had to address the question,
"how and why did children become the way they are?" to treat their difficulties. They turned for help to freud's**Psychoanalytic theory**because of its emphasis on understanding the unique developmental history of each child.Sigmund Freud{1856-1939}, a Viennese physician, saw his practice with a variety of nervous symptoms,such as hallucinations, fears, that appeared to have no physical basis. Seeking a cure for these troubled adults, Freud found that their symptoms could be relieved by having panents talk freely about painful events of their childhood.Freud concluded that infants and young children were sexual beings. Freud constructed his psychosexual theory of development on the basis of adult remembrances. It emphasizes that how parents manage their child's sexual and aggressive drives in the first few years of life is crucial for healthy personality development.

The id seeks to satisfy its impulses head on, without delay. As a result, young babies cry vigorously when they are hungry, wet, or need to be held and cuddled.

The ego- conscious, rational part of personality- emerges early in infancy to ensure that the id's desires are satisfied in accordance with reality. Recalling times when parents helped the baby gratify the id, the ego redirected the impulses so they are discharged on appropriate

objects at acceptable times and places.Freud{1938/1973} believed that, over the course of childhood, sexual impulses shift their focus from the oral to the anal to the genital regions of the body. If parents strike an appropriate balance, then children grow into well adjustedadults with the capacity for mature sexual behaviour, investment in family life, and rearing of the next generation.Freud's psychosexual theory highlighted the importance of family relationship for children's development. But Freud's perspective was eventually criticized for several reasons. First, the theory overemphasized the influence of sexual feeling in development. Second, because it was based on the problems of sexually repressed, well-to-doadults, some aspects of Freud's theory did not apply in cultures differing.The clinical method, a powerful tool for studying human mental life, is one of psychoanalytic theory's great contributions. Psychoanalytic theory has also inspired research on many aspects of child development, including infant-mother attachment, aggression,siblings relationships, child-rearing practices, moral development, sex typing, and adolescent identity.

Although psychoanalytic theory did much to emphasize the importance of children's emotional health, it is no longer in the mainstream of child development research. Perhaps psychoanalytic ideas, such as Freud's psychosexual stages {Schultz,1975}.

2.Behaviorism and Social Learning Theory

At the same time that psychoanalytic theory gained in prominence, child study was also influenced by a very different perspective: behaviorism, a tradition consistent with Locke's tabula rasa. America behaviorism began with the work of psychologist John Watson{1878-1958} in the early part of the twentieth century. Watson wanted to create an objective science of psychology. unlike psychoanalytic theorists, he believed in studying directly observable events- stimuli and responses.

- **Traditional behaviourism:-**Pavlov knew that dogs release saliva as an innate reflex when they are given food Pavlov successfully dogs to salivate at the sound of a bell by pairing it with the presentation of food. He had discovered classical conditioning.Watson wanted to find out if classical conditioning could be applied to children's behaviour. In the historic experiment, he taught Albert, a 9-month old infant, to fear a neutral stimulus- a soft white rat- by presenting it several times with a sharp, loud sound {which naturally scared the baby}, little albert, who at first had reached out

eagerly to touch the furry rat, cried and turned his head away when he caught sight of it {Watson &Raynor, 1920}.In fact, Albert's fear was so intense that research eventually questioned the ethics of studies like this one {an issue that we will take up later in this chapter }. On the basic of finding like these, {Watson concluded that environment was the supreme force in child development. Adults could mould children's behaviour in any way they wished, he thought, by carefully controlling stimulus- response associations.

After Watson, American behaviourism development along several lines. The first was Clark Hull's drive reduction theory. According to this view, children continually act to satisfy physiological needs and reduce states of tension.

As primary drives of hunger, thirst, and sex are met, a wide variety of stimuli associated with them become secondary, or learned drives. Another form of behaviourism was B.F. Skinner's{1904-1990}operant conditioning theory. According to skinner, a child's behaviour can be increased by following it with a wide variety of reinforces besides food and drink, such as praise, a friendly smile, or a new toy. It can also be decreased through punishment. Social learning theorists accepted the principles of conditioning and reinforcement that came before them. They also built on these principles, offering expanded views of how children and adults acquire new responses.

Several kinds of social learning theory emerged. The most influential was devised by Albert Bandura and his colleagues. Bandura {1977} demonstrated that modeling, otherwise known as imitation or observation learning, is the basis for a wide variety of children's behaviours. His theory stresses the importance of cognition, or thinking.

Observed behaviour affects their imitation and learning in fact, the most recommision of bandura's{1986,1989} theory places such strong emphasis on how children think about themselves and other people that he calls it a social cognitive rather the a social learning approach. Nevertheless, he still regards modeling as the foundation for all aspects of social development.

- **Contribution and Limitations of Behaviourism,** like psychoanalytic theory, behaviourism and social learning theory have had a major impact on applied work with children. Yet the techniques used are decidedly different. **Behaviour modification** refers to procedures that combine conditioning and modeling to eliminate children's undesirable

behaviours and increase their socially acceptable response. Although the techniques of behaviourism are helpful intreating many problems, we must keep in mind that making something happen through modeling and reinforcementdoes not mean that these principles provide a complete account of development influenced the modern field of child development.

Swiss cognitive theorist Jean Piaget{1896-1980} behaviourists did not study the child's mental life. In their view, thinking could be reduced to connections between stimuli and responses, and development was a

continuous process, consisting of a gradual increase in the number and strength of these connections with age.

According to his **cognitive-developmental theory,** children actively construct knowledge as they manipulate and explore their world, and their cognitive development takes place in stages.

- **Piaget's stages**:- Central to his theory is the biological concepts of adaptation{Piaget,1971}. Just as the structures of the body are adapted to fit with the environment, so the structures of the mind develop over the course of childhood to better fit with, or represent, the eternal world.In the sensorimotor stage, cognitive development begins with the baby's use of the senses and movement to explore the world. These action pattern evolve into the symbolic but illogical thinking of the pre-schooler in the preoperational stage. Then cognition is transformed into the more organized reasoning of the school-age child in the concrete operation stage. Finally, in the formal operation stage, though becomes the complex, abstract reasoning system of the adolescent and adult.

- **Piaget's Methods of Study.**

Piaget devised special methods for investigating how children think. In the early part of his career, he carefully observed his three infant children and also presented them with little problems, such as an attractive object that could be gasped, mouthed, kicked, or searched for when hidden from view. From their reactions. He adapted the clinical method of psychoanalysis, conducting open-ended clinical interviews in which a child's initial response

to a task served as the basic for the next question Piaget would ask. "Here the reference is given by the scientist".

References:-

Laura e brek

Topic No.-2

Scope and importance of human development form a life span perspective

❖ What is human development

Human development is the scientific study of how people change and how they stay the same over time.Change is most obvious in childhood but occurs thought out life. It takes two forms, quantitative and qualitative. Quantitative change is change in the number or amount of something, such as height and weight-or the increases in the number of words, phrases, and sentences that Anna uses., Qualitative change is a change in kind, structure, organization , such as the nature of person's intelligence, the way the mind woks -or Anna's development from a non-verbal infant toa child who understands and speaks a language. Like the emergences of a butterfly from a co-coon, qualitative changes is marked by the appearance of new phenomena that could not have been predicated from earlier functioning. Speech is one such phenomenon.

• Human development the study and its history

The study of human development originally used on describing behaviour in order to derive age norms. Today, development a lists also want to explain why behaviours occur by looking. At the factors that influence development ;their next step is to predict behaviour and in some cases, to try to modify or optimize development through training or therapy. We can see the interrelationship of these four steps by looking at language development . description leads to establishing norms for language at venous ages. Explanation involves trying to uncover how children acquire language and get better of coming it. Prediction entails determining what 'language status' at a given age can tell as about later behavior: does a delay at age 2,for example, predict reading problems in second grade? Modification involves finding ways to change behavior, such as speech therapy to stimulate language growth. Of course, these four activities work together. Before starting language therapy, for instance, you need to know what is normal; to design a program, a therapist has to know how people acquire language skills.

The study of human development has very practical implications. After nothing anna's delayed speech development, her parents could, with the proper knowledge, be reassured that she was basically normal and could also learn how to help her overcome this specific

problem. Similarly, understanding adult development helps professional and laypersons alike to prepare for life transitions: a woman returning to work after maternity leave; a 50-years-old man who realizes that he will never be a company resident; a person's about to retire; a widow widower, a dying patient.

Students of development draw on many disciplines, including psychology, sociology, anthropology, biology, education and medicine. These disciplines are all reflected in the materials in this book.

- ### Life- span studies

Today most psychological recognize that human development is a lifelong process, and that each period of a person's life span is influenced by what has already occurred and will affect the periods that follow.

Life-span studies in the united states grew out of programs designed to follow children over a period of years, through adulthood. The Stanford studies of gifted children [Begun in 1921 under the directions of Lewis TERMAN] continue to focus on the development of people who were identified as unusually intelligent children. Other major studies that began around 1930- the Berkeley Growth Study, the Oakland Growth study, and the Fels Research Institute Study -have also yielded information on long-term development.These and other studies have drawn on a wide variety of research tools; often, server different methods are used in the same study. Let's see what some of these methods are.

- ### A Life-Span Perspective

Within the context of work, a life-span perspective holds that patterns of change and transition occur throughout the working life. As a result, the scope of productive aging includes all age groups of workers and is not limited to "older workers," however that group may be defined. Other assumptions of a life-span perspective include:

- ***The aging process is multidirectional and involves both losses and gains***. As workers age, some dimensions of functioning decline, while others improve. For example, physical stamina gradually decreases with age, but accumulated knowledge or "wisdom" tends to gradually increase. These different "trajectories

of change" are important to understand in designing a workplace where all workers are able to perform at an optimal level.

- *The aging process is characterized by plasticity*. The term plasticity refers to the potential to change in response to one's experiences. This aspect of aging is demonstrated by a growing body of research indicating that the rate of change for some abilities (e.g., physical functioning) can be affected by specific activities (e.g., regular exercise). Animal research also provides evidence of the neuroplasticity of the brain and its remarkable ability to change with experience throughout the life-span.

- *The aging process is multidimensional*. Three basic dimensions of the aging process are biological, cognitive, and socio-emotional. Each dimension has many sub-components (examples from the cognitive dimension include attention, working memory, and social intelligence) that interact with the other two dimensions, and is subject to some level of environmental influence. All three dimensions are important to understand in designing a work environment that encourages productive aging.

- *The aging process is contextual*. The changes that occur as workers age do not take place in a vacuum. Some important contextual settings are families, friendships, community, workplace, and society. These contexts may, in turn, be influenced by historical, economic, and cultural factors. In the case of the workplace, the nature of work and how it is structured, the type of workplace relationships an individual develops, and specific work-related events (e.g., career progression, avoidance of disability, retirement) can all play an important role in productive aging.

In summary, a life-span perspective assumes that the aging process is complex, occurs across different dimensions throughout the working life, and represents the product of many interacting causes, both inside and outside of the worker. As a result, two workers of the same chronological age may differ greatly when it comes to functional capacity, health, job performance, and work motivation. Perhaps most importantly, the changes that

occur with aging are often manageable, particularly if intervention efforts begin early in the working life.

- Scope of human development

Human development is a development model that is about much more than the rise or fall of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accordance with their needs and interests, thus bringing the focus back onto people. People are the real wealth of nations. Development is thus about expanding the choices people have, to lead lives that they value and improving the human condition so that people will get the chance to lead full lives

And it is thus about much more than economic growth, which is only a means —if a very important one — of enlarging people's choices.

Fundamental to enlarging these choices is building human capabilities—the range of things that people can do or be in life. Human development disperses the concentration of the distribution of goods and services that underprivileged people need and center its ideas on human decisions

By investing in people, we enable growth and empower people thus developing human capabilities.

The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources and social services, needed for a decent standard of living and to be able to participate in the life of the community. Without these, many choices are simply not available, and many opportunities in life remain inaccessible

There are four basic pillars of human development: equity, sustainability, production and empowerment. Equity is the idea of fairness for every person; we each have the right to an education and health care. Secondly, sustainability is the view that we all have the right to earn a living that can sustain us and have access to a more even distribution of goods amongst populations. In addition, production is used to show how the government

needs more efficient social programs for its people. Lastly, empowerment is providing people who are powerless to be given power such as women

This way of looking at development, often forgotten in the immediate concern with accumulating commodities and financial wealth, is not new. Philosophers, economists and political leaders have long emphasized human well-being as the purpose, the end, of development. As Aristotle said in ancient
Greece, "Wealth is evidently not the good we are seeking, for it is merely useful for the sake of something else."

Developed countries are seen as those who have a continuous progress in the indexes of life. The countries that have seemed to excel are viewed as having better policies than those who have remained stagnant.

- Importance of studying human development from a life-span perspective

The study of life span development is very important since people change as they age. Educators and psychologists study how the brain develops and what milestones can be reasonably achieved at which age. This helps define what is "normal" in terms of skill development in young people.

Life span development has also helped scientists understand the function of the brain and by what age the brain is fully mature. Lawyers can use brain maturity studies to determine whether or not a person was fully responsible for their offense. The study of life span development has led to new age groups such as adolescents, a group that did not have its own classification one hundred years ago. Without studies in life span development, teenagers would be treated as very young adults with the same responsibilities of older adults. Life span development studies have shown that it is not reasonable to expect the same actions from teenagers and older adults.

Life span development also tackles issues...

Refrence

1.THIS REFRENCE IS GIVEN BY THE   SCIENTISC [LAURA E BREK] HISTORY OF HUMAN DEVELOPMENT AND LIFE SPAN STUDIES

2.Staudinger, U.M. (2006). Life-span theory in developmental psychology. In R. M. Lerner (Ed.), *Handbook of child psychology. Vol* Baltes, P.B., Linde berger, U., &. *1: Theoretical models of human development* (6th ed., pp. 569–664). New York: Wiley.

Sigel man, C.K., & Rider, E.A. (2015). Life-span human development, 8th edition. Stamford, CT: Cengage Learning.

Refrence

1.THIS REFRENCE IS GIVEN BY THE   SCIENTISC [LAURA E BREK] HISTORY OF HUMAN DEVELOPMENT AND LIFE SPAN STUDIES

Topic No.-3

Relationship of the discipline of human development with other disciplines of study

❖ Periods of Human development

Think about the lifespan and make a list of what you would consider the basic periods of development. How many periods or stages are on your list? Perhaps you have three: childhood, adulthood, and old age. Or maybe four: infancy, childhood, adolescence, and adulthood. Developmentalists often break the lifespan into eight stages:

1.Prenatal Development

2.Infancy and Toddlerhood

3.Early Childhood

4.Middle Childhood

5.Adolescence

6.Early Adulthood

7.Middle Adulthood

8.Late Adulthood

In addition, the topic of "Death and Dying" is usually addressed after late adulthood since overall, the likelihood of dying increases in later life (though individual and group variations

exist). Death and dying will be the topic of our last module, though it is not necessarily a stage of development that occurs at a particular age.

- Importance of human development
- Improves productivity
- Better utilization of resources
- Control population growth
- Safeguards physical environment
- Improve the quality of life
- Encourages research and development
- Development of agriculture and industry
- Change in attitude
- Higher returns
- Human development is a branch of psychology that studies—and strives to optimize—the elements that help people live healthy and fulfilling lives. This field aims to understand the various changes individuals and their relationships go through as they continue to learn and grow.

- Relationship of the discipline of human development with other disciplines of study.

1.Psychology:-Developmental psychology is the scientific study of how and why human beings change over the course of their life. Originally concerned with infants and children, the field has expanded to include adolescence, adult development, aging, and the entire lifespan. Developmental psychologists aim to explain how thinking, feeling, and behaviors change throughout life. This field examines change across three major dimensions: physical development, cognitive development, and social emotional development. Within these three dimensions are a broad range of topics including motor skills, executive functions, moral understanding, language acquisition, social change, personality, emotional development, self-concept, and identity formation.Developmental psychology examines the influences of nature and nurture on the process of human development, and processes of change in context across time. Many researchers are interested in the interactions among personal characteristics, the individual's behavior, and environmental factors, including the social context and the built environment. Ongoing debates in regards to developmental psychology include biological essentialism vs. neuroplasticity and stages of development vs. dynamic systems of development.Developmental psychology involves a range of fields, such as educational psychology, child psychopathology, forensic developmental psychology, child development, cognitive psychology, ecological psychology, and cultural psychology.

Influential developmental psychologists from the 20th century include UrieBronfenbrenner, Erik Erikson, Sigmund Freud, Jean Piaget, Barbara

Rogoff, Esther Thelen, and Lev Vygotsky.

2.Sociology:-Sociology is a social science that focuses on society, human social behaviour, patterns of social relationships, social interaction, and aspects of culture associated with everyday life. It uses various methods of empirical investigation and critical analysis 3–5 to develop a body of knowledge about social order and social change. 32–40 Sociology can also be defined as the general science of society. While some sociologists conduct research that may be applied directly to social policy and welfare, others focus primarily on refining the theoretical understanding of social processes. Subject matter can range from micro-level analyses of society (i.e., of individual interaction and agency) to macro-level analyses (i.e., of systems and the social structure).Traditional focuses of sociology include social stratification, social class, social mobility, religion, secularization, law, sexuality, gender, and deviance. As all spheres of human activity are affected by the interplay between social structure and individual agency, sociology has gradually expanded its focus to other subjects and institutions, such as health and the institution of medicine; economy; military; punishment and systems of control; the Internet; education; social capital; and the role of social activity in the development

of scientific knowledge.The range of social scientific methods has also expanded, as social researchers draw upon a variety of qualitative and quantitative techniques. The linguistic and cultural turns of the mid-20th century, especially, have led to increasingly interpretative, hermeneutic, and philosophical approaches towards the analysis of society. Conversely, the turn of the 21st century has seen the rise of new analytically, mathematically, and computationally rigorous techniques, such as agent-based modelling and social network analysis.

Social research has influence throughout various industries and sectors of life, such as among politicians, policy makers, and legislators; educators; planners; administrators; developers; business magnates and
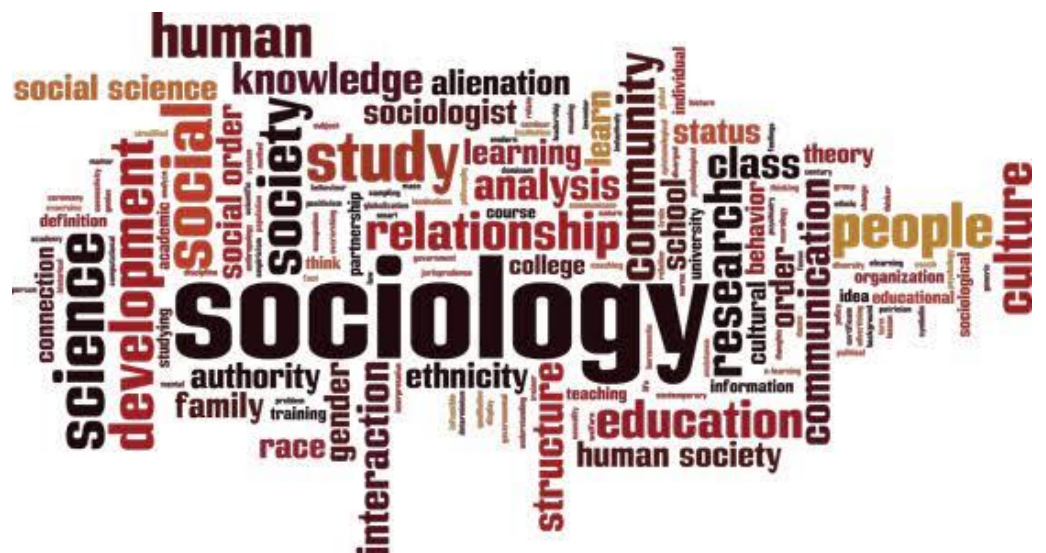
managers; social workers; non-governmental organizations; and non-profit organizations, as well as individuals interested in resolving social issues in general. As such, there is often a great deal of crossover between social research, market research, and other statistical fields.

3.Anthropology:- This anthropology of development has been distinguished from development anthropology. Development anthropology refers to the application of anthropological perspectives to the multidisciplinary branch of development studies. It takes international development and international aid as primary objects. In this branch of anthropology, the term development refers to the social action made by different agents (institutions, business, enterprise, states, independent volunteers) who are trying to modify the economic, technical, political or/and social life of a given place in the world, especially in impoverished, formerly colonized regions.Development anthropologists share a commitment to simultaneously critique and contribute to projects and institutions that create and

administer Western projects that seek to improve the economic well-being of the most marginalized, and to eliminate poverty. While some theorists distinguish between the 'anthropology of development' (in which development is the object of study) and development anthropology (as an applied practice), this distinction is increasingly thought of as obsolete.
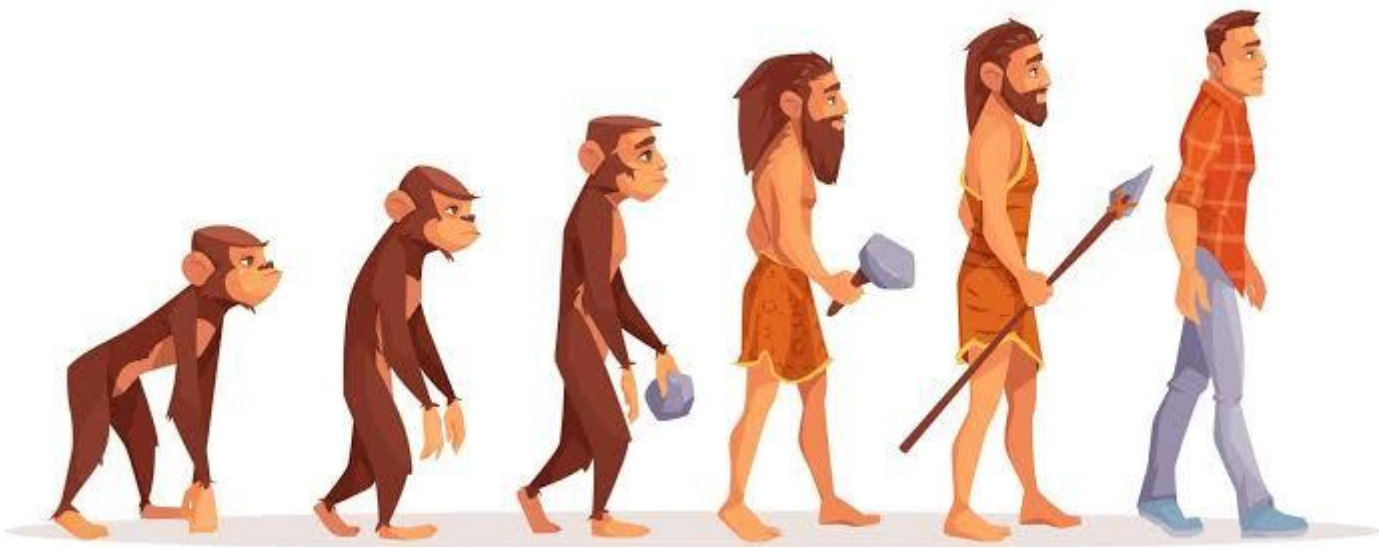
4.Economic:-Human development is the process characterized by the variation of material conditions. These conditions influence the possibilities of satisfying needs and desires. They also explore and realize the physical and psychic, biological and cultural, individual and social potentials of each person. It is also the name of the science that seeks to understand how and why the people of all ages and circumstances change or remain the same over time. It involves studies of the human condition with its core being the capability approach. The inequality adjusted Human Development Index is used as a way of measuring actual progress in human development by the United Nations. It is an alternative approach to a

single focus on economic growth, and focused more on social justice, as a way of understanding progress.

The United Nations Development Programme defines human development as "the process of enlarging people's choices," said choices allowing them to "lead a long and healthy life, to be educated, to enjoy a decent standard of living," as well as "political freedom, other guaranteed human rights and various ingredients of self-respect."

Development concerns expanding the choices people have, to lead lives that they value, and improving the human condition so that people have the chance to lead full lives.Thus, human development is about much more than economic growth, which is only a means of enlarging people's choices. Fundamental to enlarging these choices is building human capabilities—the range of things that people can do or be in life. Capabilities are "the substantive freedoms [a person] enjoys to lead the kind of life [they have] reason to value". Human development disperses the concentration of the distribution of goods and services underprivileged people need and center its ideas on human decisions.By investing in people, we enable growth and empower people to pursue many different life paths, thus developing human capabilities.The most basic capabilities for human development are to lead long and healthy lives, be knowledgeable (i.e., educated), have access to resources and social services needed for a decent standard of living, and be able to participate in the life of the community. Without these, many choices are not available, and many opportunities in life remain inaccessible.

An abstract illustration of human capability is a bicycle. A bicycle itself is a resource—a mode of transportation. If the person who owns a bicycle is unable to ride it (due to a lack of balance or knowledge), the bicycle is useless to her or him as transportation and loses its functioning. If a person owns a bicycle and has the ability to ride a bicycle, they have the capability of riding to a friend's house, a local store, or a great number of other places. This

capability would (presumably) increase their value of life and expand their choices. A person, therefore, needs both resources and the ability to use them to pursue their capabilities. This is one example of how different resources or skills can contribute to human capability. This way of looking at development, often forgotten in the immediate concern with accumulating commodities and financial wealth, is not new. Philosophers, economists, and political leaders emphasized human well being as the purpose, or the end, of development. As Aristotle said in ancient Greece, "Wealth is evidently not the good we are seeking, for it is merely useful for the sake of something else."

5.Geography:- Human geography or anthropogeography is the branch of geography that is associated and deals with humans and their relationships with communities, cultures, economies, and interactions with the environment by studying their relations with and across locations. It analyzes patterns of human social interaction, their interactions with the environment, and their spatial interdependencies by application of qualitative and quantitative

research methods.

6.Biology:-Developmental biology is a discipline that deals with the processes involved in the development of a multicellular organism as controlled by genetic information. Developmental biology studies the mechanisms of development, differentiation, and growth in both plants and animals at the cellular, molecular, genetic, and evolutionary levels.

Different forms of reproduction like sexual reproduction, asexual reproduction, metamorphosis, and germination of seeds and embryos form an essential aspect of developmental biology.

Developmental biology is a fast-growing discipline that is interrelated with a vast array of disciplines like molecular biology, anatomy, cancer biology, immunology, ecology, evolutionary biology, cell biology, and physiology.

Studies done in developmental biology have provided information on the molecular genetics of development, growth factors, and oncogenes, the evolution of developmental control, mechanisms of differentiation, gametogenesis, and fertilization, and control of gene expression.

Other areas of emphasis in developmental biology include transcriptional control, cell-cell interactions, regulatory hierarchies, signal transduction, etc.

The development of developmental biology as an important discipline is due to its applications in different areas.

The results of researches are used in fertility clinics where the information is used for artificial insemination, test-tube culture, and to treat other infertility issues.

Tissue engineering is another essential technique that utilizes concepts of developmental biology to grow replacement tissues in plastic dishes and to control the formation of cancer cells.

Reactivation of stem cells to grow replacement tissues is also by virtue of accomplishments made in developmental biology.

In agriculture, techniques developed for selective breeding by optimizing root systems, plant size, and flowering time has allowed for a better and increased harvest.

biological development, the progressive changes in size, shape, and function during the life of
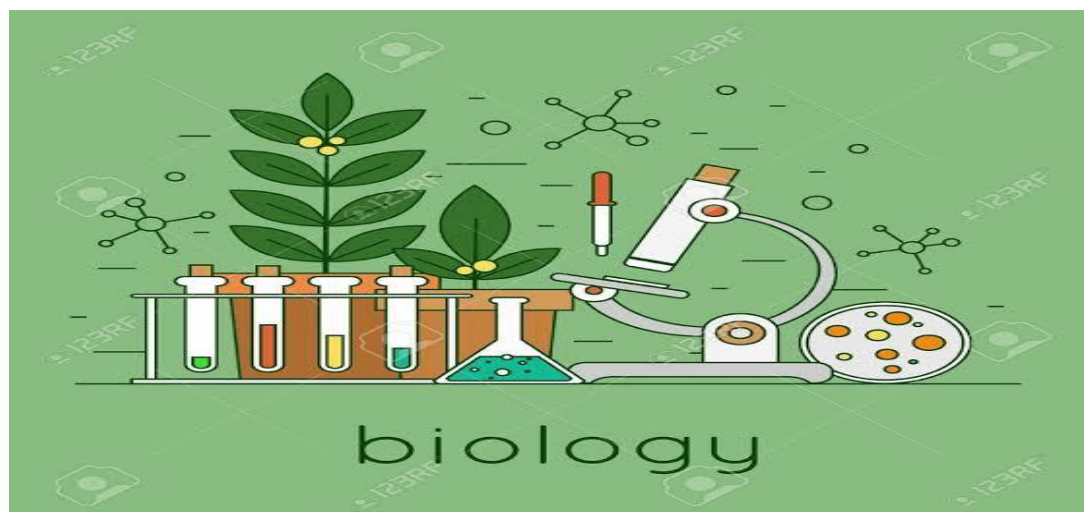
an organism by which its genetic potentials (genotype) are translated into functioning mature systems (phenotype). Most modern philosophical outlooks would consider that development of some kind or other characterizes all things, in both the physical and biological worlds. Such points of view go back to the very earliest days of philosophy.

7.Medicine:-Medicine is a scientific practice that affects human evolution by contributing to the human niche construction. It is a science which deals with material substrates of disease, from organs to DNA, and environmental threats, such as germs and chemicals, and tries to modify those elements that are also factors of natural selection. However, eugenics concerns are not sustainable, since there is no reason to think that natural selection might be eliminated among humans because of medicine. There is still plenty of individual variation in reproductive success in modern human populations—part of this variation being indirectly promoted by medical practice—but not always detrimental to fitness. On the one hand, medicine can directly act upon genetic frequencies, with genetic screening, genetic therapies, in vitro fertilization, and selective abortion. On the other hand, it can affect evolution by changing human behavior and human environment. The hospital, in particular, is a new "niche" expressly designed for the cure of diseases. This new environment has been fundamental in decreasing the mortality rate of human populations and in expanding our life expectancy. At the same time, it favors the emergence of resistant strain of bacteria. Given that medicine is deeply related to human evolution, medical sciences should be well informed about the evolutionary theory and evolutionary processes. Evolutionary biology can be crucial in disease control, and therefore it may have an important role to play in the design of medical intervention. All the arguments here outlined give enough evidence to support the development of evolutionary medicine and its use as a basic science for medical sciences.

8. History:-History plays an important role in the development of a country. For example, the United States would be a different country today if France or Spain had ruled us instead of Great Britain. We might have a different form of government. Our culture and language likely would be different.

When a country is involved in wars, it will impact the country. The Continental United States has never been invaded in its history. Unlike some European countries like France and Germany, where major wars have been fought, the United States hasn't suffered the physical and the emotional consequences of war to the degree that other countries have faced. Japan is still dealing with the effects of having two atomic bombs being dropped on Japan. The Germans still are dealing with memories of the Holocaust. It took years for the land in some European countries to recover from the fighting that took place there in World War I and in

World War II.

- Key Issues in Human Development

There are many different theoretical approaches regarding human development. As we evaluate them in this course, recall that human development focuses on how people change, and the approaches address the nature of change in different ways:

Is the change smooth or uneven (continuous versus discontinuous)?

Is this pattern of change the same for everyone, or are there different patterns of change (one course of development versus many courses)?

How do genetics and environment interact to influence development (nature versus nurture)?

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Topic No.-4

Definition of growth and development, determinants of human growth and development; principles of human growth and development

❖ Growth vs Development

Aswe mentioned, one main difference between growth and development is that growth is more of a physical measurement. Development is something that can't be measured in the same way. It's basically another word for progress.

The terms Growth and Development are used with every aspect of life. There Might be some confusion when using the terms as they are often used interchangeably. Growth is just like 'getting bigger', whereas development is improvement.

Growth can be explained as becoming bigger or larger or having more importance. Growth is termed as physical change, where as development is said to be a physical as well as social or psychological change. Development also means transformation or improvement. While growth is related to quantitative improvement, development is related to quantitative as well as qualitative improvement.

DIFFERENCE BETWEEN
GROWTH
AND
DEVELOPMENT

Growth	Development
Quantitative.	Quantitative and qualitative
Occurs at the cellular level	Occurs at the organizational level
Easier to express in terms of numbers	Not easier to express in terms of numbers
Change can be multidirectional	Change can only unidirectional
Value can be positive or negative	Value can only be Positive
Not affected by learning	Learning and experience affects
Growth can be estimated correctly	Development is the subjective version of one's change
Finishes at adolescence	Continues throughout the life
Needs a place within a limited range of time	Quite large.
Ex.- GDP, Population	Ex.-Human Development Index, Happiness Index

- What is human development?

In 1990 the first Human Development Report introduced a new approach for advancing human wellbeing. Human development – or the human development approach – is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. It is an approach that is focused on people and their opportunities and choices.

People: human development focuses on improving the lives people lead rather than assuming that economic growth will lead, automatically, to greater wellbeing for all. Income growth is seen as a means to development, rather than an end in itself. When the term growth is related to living being, it can mean increase in size. Here, the growth that comes over a living being is a physical change and it indicates the increase in weight, height and bone size. On the other hand, development is the process of developing skills and capacities. It deals with the behavioural aspect of a living being. For example, we only say that the tumour has grown and not that the tumour has developed. On the other hand, we generally say that he has developed into a better man' or he developed into a better citizen' and so on.

Growth and development is one of the important studies for the teachers and parents. Growth is different from development . But both are correlated and one is dependant on other. We can say that growth is a part of development, which is limited in physical changes.Growth is physical change whereas development is overall development of the orgsnism. the main differences between both are –

1.Growth is change of physical aspects of the organism. Development is overall changes and progressive changes of the organism.

2.Growth is cellular but development is organizational.

3.Growth is the change in shape, form, structure, size of the body. Development is structural change and functional progress of the body.

4.Growth stops at maturation but development continues till death of the organism.

5.Development also includes growth. Growth is a part of development.

6.Growth and development go side by side.

7.Growth and development is the joint product of heredity and environment.

8.Growth is quantitative and development is qualitative in nature.

9.Growth can be measured accurately but development is subjective interpretation of one' change.

- (Tabular) differences between growth & development

In terms of economy, growth is the increase in the number of measurable assets	Here it is the qualitative and functional improvements of the financial systems for better results
Growth stops when the organization reaches the stage of maturity.	Development is a continual process and does not cease with maturity
Growth is vertical	Development can be vertical as well as horizontal
In terms of business growth makes an organization big	Development makes an organization widespread
of the organisms	organisms

- Determinants of growth & development

Factors Which Influence Human Growth and Development-The following are a list of factors which influence human growth and development:

1.Heredity: Heredity is the transmission of physical characteristics from parents to children through their genes. It influences all aspects of physical appearance such as height, weight, body structure, the colour of the eye, the texture of the hair, and even intelligence and aptitudes. Diseases and conditions such as heart disease.

2.Sex : The sex of the child is another major factor affecting the physical growth and development of a child. Boys and girls grow in different ways, especially nearing puberty. Boys tend to be taller and physically stronger than girls. However, girls tend to mature faster during adolescence, while boys mature over a longer period of time. The physical structure of their bodies also has differences which make boys more athletic and suited for activities that require physical rigour. Their temperaments also vary, making them show interest in different things.

3.Socioeconomic: Socioeconomic factors definitely have some affect. It has been seen that the children from different socioeconomic levels vary in average body size at all ages. The upper level families being always more advanced. The most important reasons behind this are better nutrition, better facilities, regular meals, sleep, and exercise. Family size also influences growth rate as in big families with limited income sometimes have children that do not get the proper nutrition and hence the growth is affected.

4.Nutritional: Growth is directly related with nutrition. The human body requires an adequate supply of calories for its normal growth and this need of requirements vary with the phase of development. As per studies, malnutrition is referred as a large-scale problem in many developing countries. They are more likely to be underweight, much shorter than average, and of low height for age, known as stunting. If the children are malnourished, this slows their growth process. There are nine different amino acids which are necessary for growth and absence of any one will give rise to stunted growth. Other factors like zinc, Iodine, calcium, phosphorus and vitamins are also essential for proper growth and deficiency of anyone can affect the normal growth and development of the body.

5.Hormones: They belong to the endocrine system and influence the various functions of our bodies. They are produced by different glands that are situated in specific parts of the body to secrete hormones that control body functions. Their timely functioning is critical for normal physical growth and development in children. Imbalances in the functioning of hormone-secreting glands can result in growth defects, obesity, behavioural problems and other diseases. During puberty, the gonads produce sex hormones which control the development of the sex organs and the appearance of secondary sexual characteristics in boys and girls.

6.Pollution: According to studies, air pollution not only affects the respiratory organs but also have harmful effects on human growth. Indoor pollution or the pollution from housing conditions can result in ill health which can negatively impact human growth and development. For example, lead exposure from deteriorated lead-based paint in older housing can be very harmful. Lead is very harmful for children as it simply gets immersed into the growing bodies of children and obstructs with the normal development of brain and other organs and systems.

7.Race: Racial factors also influence height, weight, color, features, and body constitution of a human being. The body growth and development differences show a relationship with varied cultural groups. For example a child of black race will be black, their height, their hair and eye color, facial structure are all governed by the same race.

8.Exercise and Health: The word exercise here does not mean physical exercise as a discipline or children deliberately engaging in physical activities knowing it would help them grow. Exercise here refers to the normal playtime and sports activities which help the body gain an increase in muscular strength and put on bone mass. Proper exercise helps children grow well and reach milestones on time or sooner. Exercise also keeps them healthy and fights off diseases by strengthening the immune system, especially if they play outside. This is because outdoor play exposes them to microbes that help them build resistance and prevent allergies.

- Principles of growth and development

1.Principle of Continuity-The development follows the principle of continuity which means that development is a continuous process. It starts with pre-natal and ends with death.

2.Principle of Integration-Development thus involves a movement from the whole to parts and from parts to the whole and this way it is the integration of the whole and its parts as well

as the specific and general responses. It enables a child to develop satisfactorily in relation to various aspects or dimension of his personality. Example: Child first starts to learn hand movement then finger movement and then learn the movement of both hand and finger together this is called integration.

3.Principle of lack of uniformity in the developmental rate-Development through the continuous process, but does not exhibit steadiness and uniformity in terms of the rate of development in various development of personality or in the developmental periods and stage of life. Example: A person may have a high rate of growth and development in term of height and weight but may not have the same pace of mental and social development.

4.Principle of individual difference-Every organism is a distinct creation in itself. One of the most important principles of development is that involves individual differences. There is no fixed rate of development. That all children will learn to walk is universal, but the time at which each child takes his her first step may vary.

5.Principle of uniformity pattern-Although develop does not proceed at a uniform rate and shows marked individual differences with regard to the process and outcome of various stages of development, yet it follows a definite pattern in one or the other dimension which is uniform and universal with respect to the individual of a species.

6.Principle of proceeding from general to specific-While developing in relation to any aspect of personality. The child first pickup or exhibit general response and learn how to show specific and goal-directed responses afterwards.

7.Principle of interaction between Heredity and Environment-Development of a child is a process that cannot be defined wholly based on either on heredity or environment. Both have to play an important role in development. There are arguments in favour of both. However, most of the psychologist agree that an interplay o these two factors leads to development.Where heredity decides or set some limits on development (mostly physical), environmental influences complete the developmental process (qualitative). Environmental influences provide space for multidimensional development through interaction with family, peers, society and so on. Growth and development is a joint product of heredity and environment.

8.Principle of interrelation-Various aspects or dimension of one's growth and development are interrelated. What is achieved or not achieved in on or other dimensions in the course of the gradual and continuous process of the development surely affects the development of other dimensions?A healthy body tends to develop a healthy mind and an emotionally stable, physically strong and socially conscious personality. Inadequate physical or mental development may, on the other hand, result in a socially or emotionally maladjusted personality.

9.Principle of Cephalocaudal-Development proceeds in the direction of the longitudinal axis. Development from head to foot or toe. That is why, before it becomes able to stand, the child first gains control over his head and arms and then on his legs**.**

10.Principle of Proximodistal-Development of motor skills to start at central body parts to outwards. That is why, in the beginning, the child is seen to exercise control over the large fundamental muscles of the arm and then hand and only afterwards over the smaller muscles of the fingers.

11.Principle of predictability-Development is predictable, which means that with the help of the uniformity of pattern and sequence of development. We can go to a great extent, forecast the general nature and behaviour of a child in one or more aspects or dimension at any particular stage of its growth and development. We can know the particular age at which children will learn to walk, speak and so on.

12.Principle of Spiral versus Linear advancement-The child doesn't proceed straight or linear on the path of development at any stage never takes place with a constant or steady pace. After the child had developed to a certain level, there is likely to be a period of rest for consolidation of the developmental progress achieved till then. In advancing further, therefore, the development turn back and then moves forward again in a spiral pattern.

13.Principle of Association of Maturation and Learning-Biological growth and development are known as maturation. Biological changes involve changes in the brain and the nervous system, which provide new abilities to a child. Development proceeds from simple to complex. In the beginning, a child learns through concrete objects and gradually moves to abstract thinking. This transition happens because of maturation.Growth and Development is a Product of Both Heredity and Environment:Development is influenced by both heredity and environment. Both are responsible for human growth and development.

- Conclusion-Growth and development interchangeably use, Growth is required for development and we can conclude from the above point, the principles of growth and development very essential for the teacher to develop curriculum according to the needs and ability of a child.

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Genetic basis and concepts associated with human life

❖ Human Genetics

Human genetics is the study of thehuman genomeand the transmission ofgenesfrom one generation to the next. Inheritance in humans does not differ in any fundamental way from that in other organism.

Human genetics today comprises a number of overlapping fields, including:

1.Classical or formal genetics-the study of the transmission of single genes within families and the analysis of more complex types of inheritance.

2.Clinical genetics-It is the medical specialty which provides a diagnostic service and genetic counseling for individuals or families with, or at risk of, conditions which may have a genetic basis. diagnosis, prognosis and, in some cases, the treatment of genetic diseases.

3.Genetic counseling-An important area within clinical genetics involving the diagnosis, risk assessment, and interpersonal communication.

4.Cancergenetics- The study of genetic factors ininheritedand sporadiccancer.

5.Cytogenetics-The study of chromosomes in health and disease.

6.Biochemical genetics-The biochemistry of nucleic acids and proteins including enzymes.

7.Pharmacogenetics-How genes govern the absorption, metabolism and disposal ofdrugsand untoward reactions to them.

8.Molecular genetics-The molecular study of genetics including particularly DNA and RNA.

9.Immunogenetics-The genetics of the immune system including blood groups, HLA, and the immunoglobulins.

10.Behavioral genetics-The study of genetic factors in behavior in health and disease including mental retardation andmental illness.

11.Population genetics-The study of genes within populations including gene frequencies, the gene pool, and evolution.

12.Reproductivegenetics-The genetics of reproduction including genes and chromosomes in germ cells and the early embryo.

13.Developmental genetics-The genetics of normal and abnormal development includingcongenital malformations(birth defects).(Cancergenetics- The study of the genetic factors in inherited and sporadic cancer)

14.Ecogenetics-The interaction of genetics with the environment.

15.Forensic genetics-The application of genetic knowledge, including DNA, to legal matters.

- Origins of Human Genetics. A personal perspective

Genetics evolved as a field of science after 1900 with new theories being derived from experiments obtained in fruit flies, bacteria, and viruses. This personal account suggests that the origins of human genetics can best be traced to the years 1949 to 1959. Several genetic scientific advances in genetics in 1949 yielded results directly relating to humans for the first time, except for a few earlier observations. In 1949 the first textbook of human genetics was published, the American Journal of Human Genetics was founded, and in the previous year the American Society of Human Genetics. In 1940 in Britain a textbook entitled *Introduction to Medical Genetics* served as a foundation for introducing genetic aspects into medicine. The introduction of new methods for analyzing chromosomes and new biochemical assays using cultured cells in 1959 and subsequent years revealed that many human diseases, including cancer, have genetic causes. It became possible to arrive at a precise cause-related genetic diagnosis. As a result the risk of occurrence or re-occurrence of a disease within a family could be assessed correctly. Genetic counseling as a new concept became a basis for improved patient care. Taken together the advances in medically orientated genetic research and patient care since 1949 have resulted in human genetics being both, a basic medical and a basic biological science. Prior to 1949 genetics was not generally viewed in a medical context. Although monogenic human diseases were recognized in 1902, their occurrence and distribution were considered mainly at the population level.

Introduction-With the completion of the Human Genome Project in 2004 human genetics moved into a new era of exploring the whole genome and its relation to the causes of genetic

disorders. New approaches based on numerous new technological advances, such as different automated DNA sequencing methods, the elucidation of different types of individual genetic variation and others, allow high resolution analysis of the human genome in various genetic etiologies of diseases in a great number of individuals in different geographic populations or analysis of single cells. Earlier genetic studies in human genetics were aimed at individual genes or groups of linked genes. In contrast, during the first 4–5 decades of increasing knowledge of general genetics since 1900, aspects relating to humans could rarely be considered. The term "human genetics" has only been in wide use since 1949 on. "Man is one of the most unsatisfactory of all organisms for genetics studies." One sentence later: "Obviously no geneticist would study such a refractory object, were it not for the importance that a knowledge of the subject has in other fields." Thus wrote Alfred H Sturtevant in 1954, expressing an opinion widely held among geneticists before the advent of human genetics (Extended Text #1 in Supp.Mat.).

How did human genetics arise? Here I propose that the origins of human genetics as an independent scientific field can best be traced to the years between 1949 and 1959, when genetic advances could be applied to humans. Several scientific events took place in 1949 that support this idea. In addition, I will briefly review advances relating to human genetics as they apply to medicine and patient care before and after 1949, much of it as a personal witness since 1963. The year 1949two new important insights in 1949 serve as hallmarks in the development of early human genetics. James V Neel described sickle cell anemia as an autosomal recessive trait and four months later in the same volume of *Science* Linus Pauling identified this disorder as a "molecular" disease. In 1949 JBS Haldane estimated the mutation rate in humans based on an analysis of seven human diseases to be about 4×10^{-5}. Also in 1949, in a publication entitled "Disease and Evolution" JBS Haldane viewed infectious diseases as having potential as an "agent for natural selection" in man. Another landmark paper in 1949 described the serendipitous discovery of a cytologically visible structure in the nucleus of neurons of female cats, but not in males . Subsequently named Barr body, later X-chromatin, this eventually led to the principle of X-chromosome inactivation . The examples above constitute a shift in the paradigm in scientific progress as postulated by Kuhn .According to this theory science not only progresses as continuous accumulation of knowledge, but also by periods of a new paradigm by asking completely new questions in a new context . For additional reasons the year 1949 can be considered a watershed time point from which modern human genetics developed. In 1949 the American Journal of Human

Genetics was established, a year after the founding of the American Society of Human Genetics (ASHG). Curt Stern (1902–1981), one of the leading geneticists between 1923 and 1970, published the first textbook in this field, *Principles of Human Genetics* The first two meetings of the ASHG took place in September 1948 in Washington, DC, and December 1949 in New York City, both under HJ Muller as president. The title of Muller´s presidential address presented at the second annual meeting of the ASHG in 1949 was "Our Load of Mutations" .This was mainly concerned with the consequences of mutations in humans at the population level. In 1940 in Britain, a textbook appeared entitled *An Introduction to Medical Genetics* by Fraser Roberts . This was the first textbook on medical genetics, and the only one for many years. The year 1949 is also noteworthy for human genetics in post-war Germany (Extended Text #2 in Supp. Mat.).

Early advances-The transition from general genetics to human genetics is characterized by recognizing the medical aspects. Newly discovered chromosome abnormalities, hereditary metabolic defects and molecular technology resulted in defining new human diseases due to different genetic causes. Human genetics includes *medical genetics*, devoted to all of its medical aspects and *clinical genetics*, the practice of diagnosis and management of genetic disorders. McKusick in 1993 stated that clinical genetics originated in 1959 when human cytogenetics and biochemical genetics developed into mainstream subjects of research and its medical applications . The term *genomics*, derived from *genome* (coined by Winkler in 1920), was introduced in 1987 . It relates not only to all genes, but also to the molecules regulating their functions and nuclear structures.TheEuropean Society of Human Genetics (ESHG) was founded at the Third International Congress of Human Genetics in 1966 in Chicago, with the author of this review and Albert de la Chapelle present. Its first annual meeting was held 1968 in Paris.

- Chromosomes

Human genetics is a theory-driven science, but it also greatly depends on advances in methods of investigation. Probably the most important single contribution to the development of modern human genetics was that of cytogenetics in 1959.Chromosomes are structures found in the center (nucleus) of cells that carry long pieces of DNA. DNA is the material that holds genes. It is the building block of the human body. First, individual chromosomes in mitosis could not yet be individually identified distinguished except for a few chromosome pairs (Extended Text #3 in Supp. Mat.). New cell culture methods and improved mitotic chromosomal preparations for light microscopic analysis directly led to the recognition in

1959/60 that several human disorders result from defined aberrations in the number or structure of chromosomes (Trisomies 21, 18, 13; partial chromosomal deletions or duplications). Since each aberration was associated with a distinct phenotype, a relationship between a genotype and a phenotype could be defined. In 1959, individuals without a Y chromosome were shown to be female, whereas those with a Y chromosome were male no matter how many X chromosomes were present. This was the first step towards defining the fundaments of mammalian sex determination. In the 1960s and 1970s it became apparent that fetal death is frequently caused by chromosomal aberrations that are not observed in newborns. Although chromosomes in metaphase were described as early as 1879, the correct number of human chromosomes was not established until 1956 (Extended Text #4 in Supp. Mat.).

- Cell cultures and biochemical defects

From the 1960s on, cultured cells became widely used to investigate monogenic human diseases (somatic cell genetics). Cells homozygous for a genetic defect could be distinguished from heterozygous cells. Fused homozygous cells from different patients (cell hybrids) could result in a normal cellular phenotype, proving the disease in question to be genetically heterogeneous. Biochemical assays began to define human hereditary metabolic diseases such as amino acid disorders, lysosomal storage diseases, and others at the level of the phenotype and genotype. Prenatal genetic diagnosis was introduced in the late 1960s.

- Molecular advances

Beginning in 1974 DNA could be analyzed by applying new recombinant DNA methods directly, or indirectly by using linked polymorphic DNA markers. New methods to sequence DNA nucleotides in 1977 and to amplify small amounts of DNA in 1985 (PCR) resulted in precise genetic diagnoses with correct assessment of the genetic risk within a given family. Molecular cytogenetics was introduced shortly after 1985. This allowed the analysis of mitotic chromosomes by in situ DNA hybridization. Submicroscopic chromosomal alterations (less than 4 million base pairs of DNA) became visible. New automated massive parallel DNA sequencing methods ("next generation") introduced in 2005 have made it possible to sequence the DNA of large numbers of individuals and tumor cells at relatively low cost . Other new approaches have become possible: genome-wide association studies (GWAS), exome sequencing, whole genome sequencing, and others.

- Genetics in medicine

From about 1960 on genetics included its medical aspects. McKusick in 1992 reviewed the development of human genetics from the First International Congress of Human Genetics in 1956 at Copenhagen to 1991 . He noted that by 1992 human genetics had become "medicalized, subspecialized, professionalized, molecularized, consumerized, commercialized". Systematic genetic diagnostic services and genetic counseling became part of patient care . The American Board of Medical Genetics was established in 1979, the American College of Medical Genetics in 1992.

- Prescient insights

Three remarkable exceptions with early genetic insights relating to humans can be cited here: William Bateson, Archibald E Garrod, and Theodor Boveri. They can be considered forerunners of human genetics. *William Bateson* (1861–1926) at Cambridge in his *Principles of Heredity* in 1913 described several human pedigrees with autosomal dominant, recessive, and X-linked inheritance (pp. 203–234). Bateson states on page 233: "Similarly when we find that a condition such as retinitis pigmentosa sometimes descends in one way and sometimes in another, we may perhaps expect that a fuller knowledge of facts would show that more than one pathological state may be included under the same name". Thus, Bateson recognized genetic heterogeneity more than 40 years before CF Fraser and H Harris in 1956 independently established it as a basic principle in human genetics (see above). Other examples of early descriptions of Mendelian inheritance of human diseases are heritable biochemical defects, described by Archibald Garrod as "inborn errors of metabolism" or brachydactyly type A1 (OMIM 112500) by WC Farabee in a PhD thesis published in 1905, reviewed by Haws &McKusick in 1963 and Bateson, 1913, page 210–216 . Archibald E Garrod (1857–1936) at Great Ormand Street Hospital London recognized the genetic individuality of man. In a letter to Bateson on 11 January 1902, Garrod wrote: "I believe that no two individuals are exactly alike chemically any more than structurally (Ref. ,Bearn, 1993, page 61). In his prescient monograph *Inborn Factors of Disease* of 1931 Garrod considered predisposition to disease to be important. A remarkable insight pointing to the importance of genetics in human diseases is contained in Thomas H Morgan's Nobel lecture in 1934, *The relation of genetics to physiology and medicine*: "… considering the present attitude of medicine and the dominating place of the constitutional researches, the role of the inner, hereditary factors to health and disease appears in a still clearer light. For the general understanding of maladies, for prophylactic medicine, and for the treatment of diseases, hereditary research thus gains still greater importance" (cited by Bearn, 1993, ref. ,page 193).

- Diversity of modern human genetics

Modern human genetics has evolved in different directions mainly based on different methods of investigation, although in research it is by no means limited to *Homo sapiens*. Today it comprises genomics with several subsections (e.g., proteomics, epigenomics and others), molecular genetics, tumor genetics and genomics, pharmacogenetics and -genomics, immunogenetics, epigenetics, cytogenetics, somatic cell genetics, biochemical genetics, population genetics, evolutionary bases of causes of disorders, bioinformatics and others. This is extensively reviewed in two current multivolume online textbooks . No vertebrate genetics or genomics is better understood than that of man. Yet, human genetics is not an established curriculum of study within the faculties of either medicine or biology. Rather, to become a human geneticist one must study medicine or a basic science and complete approximately five years of formal postgraduate training. Thus, human geneticists represent either a medical or a non-medical basic science. This dual structure of being both a medical and a biological discipline makes human genetics unique among the medical subspecialities, as outlined in detail by Childs .

Conclusion-In summary, modern human genetics began when new advances in genetics were systematically applied in medicine from 1949 on. A close relationship between genetics and medicine evolved into human genetics. This contributes greatly to an understanding of the causes of human diseases. In addition, genetic counseling based on empathy and free decision-making of individuals has become part of patient care. Human genetics had become "medicalized".

- History of Human Genetics

Theories and studies in human genetics have a long history. Observations on theinheritance of physical traits in humans can even be found in ancient Greekliterature. In the eighteenth and nineteenth centuries observations were publishedon the inheritance of numerous diseases, including empirical rules on modes ofinheritance. The history of human genetics as a theory-based science began in1865, when Mendel published his Experiments on Plant Hybrids and Galton hisstudies on Hereditary Talent and Character. A very important step in thedevelopment of human genetics and its application to medicine came withGarrod's demonstration of a Mendelian mode of inheritance in alkaptonuria andother inborn errors of metabolism (1902). Further milestones were Pauling'selucidation of sickle cell anemia as a "molecular disease" (1949), the discoveryof genetic enzyme defects as the causes of metabolic disease (1950s, 1960s), thedetermination that there are 46 chromosomes in humans

(1956), the developmentof prenatal diagnosis by amniocentesis (1968–1969) for the detection ofchromosomal defects such as Down syndrome, and the large-scale introductionof molecular methods during the last 25 years. Concepts appropriated fromhuman genetics have often influenced social attitudes and introduced the eugenicsmovement. Abuses have occurred, such as legally mandated sterilization, initiallyin the United States and later more extensively in Nazi Germany, where thekilling of mentally impaired patients was followed by the genocide of Jews andRomani (Gypsy) people.

- ## Human Genetics as Fundamental andApplied Science

Human genetics is both a fundamental and an applied science. As a fundamental science, it is part of genetics – the branch of science that examines the laws of storage, transmission, and realization of information for development and function of living organisms. Within this framework, human genetics concerns itself with the most interesting organism – the human being. This concern with our own species makes us scrutinize scientific results in human genetics not only for their theoretical significance but also for their practical value for human welfare. Thus, human genetics is also an applied science. Its value for human welfare is bound to have repercussions for theoretical research as well, since it influences the selection of problems by human geneticists, their training, and the financing of their research. Because of its continued theoretical and practical interest, human genetics offers fascination and human fulfillment unparalleled by work in fields that are either primarily theoretical or entirely practical in subject matter.

- ## Science of Genetics

Genetics is based on a powerful and penetrating theory. The profundity of a theory depends on the depth of the problems that it sets out to solve and can be characterized by three attributes: the occurrence of high-level constructs, the presence of a mechanism, and high explanatory power [1] . In genetics, the highlevel "construct" is the gene as a unit of storage, transmission, and realization of information. Since the rediscovery of Mendel's laws in 1900, genetic mechanisms have been worked out step by step to the molecular level – deciphering of the genetic code, analysis of transcription and translation, the function of genedetermined proteins, the fi ne structure of the genetic material, and DNA sequences outside of genes. The problems of regulation of gene activity in the development and function of organisms are currently a principal goal of fundamental research. So far, the explanatory power of the theory has not nearly been exhausted.

- Central Theory of Genetics Looked at as a Paradigm

While Kuhn's concepts were developed on the basis of the history of the physical sciences, his description well fi ts the development of genetics. Up to the second half of the nineteenth century, the phenomena of heredity eluded analysis. Obviously, children were sometimes – but by no means always – similar to their parents; some diseases were shown to run in families; it was possible to improve crops and domestic animals by selective breeding. Even low-level laws were discovered, for example Nasse's law that hemophilia affects only boys but is transmitted by their mothers and sisters. However, a convincing overall theory was missing, and attempts at developing such at theory were unsuccessful. In this situation, Mendel, in his work (1865) [12] first improved a procedure; he complemented the breeding experiment by counting the offspring. He then interpreted the results in terms of the random combination of basic units; by assuming these basic units, he founded the gene concept – the nuclear concept underlying genetic theory

- Fields of Human and Medical Genetics

The field of human genetics is large, and its borders are indistinct. The development of different techniques and methods has led to the development of many fields of sub specialization. Many of these overlap and are not mutually exclusive. The field of human molecular genetics has its emphasis in the identification and analysis of genes at the DNA level. Methods such as DNA digestion by restriction endonucleases, Southern blotting, 8 Introduction polymerase chain reaction (PCR), sequencing and many others are being applied. Human biochemical genetics deals with the biochemistry of nucleic acids, proteins, and enzymes in normal and mutant individuals. Laboratory methods of the biochemist are being used (e.g., chromatography; enzyme assays). Human cytogenetics deals with the study of human chromosomes in health and disease. Immunogenetics concerns itself largely with the genetics of blood groups, tissue antigens such as the HLA types, and other components of the immune system. Formal genetics studies segregation and linkage relationships of Mendelian genes and investigates more complex types of inheritance by statistical techniques.

- Concepts of human genetics

The basic concepts of genetics involves understanding how cells, DNA, genes and chromosomes all interact. When seeking to understand genetics, it's important to understand heredity and the different patterns of inheritance. The basic concept of genetics involves understanding how evolution plays a role in the changes in genes.The chromosome theory of

inheritance, extensions of Mendelian analysis, linkage, advanced transmission genetics, recombination in bacteria and their viruses, cytogenetics, genetic change, the nature of the gene, DNA structure and function, mechanisms of genetic change, developmental genetics and population genetics.

Genes: A DNA segment with a nucleotide sequence encoding an RNA product that is either directly functional or encodes a protein. Genes are the basic units of genetic information.

Locus: Location of a gene or a particular DNA sequence (e.g., promoter) on a chromosome . A physical map of the genome shows the respective position of a gene (using the unit "base pairs" or "bp"). The genetic map, on the other hand, shows the relative position of genes to one another, as seen after staining of chromosomes.

Allele: one of the variant forms a gene can have in a population (from a particular locus).Different alleles of a gene have different nucleotide sequences.

Wild-type allele: the allele that encodes for the most common phenotype in a population

Mutant allele: any allele that does not code for the most common phenotype in a population.

Multiple alleles: the occurrence of more than two different alleles in a population (e.g., the ABO blood group system) . or a given gene, several stable mutations have accumulated over the course of evolution. In the ABO blood group system, for example, there are three such alleles (A, B, O) that encode the different blood groups depending on the combination.

Allele frequency: the prevalence of a particular allele at a genetic locus within a population . It represents the proportion of all polymorphic alleles to the total number of alleles for a particular gene in the population.Examples:In a population of 250 individuals, there will be a total of 500 gene copies (all individuals carry two alleles of a gene). If 10 individuals of this population are homozygotes and 30 are heterozygotes for a certain mutant allele, then the total number of mutant copies is (10 x 2) + (30 x 1) = 50.The allele frequency of the mutant allele will be 50/500 = 0.01 = 1%.

Genetic polymorphism: a gene with more than one allele occupying the same locus of that gene. A gene is considered polymorphic if each of its existing alleles is present in ≥ 1% of a population

Chromosome: a structure found in the nucleus of eukaryotic cells that contains nucleic acids and associated proteins (e.g., nucleosomes). o Contains part or all of the genetic information

for a given organism of each human cell contains 23 pairs of homologous chromosomes (corresponding in structure and genetic information, i.e., 23 chromosomes are inherited from each parent).Germ cells only carry one-half of a somatic cell's chromosomes. of can be visualized under a microscope during metaphase.

Allosome (sex chromosome):A type of chromosome that carries the genes that determine chromosomal sex (see"Development of the reproductive system") of human cells contain one pair of allosomes: XX in female individuals and XY in male individuals.

Autosome:Any chromosome of a cell genome that is not an allosome of human cells contain 22 pairs of homologous autosomes.

Ploidy: the number of chromosome sets present in a cell o Haploid cell: contains one single unpaired set of chromosomes (n = 23) o

Diploid cell: carries a complete set of paired chromosomes (2n = 46)

Chromatid: one of the two identical strands of a replicated chromosome .

Sister chromatids: two identical chromatids joined at the centromere (i.e., the duplicated chromosome)

Centromere: a condensed region of chromosomes where sister chromatids join of divides the chromatids into a short p arm and a long q arm of mediates attachment of the chromosome to the meiotic or mitotic spindle. Depending on the centromere position, a chromosome can be:

Metacentric: The p and q arms are of approximately identical length.

Submetacentric: The p arm is short and the q arm is long.

Acrocentric: The p arm is much shorter than the q arm.

Kinetochore: a protein complex found at the centromere that allows for the attachment of mitotic spindle microtubules during mitosis

Telomere:Repetitive, noncoding DNA sequence at the ends of each chromosome, which prevents the loss of coding DNA sequences during DNA replication.Telomere shortening occurs after each cell division, which can reduce a cell's life span.

- Genotype and phenotype

Genotype:A genotype is an individual's collection of genes. It is the chemical composition of an organism's DNA, contributing to that organism's phenotype.The term is often used to describe a combination of alleles at one or more specific locus.Based on the genotype, the following states (zygosities) can be distinguished:

▪ Homozygote: The two homologous chromosomes contain identical alleles at a given locus.

▪ Heterozygote: The two homologous chromosomes contain different alleles at a given locus.

▪ Hemizygote: having only one copy of a chromosome pair (e.g., genes located on a male individual's X or Y chromosomes).

Phenotype: the observable traits of an organism.Determined by a combination of the genotype and environmental factors. Includes an individual's physical traits (e.g., eye or hair color) and physiological characteristics (e.g., atopy)

Dominance: the characteristic of an allele to mask or override the phenotypical effects of the allele on the other corresponding copy of the chromosome in heterozygous individuals of dominant.

Allele: the allele which is phenotypically apparent in heterozygous individuals (overrides the phenotypical effects of the corresponding allele in heterozygous individuals).

Recessive allele: an allele whose effects are overridden by the corresponding dominant allele in heterozygous individuals.

Codominance: a state in which both alleles are fully expressed and contribute to the heterozygote phenotype

Examples

▪ ABO blood group system

▪ Human leukocyte antigens (HLA)

▪ α1-antitrypsin deficiency

Incomplete dominance: a type of dominance in which the dominant allele fails to completely override the phenotypic expression of the recessive allele, thus producing a new intermediate phenotypic trait (e.g., sickle cell trait).

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Topic No.-6

Stages of Human Development

❖ Different stages of human development

1.Prenatal Development (conception to till birth)

Conception occurs and development begins. All of the major structures of the body are forming and the health of the mother is of primary concern. Understanding nutrition, teratogens (or environmental factors that can lead to birth defects), and labour and delivery are primary concerns.

2.Infancy(0-2 years)

The first year and a half to two years of life are ones of dramatic growth and change. A newborn, with a keen sense of hearing but very poor vision is transformed into a walking, talking toddler within a relatively short period of time. Caregivers are also transformed from someone who manages feeding and sleep schedules to a constantly moving guide and safety inspector for a mobile, energetic child.

3.Early Childhood(3-5years)

Early childhood is also referred to as the preschool years consisting of the years which follow toddlerhood and precede formal schooling. As a three to five-year-old, the child is busy learning language, is gaining a sense of self and greater independence, and is beginning to learn the workings of the physical world. This knowledge does not come quickly, however, and preschoolers may have initially have interesting conceptions of size, time, space and distance such as fearing that they may go down the drain if they sit at the front of the bathtub or by demonstrating how long something will take by holding out their two index fingers several inches apart. A toddler's fierce determination to do something may give way to a four-year-old's sense of guilt for doing something that brings the disapproval of others.

4.Middle Childhood(6-11 years)

The ages of six through eleven comprise middle childhood and much of what children experience at this age is connected to their involvement in the early grades of school. Now the world becomes one of learning and testing new academic skills and by assessing one's abilities and accomplishments by making comparisons between self and others. Schools

compare students and make these comparisons public through team sports, test scores, and other forms of recognition. Growth rates slow down and children are able to refine their motor skills at this point in life. And children begin to learn about social relationships beyond the family through interaction with friends and fellow students.

5.Adolescence(11-20 years)

Adolescence is a period of dramatic physical change marked by an overall physical growth spurt and sexual maturation, known as puberty. It is also a time of cognitive change as the adolescent begins to think of new possibilities and to consider abstract concepts such as love, fear, and freedom. Ironically, adolescents have a sense of invincibility that puts them at greater risk of dying from accidents or contracting sexually transmitted infections that can have lifelong consequences.

6.Early Adulthood(20-40 years)

The twenties and thirties are often thought of as early adulthood. (Students who are in their mid 30s tend to love to hear that they are a young adult!). It is a time when we are at our physiological peak but are most at risk for involvement in violent crimes and substance abuse. It is a time of focusing on the future and putting a lot of energy into making choices that will help one earn the status of a full adult in the eyes of others. Love and work are primary concerns at this stage of life.

7.Middle Adulthood(40-60 years)

The late thirties through the mid-sixties is referred to as middle adulthood. This is a period in which aging, that began earlier, becomes more noticeable and a period at which many people are at their peak of productivity in love and work. It may be a period of gaining expertise in certain fields and being able to understand problems and find solutions with greater efficiency than before. It can also be a time of becoming more realistic about possibilities in life previously considered; of recognizing the difference between what is possible and what is likely. This is also the age group hardest hit by the AIDS epidemic in Africa resulting in a substantial decrease in the number of workers in those economies (Weitz, 2007).

8.Late Adulthood

This period of the life span has increased in the last 100 years, particularly in industrialized countries.

Late adulthood is sometimes subdivided into two or three categories such as the "young old" and "old " or the "young old", "old ", and "oldest old". We will follow the former categorization and make the distinction between the "young old" who are people between 65 and 79 and the "old old" or those who are 80 and older. One of the primary differences between these groups is that the young old are very similar to midlife adults; still working, still relatively healthy, and still interested in being productive and active. The "old old" remain productive and active and the majority continues to live independently, but risks of the diseases of old age such as arteriosclerosis, cancer, and cerebral vascular disease increases substantially for this age group. Issues of housing, healthcare, and extending active life expectancy are only a few of the topics of concern for this age group. A better way to appreciate the diversity of people in late adulthood is to go beyond chronological age and examine whether a person is experiencing optimal aging (like the gentleman pictured above who is in very good health for his age and continues to have an active, stimulating life), normal aging (in which the changes are similar to most of those of the same age), or impaired aging (referring to someone who has more physical challenge and disease than others of the same age).

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https://courses.lumenlearning.com/suny-lifespandevelopment2/chapter/periods-of-development/

Topic No.-7

Domains of human development and it's latest issues in human development

❖ Domains in human development

Human development refers to the physical, cognitive, language and psychosocial development of humans throughout the lifespan. What types of development are involved in each of these three domains, or areas, of life? Physical development involves growth and changes in the body and brain, the senses, motor skills, and health and wellness. Cognitive development involves learning, attention, memory, language, thinking, reasoning, and creativity. Psychosocial development involves emotions, personality, and social relationships.Eachdomain,while unique in it'sown,has much overlap with all other domains.It is important to understand these concepts,because everything related to human development can be traced back to these domains.

☞Human development encompasses the physical, cognitive, language and psychosocial changes that occur throughout a lifetime.
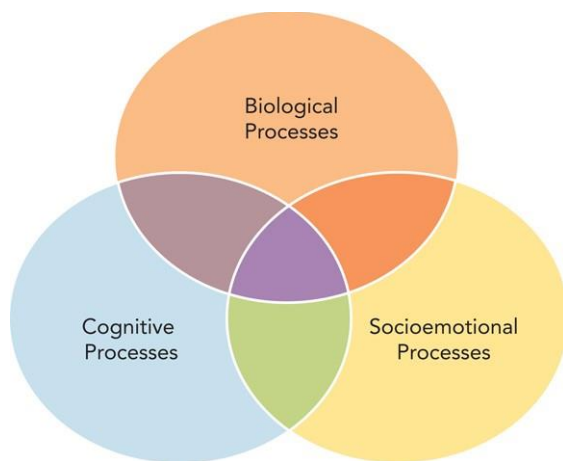
Physical, Cognitive and Psychosocial development are interrelated

1.Physical Domain

Physical development is defined as the biological changes that occur in the body and brain, including changes in size and strength, integration of sensory and motor activities, and development of fine and gross motor skills.

Many of us are familiar with the height and weight charts that pediatrician consult to estimate if babies, children, and teens are growing within normative ranges of physical development. We may also be aware of changes in children's fine and gross motor skills, as well as their increasing coordination, particularly in terms of playing sports. But we may not realize that physical development also involves brain development, which not only enables childhood motor coordination but also greater coordination between emotions and planning in adulthood, as our brains are not done developing in infancy or childhood. Physical development also includes puberty, sexual health, fertility, menopause, changes in our senses, and primary versus secondary aging. Healthy habits with nutrition and exercise are also important at every age and stage across the lifespan.

| preterm newborn infants | term newborn infants (0 to 28 days) | infants and toddlers (> 28 days to 23 months) | children (2 to 11 years) | adolescents (12 to 18 years) |
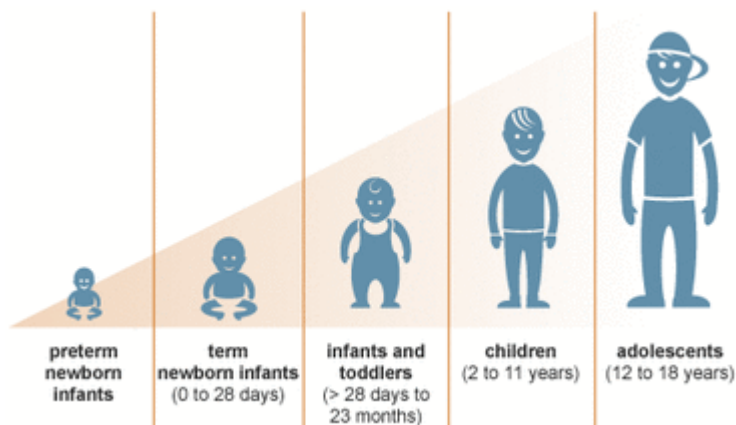
2.Cognitive Domain

Cognitive development is defined as the changes in the way we think, understand, and reason about the world.

If we watch and listen to infants and toddlers, we can't help but wonder how they learn so much so fast, particularly when it comes to language development. Then as we compare young children to those in middle childhood, there appear to be huge differences in their ability to think logically about the concrete world around them. Cognitive development includes mental processes, thinking, learning, and understanding, and it doesn't stop in childhood. Adolescents develop the ability to think logically about the abstract world (and may like to debate matters with adults as they exercise their new cognitive skills!). Moral reasoning develops further, as does practical intelligence—wisdom may develop with experience over time. Memory abilities and different forms of intelligence tend to change with age. Brain development and the brain's ability to change and compensate for losses is significant to cognitive functions across the lifespan, too.

❖ Stages of cognitive development

- **The sensorymotor stage:** A period of time between birth and age two during which an infant's knowledge of the world is limited to his or her sensory perceptions and motor activities.Behaviours are limited to simple motor responses caused by sensory stimuli.

- **The preoperational stage:** A period between ages two and six during which a child learns to use language. During this stage, children do not yet understand concrete logic, cannot mentally manipulate information and are not unable to take the point of view of other people.

- **The concrete operational stage:** A period between ages seven and eleven during which children gain a better understanding of mental operations. Children begins thinking logically about concrete events, but have difficulty understanding abstract or hypothetical concepts.

- **The formal operational stage:**A period between age twelve to adulthood when people develop the ability to think about abstract concepts. Skills such as logical thought, deductive reasoning and systematic planning also emerge during this stage.

PIAGET'S STAGES OF COGNITIVE DEVELOPMENT

0-2 YEARS	2-7 YEARS	7-11 YEARS	12+ YEARS
SENSORIMOTOR	**PREOPERATIONAL**	**CONCRETE OPERATIONAL**	**FORMAL OPERATIONAL**
Explore the world through senses and actions *looking, hearing, touching, mouthing, grasping*	Represent and refer to objects and events with words or images; use intuitive rather than logical reasoning; believe inanimate objects possess human feelings/ emotions	Conserve, reverse their thinking, and classify objects; think logically and understand analogies but only about concrete events	Use abstract reasoning about hypothetical events/situations, consider logical possibilities, and systematically examine/test hypotheses
DEVELOPMENT Object permanence Stranger anxiety	**DEVELOPMENT** Pretend play Egocentrism	**DEVELOPMENT** Conservatism Mathematical transformations	**DEVELOPMENT** Abstract logic Potential for mature, moral reasoning

3.Psychosocial Domain

Social-emotional development is defined as the changes in the ways we connect to other individuals and express and understand emotions.

Development in this domain involves what's going on both psychologically and socially. Early on, the focus is on infants and caregivers, as temperament and attachment are significant. As the social world expands and the child grows psychologically, different types of play and interactions with other children and teachers become important. Psychosocial development involves emotions, personality, self-esteem, and relationships. Peers become

more important for adolescents, who are exploring new roles and forming their own identities. Dating, romance, cohabitation, marriage, having children, and finding work or a career are all parts of the transition into adulthood. Psychosocial development continues across adulthood with similar (and some different) developmental issues of family, friends, parenting, romance, divorce, remarriage, blended families, caregiving for elders, becoming grandparents and great grandparents, retirement, new careers, coping with losses, and death and dying.

As you may have already noticed, physical, cognitive, and psychosocial development are often interrelated, as with the example of brain development. We will be examining human development in these three domains in detail throughout the modules in this course, as we learn about infancy/toddlerhood, early childhood, middle childhood, adolescence, young adulthood, middle adulthood, and late adulthood development, as well as death and dying. Children will experience a range of emotional and cognitive development related to interactions and relationships with adults and peers, identify of self, recognition of ability, emotional expression, emotional control, impulse control, and social understanding.
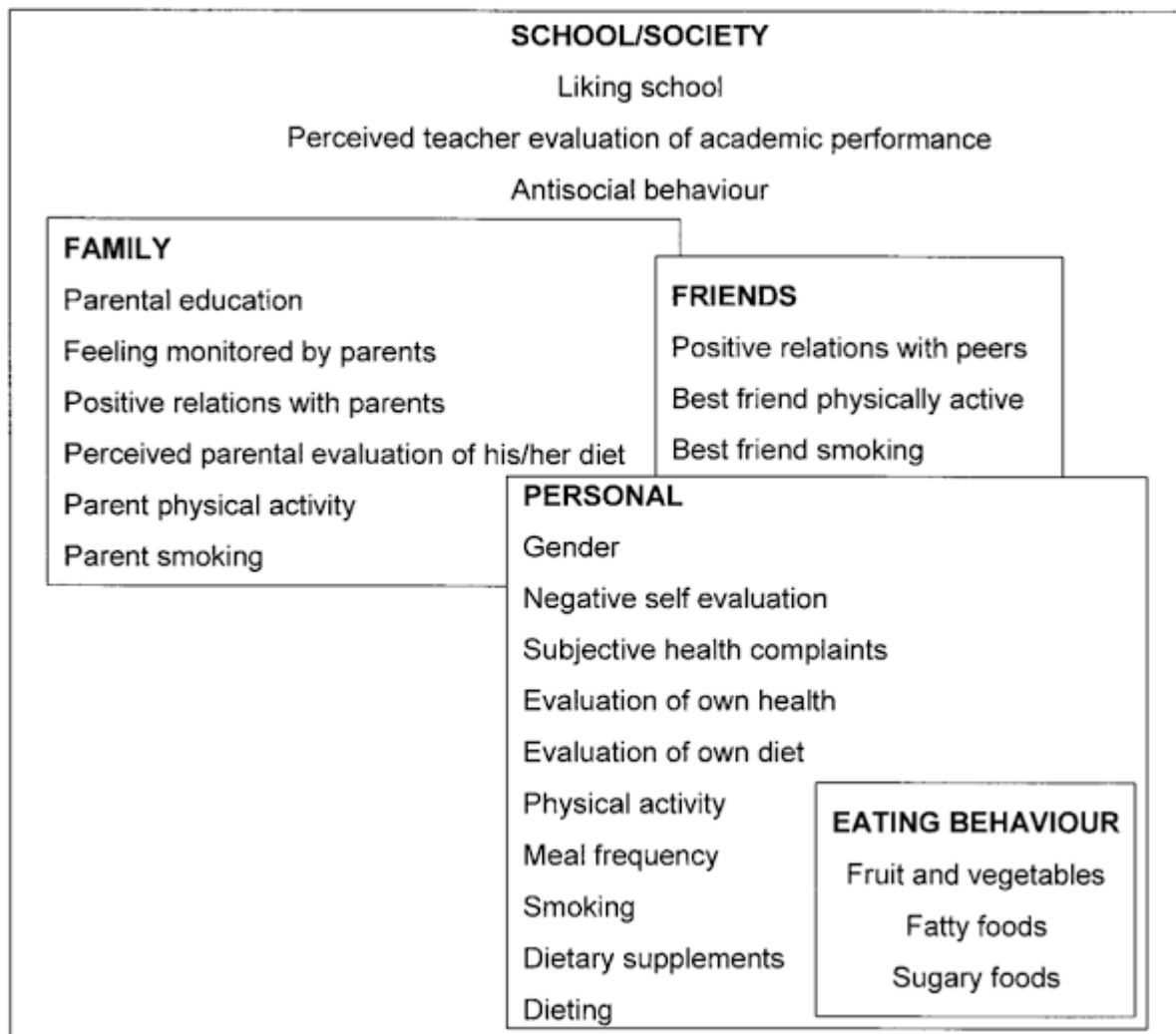
4.Language Domain

Infants understand words before they can say. In other words, comprehension precedes production of language. Children differ enormously in the rate at which they develop language.

The four different aspects of language include all of the following:

Phonology- The sound that make up the language.

Syntax-The grammer of the language.

Semantics- The meaning of words.

Pragmatics- How we use language in social situations to communicate.

Two areas of the brain are particularly important for language development and use: **Broca's area** is important for the production of speech, and **Wernicke's area** is important for understanding and making sense out of speech.

Children move through stages of language development, but there is a good deal of variability from child to child in the age at which each stage appears. Before they are able to use words, infants communicate by crying, cooing, babbling, and gesturing. Infants and toddler's begin verbalizing by using one word at a time and then create primitive sentences when they put two words together. When children make sentences that contain only the essential words this is called **telegraphic speech**. Fast mapping allows children to add words to rapidly to their vocabulary.

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5 Language Development Milestones for Under 5s: How to Foster Language Learning

0 - 3 months

Smiles and interacts with others.
In this initial stage of development, babies tend to smile, coo, and make sounds. They also cry differently to communicate different needs. Use everyday routines to make the most of interactive opportunities and increase one-on-one time where you are completely attentive to your baby.

4 - 7 months

Babbles and makes both short and long groups of sounds (7-12 months).
Model the language skills your child should be developing during everyday activities. Play around with sounds such as ba ba ba, pa pa pa, and ma ma ma. Get face-to-face with your child and show them how to babble.

7 months - 2 years

Understands what others are saying and follows simple commands.
By two years old, children can understand simple instructions and answer simple questions. New words are added to their vocabulary every month, and they start to string together two-word sentences. Speak at your child's level and use visual cues such as facial expressions and gestures. Avoid giving too many instructions at once.

2 ½ - 3 years

Uses 2-3 word sentences to talk about and ask for things.
By the time they are three years old, children can create sentences with two to three words, and by the time they reach five years old they can string together four to five words. Add an extra word to extend your child's vocabulary. For example, if your child says, "Dog" you can reply with, "Yes, Sam, it's a BIG dog." Emphasize the word

4 - 5 years

Names letters and numbers and is able to hold a longer conversation.
Use longer sentences and build vocabulary as your child gets older. Encourage your child to attend playgroups or preschool for more opportunities to practice language skills.

engage,
learn,
grow

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❖ Key Issues in Human Development

The main goal of those involved in studying human development are to describe and explain changes.Throughout this course, we will describe observations during development, then examine how theories provide explainations for why these changes occur.

There are many different theoretical approaches regarding human development. As we evaluate them in this course, recall that human development focuses on how people change, and the approaches address the nature of change in different ways:

Is the change smooth or uneven (continuous versus discontinuous)?

Is this pattern of change the same for everyone, or are there different patterns of change (one course of development versus many courses)?

How do genetics and environment interact to influence development (nature versus nurture)?

1.Is development continuous or discontinuous?

Continuous development views development as a cumulative process, gradually improving on existing skills.With this type of development, there is a gradual change. Consider, for example, a child's physical growth: adding inches to their height year by year. In contrast, theorists who view development as discontinuous believe that development takes place in unique stages and that it occurs at specific times or ages. With this type of development, the change is more sudden, such as an infant's ability to demonstrate awareness of object permanence (which is a cognitive skill that develops towards the end of infancy).
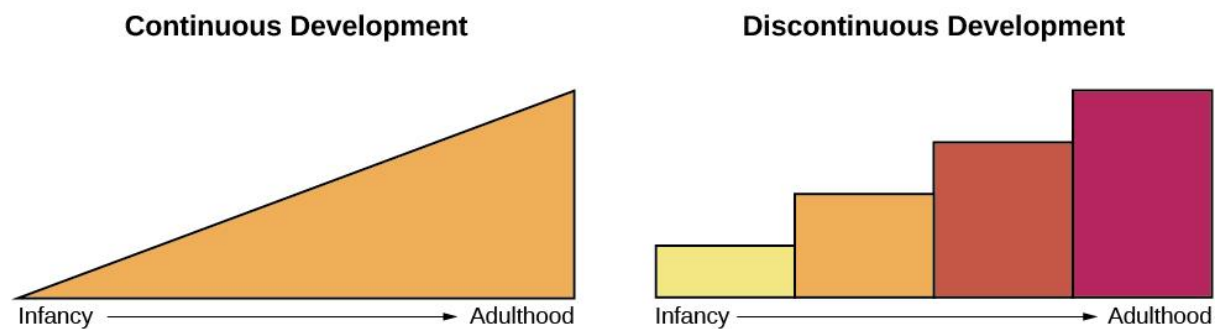
The concept of continuous development can be visualized as a smooth slope of progression, whereas discontinuous development sees growth in more discrete stages.

2.Is there one course of development or many?

Stage theories hold that the sequence of development is universal. For example, in cross-cultural studies of language development, children from around the world reach language milestones in a similar sequence (Gleitman& Newport,1995). Infants in all cultures coo before they babble, they begin babbling at about the same age and utter their first word around 12 months old. Yet we live in diverse contexts that have a unique effect on each of us. For example, researchers once believed that motor development followed one course of all children regardless of culture. However, child care practices vary by culture, and different practices have been found to accelerate or inhibit the achievement of developmental

milestones such as sitting, crawling, and walking (Karasik, Adolph, Tamis-LeMonda, & Bornstein, 2010)

(a)   (b)

All children across the world love to play. Whether in (a) Florida or (b) South Africa, children exploring sand, sunshine,and the sea.

3.How do nature and nurture influence development?

We are all born with specific genetic traits inherited from our parents, such as eye color, height, and certain personality traits. Beyond our basic genotype, however, there is a deep interaction between our genes and our environment. Our unique experiences in our environment influence whether and how particular traits are expressed, and at the same time, our genes influence how we interact with our environment (Diamond, 2009; Lobo, 2008). There is a reciprocal interaction between nature and nurture as they both shape who we become, but the debate continues as to the relative contributions of each.

Submitted to-Mrs.ManjuRathore

Submitted by-TayyabaKhatun

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Provided by:Hudson Valley Community College

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Brief orientation of theories of human development:Naturalism,Environmentalism,Maturational,Need,Ecological,Ethological,Cognitive,Social,Psychoanalytical, Language and Moral.

❖ Human development

Human development is a scientific study of how people change as well as how they stay the same throughout the life. Change is most obvious in childhood but occurs throughout the life.

• Need for studying human development.

The study of human development originally focused on describing behavior in order derives age norms. Today devlopmentalist also want to explain why behaviors occur by looking at factors that influence development; the next step is to predict behavior and, in some cases, to try to modify or optimize development through training or therapy.

• Theory

A theory is a set of related statements about data, the information obtained through research, scientists use theories to help them organize, or make sense of, their data and then to predict what data might be obtained under certain conditions

Theories then are important in helping scientists to describe, explain, interpret, and predict behaviour.

- Need for theories.

Theories guide future researchers by suggesting hypothesis to be tested.

A hypothesis is a possible explanation for a phenomenon and is used to predict the outcomes of an experiment. Sometimes research confirms a hypothesis ,providing support for a theory .at other times ,scientist must modify theories to account for unexpected facts that merge research .

The perspectives from which theorist look at development are important because they shape the questions researchers ask, the methods they use, and the way they interrupt their results.

- What is a developmental theory?

The purpose of any theory is to help us understand the world guide our future actions as earlier explained. A good theory does four things.

1. Firstly .it systematically organizes what is already known about a subject, including facts that may be conflicting or confusing second it tries to explain what is going on in its terms of helpful mechanism, principals, and processes. For example theories of social and emotional development help us to how children feel act how and why their feelings and actions changes with time. Likewise theory of cognitive development helps us to understand how children learn to think and solve problems and we can or cannot expect of them at certain ages or stages.

2. Second, a good theory is generative-it suggests and generates new ideas and research activities.

3. Third,a good theory is testable, which means that developmental researchers can systematically evaluate the accuracy of the theories claims.

Human development refers to a long term changes and patterns of these changes during a person lifetime. Developmental theories try to understand and describe these changes by discovering the principals that underlie the process of change.

❖ BASIC THEMES AND ISSUES

· Before scientific study of the child, questions about children were answered by turning to common sense, opinion, and belief.

· Research on children did not begin until the early part of the twentieth century. Gradually it led to the construction of theories of child development, to which professionals and parents could turn for understanding and guidance.

· Although there are a great many definitions, for our purposes we can think of a theory as an orderly, integrated set of statements that describes,explains, and predicts behaviour.For example, a good theory of infant-mother attachment would describe the behaviours that lead up to babie's strong desire to seek the affection and comfort of their mothers around 6 to 8 months of age.

· It would also explain why infants have such a strong desire. And it might also try to predict what might happen if babies do not develop this close emotional bond.

· Theories are important for two reasons :- First,they provide organizing frameworks for our observations of the child In other words, they interpret and give meaning to what we see. Second, theories provide us with a sound basis for practical action. Once a theory helps us understand development we are in a much better position to know what to do in our efforts to improve the welfare and treatment of children.

· As we will see later on, theories are influenced by the cultural values and belief systems of their times. But theories differ in one important way from opinion and belief a theory's continued existence depends on scientific verification. This means that the theory must be tested by using a fair set of research procedures agreed on by the scientific community.

· In the field of child development, there are many theories with very different ideas about what children are like and how they develop. The study of child development provides no single truth, since investigators do not always agree on the meaning of what they see. In addition, children are complex beings; they grow physically, mentally, emotionally, and socially. As yet, no single theory has been able to explain all these aspects. Finally, the existence of many theories helps advance our knowledge, since researchers are continually trying to support, contradict, and integrate these different points of view.

· In this , we will introduce the major child development theories and the research strategies that have been used to test them. Then, we will return to each theory in greater detail in later parts of this book. Although there are many theories, we can easily organize them, since almost every theory takes a stand on three basic issues about childhood and child

development. To help you remember these controversial issues, they are briefly described here. Let's take a close look at each one in the following sections.

Mechanistic vs. Organismic

Mechanistic	Organismic
▸ appropriate to conditions of relative stability	▸ suitable for unstable, turbulent and changing conditions
▸ highly structured, members have well-defined, formal job descriptions/roles, and precise positions vis a vis others	▸ re-shape itself to address new problems and tackle unforeseen contingencies
▸ direction is from the top – down through the hierarchy. Communication is similarly vertical	▸ a fluid organisational design is adopted which facilitates flexibility, adaptation, job redefinition
▸ the organisation insists on loyalty and conformity from members to each other, to managers and to the organisation itself in relation to policies and methods	▸ departments, sections and teams are formed and reformed. Communication is lateral as well as vertical – with emphasis on a network rather than a hierarchy
▸ members need sufficient functionary ability to operate within organisational constraints	▸ organisational members are personally and actively commitment to it beyond what is basically operationally or functionally necessary.

Source: T. Burns and G M Stalker, The Management of Innovation, 1961

Fig.Mechanistic v/s Organismic child

In the mechanistic worldview, individuals are merely functioning like machines to the world around them, "they do not create this world they respond to it". Is not that humans are machines but it is that their behaviour functions like machines. In translated woman by Ruth Behar Esperanza's endured violence and abuse at the hands of her father. As a result of her environment she entered marriage with the same abuse she endured from her father. Esperanza's life is an example of how life was created for her; she did not create her life, but rather reacted to the world around her. She responded to her world as machine by her environment operating versus her taking control of her life.

The organismic worldview differs from the mechanistic worldview in that it defines individuals, as active agents making choices that are oriented towards the future. Individuals control of their lives, rather than the environment controls their lives. In translated woman by

Ruth Behar later in Esperanza's life she becomes an active agent by taking control of her life when she decides to leave her abusive husband and associate with a group of women who were not socially accepted. This shows that Esperanza's made her own choices regardless of environmental influences.

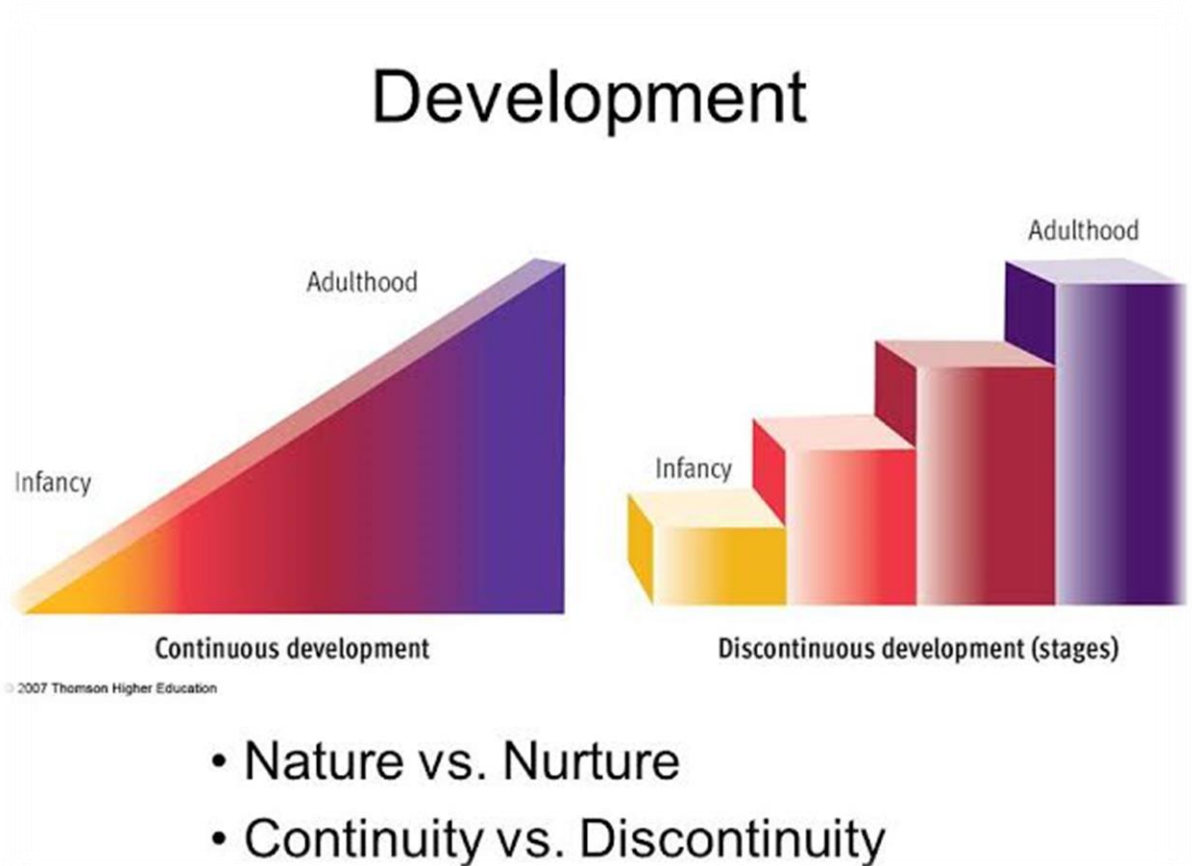2.Continuity v/s Discontinuity in Development

Fig.Continuity v/s discontinuity

Continuous development views development as a cumulative process, gradually improving on existing skills.With this type of development, there is a gradual change. Consider, for example, a child's physical growth: adding inches to their height year by year. In contrast, theorists who view development as discontinuous believe that development takes place in unique stages and that it occurs at specific times or ages. With this type of development, the change is more sudden, such as an infant's ability to demonstrate awareness of object permanence (which is a cognitive skill that develops towards the end of infancy).

Think about how children become adults. Is there a predictable pattern they follow regarding thought and language and social development? Do children go through gradual changes or are they abrupt changes?

Normative development is typically viewed as a continual and cumulative process. The continuity view says that change is gradual. Children become more skillful in thinking, talking or acting much the same way as they get taller.

The discontinuity view sees development as more abrupt-a succession of changes that produce different behaviors in different age-specific life periods called stages. Biological changes provide the potential for these changes.

We often hear people talking about children going through "stages" in life (i.e. "sensorimotor stage."). These are called developmental stages-periods of life initiated by distinct transitions in physical or psychological functioning.

Psychologists of the discontinuity view believe that people go through the same stages, in the same order, but not necessarily at the same rate.

3.Nature v/s Nurture
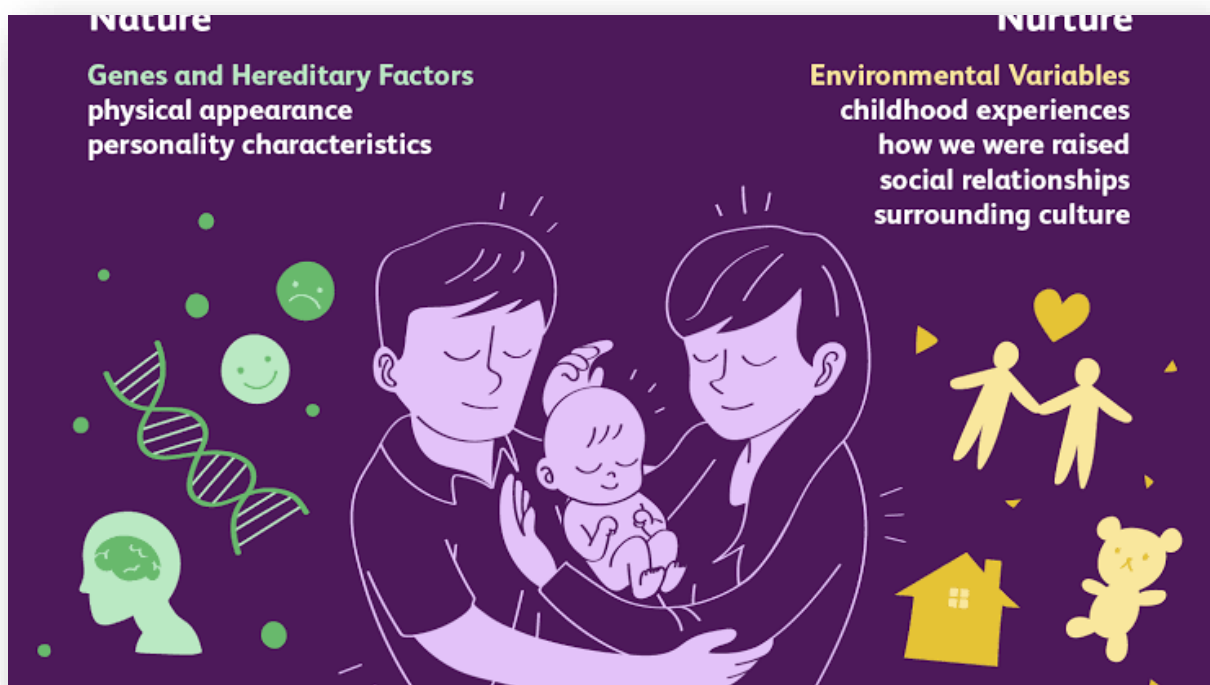
Fig.Nature v/s Nurture

We are all born with specific genetic traits inherited from our parents, such as eye color, height, and certain personality traits. Beyond our basic genotype, however, there is a deep interaction between our genes and our environment. Our unique experiences in our environment influence whether and how particular traits are expressed, and at the same time, our genes influence how we interact with our environment (Diamond, 2009; Lobo, 2008). There is a reciprocal interaction between nature and nurture as they both shape who we become, but the debate continues as to the relative contributions of each.

When trying to explain development, it is important to consider the relative contribution of both nature and nurture. Developmental psychology seeks to answer two big questions about heredity and environment:

1.How much weight does each contribute?

2.How do nature and nurture interact?

Nature refers to the process of biological maturation inheritance and maturation. One of the reasons why the development of human beings is so similar is because our common specifies heredity (DNA) guides all of us through many of the same developmental changes at about the same points in our lives. Nurture refers to the impact of the environment, which involves the process of learning through experiences.

There are two effective ways to study nature-nurture.

1.Twin studies: Identical twins have the same genotype, and fraternal twins have an average of 50% of their genes in common.

2.Adoption studies: Similarities with the biological family support nature, while similarities with the adoptive family support nurture.

1.Charles Darwin's Theory of Evolution or Naturalism (1809-1882)
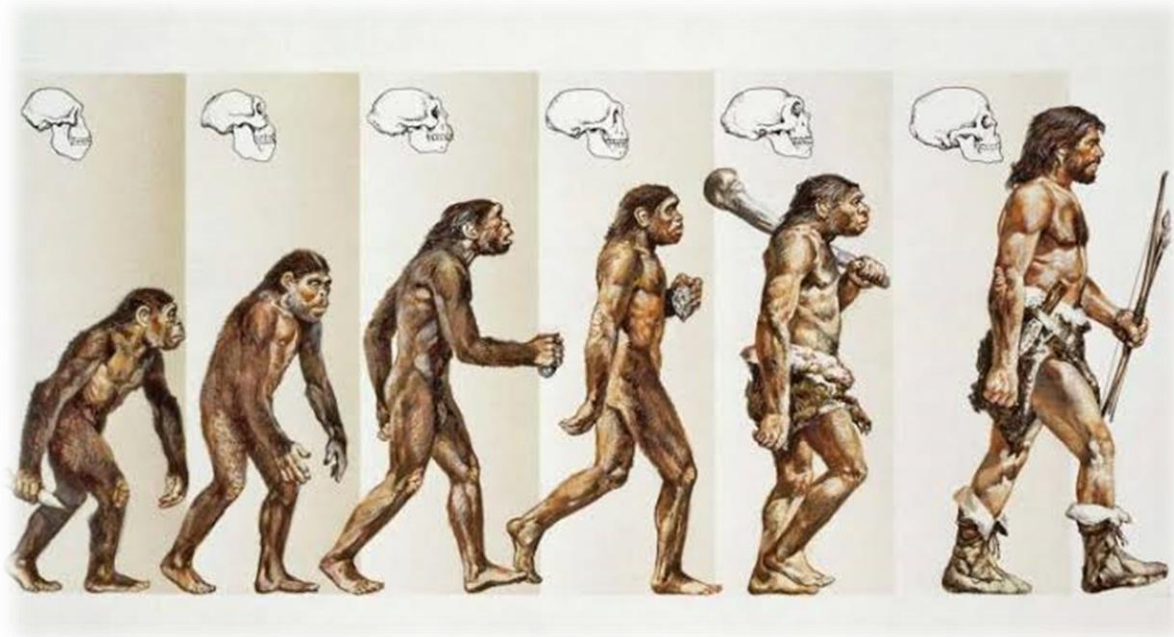
Fig.Evolution in humans

The Theory of Evolution by natural selection was first formulated in Charles Darwin's book "On the Origin of Species" published in 1859. In his book, Darwin describes how organisms evolve over generations through the inheritance of physical or behavioural traits, as National Geographic explains. The theory starts with the premise that within a population, there is variation in traits, such as beak shape in one of the Galapagos finches Darwin studied.

According to the theory, individuals with traits that enable them to adapt to their environments will help them survive and have more offspring, which will inherit those traits. Individuals with less adaptive traits will less frequently survive to pass them on. Over time, the traits that enable species to survive and reproduce will become more frequent in the population and the population will change, or evolve, according to Bio Med Central. Through natural

selection, Darwin suggested, genetically diverse species could arise from a common ancestor.

Darwin did not know the mechanism by which traits were passed on, according to National Geographic. He did not know about genetics, the mechanism by which genes encode for certain traits and those traits are passed from one generation to the next. He also did not know about genetic mutation, which is the source of natural variation. But future research by geneticists provided the mechanism and additional evidence for evolution by natural selection

Darwin chose the term "natural selection" to be in contrast with "artificial selection," in which animal breeders select for particular traits that they deem desirable. In natural selection, it's the natural environment, rather than a human being, that does the selecting.

Put simply, the theory of evolution by means of natural selection can be described as "descent with modification," said Briana Pobiner, an anthropologist and educator at the Smithsonian National Museum of Natural History in Washington, D.C., who specializes in the study of human origins. The theory is sometimes described as "survival of the fittest," but that characterization can be misleading, Pobiner said. Here, "fitness" refers not to an organism's strength or athleticism but rather its ability to survive and reproduce.

Natural selection can alter a species in small ways, causing a population to change colour or size over the course of several generations, according to The Natural History Museum. When this process happens over a relatively short period of time and in a species or small group of organisms, scientists call it "microevolution."

But when given enough time and accumulated changes, natural selection can create entirely new species, a process known as "macroevolution," according to Derek Turner and Joyce C. have said in "The Philosophy of Macroevolution." This long-term process is what turned dinosaurs into birds, amphibious mammals (such as an animal called Indohyus) into whales and a common ancestor of apes and humans into the people, chimps and gorillas we know today.

2.John Watson's theory of behaviourism or environmentalism (1878-1958)

Fig.John Watson's theory of behaviourism

Theorists such as John Watson, B.F. Skinner, and Albert Bandura contributed greatly to the environmentalist perspective of development. Environmentalists believe the child's environment shapes learning and behaviour; in fact, human behaviour, development, and learning are thought of as reactions to the environment. This perspective leads many families, schools, and educators to assume that young children develop and acquire new knowledge by reacting to their surroundings.

Kindergarten readiness, according to the environmentalists, is the age or stage when young children can respond appropriately to the environment of the school and the classroom (e.g., rules and regulations, curriculum activities, positive behaviour in group settings, and directions and instructions from teachers and other adults in the school). The ability to respond appropriately to this environment is necessary for young children to participate in teacher-initiated learning activities. Success is dependent on the child following instructions from the teacher or the adult in the classroom. Many environmentalist-influenced educators and parents believe that young children learn best by rote activities, such as reciting the alphabet over and over, copying letters, and tracing numbers. This viewpoint is evident in

kindergarten classrooms where young children are expected to sit at desks arranged in rows and listen attentively to their teachers. At home, parents may provide their young children with workbooks containing such activities as colouring or tracing letters and numbers--activities that require little interaction between parent and child. When young children are unable to respond appropriately to the classroom and school environment, they often are labelled as having some form of learning disabilities and are tracked in classrooms with curriculum designed to control their behaviours and responses.

John Watson was an American psychologist who is generally recognised as the 'father' of the psychological school of behaviourism. Watson's 1913 article 'Psychology as the Behaviourist Views it' promoted a change in the field of psychology. Pursuing his behaviourist approach, Watson conducted research into animal behaviour, child rearing (which included his controversial "Little Albert" experiment), and advertising.

- John Watson and Behaviourism

John Watson (1878-1958) began the behaviourist movement in 1913 when he published the article: 'Psychology as the behaviourist views it'. Behaviourism refers to a psychological school which emphasises scientific and objective methods of investigation. Watson's 'manifesto' stated a number of underlying assumptions regarding methodology and behavioural analysis, made it clear behaviourism focuses only on observable stimulus-response behaviours, and considers that all behaviours are learned through events and situations within the environment.

- Basic Assumptions

All behaviour is learned from, and shaped by, the environment: Behaviourism stresses how environmental factors influence behaviour, virtually ignoring innate or inherited factors – which is essentially a learning perspective. Humans are born with a blank-slate mind (tabula rasa) and learn new behaviours via classical or operant conditioning.

- Psychology should be regarded as a science:

Any theory must be supported by empirical data obtained via systematic observation and measurement of behaviour. Theoretical components should be as simple as possible.

Behaviourism is principally concerned with behaviour that can be observed, rather than with internal events such thinking and emotion:

Though behaviourists largely accept the existence of cognitions and emotions, they prefer to study them only observable in the context of what can be objectively and scientifically measured.

Human learning is very similar to the learning which takes place in other animals:

This implies research can be conducted on animals as well as humans – what is known as comparative psychology. For behaviourists, animal research became the primary source of data simply because such environments could be easily controlled.

- Behaviour is the result of stimulus-response:

Even complex behaviours can be reduced to a simple stimulus-response association.

Watson's approach is termed 'methodological behaviourism'.

Practitioners should note that many 'classic' classroom management techniques (such as 'time out') are based on behaviourist principles.

- Watson's Lab Experiment-Little Albert

Without the benefit of modern-day ethical standards, a study conducted by Watson and Rayner (1920) used an 11-month-old child, called Albert, as a subject.

Albert would cry at the sound of a steel bar being struck. For experimental purposes, Watson induced fear of a white rat by presenting the animal to the child in association with the feared sound. Soon the child also became fearful of the white rat, even in the absence of the sound.

3.Maturational theory of Arnold Gesell (1880-1961)& Granville Stanley Hall(1846-1924)

Gesell's Theory

Gesell's theory is known as a maturational-developmental theory. It is the foundation of nearly every other theory of human development after Gesell. Early in the 20th century, Dr. Gesell observed and documented patterns in the way children develop, showing that all children go through similar and predictable sequences, though each child moves through these sequences at his or her own rate or pace.

This process is comprised of both internal and external factors. The intrinsic factors include genetics, temperament, personality, learning styles, as well as physical and mental growth. Simultaneously, development is also influenced by factors such as environment, family

background, parenting styles, cultural influences, health conditions, and early experiences with peers and adults. Gesell was the first theorist to systematically study the stages of development, and the first researcher to demonstrate that a child's developmental age (or stage of development) may be different from his or her chronological age.
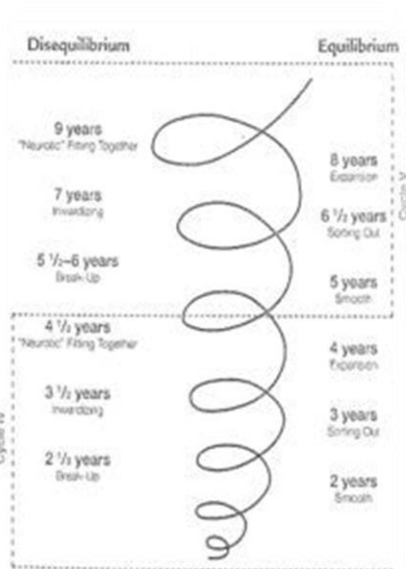
- The Cyclical Spiral

Fig.The cyclic spiral

Gesell emphasized that growth always progresses in a pattern through predictable stages or sequences. Sequential development begins within the embryo and continues after birth. While an individual progresses through these stages at his or her own pace, the sequence remains the same. According to Gesell, growth can be thought of as a cyclical spiral. Each cycle of the spiral encompassing the time it takes to move through six stages, or half-year increments. Notice that the time to complete a cycle of the six stages is quite rapid in early life and slows down with age. Gesell's cycles of development are divided into six well-defined stages which are repeated throughout life. One cycle includes the following stages: Smooth, Break-Up, Sorting Out, Inwardizing, Expansion, and Neurotic "Fitting Together".

Gesell's research established normative trends for four areas of growth and development, namely (1) Motor, (2) Adaptive (Cognitive), (3) Language, and (4) Personal-Social behaviour. Originally published as the Gesell Developmental Schedules in 1925, these developmental schedules, most recently updated in 2010, continue to serve and guide pediatricians and psychologists throughout the world today.
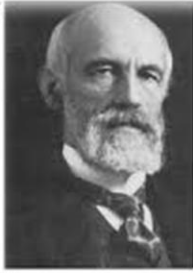
G. Stanley Hall's Theory

Hall is attributed with coining the phrase adolescence to describe the period of development between puberty and adulthood. His work was well received, and he was among the first to explore child psychology as a branch of psychological development. His most popular work was published in 1904 and titled 'Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education'.

Before Hall, very little research had been conducted on the developmental period of adolescence. Hall believed that between the ages of 14 and 24, we undergo a period of 'storm and stress,' where we experience intense feelings of ambition and rebellion that will lead to a lot of suffering as we head towards maturation. He emphasized, however, that reaching maturation was not the end, and it's important to note that even after we mature, we continue to develop.

In 1904, psychologist G. Stanley Hall coined the term storm and stress in his written work, Adolescence, to describe the decreased levels of self-control and increased levels of sensitivity exhibited by adolescents.

- Storm and Stress

Fig.Hall's storm and stress

Missy gets into a fight with her mother about what she is wearing to school. When she gets to school, she is happy, but she bursts into tears when she hears some other girls talking about her. Her boyfriend makes her angry because he tells her to stop crying. At the end of the school day, she speeds out of the parking lot in her car.

This is an example of storm and stress that is experienced in adolescence. The term 'storm and stress' was coined by G. Stanley Hall in Adolescence, written in 1904. Hall used this term because he viewed adolescence as a period of inevitable turmoil that takes place during the transition from childhood to adulthood. 'Storm' refers to a decreased level of self-control, and 'stress' refers to an increased level of sensitivity. Hall's perception of adolescence continues to influence our view of this period of development.

Three main categories of storm and stress described by Hall are:

1.Conflict with parents: Adolescents tend to rebel against authority figures as they seek greater independence and autonomy.

2.Mood disruption: Hormonal changes and the psychological stress of adolescence can cause uncontrollable shifts in emotions.

3.Risky behaviour: The combination of a neurological need for stimulation and emotional immaturity lead to increased risk-taking behaviour during adolescence.

4.Abraham Maslow's (1908-1970) Theory of Need

In a 1943 paper titled "A Theory of Human Motivation," American psychologist Abraham Maslow theorized that human decision-making is undergirded by a hierarchy of psychological needs. In his initial paper and a subsequent 1954 book titled Motivation and Personality, Maslow proposed that five core needs form the basis for human behavioral motivation.

- What Is Maslow's Hierarchy of Needs?

Maslow's hierarchy of needs is a theory of motivation which states that five categories of human needs dictate an individual's behaviour. Those needs are physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs.

- What Are the 5 Levels of Maslow's Hierarchy of Needs?

Maslow's theory presents his hierarchy of needs in a pyramid shape, with basic needs at the bottom of the pyramid and more high-level, intangible needs at the top. A person can only move on to addressing the higher-level needs when their basic needs are adequately fulfilled.
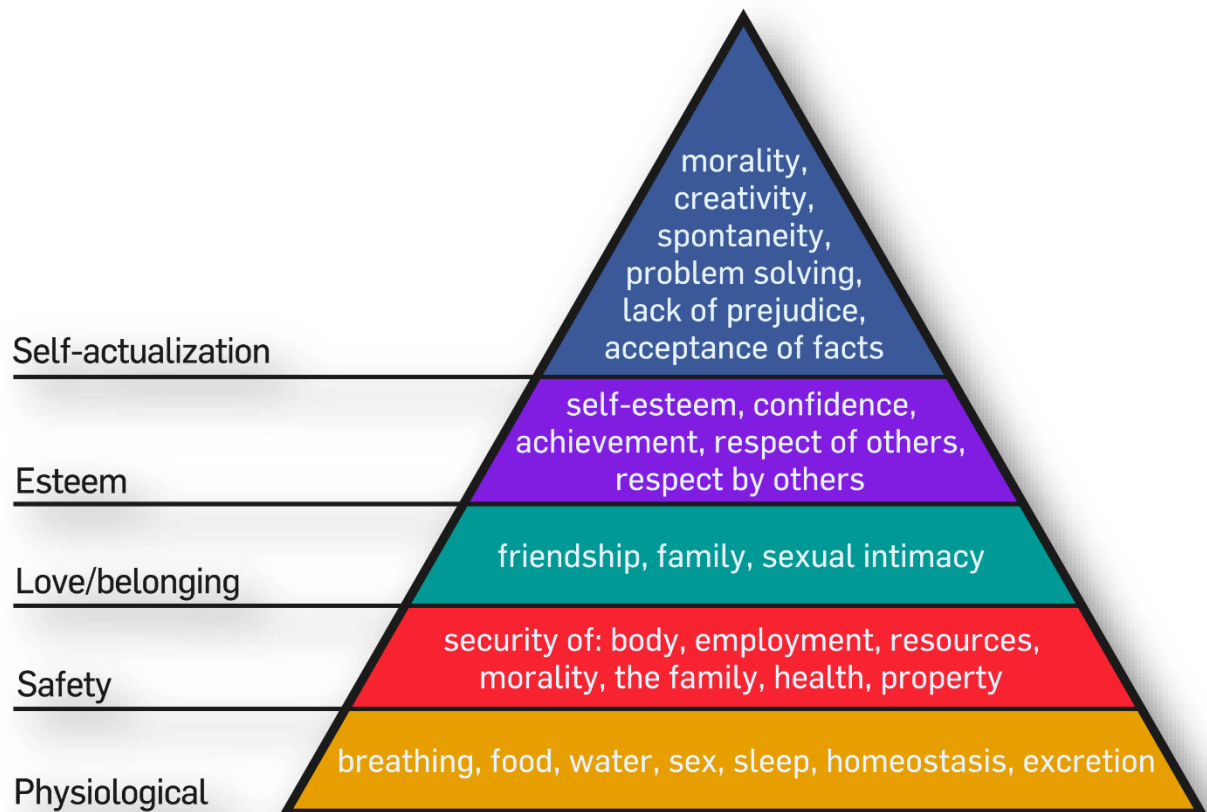
Fig.Maslow's Hierarchy of Need

1.Physiological needs: The first of the id-driven lower needs on Maslow's hierarchy are physiological needs. These most basic human survival needs include food and water, sufficient rest, clothing and shelter, overall health, and reproduction. Maslow states that these basic physiological needs must be addressed before humans move on to the next level of fulfillment.

2.Safety needs: Next among the lower-level needs is safety. Safety needs include protection from violence and theft, emotional stability and well-being, health security, and financial security.

3.Love and belonging needs: The social needs on the third level of Maslow's hierarchy relate to human interaction and are the last of the so-called lower needs. Among these needs are friendships and family bonds—both with biological family (parents, siblings, children) and chosen family (spouses and partners). Physical and emotional intimacy ranging from sexual relationships to intimate emotional bonds are important to achieving a feeling of elevated kinship. Additionally, membership in social groups contributes to meeting this need,

from belonging to a team of coworkers to forging an identity in a union, club, or group of hobbyists.

4.Esteem needs: The higher needs, beginning with esteem, are ego-driven needs. The primary elements of esteem are self-respect (the belief that you are valuable and deserving of dignity) and self-esteem (confidence in your potential for personal growth and accomplishments). Maslow specifically notes that self-esteem can be broken into two types: esteem which is based on respect and acknowledgment from others, and esteem which is based on your own self-assessment. Self-confidence and independence stem from this latter type of self-esteem.

5.Self-actualization needs: Self-actualization describes the fulfillment of your full potential as a person. Sometimes called self-fulfillment needs, self-actualization needs occupy the highest spot on Maslow's pyramid. Self-actualization needs include education, skill development—the refining of talents in areas such as music, athletics, design, cooking, and gardening—caring for others, and broader goals like learning a new language, traveling to new places, and winning awards.

- Deficiency Needs vs. Growth Needs on Maslow's Hierarchy

Maslow referred to self-actualization as a "growth need," and he separated it from the lower four levels on his hierarchy, which he called "deficiency needs." According to his theory, if you fail to meet your deficiency needs, you'll experience harmful or unpleasant results. Conditions ranging from illness and starvation up through loneliness and self-doubt are the byproducts of unmet deficiency needs. By contrast, self-actualization needs can make you happier, but you are not harmed when these needs go unfulfilled. Thus, self-actualization needs only become a priority when the other four foundational needs are met.

5.Ecological theory of UrieBrofenBrenner(1917-2005)

Bronfenbrenner recognized there are multiple aspects of a developing child's life that interacts with and affects the child. His work looked beyond individual development, taking into account wider influencing factors and the context (or ecology) of development. He proposed the 'Ecological Systems Theory' based on these dynamic interactions that the environments have on the developing child.

Bronfenbrenner (1977) suggested that the environment of the child is a nested arrangement of structures, each contained within the next. He organized them in order of how much of an impact they have on a child.

He named these structures the microsystem, mesosystem, exosystem, macrosystem and the chronosystem.

Because the five systems are interrelated, the influence of one system on a child's development depends on its relationship with the others.
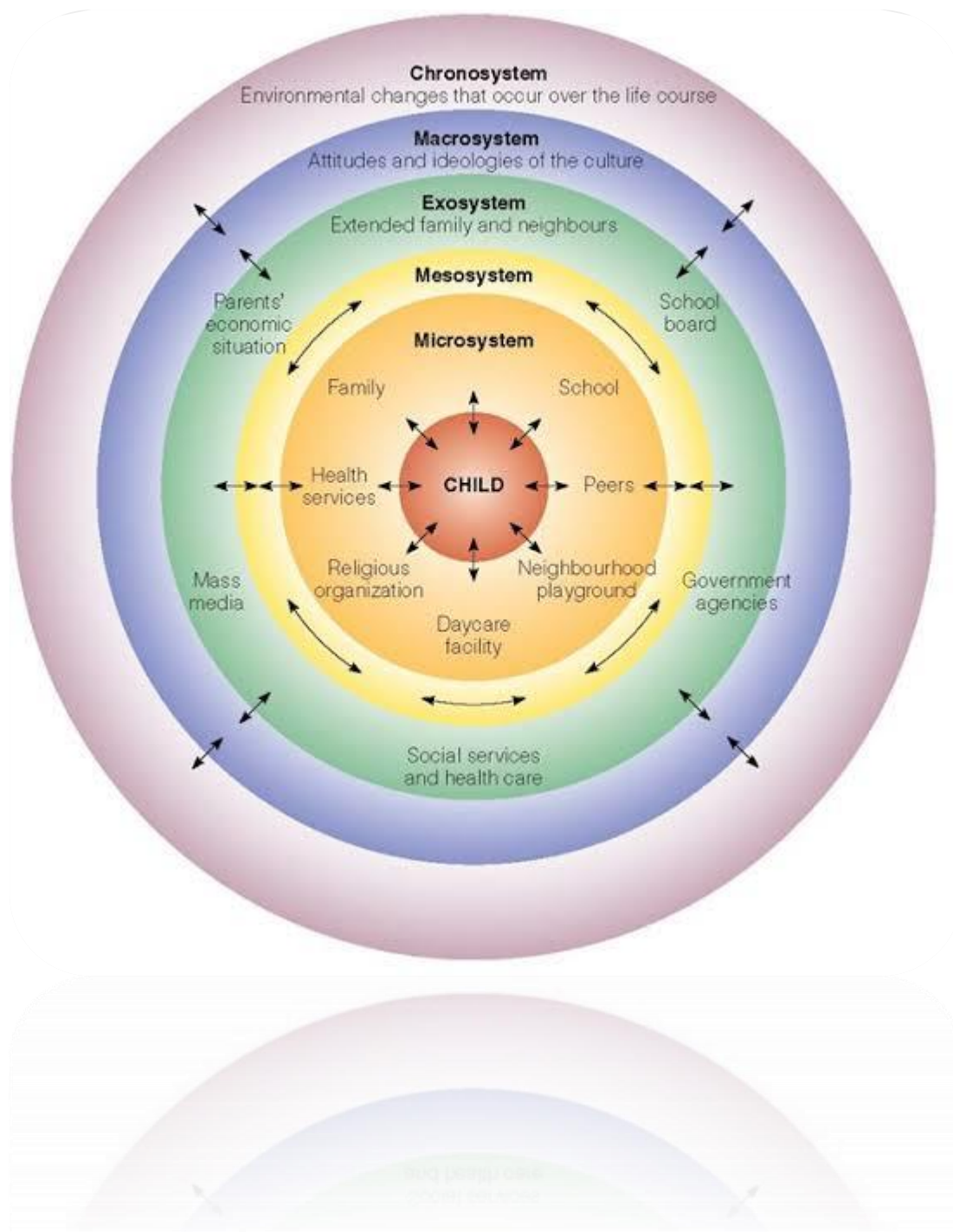
Fig.Ecological system theory

1.The Microsystem-The microsystem is the first level of Bronfenbrenner's theory, and are the things that have direct contact with the child in their immediate environment, such as parents, siblings, teachers and school peers.

Relationships in a microsystem are bi-directional, meaning the child can be influenced by other people in their environment and is also capable of changing the beliefs and actions of other people too.

Furthermore, the reactions of the child to individuals in their microsystem can influence how they treat them in return.

The interactions within microsystems are often very personal and are crucial for fostering and supporting the child's development.

If a child has a strong nurturing relationship with their parents, this is said to have a positive effect on the child. Whereas, distant and unaffectionate parents will have a negative effect on the child.

2.The Mesosystem-The mesosystem encompasses the interactions between the child's microsystems, such as the interactions between the child's parents and teachers, or between school peers and siblings.

The mesosystem is where a person's individual microsystems do not function independently, but are interconnected and assert influence upon one another.

For instance, if a child's parents communicate with the child's teachers, this interaction may influence the child's development. Essentially, a mesosystem is a system of microsystems.

According to the ecological systems theory, if the child's parents and teachers get along and have a good relationship, this should have positive effects on the child's development, compared to negative effects on development if the teachers and parents do not get along.

3.The Exosystem-The exosystem is a component of the ecological systems theory developed by Urie Bronfenbrenner in the 1970s. It incorporates other formal and informal social structures, which do not themselves contain the child, but indirectly influence them as they affect one of the microsystems.

Examples of exosystems include the neighborhood, parent's workplaces, parent's friends and the mass media. These are environments in which the child is not involved, and are external to their experience, but nonetheless affects them anyway.

An instance of exosystems affecting the child's development could be if one of the parents had a dispute with their boss at work.

The parent may come home and have a short temper with the child as a result of something which happened in the workplace, resulting in a negative effect on development

4.The Macrosystem-The macrosystem is a component of Bronfenbrenner's ecological systems theory that focuses on how cultural elements affect a child's development, such as socioeconomic status, wealth, poverty, and ethnicity.

Thus, culture that individuals are immersed within may influence their beliefs and perceptions about events that transpire in life.

The macrosystem differs from the previous ecosystems as is does not refer to the specific environments of one developing child, but the already established society and culture which the child is developing in.

This can also include the socioeconomic status, ethnicity, geographic location and ideologies of the culture.

For example, a child living in a third world country would experience a different development than a child living in a wealthier country.

5.The Chronosystem-The fifth and final level of Bronfenbrenner's ecological systems theory is known as the chronosystem.

This system consists of all of the environmental changes that occur over the lifetime which influence development, including major life transitions, and historical events.

These can include normal life transitions such as starting school but can also include non-normative life transitions such as parents getting a divorce or having to move to a new house.

- The Bioecological Model

It is important to note that Bronfenbrenner (1994) later revised his theory and instead named it the 'Bioecological model'.

6.Ethological or Attachement theory of John Bowlby (1907-1990) and Mary Ainsworth(1913-1999)

Attachment theory, developed by John Bowlby and Mary Ainsworth, describes the dynamics of long-term relationships between humans.

- Key Points in this theory
  - Attachment in infants is primarily a process of proximity-seeking to an identified attachment figure in situations of perceived distress or alarm for the purpose of survival.
  - John Bowlby and Mary Ainsworth were two prominent researchers who advanced the theory of attachment as related to human development.
  - John Bowlby conceived of four stages of attachment that begin during infancy: preattachment, attachment-in-the-making, clear-cut attachment, and formation of reciprocal relationships.
  - Ainsworth identified three types of attachment that a child could possibly demonstrate: secure, avoidant, and resistant/ambivalent. Her colleague Mary Main later identified a fourth type, called disorganized attachment.
  - In his experiments related to attachment, Harry Harlow raised baby monkeys away from their mothers; he gave them surrogate mothers made of wire and wood, to which they developed attachment bonds.

Attachment theory describes the dynamics of long-term social relationships between humans. Attachment in infants is primarily a process of proximity-seeking to an identified attachment figure in situations of perceived distress or alarm for the purpose of survival. In other words, infants develop attachment to their caregivers—upon whom they are dependent—as a means of survival. John Bowlby and Mary Ainsworth were two prominent researchers who advanced the theory of attachment as related to human development.

Bowlby's Attachment Theory

John Bowlby's contributions to the theory of attachment formation are heavily influenced by ethology (the scientific study of human and animal behaviour), including an emphasis on the evolutionary origins and biological purposes of behaviour. According to Bowlby, children are biologically predisposed to develop attachments to caregivers as the result of genetics. In 1969 Bowlby studied mother-infant interactions and concluded that infant smiling, babbling, crying, and cooing are built-in mechanisms to encourage parents to attach to, and thereby care for, the infant. Keeping the parent in close proximity ensures the infant will avoid danger. Bowlby introduced the idea of the caregiver as a "secure base" for the child, and that this secure base was either successfully created during childhood or was not.

The development of parent-infant attachment is a complex process that leads to deeper and deeper attachment as the child ages. This attachment (or lack thereof) has lifelong implications for the child as he or she reaches adulthood. Bowlby conceived of four stages of attachment that begin during infancy: preattachment, attachment-in-the-making, clear-cut attachment, and formation of reciprocal relationships.
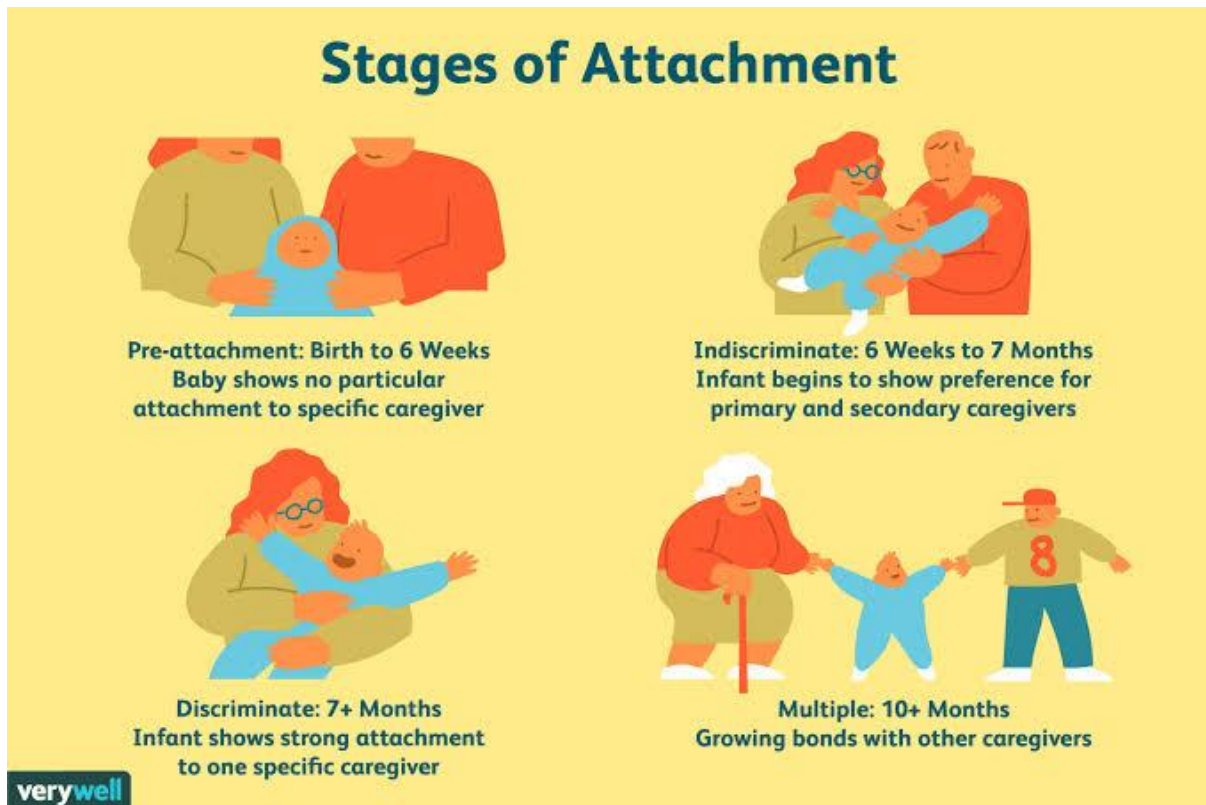

Fig.Stages of attachement

1.Preattachment (birth to 6 weeks): Built-in signals, such as crying and cooing, bring a new born baby into close proximity with their caregiver. Babies recognize a caretaker's smell and voice and are comforted by these things. When the caretaker picks up the baby or smiles at her, the beginnings of attachment are forming. However, complete attachment has not yet occurred, so the baby is still comfortable being left with an unfamiliar person.

2.Indiscriminate or Attachment-in-the-making (6 weeks to 8 months): Attachment is getting stronger during this stage, and infants respond differently to familiar people than they do to strangers. For example, a 5-month-old baby will be more "talkative" with his mother rather than with an uncle he sees only once a month. He will also be calmed more quickly by the mother's presence than by the uncle's. Separation anxiety (becoming upset when a trusted

caregiver leaves) has not set in yet but will be seen in the next stage. Parents continue to build attachment by meeting the baby's basic needs for food, shelter, and comfort.

3.Discriminate or Clear-cut attachment (8 months to 18 months): Attachment to trusted caregivers continues to strengthen in this stage, and separation anxiety is likely in a caregiver's absence. Toddlers generally want to be with their preferred caregiver at all times, and they will follow the caretaker, climb on them, or otherwise do things to keep the caregiver's attention. Parents and other important adults in the child's life continue to strengthen attachment by being receptive to the child's needs for attention, meeting basic needs, and playing with the child.

4.Multiple or Formation of reciprocal attachment (18 months to 2 years): Rapid language growth facilitates the understanding of new concepts, and children begin to understand a parent's coming and going. For example, children can now understand that a parent returns home from work at a certain time each day, so separation anxiety lessens— although the child may do things to gain extra time with the parent prior to departure or to keep the parent from leaving. Parents can help a child form secure attachment by explaining things to them, by being present as much as possible, and by continuing to meet basic needs.

Ainsworth's Attachment theory

Childhood Attachement: Children who have secure attachement to parents are more likely to be successful adults

In 1970, Mary Ainsworth built on and expanded Bowlby's ideas, coming up with a more nuanced view of multiple types of insecure attachment. Ainsworth's primary contribution to attachment theory comes in the form of a study known as the Strange Situation. In this study, Ainsworth placed children between the ages of 1 and 2 in unfamiliar situations to assess the type and level of their attachment to their caregivers. Her research showed that children generally use the parent as a secure base from which to explore an unfamiliar room, and they become upset or uncomfortable when the parent leaves and a new individual (not known to the child) enters the room.

Ainsworth identified four primary types of attachment: secure, avoidant, and resistant/ambivalent. Depending upon how the children attached to their parents, they would act in predictable ways in the Strange Situation experiment.
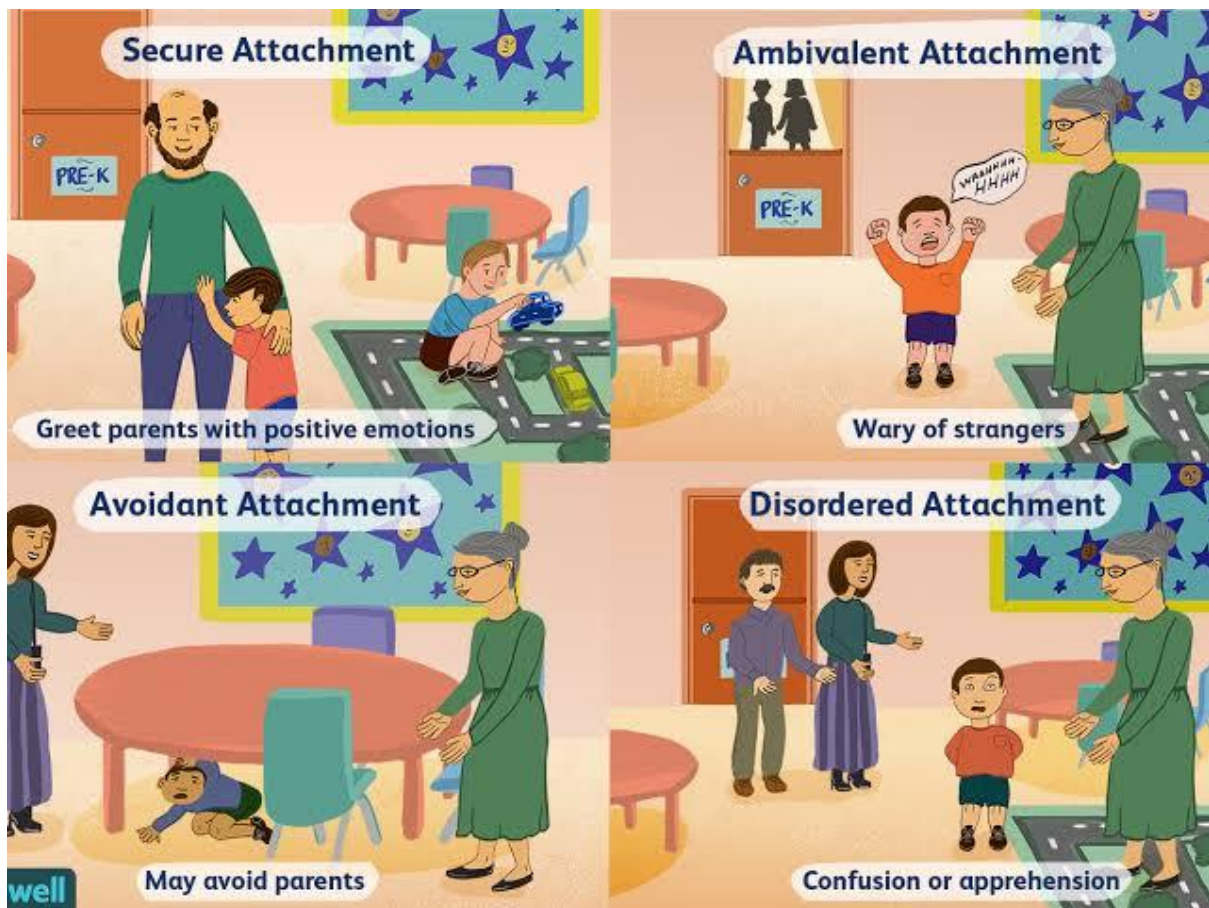
Fig.Attachement stages of Mary Ainsworth

1.Secure: Children with this form of attachment use the caregiver as a secure base from which to explore the room. They are comforted by the parent and show a clear preference for the caregiver (for example, by protesting or avoiding the unfamiliar person).

2.Avoidant: These children avoid contact with the caregiver and show little interest in play. They do not seem to mind when the caregiver leaves, and they treat the stranger in a similar fashion to the caregiver. The child may act in a rebellious manner and have lower self-esteem as they get older. The children of parents who do not meet their basic needs or are inattentive may form avoidant attachment.

3.Resistant/Ambivalent: Children with this form of attachment are unable to use the caregiver as a secure base, and they seek out the caregiver prior to separation. They are both distressed by the caregiver's departure and angry when the caregiver returns. They are not easily calmed by the caregiver or the stranger, and they feel anxiety with the caregiver due to inconsistent attachment patterns.

In 1990, a fourth category, known as disorganized attachment, was added by Ainsworth's colleague Mary Main. Children with these attachment patterns engage in stereotypical behaviour such as freezing or rocking. They act strangely with the caregiver and do not appear to know how to attach, doing such things as approaching with their back turned or hugging the stranger upon their entry to the room. Disorganized attachment generally results from the child being maltreated or neglected in some way.

4.Childhood Attachment: Children who have secure attachment to parents are more likely to be successful adults.

- Harry Harlow and the Rhesus Monkeys

In order to demonstrate the importance of social and emotional development in people, Harry Harlow studied the attachment patterns of Rhesus monkeys. This was based on the belief of John Bowlby that maternal attachment is a necessity for proper emotional and social development. Harlow raised baby Rhesus monkeys in a nursery-type setting away from their mothers; he gave them surrogate mothers made out of wire and wood, to which the babies developed attachment bonds. His alternative rearing technique, also called maternal deprivation, is considered highly controversial today.

Harlow next chose to investigate if the baby monkeys had a preference for bare wire mothers or cloth-covered mothers. For this experiment, he presented the infants with a cloth mother or a wire mother under two conditions. In one situation, the wire mother held a bottle with food and the cloth mother held no food; in the other, the cloth mother held the bottle and the wire mother had nothing. In the end, even in the situations in which the wire mother had food and the cloth mother had none, the baby monkeys preferred to cling to the cloth mother for comfort. Harlow concluded that there was much more to the mother/infant relationship than milk, and that this "contact comfort" was essential to the psychological development and health of infants.

7.Jean Piaget's cognitive development theory (1896-1980)

Piaget's theory of cognitive development states that our cognitive abilities develop through four specific stages.

- Key Points in this theory

- Jean Piaget developed his cognitive -developmental theory based on the idea that children actively construct knowledge as they explore and manipulate the world around them.

- The four stages of Piaget's theory of cognitive development correspond with the age of the child; they include the sensorimotor, preoperational, concrete operational, and formal operational stages.

- The sensorimotor stage occurs from birth to age 2 and is characterized by the idea that infants "think" by manipulating the world around them.

- The preoperational stage occurs from age 2 to age 7 and is characterized by the idea that children use symbols to represent their discoveries.

- The concrete operational stage occurs from age 7 to age 11 and is characterized by the idea that children's reasoning becomes focused and logical.

- The formal operational stage occurs from age 11 to adulthood and is characterized by the idea that children develop the ability to think in abstract ways.
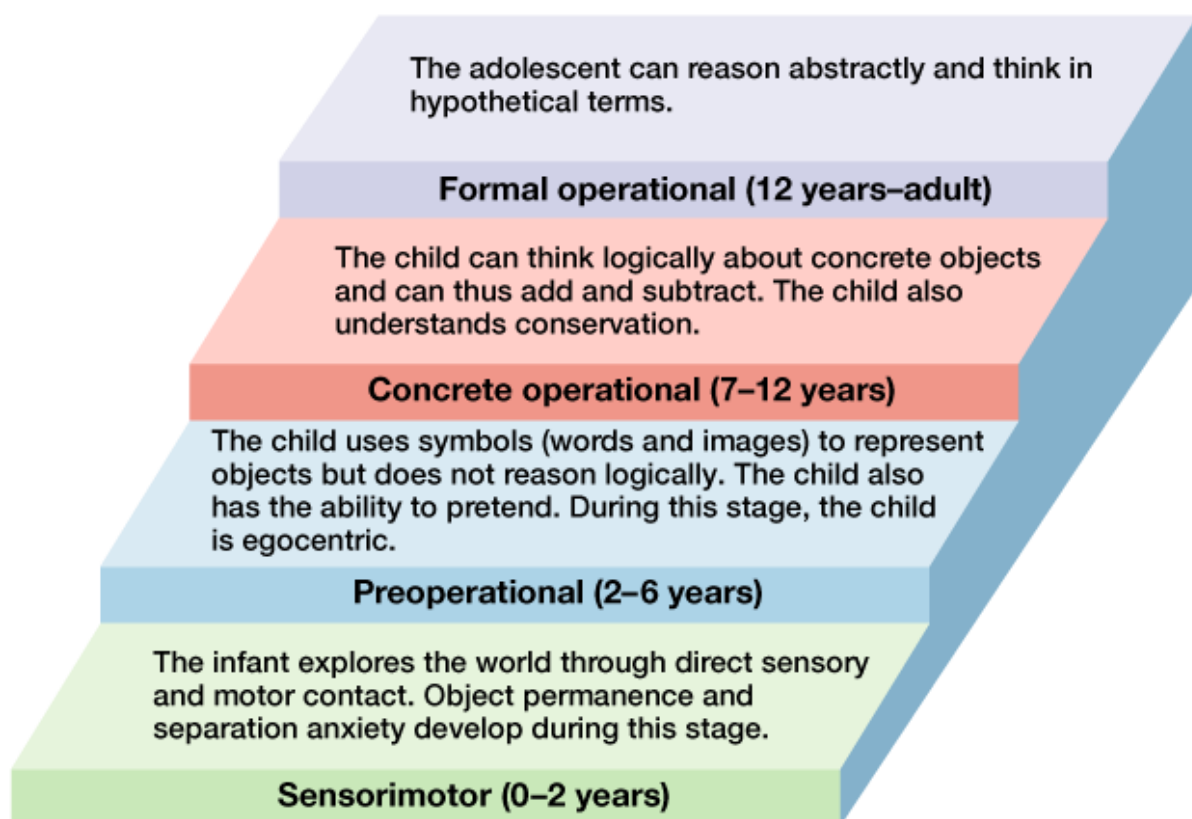

Jean Piaget: Piaget's theory of child development is still one of the most widely accepted in modern psychology

The Swiss cognitive theorist Jean Piaget is one of the most influential figures in the study of child development. He developed his cognitive-developmental theory based on the idea that

children actively construct knowledge as they explore and manipulate the world around them. Piaget was interested in the development of "thinking" and how it relates to development throughout childhood. His theory of four stages of cognitive development, first presented in the mid-20th century, is one of the most famous and widely-accepted theories in child cognitive development to this day.

- Stages of Cognitive Development

Piaget believed that as children grow and their brains develop, they move through four distinct stages that are characterized by differences in thought processing. In his research, he carefully observed children and presented them with problems to solve that were related to object permanence, reversibility, deductive reasoning, transitivity, and assimilation (described below). Each stage builds upon knowledge learned in the previous stage. Piaget's four stages correspond with the age of the children and are the sensorimotor, preoperational, concrete operational, and formal operational stages.

The adolescent can reason abstractly and think in hypothetical terms.

Formal operational (12 years–adult)

The child can think logically about concrete objects and can thus add and subtract. The child also understands conservation.

Concrete operational (7–12 years)

The child uses symbols (words and images) to represent objects but does not reason logically. The child also has the ability to pretend. During this stage, the child is egocentric.

Preoperational (2–6 years)

The infant explores the world through direct sensory and motor contact. Object permanence and separation anxiety develop during this stage.

Sensorimotor (0–2 years)

Piaget's theory of cognitive development: This theory includes four stages:sensorymotor,pre-operational,concrete operational and formal operational

1.Sensorimotor Stage-The sensorimotor stage occurs from birth to age 2. It is characterized by the idea that infants "think" by manipulating the world around them. This is done by using all five senses: seeing, hearing, touching, tasting, and smelling. Children figure out ways to elicit responses by "doing", such as pulling a lever on a music box to hear a sound, placing a block in a bucket and pulling it back out, or throwing an object to see what happens. Between 5 and 8 months old, the child develops object permanence, which is the understanding that even if something is out of sight, it still exists (Bogartz, Shinskey, & Schilling, 2000). For example, a child learns that even though his mother leaves the room, she has not ceased to exist; similarly, a ball does not disappear because a bucket is placed over it.

By the end of this stage, children are able to engage in what Piaget termed deferred imitation. This involves the ability to reproduce or repeat a previously-witnessed action later on; rather than copying it right away, the child is able to produce a mental representation of it and repeat the behaviour later on. By 24 months, infants are able to imitate behaviours after a delay of up to three months.

2.Preoperational Stage-The preoperational stage occurs from age 2 to age 7. During this stage, children can use symbols to represent words, images, and ideas, which is why children in this stage engage in pretend play. A child's arms might become airplane wings as she zooms around the room, or a child with a stick might become a brave knight with a sword. Language development and make-believe play begin during this stage. Logical thinking is still not present, so children cannot rationalize or understand more complex ideas. Children at this stage are very egocentric, meaning they focus on themselves and how actions will impact them, rather than others. They are not able to take on the perspective of others, and they think that everyone sees, thinks, and feels just like they do.

3.Concrete Operational Stage-The concrete operational stage occurs from age 7 to age 11. It is characterized by the idea that children's reasoning becomes focused and logical. Children demonstrate a logical understanding of conservation principles, the ability to recognize that key properties of a substance do not change even as their physical appearance may be altered. For example, a child who understands the principles of conservation will recognize that identical quantities of liquid will remain the same despite the size of the container in which they are poured. Children who do not yet grasp conservation and logical thinking will believe that the taller or larger glass must contain more liquid.

By the end of this stage, children will develop true mental operations and master the concepts of reversibility, transitivity, and assimilation. Reversibility is the idea that something can be changed back to its original state after it has been altered (for example, pouring water back and forth between two differently shaped glasses and still having the same amount of water). Transitivity is the concept of relation—for example, if A is related to B and B is related to C, then A must also be related to C. Finally, assimilation is the absorption of new ideas, information, or experiences into a person's existing cognitive structure, or what they already know or understand of the world.

Piaget determined that in this stage, children are able to incorporate inductive reasoning, which involves drawing inferences from observations in order to make a generalization. In contrast, children struggle with deductive reasoning, which involves using a generalized principle in order to try to predict the outcome of an event.

4.Formal Operational-The formal operational stage occurs from age 11 to adulthood. It is characterized by the idea that children develop the ability to think in abstract ways. This enables children to engage in the problem-solving method of developing a hypothesis and reasoning their way to plausible solutions. Children can think of abstract concepts and have the ability to combine various ideas to create new ones. By the end of this stage, children have developed logical and systematic thinking, are capable of deductive reasoning, and can create hypothetical ideas to explain various concepts.

*Beyond Formal Operational Thought***:**As with other major contributors of theories of development, several of Piaget's ideas have been challenged by later research. For example, several contemporary studies support a model of development that is more continuous than Piaget's discrete stages (Courage & Howe, 2002; Siegler, 2005, 2006). Many others suggest that children reach cognitive milestones earlier than Piaget describes (Baillargeon, 2004; de Hevia&Spelke, 2010).

Many developmental psychologists suggest a fifth stage of cognitive development, known as the **post formal stage** (Basseches, 1984; Commons &Bresette, 2006; Sinnott, 1998). In post formal thinking, decisions are made based on situations and circumstances, and logic is integrated with emotion as adults develop principles that depend on contexts. One way that we can see the difference between an adult in post formal thought and an adolescent in formal operations is in terms of how they handle emotionally charged issues.

It seems that once we reach adulthood, our problem-solving abilities change: as we attempt to solve problems, we tend to think more deeply about many areas of our lives, such as relationships, work, and politics (Labouvie-Vief& Diehl, 1999). Because of this, post formal thinkers are able to draw on past experiences to help them solve new problems. Problem-solving strategies using post formal thought vary depending on the situation. Adults can recognize, for example, that what seems to be an ideal solution to a disagreement with a co-worker may not be the best solution for a disagreement with a romantic partner.

8.Psychoanalytic Theory of Sigmund Freud (1856-1939)

Fig. Levels of psychoanalytical theory

So let's dive into the first theory of personality, called the psychoanalytic theory. Now, you've probably heard of someone super famous in the psychology world named Sigmund Freud. So let's write his name down here, because it's very important for this theory. OK. So Sigmund Freud. Well, it so happens-- fun fact here-- that Freud was not even a psychologist. He was a physician, more specifically a neurologist. And in 1885, he went to Paris to study hypnosis

with a fellow neurologist. But this experience is actually what turned him towards medical psychopathology. And psychiatry as we know it was actually unknown at the time Freud began his work. So there you have it. There's your history lesson for the day. OK. So let's go back and talk about the psychoanalytic theory. The psychoanalytic theory says that our childhood experiences and unconscious desires influence behaviour. So this is a key word for this theory, "unconscious." So our personalities have memories, beliefs, urges, drives, and instincts that we are not always aware of and that make up this unconscious. And the major driving force behind Freud's instinctual theory is the concept of libido. And you may have heard of this in a different context, but we'll go over it in terms of this theory. So libido is natural energy source that fuels the mechanisms of the mind. And when this libidinal energy is stuck or fixated at various stages of psychosexual development-- there's another keyword. So when this fixation occurs at this psychosexual development and stages, conflicts can occur that have lifelong effects. So fixation at a particular stage is what predicts adult personality according to this theory. For example, someone fixated at the oral stage, which is actually the first stage in psychosexual development, might have oral personality characteristics like being overly talkative or having a smoking habit when they grow up. OK. So Freud breaks down those mental structures that I was talking about into three parts. And we can look at this by looking at an iceberg. So let's break this down into two parts first. The top of the iceberg, which is shown up here, above the surface of the water, is the conscious part of our mind. So this is everything we are aware of. And if that's the conscious, what do you think this bottom is? If you said unconscious, you are right. So it's the unconscious mind. And what do you notice? The unconscious is a lot larger than the conscious. You know that saying, it's only the tip of the iceberg that we see? Well, it's true. Most of our mind is hidden below the surface. OK. Let's go into the first structure of our mind. And that is the id. So the id is located down here in this compartment. And it's the unconscious part of our mind that makes up most of the mind. It's hidden below the surface. And it develops right after birth, and demands immediate gratification. Now, the second part of this structure is the ego. So the ego is right here in this compartment. And it's part of our conscious and our unconscious mind. OK. We'll see why that's the case in a little bit. But the ego is involved in our perceptions, thoughts, and judgments. And it seeks long-term gratification as opposed to the id's immediate gratification. In the third compartment, right over here, I'm going to try to fit it in, is the superego. Now, the superego develops around the age of four. And it's our moral compass or our conscience. Don't get that confused with conscious. Conscience, it's a little tongue-twister. OK. So let's go back to these psychosexual stages I was talking about. So our libidinal impulses, right here,

are what want to be gratified. And when they are either over-gratified or not gratified at all or partially gratified, fixation occurs at a psychosexual stage, and we face either conflict or anxiety. Now, what I mean by "conflict" is not this whole battle or drama that plays out. But it's a conflict between these three mental structures of our mind, the ego, the superego, and the id. Because all of them are competing for demands, so they're in a conflict. Think of it like this. I'm going to draw out ourselves right here, like that. And there's the rest of us. You get the picture Well, this person has really big arms, but you get the idea. OK. So think of it like this. We have the id sitting on one shoulder over here. And this is us, looking-- we're in little bit of a conflict. OK. So the id is sitting on one shoulder here. And it's really, really upset, because it's demanding gratification and it isn't immediately getting it. Remember, I said it wants immediate gratification. But then, over here, you have the superego. And the superego is sitting on its high horse. And it's preaching to the id about what's moral. And then what about the ego? What happens to the ego? What role does that have? Well, it's going to be in the middle. Because the id wants gratification, and only gratification. And it's going back and forth with the superego. So the ego, right over here, is trying to gratify the id, but it also has to take into account what the superego is saying. The superego is moral oversight, which represents the values of society. Now, remember I said earlier that the ego is part of the conscious and the unconscious minds. So it basically acts as a mediator between the unconscious desires of the id and the moral demands of the superego. So have you ever heard of a Freudian slip? That's actually an example of a mental conflict. So for example, a financially stressed patient tells his doctor, oh, doctor, please don't give me any bills. Well, what he really meant to say was, please don't give me any pills. So this whole process that I went through of the ego, the superego, and the id becoming fixated in psychosexual development due to conflicts is all part of the psychoanalytic theory. And this process is part of personality development for all individuals. But it's especially problematic when there's a problem with gratification in a particular psychosexual stage.
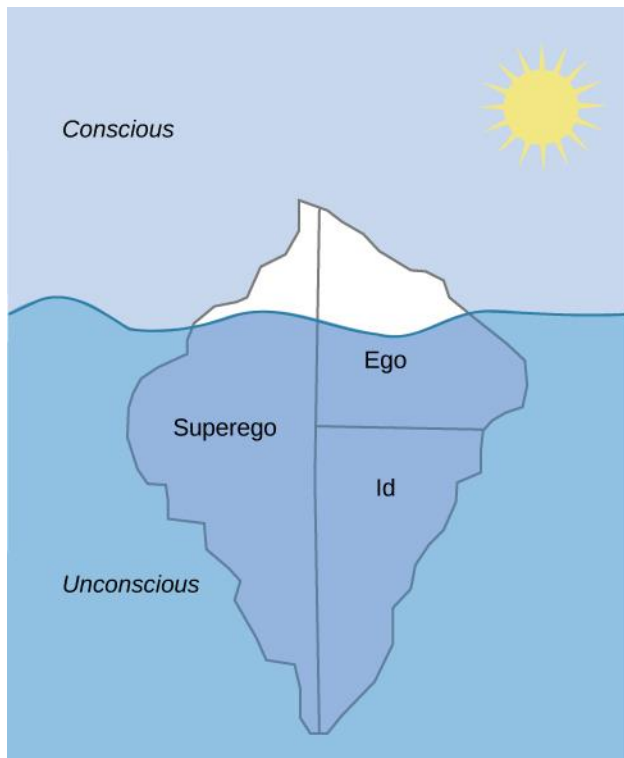
Fig.Relation of id, ego and superego with conscious and subconscious part of mind

According to Freud's psychoanalytic theory, the id is the primitive and instinctual part of the mind that contains sexual and aggressive drives and hidden memories, the super-ego operates as a moral conscience, and the ego is the realistic part that mediates between the desires of the id and the super-ego.

Although each part of the personality comprises unique features, they interact to form a whole, and each part makes a relative contribution to an individual's behavior.

Fig. Id,Ego and Superego

1.What is the id?-The id is the primitive and instinctive component of personality. The id is a part of the unconscious that contains all the urges and impulses, including what is called the libido, a kind of generalized sexual energy that is used for everything from survival instincts to appreciation of art. The id is also kind of stubborn, for it responds only to what Freud called the pleasure principle (if it feels good, do it), and nothing else.

2.What is the Ego?-The ego is 'that part of the id which has been modified by the direct influence of the external world.'

The ego is the only part of the conscious personality. It's what the person is aware of when they think about themselves, and is what they usually try to project toward others.

The ego develops to mediate between the unrealistic id and the external real world. It is the decision-making component of personality. Ideally, the ego works by reason, whereas the id is chaotic and unreasonable.

The ego operates according to the reality principle, working out realistic ways of satisfying the id's demands, often compromising or postponing satisfaction to avoid negative

consequences of society. The ego considers social realities and norms, etiquette and rules in deciding how to behave.

Like the id, the ego seeks pleasure (i.e., tension reduction) and avoids pain, but unlike the id, the ego is concerned with devising a realistic strategy to obtain pleasure. The ego has no concept of right or wrong; something is good simply if it achieves its end of satisfying without causing harm to itself or the id.

3.What is the superego?-The superego incorporates the values and morals of society which are learned from one's parents and others. It develops around the age of 3 – 5 years during the phallic stage of psychosexual development. The superego is seen as the purveyor or rewards (feelings of pride and satisfaction) and punishments (feelings of shame and guilt) depending on which part (the ego-deal or conscious) is activated.

The superego is a part of the unconscious that is the voice of conscience (doing what is right) and the source of self-criticism. It reflects society's moral values to some degree, and a person is sometimes aware of their own morality and ethics, but the superego contains a vast number of codes, or prohibitions, that are issued mostly unconsciously in the form of commands or "don't" statements.

The superego's function is to control the id's impulses, especially those which society forbids, such as sex and aggression. It also has the function of persuading the ego to turn to moralistic goals rather than simply realistic ones and to strive for perfection.

9.Psychosexual theory of Sigmund Freud(1856-1939)
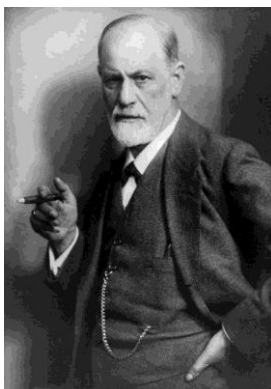
Sigmund Freud: Sigmundfreud developed his theory of development based on five psychosexual stages

Freud's psychosexual theory of development suggests that children develop through a series of stages related to erogenous zones.

- Key Points
  - Sigmund Freud 's theory of psychosexual development is based on the idea that parents play a crucial role in managing their children's sexual and aggressive drives during the first few years of life to foster their proper development.
  - Freud's structural model posits that personality consists of three interworking parts: the id, the ego, and the superego.
  - The five stages of Freud's psychosexual theory of development include the oral, anal, phallic, latency, and genital stages.
  - According to his theory, each stage of psychosexual development must be met successfully for proper development; if we lack proper nurturing and parenting during a stage, we may become stuck in, or fixated on, that stage.
  - Freud's psychosexual theory has been seriously criticized for the past few decades and is now considered largely outdated.

Sigmund Freud

Sigmund Freud was a Viennese physician who developed his psychosexual theory of development through his work with emotionally troubled adults. Now considered controversial and largely outdated, his theory is based on the idea that parents play a crucial role in managing their children's sexual and aggressive drives during the first few years of life in order to foster their proper development.

- Freud's Structural Model

Freud believed that the human personality consisted of three interworking parts: the id, the ego, and the superego. According to his theory, these parts become unified as a child works through the five stages of psychosexual development. The id, the largest part of the mind, is related to desires and impulses and is the main source of basic biological needs. The ego is related to reasoning and is the conscious, rational part of the personality; it monitors behaviour in order to satisfy basic desires without suffering negative consequences. The superego, or conscience, develops through interactions with others (mainly parents) who want the child to conform to the norms of society. The superego restricts the desires of the id by applying morals and values from society. Freud believed that a struggle existed between these levels of consciousness, influencing personality development and psychopathology.

- Psychosexual Stages of Development

For Freud, childhood experiences shape our personalities and behaviour as adults. Freud viewed development as discontinuous; he believed that each of us must pass through a series of stages during childhood, and that if we lack proper nurturing and parenting during a stage, we may become stuck in, or fixated on, that stage. According to Freud, children's pleasure-seeking urges (governed by the id) are focused on a different area of the body, called an erogenous zone, at each of the five stages of development: oral, anal, phallic, latency, and genital.
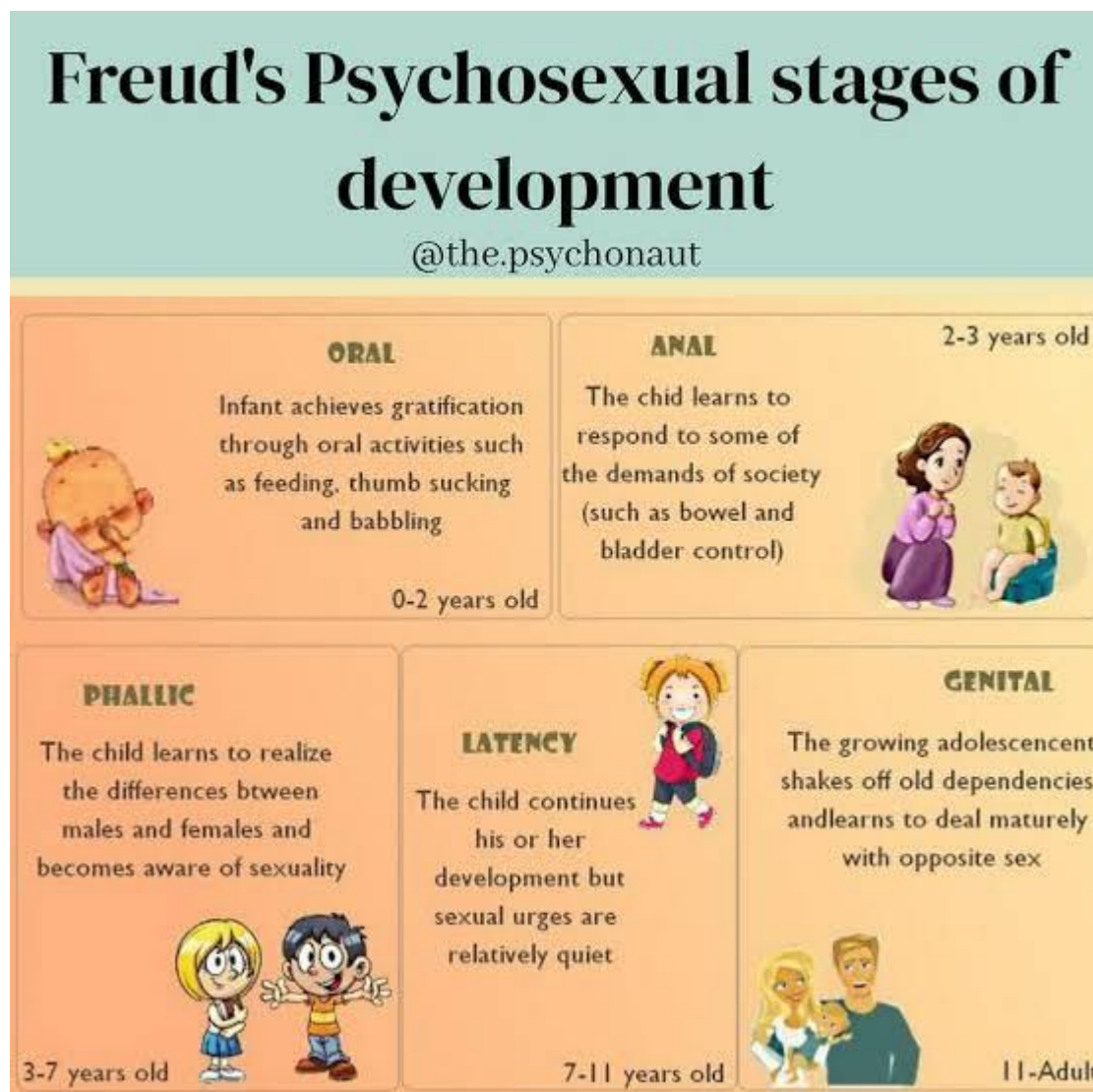
Freud's Psychosexual stages of development

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ORAL

Infant achieves gratification through oral activities such as feeding, thumb sucking and babbling

0-2 years old

ANAL   2-3 years old

The chid learns to respond to some of the demands of society (such as bowel and bladder control)

PHALLIC

The child learns to realize the differences btween males and females and becomes aware of sexuality

3-7 years old

LATENCY

The child continues his or her development but sexual urges are relatively quiet

7-11 years old

GENITAL

The growing adolescencent shakes off old dependencies andlearns to deal maturely with opposite sex

11-Adult

Fig.Freud's psychosexual stages of development

1.Oral (0-1 years of age): During this stage, the mouth is the pleasure center for development. Freud believed this is why infants are born with a sucking reflex and desire

their mother's breast. If a child's oral needs are not met during infancy, he or she may develop negative habits such as nail biting or thumb sucking to meet this basic need.

2.Anal (1-3 years of age): During this stage, toddlers and preschool-aged children begin to experiment with urine and feces. The control they learn to exert over their bodily functions is manifested in toilet-training. Improper resolution of this stage, such as parents toilet training their children too early, can result in a child who is uptight and overly obsessed with order.

3.Phallic (3-6 years of age): During this stage, preschoolers take pleasure in their genitals and, according to Freud, begin to struggle with sexual desires toward the opposite sex parent (boys to mothers and girls to fathers). For boys, this is called the Oedipus complex, involving a boy's desire for his mother and his urge to replace his father who is seen as a rival for the mother's attention. At the same time, the boy is afraid his father will punish him for his feelings, so he experiences castration anxiety. The Electra complex, later proposed by Freud's protégé Carl Jung, involves a girl's desire for her father's attention and wish to take her mother's place.

4.Latency (6-12 years of age): During this stage, sexual instincts subside, and children begin to further develop the superego, or conscience. Children begin to behave in morally acceptable ways and adopt the values of their parents and other important adults.

5.Genital (12+ years of age): During this stage, sexual impulses re emerge. If other stages have been successfully met, adolescents engage in appropriate sexual behaviour, which may lead to marriage and childbirth.

- Criticism of Freud's Theories

Freud's psychosexual theory is controversial and has been thoroughly criticized. First, even though Freud's stages are related to children, he based most of his theory on his work with troubled adults; he in fact never worked with children. Second, many believed his work was too focused on human sexuality, especially his focus on the Oedipus complex and children's sexual desire for parents. Some critics of Freud believe the memories and fantasies of childhood seduction Freud reported were not real memories but constructs that Freud created and forced upon his patients. Finally, supporters of feminist theory believe Freud's theory to be sexist and overly reliant upon a male perspective (for example, his belief that girls developed sexual libido due to "penis envy").

10.Psychosocial theory of Erik Erikson (Neo-Freud)(1902-1994)

Erik Erikson: Erikson developed his eight stages of psychosocial development based on freud's psychosexual

Erikson's psychosocial stages of development focus on the resolution of different crises to become a successful, complete person.

- Key Points in this theory
- Erik Erikson (1902–1994) was a stage theorist who took Freud's controversial psychosexual theory and modified it into an eight-stage psychosocial theory of development.
- During each of Erikson's eight development stages, two conflicting ideas must be resolved successfully in order for a person to become a confident, contributing member of society. Failure to master these tasks leads to feelings of inadequacy.
- Erikson's eight stages of psychosocial development include trust vs. mistrust, autonomy vs. shame/doubt, initiative vs. guilt, industry vs. inferiority, identity vs. role confusion, intimacy vs. isolation, generativity vs. stagnation, and integrity vs. despair.
- Erikson also expanded upon Freud's stages by discussing the cultural implications of development; certain cultures may need to resolve the stages in different ways based upon their cultural and survival needs.

Erik Erikson

Erik Erikson (1902–1994) was a stage theorist who took Freud's controversial theory of psychosexual development and modified it as a psychosocial theory. Erikson emphasized that the ego makes positive contributions to development by mastering attitudes, ideas, and skills at each stage of development. This mastery helps children grow into successful, contributing members of society. During each of Erikson's eight stages, there is a psychological conflict that must be successfully overcome in order for a child to develop into a healthy, well-adjusted adult.

- Stages of Psychosocial Development

Erikson's stages of psychosocial development are based on (and expand upon) Freud's psychosexual theory. Erikson proposed that we are motivated by the need to achieve competence in certain areas of our lives. According to psychosocial theory, we experience eight stages of development over our lifespan, from infancy through late adulthood. At each stage there is a crisis or task that we need to resolve. Successful completion of each developmental task results in a sense of competence and a healthy personality. Failure to master these tasks leads to feelings of inadequacy.

Erikson also added to Freud's stages by discussing the cultural implications of development; certain cultures may need to resolve the stages in different ways based upon their cultural and survival needs.
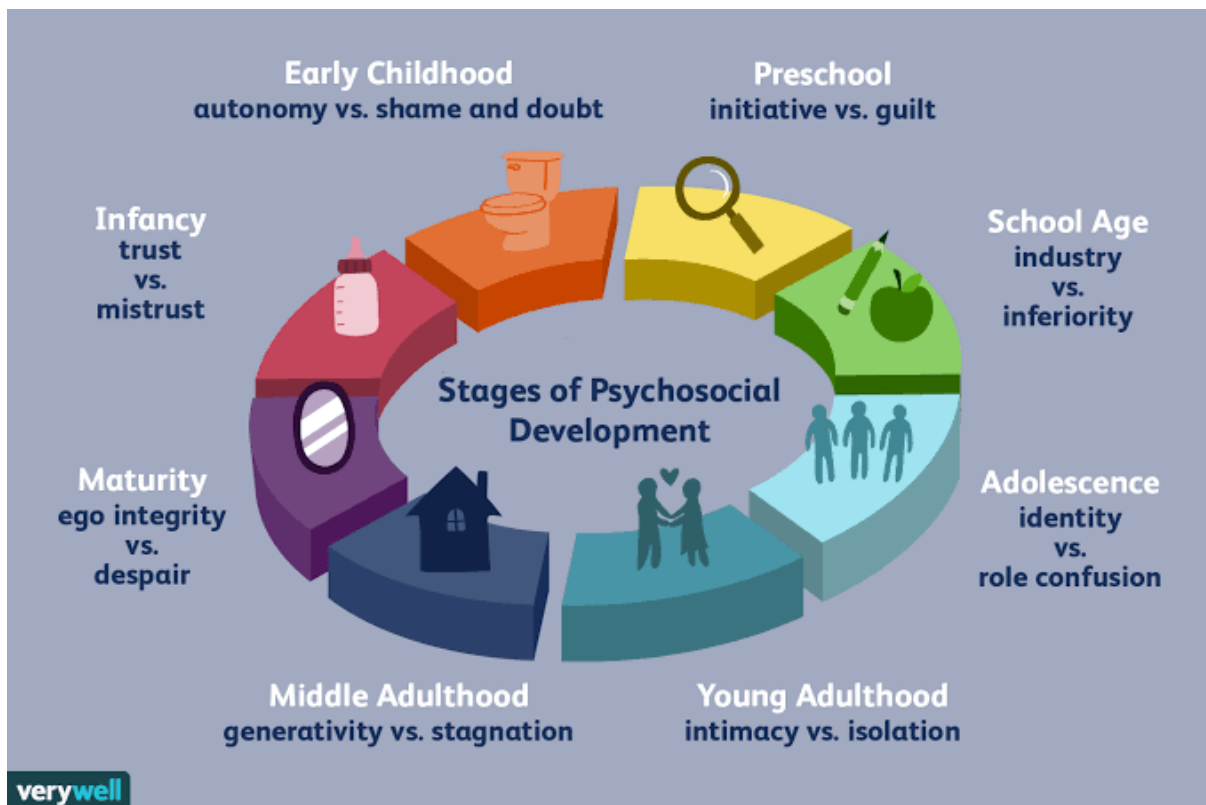
Fig. Stages of psychosocial theory

1.Trust vs. Mistrust-From birth to 12 months of age, infants must learn that adults can be trusted. This occurs when adults meet a child's basic needs for survival. Infants are dependent upon their caregivers, so caregivers who are responsive and sensitive to their infant's needs help their baby to develop a sense of trust; their baby will see the world as a safe, predictable place. Unresponsive caregivers who do not meet their baby's needs can engender feelings of anxiety, fear, and mistrust; their baby may see the world as unpredictable. If infants are treated cruelly or their needs are not met appropriately, they will likely grow up with a sense of mistrust for people in the world.

2.Autonomy vs. Shame/Doubt-As toddlers (ages 1–3 years) begin to explore their world, they learn that they can control their actions and act on their environment to get results. They begin to show clear preferences for certain elements of the environment, such as food, toys, and clothing. A toddler's main task is to resolve the issue of autonomy vs. shame and doubt by working to establish independence. This is the "me do it" stage. For example, we might observe a budding sense of autonomy in a 2-year-old child who wants to choose her clothes and dress herself. Although her outfits might not be appropriate for the situation, her input in such basic decisions has an effect on her sense of independence. If denied the opportunity to

act on her environment, she may begin to doubt her abilities, which could lead to low self-esteem and feelings of shame.

3.Initiative vs. Guilt-Once children reach the preschool stage (ages 3–6 years), they are capable of initiating activities and asserting control over their world through social interactions and play. According to Erikson, preschool children must resolve the task of initiative vs. guilt. By learning to plan and achieve goals while interacting with others, preschool children can master this task. Initiative, a sense of ambition and responsibility, occurs when parents allow a child to explore within limits and then support the child's choice. These children will develop self-confidence and feel a sense of purpose. Those who are unsuccessful at this stage—with their initiative misfiring or stifled by over-controlling parents—may develop feelings of guilt.

4.Industry vs. Inferiority-During the elementary school stage (ages 6–12), children face the task of industry vs. inferiority. Children begin to compare themselves with their peers to see how they measure up. They either develop a sense of pride and accomplishment in their schoolwork, sports, social activities, and family life, or they feel inferior and inadequate because they feel that they don't measure up. If children do not learn to get along with others or have negative experiences at home or with peers, an inferiority complex might develop into adolescence and adulthood.

5.Identity vs. Role Confusion-In adolescence (ages 12–18), children face the task of identity vs. role confusion. According to Erikson, an adolescent's main task is developing a sense of self. Adolescents struggle with questions such as "Who am I?" and "What do I want to do with my life?" Along the way, most adolescents try on many different selves to see which ones fit; they explore various roles and ideas, set goals, and attempt to discover their "adult" selves. Adolescents who are successful at this stage have a strong sense of identity and are able to remain true to their beliefs and values in the face of problems and other people's perspectives. When adolescents are apathetic, do not make a conscious search for identity, or are pressured to conform to their parents' ideas for the future, they may develop a weak sense of self and experience role confusion. They will be unsure of their identity and confused about the future. Teenagers who struggle to adopt a positive role will likely struggle to "find" themselves as adults.

6.Intimacy vs. Isolation-People in early adulthood (20s through early 40s) are concerned with intimacy vs. isolation. After we have developed a sense of self in adolescence, we are

ready to share our life with others. However, if other stages have not been successfully resolved, young adults may have trouble developing and maintaining successful relationships with others. Erikson said that we must have a strong sense of self before we can develop successful intimate relationships. Adults who do not develop a positive self-concept in adolescence may experience feelings of loneliness and emotional isolation.

7.Generativity vs. Stagnation-When people reach their 40s, they enter the time known as middle adulthood, which extends to the mid-60s. The social task of middle adulthood is generativity vs. stagnation. Generativity involves finding your life's work and contributing to the development of others through activities such as volunteering, mentoring, and raising children. During this stage, middle-aged adults begin contributing to the next generation, often through childbirth and caring for others; they also engage in meaningful and productive work which contributes positively to society. Those who do not master this task may experience stagnation and feel as though they are not leaving a mark on the world in a meaningful way; they may have little connection with others and little interest in productivity and self-improvement.

8.Integrity vs. Despair-From the mid-60s to the end of life, we are in the period of development known as late adulthood. Erikson's task at this stage is called integrity vs. despair. He said that people in late adulthood reflect on their lives and feel either a sense of satisfaction or a sense of failure. People who feel proud of their accomplishments feel a sense of integrity, and they can look back on their lives with few regrets. However, people who are not successful at this stage may feel as if their life has been wasted. They focus on what "would have," "should have," and "could have" been. They face the end of their lives with feelings of bitterness, depression, and despair.

11.Noam Chomsky's (1928) theory of language

Around the same time as Skinner there came another linguistic powerhouse who would leave a lasting impression on the field of linguistics. Namely, Noam Chomsky.

The theory that Chomsky proposed would be called Universal Grammar and it would assert nearly the exact opposite of what Skinner had offered in his theory. Where Skinner saw all learning coming from external stimuli, Chomsky saw an innate device for language

acquisition. What Skinner understood to be conditioning according to particular events Chomsky, understood to be the result of the universal elements that structure all languages.

In fact, one of Chomsky's major bones to pick with Skinner's theory had to do with Plato's problem, as described above. After all, if Skinner is right, how is it that children can learn a language so quickly, creating and understanding sentences they have never heard before?

Universal Grammar has been around for roughly a half a century by now, so it's hardly the last word on the subject. It has also received plenty of criticism. One critique that particularly concerns us is that it may have little to do with learning a second language, even if it's how we learn a first language. There are certainly theories about applying this concept to organize syllabi for language learning, but this seems unnecessarily complex for the average, independent learner.

In short, while Chomsky's theory may be still be important in the linguistics field as part of an ongoing discussion, it offers little help for learning a second language other than to provide you with the confidence that the grammar for all languages is already inside your head. You just need to fill in the particulars.

Over the past half century or so, a slew of other language learning theories have cropped up to try to deal with the perceived flaws in Chomsky's theory and to fill in the cracks for more specific areas of language learning (i.e. areas of particular interest to us).

Next up are two theories that, while not the philosophical bombshells like the ones listed above, arguably have more of a practical edge.

The child learn a set of generalizations or rules governing the way in which sentences are formed in the following sequence

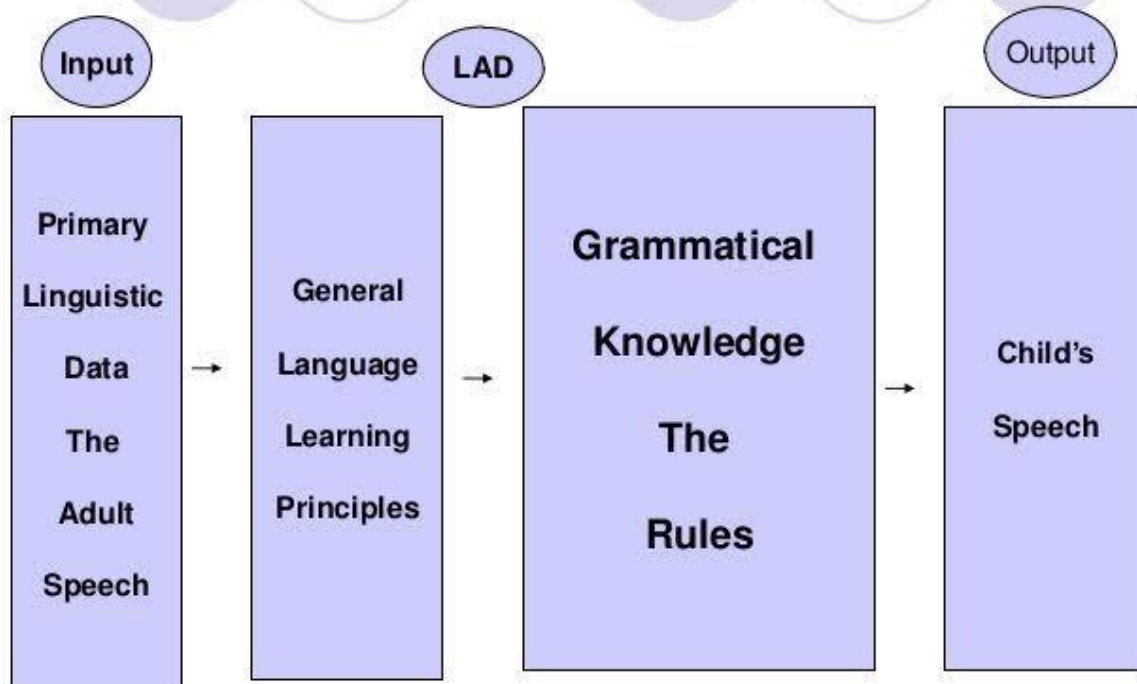| Input	LAD		Output
Primary Linguistic Data The Adult Speech	General Language Learning Principles	Grammatical Knowledge The Rules	Child's Speech

Fig.Chomsky's language theory

- Conclusion

However, finding a solid answer to the problem of language acquisition is far from being over. Our current understanding of the developmental process is still immature. Investigators of Universal Grammar are still trying to convince that language is a task too demanding to acquire without specific innate equipment, whereas the constructivist researchers are fiercely arguing for the importance of linguistic input. The biggest questions, however, are yet unanswered. What is the exact process that transforms the child's utterances into grammatically correct, adult-like speech? How much does the child need to be exposed to language to achieve the adult-like state?

12. Moral theory of Lawrence Kohlberg(1927-1987)

Kolhberg's theory of moral development states that we progress through three levels of moral thinking that build on our cognitive development.

- Key Points
  - Lawrence Kohlberg expanded on the earlier work of cognitive theorist Jean Piaget to explain the moral development of children, which he believed follows a series of stages.
  - Kohlberg defined three levels of moral development: preconventional, conventional, and postconventional. Each level has two distinct stages.
  - During the preconventional level, a child's sense of morality is externally controlled. Children accept and believe the rules of authority figures, such as parents and teachers, and they judge an action based on its consequences.
  - During the conventional level, an individual's sense of morality is tied to personal and societal relationships. Children continue to accept the rules of authority figures, but this is now because they believe that this is necessary to ensure positive relationships and societal order.
  - During the postconventional level, a person's sense of morality is defined in terms of more abstract principles and values. People now believe that some laws are unjust and should be changed or eliminated.
  - Kohlberg's theory has been criticized for its cultural and gendered bias toward white, upper-class men and boys. It also fails to account for inconsistencies within moral judgments.

Lawrence Kohlberg

Lawrence Kohlberg expanded on the earlier work of cognitive theorist Jean Piaget to explain the moral development of children. Kohlberg believed that moral development, like cognitive development, follows a series of stages. He used the idea of moral dilemmas—stories that present conflicting ideas about two moral values—to teach 10 to 16 year-old boys about morality and values. The best known moral dilemma created by Kohlberg is the "Heinz" dilemma, which discusses the idea of obeying the law versus saving a life. Kohlberg emphasized that it is the way an individual reasons about a dilemma that determines positive moral development.

After presenting people with various moral dilemmas, Kohlberg reviewed people's responses and placed them in different stages of moral reasoning. According to Kohlberg, an individual progresses from the capacity for pre-conventional morality (before age 9) to the capacity for conventional morality (early adolescence), and toward attaining post-conventional morality (once Piaget's idea of formal operational thought is attained), which only a few fully achieve.

Each level of morality contains two stages, which provide the basis for moral development in various contexts.
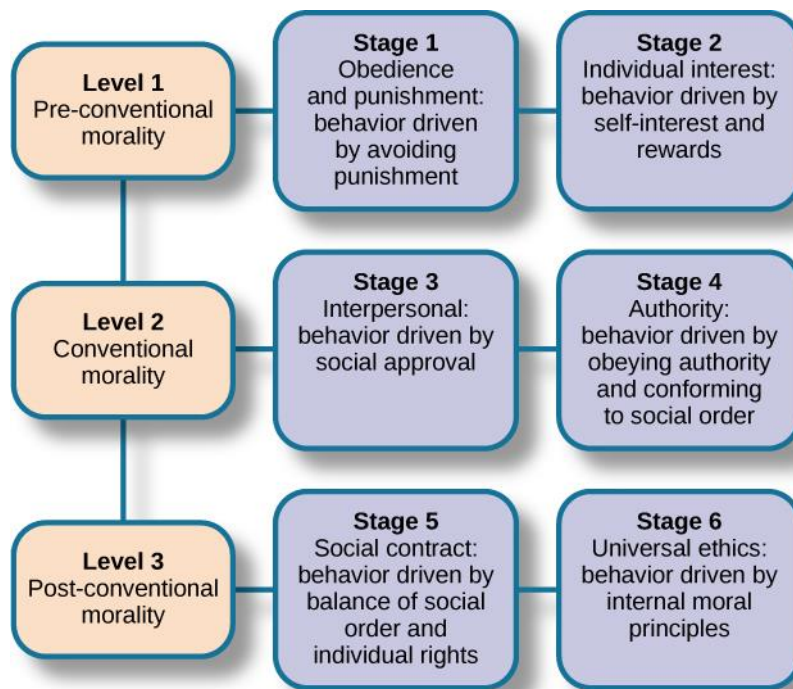
Kohlberg's theory of moral development: Kohlberg identified three levels of moral reasoning: Pre-conventional, Conventional and post-conventional

- Level 1: Pre-conventional

Throughout the pre-conventional level, a child's sense of morality is externally controlled. Children accept and believe the rules of authority figures, such as parents and teachers. A child with pre-conventional morality has not yet adopted or internalized society's conventions regarding what is right or wrong, but instead focuses largely on external consequences that certain actions may bring.

Stage 1: Obedience -and- Punishment Orientation-Stage 1 focuses on the child's desire to obey rules and avoid being punished. For example, an action is perceived as morally wrong because the perpetrator is punished; the worse the punishment for the act is, the more "bad" the act is perceived to be.

Stage 2: Instrumental Orientation-Stage 2 expresses the "what's in it for me?" position, in which right behavior is defined by whatever the individual believes to be in their best interest. Stage two reasoning shows a limited interest in the needs of others, only to the point where it might further the individual's own interests. As a result, concern for others is not based on

loyalty or intrinsic respect, but rather a "you scratch my back, and I'll scratch yours" mentality. An example would be when a child is asked by his parents to do a chore. The child asks "what's in it for me?" and the parents offer the child an incentive by giving him an allowance.

- Level 2: Conventional

Throughout the conventional level, a child's sense of morality is tied to personal and societal relationships. Children continue to accept the rules of authority figures, but this is now due to their belief that this is necessary to ensure positive relationships and societal order. Adherence to rules and conventions is somewhat rigid during these stages, and a rule's appropriateness or fairness is seldom questioned.

Stage 3: Good Boy, Nice Girl Orientation-In stage 3, children want the approval of others and act in ways to avoid disapproval. Emphasis is placed on good behaviour and people being "nice" to others.

Stage 4: Law-and-Order Orientation-In stage 4, the child blindly accepts rules and convention because of their importance in maintaining a functioning society. Rules are seen as being the same for everyone, and obeying rules by doing what one is "supposed" to do is seen as valuable and important. Moral reasoning in stage four is beyond the need for individual approval exhibited in stage three. If one person violates a law, perhaps everyone would—thus there is an obligation and a duty to uphold laws and rules. Most active members of society remain at stage four, where morality is still predominantly dictated by an outside force.

- Level 3: Post-conventional

Throughout the post-conventional level, a person's sense of morality is defined in terms of more abstract principles and values. People now believe that some laws are unjust and should be changed or eliminated. This level is marked by a growing realization that individuals are separate entities from society and that individuals may disobey rules inconsistent with their own principles. Post-conventional moralists live by their own ethical principles—principles that typically include such basic human rights as life, liberty, and justice—and view rules as useful but changeable mechanisms, rather than absolute dictates that must be obeyed without

question. Because post-conventional individuals elevate their own moral evaluation of a situation over social conventions, their behaviour, especially at stage six, can sometimes be confused with that of those at the pre-conventional level. Some theorists have speculated that many people may never reach this level of abstract moral reasoning.

Stage 5: Social-Contract Orientation-In stage 5, the world is viewed as holding different opinions, rights, and values. Such perspectives should be mutually respected as unique to each person or community. Laws are regarded as social contracts rather than rigid edicts. Those that do not promote the general welfare should be changed when necessary to meet the greatest good for the greatest number of people. This is achieved through majority decision and inevitable compromise. Democratic government is theoretically based on stage five reasoning.

Stage 6: Universal-Ethical-Principal Orientation-In stage 6, moral reasoning is based on abstract reasoning using universal ethical principles. Generally, the chosen principles are abstract rather than concrete and focus on ideas such as equality, dignity, or respect. Laws are valid only insofar as they are grounded in justice, and a commitment to justice carries with it an obligation to disobey unjust laws. People choose the ethical principles they want to follow, and if they violate those principles, they feel guilty. In this way, the individual acts because it is morally right to do so (and not because he or she wants to avoid punishment), it is in their best interest, it is expected, it is legal, or it is previously agreed upon. Although Kohlberg insisted that stage six exists, he found it difficult to identify individuals who consistently operated at that level.

- Critiques of Kohlberg's Theory
  - Kohlberg has been criticized for his assertion that women seem to be deficient in their moral reasoning abilities when compared to men. Carol Gilligan (1982), a research assistant of Kohlberg, criticized her former mentor's theory because it was based so narrowly on research using white, upper-class men and boys. She argued that women are not deficient in their moral reasoning and instead proposed that males and females reason differently: girls and women focus more on staying connected and maintaining interpersonal relationships.
  - Kohlberg's theory has been criticized for emphasizing justice to the exclusion of other values, with the result that it may not adequately address the arguments of those who value other moral aspects of actions. Similarly, critics argue that Kohlberg's stages

are culturally biased—that the highest stages in particular reflect a westernized ideal of justice based on individualistic thought. This is biased against those that live in non-Western societies that place less emphasis on individualism.

▪ Another criticism of Kohlberg's theory is that people frequently demonstrate significant inconsistency in their moral judgements. This often occurs in moral dilemmas involving drinking and driving or business situations where participants have been shown to reason at a lower developmental stage, typically using more self-interest driven reasoning (i.e., stage two) than authority and social order obedience driven reasoning (i.e., stage four). Critics argue that Kohlberg's theory cannot account for such inconsistencies.

- Basic tenets of Kohlberg's theory

The numerous studies investigating moral reasoning based on Kohlberg's theory have confirmed basic tenets regarding the topic area. Cross-sectional data have shown that older individuals tend to use higher stages of moral reasoning when compared with younger individuals, while longitudinal studies report "upward" progression, in accordance with Kohlberg's theoretical order of stages. In addition, studies have revealed

that comprehension of the stages is cumulative (e.g., if a person understands stage 3, he or she understands the lower stages but not necessarily the higher stages), and comprehension of higher stages is increasingly difficult. Moreover, age trends in moral development have received cross-cultural support. Lastly, data support the claim that every individual progresses through the same sequence of development; however, the rates of development will vary.

- Measurement of moral development

Since the development of Kohlberg's theory, a number of measurement tools that purport to measure moral reasoning have been constructed. Kohlberg's Moral Judgment Interview (1969) is a rather lengthy structured interview requiring trained interviewers and scorers. Another instrument is the Defining Issues Test developed by James Rest (1974). These measures, ranging from projective tests to structured, objective assessments, all consist of a set of hypothetical stories involving moral dilemmas.

13. Lev vygotsky's (1896-1934) Socio-cultural theory

Principle of Social Development Theory

Cognitive development is limited to a certain range at any given age.

+

Full cognitive development requires social interaction.

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Social Interaction

The More Knowledgeable Other (MKO)

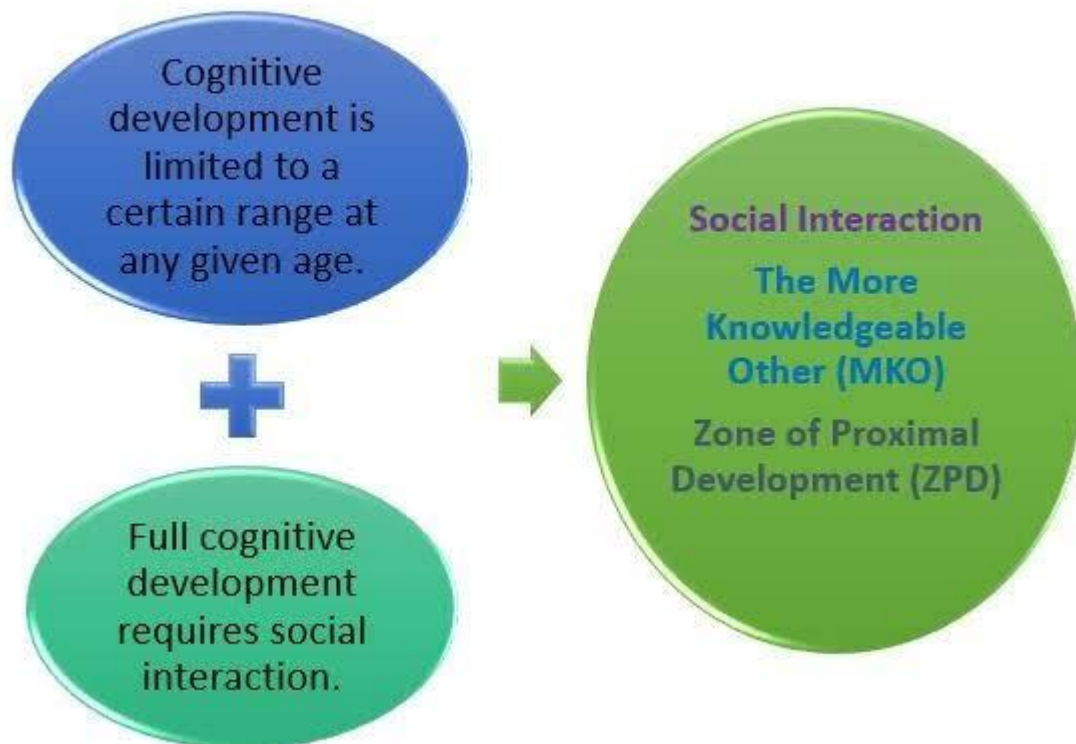Zone of Proximal Development (ZPD)

Fig. Principle of social development

Ecological systems theory, as well as Erikson's psychoanalytic theory, underscores the connection between culture and development. In line with this emphasis, child development research has recently seen a dramatic increase in cross-cultural studies. Investigations that make comparisons across cultures, and between ethnic and social class groups within cultures, provide insight into whether developmental theories apply to all children or are limited to particular environmental conditions. In doing so, cross-cultural research helps us untangle the contributions of biological and environmental factors to the timing and order of appearance of children's behaviours.

In the past, cross-cultural studies focused on broad cultural differences in development-for example, whether children in one culture are more advanced in motor development or do better on intellectual tasks than children in another. However, this approach can lead us to conclude incorrectly that one culture is superior in enhancing development, while another is deficient. In addition, it does not help us understand the precise experiences that contribute to cultural differences in children's behaviour. Today, more research is examining the

relationship of culturally specific practices to child development. The contributions of the Russian psychologist Lev Semanovich Vygotsky (1896-1934) have played a major role in this trend. Vygotsky's (1987) perspective is called sociocultural theory. It focuses on how culture values, beliefs, customs, and skills of a social group-is transmitted to the next generation. According to Vygotsky, social interaction-in particular, cooperative dialogues between children and more knowledgeable members of society-is necessary for children to acquire the ways of thinking and behaving that make up a community's culture. Vygotsky believed that as adults and more expert peers help children master culturally meaningful activities, the communication between them becomes part of children's thinking. Once children internalize the essential features of these dialogues, they can use the language within them to guide their own actions and accomplish skills on their own. The young child instructing herself while working a puzzle or tying her shoes has started to produce the same kind of guiding comments that an adult previously used to help her master important tasks (Kozulin, 1990).

Perhaps you can tell from this brief description that Vygotsky's theory has been especially influential in the study of children's cognition. But Vygotsky's approach to cognitive development is quite different from Piaget's.

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Origins of scientific enquiry

❖ Introduction:

We Emphasised that scientific method is a methodological approach to the process inquiry in which empirically grounded theory off nature is constructed and verified .To understand This statement it is useful to go back in time to see how the method evolved .The origin of modern scientific method occurred in Europe in the 1600s: involving(1)A chain off research events from copernicusto newton,Which resulted (2)in the gravitational model off the solar system and (3)the theory of Newtonian physics to express the model

There are many important intellectual precursors to science .Forexample,alchemy was a precursor to the modern scientific discipline of chemistry, but it was not science.Alchemy was a confusion of practices and un-grounded theory. In medieval europe, the fundamental stuff of the universe was viewed as air ,earth ,fire,water- alchemy .But now in modern Europe,the Fundamental stuff of of the universe Is energy and mass,atoms and molecules,fields and particles chemistry and physics.

As another example the modern science of mathematics has important historical roots in Egyptian and Greek and Arab geometry and algebra but algebra And geometry were not integrated Until 1619 ,when Renes Descartes created the modern methamatical topic of analytic geometry .Nor was the modern topic of calculus created untill in 1693,when newton added to analytic geometry the ideas of differential calculus in finitessimals .(and about the same time and independently,Leibnitz contributed the ideas of integral calculu

- Scientific Method

Science began in that intellectual conjunction of the research of six particular individuals: Copernicus, Brahe,Kepler,Galileon,Descartes, Newton. Why this particular set of people and their work ?For the first time in history, all the component ideas of scientific method came together and operated fully as empirically grounded theory:

1.A scientific model that could be verified by observation (Copernicus)
2.Precise instrumental observatios to verify the model (Brahe)

3.Theoretical analysis of experimental data (Kepler)

4.Scientific laws generalized from experiment (Galileo)

5.Mathematics to quantitatively express theoretical ideas (Descartes and Newton)

6.Theoretical derivation of an experimentally verifiable model (Newton).

Nicolaus Copernicus

Nicolaus Copernicus (1473-1543)was what we would now call a theoritician ,but he thought of himself as a"naturalphiloshoper".He proposed an idea (actually a revival of an ancient idea)that the universe should be modeled with the sun as a center and not the earth – sun centric versus earth -centric system .

Nicolaus Copernicus (1473-1543)was born in the city Tourn then in the kingdom of Poland .copernicus entered the krakow Academy in 1491.Four years later he went to Italy to continue his studies ,in law and in medicine at the University of Bologna and at the University of padua .His uncle was a bishop in the catholic church ,supported him and expected him to become a priest .While in Italy ,he met an astronomer ,Domenico Maria Novara da Ferrara and became his assistant for a time, making his first astronomical observations.Copernicus finished his studies at University of padua and received a doctorate in canaon law in 1503.He then returned to take a position at the collegiate church of the holy cross in Breslaw ,Silesia .Just before his death 1543 .he published his work ,De revolutionibusorbiumcolestium.Copernicus's model challenged an older and then widely accepted model of an earth -centered system -which had been refined by the egyptian ,Ptolemy (90-168AD) of Alexandria. Ptolemy wrote scientific treatises ,three of which were influential upon later Islamic and Europe thought : astronomical treatise (Almagest),Geography ,and four books astrology

The Ptolemaic model had the earth as center and the sun and planets circling the Earth.But it had awkward aspects – such as the planet of venus showed an apparent retrograde motion ,going forward most of the time but sometimes going backward .To account for this appearance, Ptolemy had put the planet upon a small Circle upon a bigger circle around the earth .This was a model the apparent retrograde" motion of the planet venus as seen from the earth .This was theoritically not elegant .It was neither simple nor direct in explanation .Copernicus argued that if all the planets were upon circles around the sun ,the model became elegant -elegant in the manner of -simpler and without added complexity.

TychoBrache

Copernicus's work stimulated new observations by the astronomer TychoBrahe .Brahe wanted to determine which model was correct by direct astronomical observations .Now we could call Brahe an experimental scientist (in contrast to the theoritician Copernicus).

The importance of Brahe to copernicus is that Brahe would use observations to ground theory -to place a theoritical model upon empirical foundation-empirically grounded theory .

The greatly improved precision of Brahe's measurements over previous measurements of planetary positions enabled the breakthrough in astronomy.This precision of measurement provided data accurate enough to determine between two theoritical models of the planets which in fact was real :the Earth -centric (Ptolemy)or the sun -centric (Copernicus) model?

In historical perspective,We can view Brahe As a greate experimental scientist -because he understood that it was the precision of measurements that was the key to determining which

model was correct in reality. This understanding by an experimenter as to what experimental data is critical to theory construction or validation is the mark of great experimental scientist .This is a key process in scientific method-precise experimental verification of a theoritical model of nature -by improved scientific instruments .

Tycho Brahe (1546-1601)was born in Denmark .His father was a nobleman .His uncle raised him,and in 1559,he went to the university of copenhagen to study law .he turned his attention to astronomy after a predicted eclipse in 1560.over the course of his life,ofhe built several observatories and constructed measuring instruments larger and much more precise than previous instruments .These were astrolabes ,ten times larger than previous astrolabes .His measurements the planetary motion of venus ,mars,andjupiter were an order of magnitude more exact than older measurements of planetary motion .

Johannes kepler
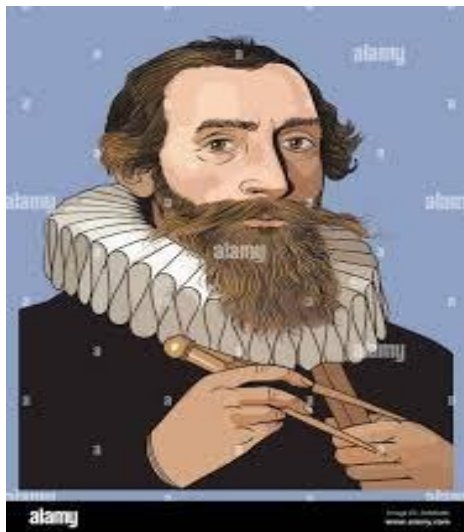
Brahe made many,many astronomical measurements and ,in 1660,hired a mathematicians, Johannes Kepler ,to analyzed all the data.Toanalyze means to abstract the underlying form of the data andto generalize the form ,so that data form additional new observation would fit that form .Analysis of data is the connection of observation to theory. Kepler moved his family from Austria to Poland and began working for Brahe .But Brahe died unexpectedly on October 24,1601 Brahe had been the imperial mathematicians to the court of emporer Rudolph 2 ;and Kepler was appointed as Brahe'a successor. Kepler continued working on

analyzingBrahe'smeasurements .By late 1602,Kepler found a law that nicely fit the planetary data-planets sweep out equal areas of their orbits in equal times .Here was a law of nature (the mind of God Kepler'sview).It was a phenomenological law -a law of nature which nature follows -and also quantitative law!

Kepler understood that this law was a properly of elliptical orbits.Copernicus's model had used circular orbits .But Kepler saw that,inreality,planets followed elliptical orbits .

By the end of the year ,kepler saw that ,in reality ,planets followed elliptical orbits .By the end of the year kepler completed a new manuscript ,Astronomia nova ,describing the elliptical orbits .By the end of the year ,kepler completed a new manuscript Astronomianova,describing the elliptical orbits. But this was not published until 1609 due to legal disputes with Brahe'sheirs over ownership of Brahe's data (This was an early dispute over what today we would call "intellectual property ")

The quantitative formulation of a law – of – nature was a major step towards scientific method.

Scientific method consisted not merely of qualitative observation of nature but also of quantitative measurements and quantitative laws depicting the underline form of the measurements-physical law of natural phenomenon

Phenomenological laws are regular patterns of relationship observed as occuring in phenomenon of nature .

Johannes kepler (1571-1630)was born in Germany. In 1589 he entered the university of tubingen as a theology student but was soon to excel in mathematics .His love of astronomy was long standing ,and he cast horoscopes as an astrologer .Learning of the Ptolemaic model and the Copernican model ,he liked the Copernican model .Kepler than took a position as a teacher of mathematics and astronomy at a protestant school in Graz ,Austria (which later was to become the university of Graz).Kepler published his first astronomical work in 1595 ,MysteriumCosographium ,in which he defined the Copernican system. He was at the time interested in geometric forms (Polygons) which might be used to fit the astronomical data .Kepler could not have created his theory of planetary orbits as ecllipses without the extreme precision of Brahe's measurements.

Galileo Galilei
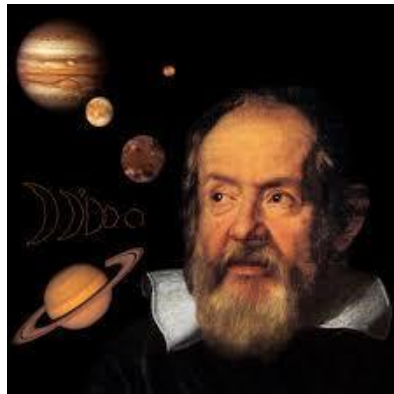
Just before kapur's publication of astronomia Nova the telescope was invented in 1608 in the netherland learning of his invention GalileoGalilee in Italy made a telescope that same year with 3 power magnification he used it to be observe the moon and planet he was the first to observethe moons off Jupiter a large planet with four moons circling it .This was a clear analogy to Copernicus 's Solar models with the sun the center off planetary orbits -as a jupiter the center of it's moon's orbits .Galileo published his first Astronomical observation in March 1610 as sidereusNuncius .The double impact of Kepler's elliptical orbits and Galileo's moon's of jupiter established for the astronomical community then the realistic superiority of the Copernican model. The Ptolemaic model went into the dustbin of intellectual history.

Rene Descartes

The next step in the emergency off the scientific method was to improve the language off quantitative Anna lysis the invention of analytical geometry and calculus and their application to the expression of physical theory .And this was due principally to descartes and Newton .Rene Descartes was a contemporary of galileo and made a very major contribution to advancing mathematics.

- Scientific Method as Empirically Grounded Theory

The development of the disciplines of science, physics ,chemistry,and biology did begin after Newton's synthesis of mechanical theory.After Newton published his seminal work in 1686,the next two centuries (the eighteenth centuries) saw the development of the disciplines of classical physics and chemistry and mathematics and biology .Further major theoritical developments continued to occur in physics and chemistry and biology in twentieth century. The critical Component parts off scientific methods are:

1.Observation and experimentation

2.Instrumentation and instrumental techniques

3.Theoretical analysis and model building

4. Theory construction and validation

5.Paradigm development and integration.

- Vienna Circle's Logical Positivism

However, not all philosophers of science have recognized this full complexity about how scientific theory is constructed in the practice of science. An example in the early twentieth century was the school of philosophy science called logical positivism.They had 2positions:-
1.That all objects must be observable in science
2.Scientific theory is merely logically inducded from experiment.

- Circularity Between Empiricism and Theory in scientific Method

In this Historical example of Newton's model off the solar system we saw the empirical research technique off measurement and this was combine with the Theoretical technique off analysis modelling endtheory to create this dramatic Progress in physical science combination of both inductive and deductive inference.

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Topic No.-10

Research involving humans: Definitions of ethics & research, practical and ethical principles and concerns in research with human subjects. Ethical trends & challenges

Human subject research is systematic, scientific investigation that can be either interventional or observational and involves human beings as research subjects, commonly known as test subjects. Human subject research can be either medical research or non-medical researches.

Human research is **research conducted with or about people**, or their data or tissues, with

the sole intention to do good. Human research involves significant risks and it is possible for things to go wrong. Despite the best of intentions and care in planning and practice, sometimes things go awry. Definition of ethics

Ethics is a branch of philosophy that "involves systematizing, defending, and recommending concepts of right and wrong behaviour ".

In short term, we can say that ethics is the study of what is right and wrong in human behaviour.

- Definition of research

Research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings.

Meaning of research- Detailed and careful study of something to find out more information about it.

- Definition of research ethics

Research ethics involves the application of fundamental ethical principles to research activities which include the design and implementation of research, respect towards society and others, the use of resources and research outputs, scientific misconduct and the regulation of research.

- Research ethics

Introduction

Ethics are the moral principles that govern a person's behaviour. Research ethics may.

Be referred to as doing what is morally and legally right in research. They are actually.

Norms for conduct that distinguish between right and wrong, and acceptable and unacceptable behaviour.

According to The Research Excellence Framework, 2014, research is "a process of Investigation leading to new insights, effectively shared." Research is a multi-stage process. Ethics are central to the research process. Researchers need to take care of Various ethical issues at different levels of this process.

Research ethics provides guidelines for the responsible conduct of research. In addition, it educates and monitors scientists conducting research to ensure a high ethical standard. The following is a general summary of some ethical principles:

1.Honesty

Honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data.

2.Objectivity

Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research.

3.Integrity

Keep your promises and agreements; act with sincerity; strive for consistency of thought and action.

4.Carefulness

Avoid careless errors and negligence; carefully and critically examine your own work and the work of your peers. Keep good records of research activities.

5.Openness

Share data, results, ideas, tools, resources. Be open to criticism and new ideas.

6.Respect for Intellectual Property

Honor patents, copyrights, and other forms of intellectual property. Do not use unpublished data, methods, or results without permission. Give credit where credit is due. Never plagiarize.

7.Confidentiality

Protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.

8.Responsible Publication

Publish in order to advance research and scholarship, not to advance just your own career. Avoid wasteful and duplicative publication.

9.Responsible Mentoring

Help to educate, mentor, and advise students. Promote their welfare and allow them to make their own decisions.

10.Respect for Colleagues

Respect your colleagues and treat them fairly.

11.Social Responsibility

Strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy.

12.Non-Discrimination

Avoid discrimination against colleagues or students on the basis of sex, race, ethnicity, or other factors that are not related to their scientific competence and integrity.

13.Competence

Maintain and improve your own professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.

14.Legality

Know and obey relevant laws and institutional and governmental policies.

15.Animal Care

Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.

HR Trends in Ethics Accountability in ethics represents a guiding force in human resources, one that can affect not only HR but all other business activities. However, the fierce competitive nature of the business environment leads many business owners and managers to forgo ethics considerations, believing that their quality products will sell regardless of the actual "how" of conducting business. To protect the business and its employees, effective human resources teams make every effort to stay abreast of how ethics are trending in business.Human Subjects Protection:

When conducting research on human subjects, minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy.

- Ethical principle

1.Essentiality

For undertaking research it is necessary to make all possible efforts to get and give adequate consideration to exiting literature /knowledge. In planning a study inventor, the investigator has the responsibility to make a careful evaluation of its ethical acceptability. To the extend that are weighing of scientific and human values suggested a compromise and human values

suggests a compromise of any principle, the investigator incurs a correspondingly serious obligation to seek ethical advice.

2.Precaution and risk ininimisation

All research carries some risk to the participants and to society. Considering whether a participant in a planned study will be a subject risk or a subject at minimal risk, according to recognized standards, is of primary ethical concern to the investigator.

3.Respect and protection of autonomy and rights

The investigator always retains the responsibility for ensuring ethical practice in research. Research involving participation of individual must not only respect but also protect the autonomy ,the rights and dignity of participants. The investigator is also responsible for the ethical treatment of research participants by collaborators, assistants, students and employees, all of whom, however, incur similar obligations.

4.Non-exploitation

Research must not unnecessarily consume the time of participants. it should not expose them to risk due to participation in the research. Except in minimal – risk research, the investigator establishes a clear and fair agreement with research participants, prior to their participation, that clarifies the obligations and responsibilities of each, the investigator has the obligation to honor all promises and commitments included in that agreement.

5.Knowledge,ability and commitment to do research

Sincere commitment to research in general and to the relevant subject in particular, and readiness to acquire adequate knowledge ,ability and skills for undertaking particular research are essential for good and ethical research. Methodological requirements of a study may make the use of concealment or deception necessary. Before conducting such a study, the investigator has a special responsibility to-determine the whether the use of such techniques is justified by the study's prospective scientific, educational or applied values .

Determine whether alternative procedures are available that do not use concealment or deception..

6.The Principle of Non-maleficence

The investigator protects the participant from physical and mental discomfort, harm, and danger that may arise from research procedures. If risk of such consequences exist ,the investigator informs the participants of the fact.

Where research procedures result in undesirable consequence for the individual participants, the investigators has the responsibility to detect and remove or correct consequence, including long -term effects.

7.Privacy,anonymity and confidentiality

Information obtained about a research participants during the course of an investigation is confidential unless otherwise agreed upon in advance. When the possibility exist that others may obtain access to such information, this possibility ,together with the plans for protecting confidentiality.

8.Maximisation of public interest and of social-justice

Research is a social activity, carried out for the benefit of society. It should be undertaken with the motive of maximization of public interest and social justice .

9.Public domain

All persons and organizations connected to research should make adequate efforts to make public in appropriate manner and form, and at appropriate time, information on the research undertaken and the relevant results and implications of complicated research.

10.Accountability and transparency

The conduct of research must be fair, honest and transparent. It is desirable that institutions and researchers are amenable to social and financial review of their research by an appropriate and responsible and social body.

11.Totality of responsibility

The responsibility for due observance of all principles of ethic and guidelines devolves on all those directly or indirectly connected with the research, They include institutions where the research is conducted ,researchers, sponsors and those who publish material generated from research.

- Concern in research with human subject

Here we identify a series of issues that typically need attention before, during, and after qualitative studies.

1.Worthiness of the project

The question may sound pompous and hortatory, but the issue is not trivial is my contemplated study worth doing? Will it contribute ion same significant way to a domain broader than my funding, my publication opportunities, my career?

2.Benefits, costs and reciprocity

What will each party to the study gain from having taken part? what do they have to invest in time, ended, or money7 Is the balance equitable?

Researchers are often said: stay usually enjoy their work and learn from it, they may get a dissertation out of it: their papers, articles, and books not only contribute to Science but also can bring them recoetition, royalties, new funding, and career advancement. Study participants have a somewhat different set of benefits they get to be listened to, they may gain insights for learning they may improve their personal practice program or policy they are involved with may be strengthened they may get help in talking effective action on some recurring problem The question of costs and who bears them is important the .researcher's time is repaid-usually not fully-in casti or a class grade.

3.Harm and Risk

Harm te participants can come in many varieties from blows to sell esteem or looking bad to others, to threats to one's interests, position or advancement the organization, to loss of fuddle for a program on up to being Irressted. The Information from a qualitative study is never value free, and it may have negative consequence. Harm cuts both ways.

Setting risk levels for potential harm is very difficult, perhaps impossible- in qualitative studies. It's wise to assume that the chances of some type of harm are better than even, and to consider in advance, ways of reducing that likelihood.

4.Honesty and Trust

What's my relationship with the people I am studving? Am telling the truth? Do we trust each other?

Most qualitative researches are unlikely to lie, cheat or steal in the course of their work But broken promises are not unknown. And some researchers have reported deceiving respondents about the true nature of the inquiry. The trend toward investigative evaluation carried out for accountability or the detection of wrong do, may also involve deception.

5.Privacy, confidentiality, and anonymity

In what ways will the study intrude, come closer to people than they want ? How will information be guarded?

Privacy - Control over other's access to oneself and associated information; preservation of boundaries against giving protected information or receiving unwanted information.

Confidentiality-agreements with a person or organization about what will be done with their data; may include legal constraints.

Anonymity - lack of identifiers, information that would indicate which individuals or organizations provided which data.

6.Intervention and advocacy

Ethical choices are not alwaysso dramatic, but they are still there when we see indifferent teachers, medical malpractice, abused children or evidence of misspent funds. Ethical choices are also present when we study people who are breaking the law as we study them. It is important to know more about deviance, but are we somehow condoning it by our neutral, Noncondenming?

7.Research integrity and quality

Is my study being conducted carefully, thoughtfully and correctly in terms of some reasonable set of standards?

This is more than a technical issues. If wo provide a set conclusion based on work and claim their validity, then we are being dishonest with our sponsors, colleagues, supervisors, respondents, and anyone else who reads and trusts our reports This is more than a technical issue. if we provide a set conclusion based on.

8.Ownership of data and conclusions

The issue of confidentiality requires being clear about who can have access to data. Most researchers consider their data and analysis as belonging to them and absent some form of

litigation, consider themselves to be responsible for safeguarding its confidentiality, preserving anonymity, and making data available to others for auditing, reanalyses, and replications.

9.Use and Misuse of results

Examples df misuse of study findings are not hard to find. Findings may be misinterpreted and used to support wrong policies Ore findings, correctly understood can be for a purpose researchers deplores. Long range outcomes for different parties may be inequitable.

A clear commitment to use your findings also serves to delimit and constrain the conceptual issues being considered to focus the data collection more than in a straight descriptive study and to narrow the analytic strategies followed.

- Ethical trends

HR Trends in Ethics Accountability in ethics represents a guiding force in human resources, one that can affect not only HR but all other business activities.

However, the fierce competitive nature of the business environment leads many business owners and managers to forgo ethics considerations, believing that their quality products will sell regardless of the actual "how" of conducting business.

To protect the business and its employees, effective human resources teams make every effort to stay abreast of how ethics are trending in business.

Ethics in HR Human resources departments are not immune to the questionable seduction of ignoring ethics. With more businesses competing in a global economy, a distressing trend condoned by some HR staff members is the exploitation of foreign labour by providing low pay and no employee benefits.

Some HR departments ignore longer hours worked by employees, don't address work-related stress, and follow disreputable hiring and firing practices.

Other HR teams overseeing off-site workers are redoubling their efforts toward consistently fair and equitable treatment of all employees.

- Ethical challenges

Ethical trends in business are spurred by a collective desire to make the world a better place. They're often associated with the consumption of ethical goods.
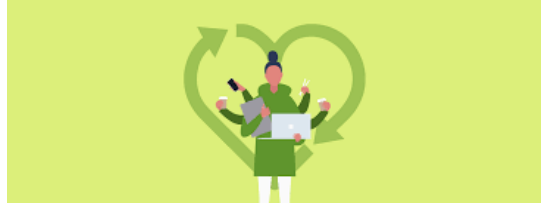
In a perfect world, it's always clear what's right or wrong. In the real world, things are often not so clear. Someone's wrong can be your right, which means your right will definitely, at some point, be someone else's wrong. Most of the time, the "right" choice is subjective. In business, many of these ethical challenges appear in the form of bribes, conflicts of interest, issues of honesty and integrity, and whistle-blowing.

- Bribery

Bribery is the act of giving money, goods, or other forms of compensation to a recipient in exchange for an alteration of their behaviour (to the benefit/interest of the giver) that the recipient would otherwise not alter. Many types of payments or favours can constitute bribes: tips, gifts, favours, discount, waived fees, free foods, free advertising, free trips, free tickets, donations, campaign contribution, sponsorship/backing, higher paying job, stock options, secret commission, or promotions.

- The definition of bribery is offering something desirable or something of value in exchange for getting something in return. Giving a congressman money to get a lucrative government contract job is an example of bribery. ... The giving, offering, or taking of bribes.In business, bribery can be very subtle. Consider the following example:

  You are the purchasing manager for a manufacturing company. There are several suppliers from whom you can purchase component parts used in the production of your finished product.

  One of the supplier representatives comes by every Monday morning with biscuits for you and your staff. He calls you on occasion and offers you tickets to sold-out sporting events and sends a lavish gift basket every Christmas. Is this just good business on his part, building a personal relationship with you and your staff, or is

there an expectation that, in exchange for his generosity, you will select his company's product over the competition— even though he's not the most cost-effective choice?

Are you taking a bribe when you accept the football tickets? These small "tokens of appreciation" can be construed as bribes, and as a result, many companies prohibit their employees from accepting gifts from suppliers and vendors.

One of the challenges in determining whether or not someone has taken a bribe or simply accepted a gift is that the social and cultural norms governing bribery and gift giving can differ from place to place.

Certain monetary transactions are acceptable and appropriate in some cultures but not in others. For example, political campaign contributions in the form of cash are considered criminal acts of bribery in some countries, but in the United States, as long as they adhere to election law, they're legal. Tipping is considered bribery in some societies, but in others the two concepts are very different.

A kickback is a form of negotiated bribery in which a commission is paid to the bribe-taker in exchange for services rendered. Generally speaking, money, goods, or services handed over are negotiated ahead of time. The kickback varies from other kinds of bribes in that there is implied collusion between agents of the two parties, rather than one party extorting the bribe from the other. The purpose of the kickback is usually to encourage the other party to cooperate in the illegal scheme. Consider the following case of a former Fannie Mae employee, Armando Granillo: Before dawn one hazy March day in L.A., Granillo pulled his SUV into a Starbucks near MacArthur Park, where he planned to pick up an envelope full of cash from an Arizona real-estate broker, federal investigators say.

Granillo, a foreclosure specialist at mortgage giant Fannie Mae, expected to drive off with $11,200—an illegal kickback for steering foreclosure listings to brokers, authorities allege in court records. Granillo would leave in handcuffs. And investigators are looking into assertions by Granillo and another former Fannie Mae foreclosure specialist that such kickbacks were "a natural part of business" at the government-sponsored housing finance company, as Granillo allegedly told the broker in a wiretapped conversation.

Regulators keep a close watch for kickback deals as the housing market heats up and new regulations take hold following the mortgage meltdown, which exposed widespread corruption in the housing and lending markets. Consumer Financial

Protection Bureau Director Richard Cord ray said his agency has moved to shut down kickback operations not only because they're illegal but also because they reduce competition and increase costs.

Reference:-

Notes given by sunita mam

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Basic Concepts of Research: Variables, Hypothesis, Sampling, Operational Definitions

❖ Research Methods

Research methods for the study of human development include techniques appropriate for research iwith children of different ages as well as with adults, and research with individuals as well as with groups (for example, families and classrooms). In all cases, the goal is the same: to use the tools of the scientific method to understand the process of human development. These tools can help you clarify your knowledge of age-related changes and guide you to explore new areas of study.

Human development and family relations professionals rely on research findings. Research knowledge will help you become a more informed citizen on issues of public policy and planning.

- Variables

Life spans of different people have been different. Physical abilities of different persons have been different. Marks of the students in the same subjects taught by the same teacher to all of them have not been equal. Temperature at different times in a day has been different. All these examples show that the variation is a characteristic found per unit that possesses it. We can thus say that as a person, object or situation changes, value or proportion of the properties
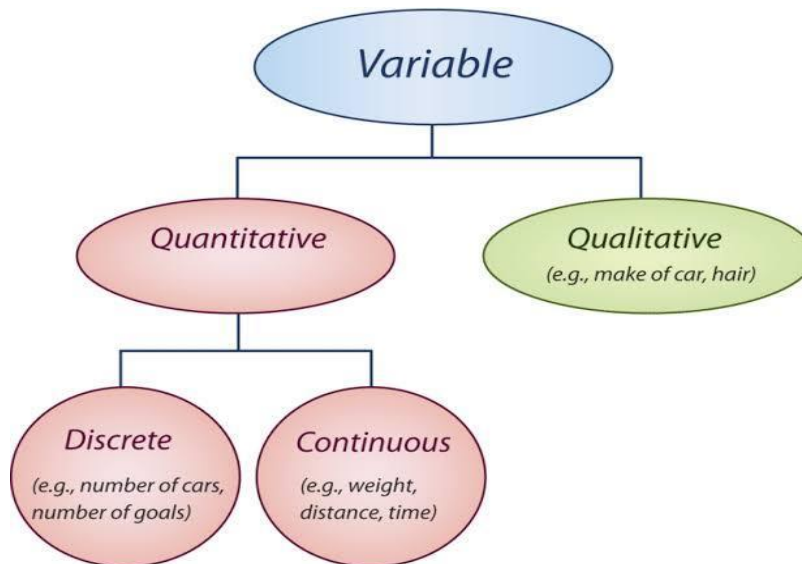
associated with it also changes. A characteristic under study of which an identity or value changes or is possible to change per unit is called variable. Or a variable is a characteristic that varies in the context of its value or identity. Variables play an important role in most of the research, especially in quantitative type ofresearch in which numeric or quantitative data are gathered and analysed.

- Types of variables

There are five types of variables in terms of research methodology as follows.

- Independent Variables: The independent variable is considered the manipulated variable and, thus, is the "cause" of behavior. The variable, value of which affects the value of another variable is known as an independent variable. Such a variable is not affected by the change in the value of another variable but affects the value of another variable. Generally, the effect of such a variable on another variable is measured or studied during research studies. Independent variable is also known as an absolute variable. We will understand this concept with the help of an example. In a

comparative study of Computer Aptitude (CA) of undergraduate students of different faculties, 'Faculty' will be considered as an independent variable, because in studythe researcher will check the impact of faculty on computer aptitude of the students. Faculty may have different levels like Arts, Commerce and Science. Here, the researcher assumes that CA of students may differ from faculty to faculty. Each level of independent variable is called Stratum and all levels together are known as Strata. Some independent variable, like Gender, has levels in fixed number. E.g. In the study of Emotional Maturity of students in terms of their Gender, the Gender will have only two levels Male and Female. Nowadays, third level of gender that is transgender is also accepted universally. In such cases gender will have three levels like Male, Female and Transgender.

- An independent variable is a singular characteristic that the other variables in your experiment cannot change. Age is an example of an independent variable. Where someone lives, what they eat or how much they exercise are not going to change their age. Independent variables can, however, change other variables. In studies, researchers often try to find out whether an independent variable causes other variables to change and in what way.

- **Dependent Variables:**The dependent behavior is the observed variable that measures the participant's response and, thus, is the "effect." The variable, value of which may change due to change in the value of other variables is called dependent variable. In other words, such a characteristic is called a dependent variable for which different values can be obtained in the context of change in independent variable. A dependent variable relies on and can be changed by other components. A grade on an exam is an example of a dependent variable because it depends on factors such as how much sleep you got and how long you studied. Independent variables can influence dependent variables, but dependent variables cannot influence independent variables. For example, the time you spent studying (dependent) can affect the grade on your test (independent) but the grade on your test does not affect the time you spent studying.

- When analyzing relationships between study objects, researchers often try to determine what makes the dependent variable change and how.

- In this way, we can say that the value of dependent variable may change due to change in the value of independent variable. Let's take an example to understand this

concept. In comparative study of Mathematical Reasoning Ability (MRA) of students in the context of their Intelligence, MRA will be a dependent variable and Intelligence will be considered as an independent variable because in this study, the impact of Intelligence on MRA is to be checked. The researcher may divide the students according to the level of their intelligence. Levels of intelligence may be high, low and medium or very high, high, medium, low and very low. Levels will be decided according to the need and objectives of study. Generally, there has been a relationship of cause and effect between dependent and independent variables, where independent variable acts as a cause and dependent variable as an effect. In this example, the researcher takes intelligence as a cause and MRA as effect. Because, here, he wants to check whether MRA is affected by intelligence or not.

- **Moderator Variable:** We know that the independent variable affects the value of the dependent variable and there has been a cause and effect relationship between these two. The variable that affects the cause and effect relationship between these two variables is called moderator variable. It means the effect of independent variable on dependent variable may be different in the presence of moderator variable. E.g. In the study of Value Awareness (VA) of urban, rural and semi urban students, the area will be an independent variable and VA will be a dependent variable. But here, if the researcher thinks that th. In other words, if the effect of the moderator variable is controlled, it is known as a controlled variable.

- **Intervening Variable:** The gender of students may also affect the relationship between area and VA of students, the gender will be considered as a moderator variable. Various moderator variables may be there for one pair of independent and dependent variables. Researcher has to decide, in such cases, which variable he wants to take as a moderator variable.

- **Controlled Variable:** If the effect of such variables that can affect the cause and effect relationship of dependent and independent variable, is eliminated, it is called controlled variableAn intervening variable, sometimes called a mediator variable, is a theoretical variable the researcher uses to explain a cause or connection between other study variables—usually dependent and independent ones. They are associations instead of observations. For example, if wealth is the independent variable, and a long life span is a dependent variable, the researcher might hypothesize that access to quality healthcare is the intervening variable that links wealth and life span.

- **Extraneous variables:**Extraneous variables are factors that affect the dependent variable but that the researcher did not originally consider when designing the experiment. These unwanted variables can unintentionally change a study's results or how a researcher interprets those results. Take, for example, a study assessing whether private tutoring or online courses are more effective at improving students' Spanish test scores. Extraneous variables that might unintentionally influence the outcome include parental support, prior knowledge of a foreign language or socioeconomic status.

- **Identifying Independent & Dependent Variables:**Let's say that a study reports "The effects of kicking on the position of the ball." Just from this title of the study, we can tell that the outcome measure (the dependent variable) will be the position of the ball (or the distance traveled). The variable thought to influence the distance, the independent variable, would be the kicking. We would assume that in the study, some balls were kicked (intervention or experimental group), and others were not kicked; or had something else done to them; so there were at least 2 levels of the independent variable.

You can use this typical form to determine the independent and dependent variables from the title of the study. If the study title is in the form "The effects of X on Y in Z". X is the independent variable and Y is the dependent variable - the outcome, and Z is the type of subjects represented.

1. Hypothesis
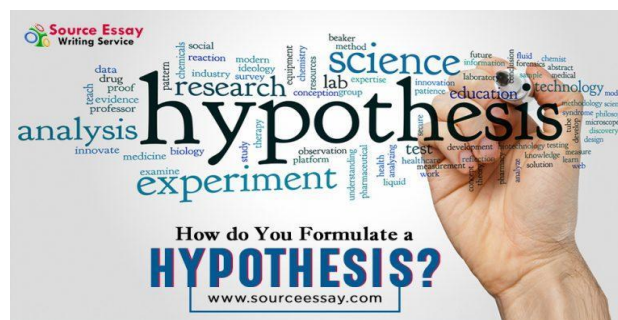
It (hypothesis) is a suggested answer to the problem under investigation. – John T. Townsend.

1.A hypothesis is a tentative generalization, the validity of which remains to be tested. – J. W. Best.

2.A hypothesis is a proposition which can be put to test to determine its validity. It may be proved correct or incorrect. – Good &Hatt.

3.A hypothesis is a conjectural statement of the relation between two or more variables. – F. N. Kerlinger

On the basis of the definitions, we can say that *hypothesis is an assumption that is still not proved but shows the probable solution of the problem or predicts the relationship between two or more variables.* The assumption is proved true or false by testing it. Hypothesis is not formulated by imagining baselessly, but it is a result of matured, rational and logical thinking. Such thinking, findings of previous researches and experience of the researcher provides the base for formulating a good hypothesis. We will not have the solution to the problem until the assumption is tested.

Three points, regarding such assumptions, are very important.

a) The assumptions are made on the basis of previous experiences or primary evidences or by thinking logically.

b) Whether the assumptions are true or false is decided by testing them.

c) Testing of assumptions lead to the solution of the problem

- Forms of hypothesis

1.Complex Hypothesis

It shows the relationship between two or more dependent variables and two or more independent variables. Eating more vegetables and fruits leads to weight loss, glowing skin, reduces the risk of many diseases such as heart disease, high blood pressure, and some cancers.

2.Directional Hypothesis

It shows how a researcher is intellectual and committed to a particular outcome. The relationship between the variables can also predict its nature. For example- children aged four years eating proper food over a five year period are having higher IQ level than children not having a proper meal. This shows the effect and the direction of effect.

3.Non-directional Hypothesis

It is used when there is no theory involved. It is a statement that a relationship exists between two variables, without predicting the exact nature (direction) of the relationship.

4.Null Hypothesis

It provides the statement which is contrary to hypothesis. It's a negative statement, and there is no relationship between independent and dependent variable. The symbol is denoted by "HO"

5.Associative and Causal Hypothesis

Associative hypothesis occurs, when there is a change in one variable resulting a change in the other variable. Whereas, Causal hypothesis propose a cause and effect interaction between two or more variables.

- Sampling

Sampling method: Any market research study requires two essential types of sampling. They are:

1.Probability Sampling

Probability sampling is a sampling method that selects random members of a population by setting a few selection criteria. These selection parameters allow every member to have the equal opportunities to be a part of various samples.

Probability Sampling is a sampling technique in which sample from a larger population are chosen using a method based on the theory of probability. This sampling method considers every member of the population and forms samples on the basis of a fixed process. For example, in a population of 1000 members, each of these members will have 1/1000 chances of being selected to be a partof a sample. It gets rid of bias in the population and gives a fair chance to all members to be included in the sample.

2.Non-probability Sampling

Non probability sampling method is reliant on a researcher's ability to select members at random. This sampling method is not a fixed or pre-defined selection process which makes it difficult for all elements of a population to have equal opportunities to be included in a

sample. The non-probability method is a sampling method that involves a collection of feedback on the basis of a researcher or statistician's sample selection capabilities and not on a fixed selection process. In most situations, output of a survey conducted with a non-probable sample leads to skewed results, which may not totally represent the desired target population. But, there are situations such as the preliminary stages of research or where there are cost constraints for conducting research, where non-probability sampling will be much more effective than the other type.

- Methods of sampling

It would normally be impractical to study a whole population, for example when doing a questionnaire survey. Sampling is a method that allows researchers to infer information about a population based on results from a subset of the population, without having toinvestigate every individual. Reducing the number of individuals in a study reduces the cost and workload, and may make it easier to obtain high quality information, but this has to be balanced against having a large enough sample size with enough power to detect a true association. (Calculation of sample size is addressed in section 1B (statistics) of the Part A syllabus.)

If a sample is to be used, by whatever method it is chosen, it is important that the individuals selected are representative of the whole population. This may involve specifically targeting hard to reach groups. For example, if the electoral roll for a town was used to identify participants, some people, such as the homeless, would not be registered and therefore excluded from the study by default.

There are several different sampling techniques available, and they can be subdivided into two groups: probability sampling and non-probability sampling. In probability (random) sampling, you start with a complete sampling frame of all eligible individuals from which you select your sample. In this way, all eligible individuals have a chance of being chosen for the sample, and you will be more able to generalise the results from your study. Probability sampling methods tend to be more time-consuming and expensive than nonprobability sampling. In non-probability (non-random) sampling, you do not start with a complete sampling frame, so some individuals have no chance of being selected. Consequently, you cannot estimate the effect of sampling error and there is a significant risk of ending up with a non-representative sample which produces non-generalisable results. However, non-

probability sampling methods tend to be cheaper and more convenient, and they are useful for exploratory research and hypothesis generation.

1.Probability Sampling Methods

1.Simple random sampling-In this case each individual is chosen entirely by chance and each member of the population has an equal chance, or probability, of being selected. One way of obtaining a random sample is to give each individual in a population a number, and then use a table of random numbers to decide which individuals to include. 1 For example, if you have a sampling frame of 1000 individuals, labelled O to 999, use groups of three digits from the random number table to pick your sample. So, if the first three numbers from the random number table were 094, select the individual labelled "94", and so on.

As with all probability sampling methods, simple random sampling allows the sampling error to be calculated and reduces selection bias. A specific advantage is that it is the most straightforward method of probability sampling. A disadvantage of simple random sampling is that you may not select enough individuals with your characteristic of interest, especially if that characteristic is uncommon. It may also be difficult to define a complete sampling frame and inconvenient to contact them, especially if different forms of contact arerequired (email, phone, post) and your sample units are scattered over a wide geographical area.

2.Systematic sampling-Individuals are selected at regular intervals from the sampling frame. The intervals are chosen to ensure an adequate sample size. If you need a sample size n from a population of size x, you should select every x/nth individual for the sample. For example, if you wanted a sample size of 100 from a population of 1000, select every 1000/100 = 10th member of the sampling frame.

Systematic sampling is often more convenient than simple random sampling, and it is easy to administer. However, it may also lead to bias, for example if there are underlying patterns in the order of the individuals in the sampling frame, such that the sampling technique coincides with the periodicity of the underlying pattern. As a hypothetical example, if a group of students were being sampled to gain their opinions on college facilities, but the Student Record Department's central list of all students was arranged such that the sex of students alternated between male and female, choosing an even interval (e.g. every 20th student)

would result in a sample of all males or all females. Whilst in this example the bias is obvious and should be easily corrected, this may not always be the case.

3.Stratified sampling-In this method, the population is first divided into subgroups (or strata) who all share a similar characteristic. It is used when we might reasonably expect the measurement of interest to vary between the different subgroups, and we want to ensure representation from all the subgroups. For example, in a study of stroke outcomes, we may stratify the population by sex, to ensure equal representation of men and women. The study sample is then obtained by taking equal sample sizes from each stratum. In stratified sampling, it may also be appropriate to choose non-equal sample sizes from each stratum. For example, in a study of the health outcomes of nursing staff in a county, if there are three hospitals each with different numbers of nursing staff (hospital A has 500 nurses, hospital B has 1000 and hospital C has 2000), then it would be appropriate to choose the sample numbers from each hospital proportionallyl B and 40 from hospital C). This ensures a more realistic and accurate estimation of the health outcomes of nurses across the county, whereas simple random sampling would over-represent nurses from hospitals A and B. The fact that the sample was stratified should be taken into account at the analysis stage.

Stratified sampling improves the accuracy and representativeness of the results by reducing sampling bias. However, it requires knowledge of the appropriate characteristics of the sampling frame (the details of which are not always available), and it can be difficult to decide which characteristic(s) to stratify by.

4.Clustered sampling-In a clustered sample, subgroups of the population are used as the sampling unit, rather than individuals. The population is divided into subgroups, known as clusters, which are randomly selected to be included in the study. Clusters are usually already defined, for example individual GP practices or towns could be identified as clusters, In single-stage cluster sampling, all members of the chosen clusters are then included in the study. In two-stage cluster sampling, a selection of individuals from each cluster is then randomly selected for inclusion. Clustering should be taken into account in the analysis. The General Household survey, which is undertaken annually in England, is a good example of a (one-stage) cluster sample. All members of the selected households (clusters) are included in the survey.Cluster sampling can be more efficient that simple random sampling, especially where a study takes place over a wide geographical region. For instance, it is easier to contact lots of individuals in a few GP practices than a few individuals in many different GP

practices. Disadvantages include an increased risk of bias, if the chosen clusters are not representative of the population, resulting in an increased sampling error.

2.Non-Probability Sampling Methods

1.Convenience sampling-Convenience sampling is perhaps the easiest method of sampling, because participants are selected based on availability and willingness to take part. Useful results can be obtained, but the results are prone to significant bias, because those who volunteer to take part may be different from those who choose not to (volunteer bias), and the sample may not be representative of other characteristics, such as age or sex. Note: volunteer bias is a risk of all non-probability sampling methods.

2.Quota sampling-This method of sampling is often used by market researchers. Interviewers are given a quota of subjects of a specified type to attempt to recruit. For example, an interviewer might be told to go out and select 20 adult men, 20 adult women, 10 teenage girls and 10 teenage boys so that they could interview them about their television viewing. Ideally the quotas chosen would proportionally represent the characteristics of the underlying population.

Whilst this has the advantage of being relatively straightforward and potentially representative, the chosen sample may not be representative of other characteristics that weren't considered (a consequence of the non-random nature of sampling). 2

3.Judgement (or Purposive) Sampling-Also known as selective, or subjective, sampling, this technique relies on the judgement of the researcher when choosing who to ask to participate. Researchers may implicitly thus choose a "representative" sample to suit their needs, or specifically approach individuals with certain characteristics. This approach is often used by the media when canvassing the public for opinions and in qualitative research.

Judgement sampling has the advantage of being time-and cost-effective to perform whilst resulting in a range of responses (particularly useful in qualitative research). However, in addition to volunteer bias, it is also prone toerrors of judgement by the researcher and the findings, whilst being potentially broad, will not necessarily be representative.

4.Snowball sampling-This method is commonly used in social sciences when investigating hard-to-reach groups. Existing subjects are asked to nominate further subjects known to them,

so the sample increases in size like a rolling snowball. For example, when carrying out a survey of risk behaviours amongst intravenous drug users, participants may be asked to nominate other users to be interviewed.

Snowball sampling can be effective when a sampling frame is difficult to identify. However, by selecting friends and acquaintances of subjects already investigated, there is a significant risk of selection bias (choosing a large number of people with similar characteristics or views to the initial individual identified).

Refrences:-

Google Notes

Topic No.-12

Research Designs

We have just been looking at models of the research process and goals of research. The following is a comparison of research methods or techniques used to describe, explain, or evaluate. Each of these designs has strengths and weaknesses and is sometimes used in combination with other designs within a single study.

The research carried out for new idea generation, new facts and fundamental principle for human knowledge. Based on experimentation and observation by following rigorous standards and methodologies To meet specific objective and ensure credibility of conclusions of research published into pre-reviewed journals.

Pure research was studies on elements after Mendeleev's periodic table published and penicillin discovery by Alexander Flaming was big step in discovery of antibiotic in medicinal science. Pure research is marvelous change setup of human mind and it generates knowledge and education.

- Applied Research

Applied research main aim to discover solution, to provide knowledge and to applied social research data into decisions to solve problems associated with serious risks. With help of employing experimental research, accepted known theories, principles, case studies and Interdisciplinary research one can solve certain problems.

Characteristics:

- Solve problematic facts.
- Without generalize objective studies.
- Represent how things can be changed.
- Tries to correct problematic facts.

Key points:

- To study changes in individuals over time, developmental psychologists use systematic observation; self-reports, clinical interviews, or structured observation; case studies; and ethnography or participant observation.

- Three common research methods are the experimental method (which investigates cause and effect), correlational method (which explores relationships between variables), and the case study approach (which provides in-depth information about a particular case).

- Regardless of whether studies employ the experimental, correlational, or case study methodology, they can use research designs or logical frameworks to make key comparisons within research studies.

- Common research designs include longitudinal, cross-sectional, sequential, and microgenetic designs.

Terms:

1.Cohort

A demographic grouping of people, especially those in a defined age group, or sharing a common characteristic.

2.Longitudinal

Sampling data over time rather than merely once.

3.Ethnography

The branch of anthropology that scientifically describes specific human cultures and societies.

4.Correlation

One of the several measures of the linear statistical relationship between two random variables, indicating the strength of the relationship but not necessarily the causation

- Research Methods

Developmental psychology employs many of the research methods used in other areas of psychology; however, infants and children cannot be tested in the same ways as adults. To study changes in individuals over time, developmental psychologists use systematic observation, including naturalistic or structured observation; self-reports, which could be clinical interviews or structured observation; clinical or case study methods; and ethnography

or participant observation. Three research methods used include the experimental, correlational, and case study approach.

1.Experimental Research

The experimental method involves actual manipulation of treatments, circumstances, or events to which the participant or subject is exposed. This design points to cause-and-effect relationships and thus allows for strong inferences to be made about causal relationships between the manipulation of one or more independent variables and subsequent subject behavior. A limit to this method is that the artificial environment in which the experiment is conducted may not be applicable to the general population.

2.Correlational Research

The correlational method explores the relationship between two or more events by gathering information about these variables without researcher intervention. The advantage of using a correlational design is that it estimates the strength of a relationship among variables in the natural environment. However, the limitation is that it can only indicate that a relationship exists between the variables; it cannot determine which one caused the other.

3.Fundamental Research

To acquire the new knowledge experimentation and theoretical work has to done primarily.

It increases scientific knowledge of researcher and has no planned or immediate uses, their eesults may be useful in future.

- Benefits of Fundamental Research

1.Economical gaining.

2.Benefits to society.

3.New knowledge acquisition.

4.Conceptual Research

The research is conducted on the basis of already present information and observation on given topic. It can be used in developing theories or new theories.

- Case Study

In a case study, developmental psychologists collect a great deal of information from one individual in order to better understand physical and psychological changes over his or her lifespan. Data can be collected through the use of interviews, structured questionnaires, observation, and test scores. This particular approach is an excellent way to better understand individuals who are exceptional in some way, but it is especially prone to researcher bias in interpretation, and it is difficult to generalize conclusions to the larger population.

- Research Designs

Regardless of whether studies employ the experimental, correlational, or case study methodology, they can use research designs or logical frameworks to make key comparisons within research studies. These include longitudinal, cross-sectional, sequential microgeneticdesigns.

1.Longitudinal Design

In a longitudinal study, a researcher observes many individuals born at or around the same time (a cohort) and carries out new observations as members of the cohort age. This method can be used to draw conclusions about which types of development are universal (or normative) and occur in most members of a cohort. Researchers may also observe ways that development varies between individuals and hypothesize the causes of such variation. Longitudinal studies often require large amounts of time and funding, making them unfeasible in some situations. Also, because members of a cohort all experience historical events unique to their generation, apparently normative developmental trends may only be universal to the cohort itself.

2.Cross-Sectional Design

The research design calculated among study participants at some time. Research variable data analyze from sample population which is collected from given point of time.

- Type of Research and Type Research Design

It has selection based on differences rather than selection, dependence based on existing variations; no time dimension so distinguishing features can be analyzed.

1.Cross-Sequential Design

Cross-sequential designs combine both longitudinal and cross-sectional design methodologies. A researcher observes members of different birth cohorts at the same time, and then tracks all participants over time, charting changes in the groups. While much more resource-intensive, this method results in a clearer distinction between changes that can be attributed to individual or historical environment and changes that are truly universal.

1.Microgenetic Design

Microgenetic design studies the same cohort over a short period of time. In contrast to longitudinal and cross-sectional designs, which provide broad outlines of the process of change, microgenetic designs provide an in-depth analysis of children's behavior while it is changing.

2.Casual Design

They relates with understanding of phenomenon with statements "If A, then B". According to assumptions and norms one can made certain changes in this kind of research.The explanation of test by hypothesis seeks by majority of scientists like dependent variable independent variable, variation in one phenomenon, variation in other phenomenon.The following impact need to include in casual design:

- Non-Superiorness:

The relationship independent of variation and between two variables is called third variable.

- Appropriate Time Order:

Before dependant variable independent variable must be tackled.

- Empirical Associate

Finding relationship between dependant and independent variables. dependant variable independent variable must be tackled.

Conclusion

1.Detailing procedures for case studies, interviews, and surveys.

2.Understanding applications for the true experimental research design**.**

3.Analyzing causation vs. correlation.

4.Defining and explaining the uses of various research designs.

5.Discussing research related to the cohort effect.

6.Assessing connections between generalizability, sample, and population.

7.Examining the role of ethics in psychological experiments.

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Topic No.-13

Methods of data collection- their merits and demerits.

❖ *Concepts of data collection*

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities, business, etc. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same. The goal for all data collection is to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed. Regardless of the field of study or preference for defining data (quantitative, qualitative), accurate data collection is essential to maintaining the integrity of research. Both the selection of appropriate data collection instruments (existing, modified, or newly developed) and clearly delineated instructions for their correct use reduce the likelihood of errors occurring.

Data collection is one of the most important stages in conducting a research. You can have the best research design in the world but if you cannot collect the required data you will be not be able to complete your project. Data collection is a very demanding job which needs thorough planning, hard work, patience, perseverance and more to be able to complete the task successfully. Data collection starts with determining what kind of data required followed by the selection of a sample from a certain population. After that, you need to use a certain instrument to collect the data from the selected concept.

- **Type of data collection**

1.Primary data.

Data that has been collected from first-hand-experience is known as primary data. Primary data has not been published yet and is more reliable, authentic and objective. Primary data has not been changed or altered by human beings; therefore its validity is greater than secondary data.

Importance of Primary data: In statistical surveys it is necessary to get information from primary sources and work on primary data. For example, the statistical records of female

population in a country cannot be based on newspaper, magazine and other printed sources. A resoearchcan be conducted without secondary data but a research based on only secondary data is least reliable and may have biases because secondary data has already been manipulated by human beings. One of such sources is old and secondly they contain limited information as well as they can be misleading and biased.

Sources of Primary Data: Sources for primary data are limited and at times it becomes difficult to obtain data from primary source because of either scarcity of population or lack of cooperation.

Following are some of the sources of primary data.

1.Experiments: Experiments require an artificial or natural setting in which to perform logical study to collect data. Experiments are more suitable for medicine, psychological studies, nutrition and for other scientific studies. In experiments the experimenter has to keep control over the influence of any extraneous variable on the results.

2.Survey: Survey is most commonly used method in social sciences, management, marketing and psychology to some extent. Surveys can be conducted in different methods.

3.Questionnaire: It is the most commonly used method in survey. Questionnaires are a list of questions either open-ended or close-ended for which the respondents give answers. Questionnaire can be conducted via telephone, mail, live in a public area, or in an institute, through electronic mail or through fax and other methods.

4.*Interview:*Interview is a face-to-face conversation with the respondent. In interview the main problem arises when the respondent deliberately hides information otherwise it is an in depth source of information. The interviewer can not only record the statements the interviewee speaksbut he can observe the body language, expressions and other reactions to the questions too. This enables the interviewer to draw conclusions easily.

5.Observations: Observation can be done while letting the observing The following are some ways of collecting secondary data –person know that s/he is being language or without letting him know. Observations can also be made in natural settings as well as in artificially created environment.

- Merits of Using Primary Data
- The investigator collects data specific to the problem under study.

- The investigator collects data specific to the problem under study.

- There is no doubt about the quality of the data collected (for the investigator).

- If required, it may be possible to obtain additional data during the study period.

- Demerits of Using Primary Data

- The investigator has to contend with all the hassles of data collection- deciding why, what, how, when to collect. Getting the data collected (personally or through others)getting funding and dealing with funding agencies;ethical considerations (consent, permissions, etc.)

- Ensuring the data collected is of a high standard-all desired data is obtained accurately, and in the format it is required in;there is no fake/ cooked up data;unnecessary/ useless data has not been included.

- Cost of obtaining the data is often the major expense in studies.

2.Secondary data

Data collected from a source that has already been published in any form is called as secondary data. The review of literature in any research is based on secondary data. It is collected by someone else for some other purpose (but being utilized by the investigator for another purpose). For examples, Census data being used to analyze the impact of education on career choice and earning.Common sources of secondary data for social science include censuses, organizational records and data collected through qualitative methodologies or qualitative research. Secondary data is essential, since it is impossible to conduct a new survey that can adequately capture past change and/or developments.

Sources of Secondary Data: The following are some ways of collecting secondary data-

1.Books

2.Records

3.Biographies

4.Newspapers

5.Published censuses or other statistical data

6.Data archives- A data archive is a **place to store data that is important** but that doesn't need to be accessed or modified frequently (if at all). Most businesses use data archives for

legacy data or data that they are required to keep in order to meet regulatory standards like HIPAA, PCI-DSS or GDPR.

7.Internet articles

8.Research articles by other researchers (journals)

9.Databases, etc.

Importance of Secondary Data: Secondary data can be less valid but its importance is still there.Sometimes it is difficult to obtain primary data; in these cases getting information from secondary sources is easier and possible. Sometimes primary data does not exist in such situation one has to confine the research on secondary data. Sometimes primary data is present but the respondents are not willing to reveal it in such case too secondary data can suffice. For example, if the research is on the psychology of transsexuals first it is difficult to find out transsexuals and second they maynot be willing to give information you want for your research, so you can collect data from books or other published sources.A clear benefit of using secondary data is that much of the background work needed has already been carried out. For example, literature reviews, case studies might have been carried out, published texts and statistics could have been already used elsewhere, media promotion and personal contacts have also been utilized.This wealth of background work means that secondary data generally have a pre-established degree of validity and reliability which need not be re-examined by the researcher who is re-using such data.Furthermore, secondary data can also be helpful in the research design of subsequent primary research and can provide a baseline with which the collected primary data results can be compared to. Therefore, it is always wise to begin any research activity with a review of the secondary data.

- Merits Of Using Secondary Data
- No hassles of data collection.
- It is less expensive.
- The investigator is not personally responsible for the quality of data ('I didn't do it').
- Disadvantages of Using Secondary Data
- The data collected by the third party may not be a reliable party so the reliability and accuracy of data go down.
- Data collected in one location may not be suitable for the other one due variable environmental factor.

- With the passage of time the data becomes obsolete and very old.

- Secondary data collected can distort the results of the research. For using secondary data a special care is required to amend or modify for use.

- Secondary data can also raise issues of authenticity and copyright.

- Keeping in view the advantages and disadvantages of sources of data requirement of the research study and time factor, both sources of data i.e. primary and secondary data have been selected.

- These are used in combination to give proper coverage to the topic.

- **Methods of primary data**

1.Observation is the most commonly used method of data collection in the humanities and social sciences. To some extent this method is also used in natural sciences. In natural sciences observation is conducted in natural settings while in the social sciences an artificial situation can also be created where the observer can observe the participants. Observation can be conducted without the knowledge and awareness of the participant's even, if the participants are aware or not aware of the observation the observer should understand the ethics of the privacy of the participants. In disguise observations the observer has the best opportunity to observe the participants, the observer get true and unbiased results.

In observation chances of personal biases are high as the observer observes the situation in his/her own way. The observer should observe the situation without any biases or personal interests. He/ she should become as natural as possible and records the observer's responses accurately. In natural sciencesobservation can be conducted along with the other methods that the researcher is using. Observation alone cannot suffice in natural sciences.

2.Interview are another important method of primary data collection. Interviews are expensive as compared to other methods of data collection. In the interview the interviewer collects information from each respondent independently. Due to this reason it becomes costly as well as time consuming. Interview as a research tool can only be used if the researcher has plenty of time and resources, otherwise it will be wastage of time and money to start interviewing. Interviews are more reliable as compared to observation. In the interview the interviewer not only asks several questions from the interviewee but he/she observes the respondent too. This facilitates in depth knowledge of the situation, phenomena

or individual. The most important limitation of interview is the time that is required to conduct it properly. To obtain reliable results interview should be conducted by a single interviewer rather than having many. Sometimes the interviewees live in distant areas, reaching each respondent becomes difficult.

The interview is basically conducted in social science studies. In the interview the interviewer can make an inventory of questions before starting the interview, in another case the interviewer asks questions spontaneously. Spontaneous questions are better if the purpose of the interview is to find out in depth knowledge. The interviewer may ask spontaneous questions when he has little knowledge of the subject areas. The interviewer records the responses during the interview or at the end of the interview. To conduct an interview the interviewer should have command of social skills and he should develop a rapport with the audience in order to get genuine responses.

3.Questionnaire is one of the most commonly used methods of data collection in research. Questionnaires are formulated to get to the point information on any subject area. The questionnaire is an inexpensive method of data collection as compared to other methods of primary research. Questionnaires can be submitted by the vast audience at a time and the responses can be obtained easily. The only drawback of questionnaire is the low feedback as several people do not return questionnaires on time. Several respondents do not show true responses in questionnaires. In the interview the interviewer can observe the gestures of the respondents but in questionnaires the respondents do not know whether the answers are genuinely true or not.To formulate a questionnaire the researcher should formulate questions that do not contain double meaning. Questions should have to be written in easy language that anyone can understand. Questions should have to be simple and not very technical. The researcher should follow the ethics of writing and the language of the questions should not be humiliating.

4.Experiments are the most reliable source of data collection in natural sciences. Experiments can be conducted in any area of scientific study, whether it is chemistry, biology, physiology, physics, astronomy or mathematics. Experiments consist of logical series of actions that result in the answer to your query. Experiments can be conducted in a controlled environment as well as in natural situations. In experiments the experimenter controls the external factors while looking for the effect of internal factors. Experiments can be conducted in the field as well as in laboratories. In most of the natural science studies a

research question is formulated in which the researcher formulates one or several hypotheses. Later the experimenter design experiments that can help him approve or disapprove his hypothesis. The results of the experiments are analyzed using suitable statistical tests and on the basis of these results conclusion is drawn.

- **Method of Secondary data**

Secondary data is the data that is collected from the primary sources which can be used in the current research study. Collecting secondary data often takes considerably less time than collecting primary data where you would have to gather every information from scratch. It is thus possible to gather more data this way. Secondary data can be obtained from two different research strands-

1.Quantitative: Census, housing, social security as well as electoral statistics and other related databases Qualitative: Semi-structured and structured interviews, focus groups transcripts, field notes, Observation records and other personal, research-related documents secondary data is often readily available. After the expense of electronic media and internet the availability of secondary data has become much easier.

- **Published Printed Sources:**There are varieties of published printed sources. Their credibility depends on many factors. For example, on the writer, publishing company and time and date when published. New sources are preferred and old sources should be avoided as new technology and researches bring new facts into light.

1.Books:Books are available today on any topic that you want to research. The use of books start before even you have selected the topic. After selection of topics books provide insight on how much work has already been done on the same topic and you can prepare your literature review. Books are secondary source but most authentic one in secondary sources.

2.Journals/periodicals:Journals and periodicals are becoming more important as far as data collection is concerned. The reason is that journals provide up-to-date information which at times books cannot and secondly, journals can give information on the very specific topic on which you are researching rather talking about more general topics.

3.Magazines/Newspapers: Magazines are also effective but not very reliable. Newspapers on the other hand are more reliable and in some cases the information can only be obtained from newspapers as in the case of some political studies.

- **Published Electronic Sources:**As internet is becoming more advance, fast and reachable to the masses; it has been seen that much information that is not available in printed form is available on internet. In the past the credibility of internet was questionable but today it is not. The reason is that in the past journals and books were seldom published on internet but today almost every journal and book is available online. Some are free and for others you have to pay the price.

1.e-journals: e-journals are more commonly available than printed journals. Latest journals are difficult to retrieve without subscription but if your university has an e-library you can view any journal, print it and those that are not available you can make an order for them.

2.General Websites: Generally websites do not contain very reliable information so their content should be checked for the reliability before quoting from them.

3.Weblogs:Weblogs are also becoming common. They are actually diaries written by different people. These diaries are as reliable to use as personal written diaries.

- **Unpublished Personal Records:**Some unpublished data may also be useful in some cases.

1.Diaries: Diaries are personal records and are rarely available but if you are conducting a descriptive research then they might be very useful. The Anne Frank's diary is the most famous example of this. That diary contained the most accurate records of Nazi wars.

2.Letters: Letters like diaries are also a rich source but should be checked for their reliability before using them.

3.Government Records:Government records are very important for marketing, management, humanities and social science research.

- **Census Data/population statistics:** Health records; Educational institutes' records etc.
- **Public Sector Records:** NGOs' survey data;Other private companies record.

References:-

These topic have been taken from the book " basic guideline for research" written by Syed Muhammad sajjadkabir.