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Lesson 01

Introduction to Child Development

Overview of Growth and Maturation

Overview of the Lesson:
What do we understand about the field of child development?
What is developing and growing?
What are individual differences within a normative range of development?

Child Development
Child development is a field that studies the growth and development of the child. It is studied by many different kinds of experts, which include ***educationists, teachers, philosophers, psychologists, sociologists, neuroscientists, and social workers,*** etc. These experts work independently or together and try to understand the nature of child development. The goal is to understand, and provide insights to problems during development the child is going through.

Why Study Child Development?
Perhaps the most important reason to study child development is to understand how growth and development takes place in the child. This is a basic science question that satisfies the human curiosity; however there are practical benefits of doing so. Who benefits from this understanding? We understand that parents, teachers, educational experts, policy makers, and community in general benefits from this understanding. Experts that study child development address both basic and applied science questions, which are important for the study of development.

Critical Question
Question: In what ways is a child different to an adult, and in what ways the two are still the same?

Continuous or Staged Development
Experts in the field of child development ask if this change in development is continuous or discontinuous, i.e., broken down into stages? The answer lies in the fact how experts view this developmental process.

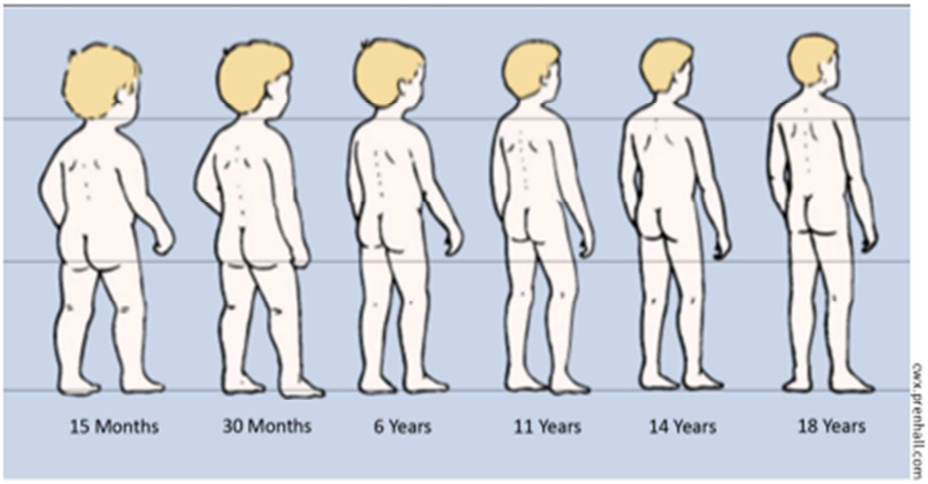
Naming Developmental Periods
For most of the experts in the field of *Child Development*, an individual growth may be continuous, but when studied it is broken down into stages. The concept of stages of development is not new and has been proposed by ancient thinkers, philosophers, theologians etc. Experts in the field of child development talk about growth and development both in general qualitative and quantitative terms. Many suggest that the individual changes qualitatively over time, backed by measurable quantitative changes. For example, children express lower levels of cognitive functioning when young compared to when they are older. Piaget and Inhelder (1969) not only observed this change in cognitive development but also were able to quantitatively document it with empirical experiments.

Developmental Periods
Experts divide periods of development into broad and smaller stages and classify them for easy use. When stages, where developmental change is minimal, are close development seems to be more continuous.

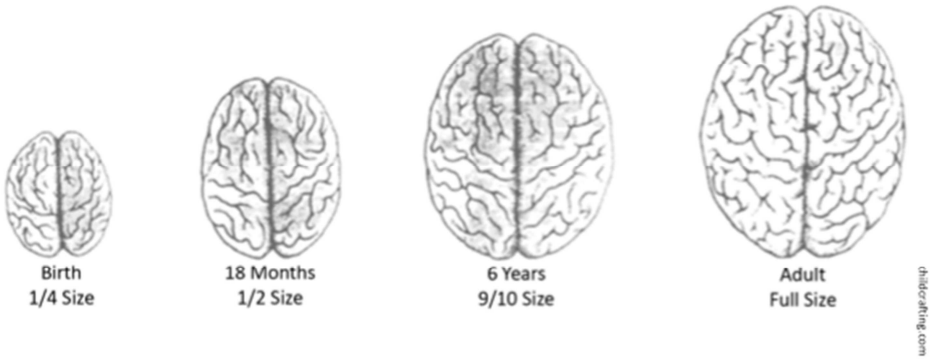
What is Developing?

A. Physical Development. Physical development involves the physical growth and development of the individual starting in the womb, through prenatal period all the way to late adolescence. Some of the changes that we see are: Allometric Development. Body proportions change over development. An infant 15 months old has a bigger head size compared to the body than an adult.

The bodily proportions change over the developmental period (see figure below).



Brain Size: In the same fashion the brain also increases in size over development. By six years, its size is very close to what the adult brain is (see figure below).



B. Cognitive Development: Biological maturation (like age) and, experience (like schooling) are needed together to develop the child intellectually or cognitively. Piaget and many of his colleagues worked on studying cognitive development in the growing child. Piaget went on to say that all cognitive structures are affected by an intertwined relationship between biological maturation and experience, and changed through many stages of cognitive development, like the sensorimotor stage, preoperational stage etc., (Piaget & Inhelder, 1969/2000).

C. Intellectual Development: Does intelligence change with age? Or experience like going to school improves intelligence? Cahan and Cohen (1989) proposed both; however age had lower effect on intelligence than schooling.

D. Language Development: Children's vocabulary enriches rapidly. From about 11,000 words in 1st grade to about 80,000 words in 12th grade. In the same fashion grammar in children improves over time.

E. Emotional Development: Emotions like anger, fear, and happiness can be seen in the infant in a few months, however sadness develops after infancy. From day 1, infants are aware of emotions of others. They respond to other's distress with their own distress. By about 1 year infants can

draw emotional cues from others.

F. Social Development: Early social bonding comes about between infants and their mother. Later siblings and fathers start socially bonding with infants. In Western societies, there are fewer caregivers so infants and children have fewer social relations. This changes when children become older, and develop many social bonds. Healthy social development is based on reliable attachment the primary caregiver (Erickson, 1950; Bowlby, 1969).

G. Moral Development. Moral development in children occurs along with cognitive development. Around late childhood (8-10 years) children start differentiating between good and bad; although they may be driven by reward and punishment to do that. Conventional moral sense develops much later. All morality according to Kohlberg is universal. However, Kohlberg ideas have been challenged. Jensen argues morality is culturally driven.

Individual Differences:
Most individuals develop normally and follow a typical developmental trajectory. However, during development some individuals are different than others, for example differences in intelligence, achievement, and personality may be obvious among many individuals (which will be discussed in subsequent chapters). Problems associated with development, and thus differences.

Summary:
We have looked at the field of child development. It is important to many experts and laymen alike. The developmental processes are continuous and discontinuous depending on how you see them. Different developments in the individual; physical, cognitive, social, emotional and moral take place over time. Individual differences and similarities in many of the above aspects occur in the growing individuals.

References

- Bowlby, J. (1969). *Attachment and loss, Vol. I: Attachment.* New York: Basic Books Inc.
- Cahan, S., & Cohen, N. (1989), Age vs. schooling effects on intelligence development. *Child Development, 60.* 1236-1249.
- Erikson, E. (1963). *Childhood and society.* New York: Norton.
- Piaget, J., & Inhelder, B. (1969/2000). *The psychology of the child.* New York: Basic Books Inc.

Lesson 02

Introduction to Child Development

Factors affecting Development: Biology and Environment

Overview of the Lesson:

What are genes and how does human reproduction takes place?
How traits and genetic abnormalities are inherited?
How genes and environments interact?
How do we measure heritability of traits by Behavior Genetics?

Critical Questions:

How do our genes affect our traits, and our behaviors?
Why would some aspects of our lives be judged by genetic makeup than others?

Genes & Human Reproduction:

Most human cells contain 46 *chromosomes* (23 pairs) that are made from deoxyribonucleic acid (DNA) molecules. The *DNA* consists of two strands of sugar and phosphate molecules like a spiral staircase, where the stairs are made out of nucleotide bases, i.e., adenine (A), thymine (T), cytosine (C) and guanine (G). These nucleotides become the alphabets or building blocks of our genetic code. A *Gene* is a segment of DNA (base pairs) that provides instructions for a particular structure, function, or trait. So this trait can be like the color of the eyes, or instructions on how to build the membrane of a cell wall (structure) or instructions for moving (function) chemicals like neurotransmitters in neurons from the cell body to its terminals. There are roughly 20-25 thousand genes in human beings.

Human Genome Project:

Based on extensive research, geneticists were able to identify the genetic map of a human. *Human Genome Project (HGP)* completed in 2003 (updated in 2006). Project HGP tells us that there are 3 billion base pairs in human chromosomes. With this project we will be able to identify genetic markers of disease, improving health and prolonging life. Gene therapy will be one such way to help diseased individuals. Parents today can select sex of the child, and can make informed decisions about diseased fetus.

Human Reproduction & Cell Division:

To understand the nature of genes and their effect on living individuals, we must understand a number of biological processes. Human and other life forms begin with the process of *fertilization*, the union of the father's sperm cell with the mother's egg. The fused cell is called a *zygote* and starts to divide and grow into a ball like structure called the *blastocyst* (see figures below).

The sperm and egg (gametes) result from a process called *meiosis*, in which reduction division takes place as opposed to *mitosis*, which involves copy division. After the zygote forms and begins to divide grow, the process of cell division is largely mitosis, however very quickly the dividing cells become specialized forming

many different structures in the embryonic and later stages of development. If a zygote divides into two cells and breaks to form two independent zygotes, we have *monozygotic (MZ)* or identical twins as opposed to *dizygotic (DZ)* or fraternal twins. Fraternal twins form through independent fertilization of two sperm and egg cells separately.

Traits & Genetic Abnormalities:
Dominant-Recessive traits are expressed through recessive and dominant genes (alleles) that come from fathers and mothers. Many dominant or recessive gene diseases are due to dominant or recessive alleles. One such dominant gene disease is *Huntington's disease*. Other recessive gene diseases are *cystic fibrosis, sickle-cell disease and Tay-Sachs disease.*

Huntington's Disease:
Huntington's disease is a nervous system disease in which some parts of the brain (nerve cells) degenerate. Patients express behavioral disturbances, hallucinations, irritability, moodiness, restlessness or paranoia; it includes quick, sudden, sometimes wild jerking movements of many body parts, the movements can be slow, uncontrolled with an unsteady gait. In addition, dementia, disorientation, confusion, loss of judgment, loss of memory, personality and speech changes may occur. This disease is caused by a genetic defect on *chromosome 4*, due to a dominant allele. The defect causes a part of DNA, to repeat CAG nucleotides many more times than it is supposed to.

Cystic Fibrosis:
Cystic fibrosis is a lung disease, in which thick sticky mucus builds up in lungs, digestive tract and other areas of the body. This is a genetic disease and is a recessive gene disease. This sticky mucus in the lungs can be life-threatening due to infections and also seriously affects digestive and reproductive systems. It is caused by recessive alleles on *chromosome 7* both from the mother and the father.

Sex-linked Diseases:
X-linked (sex-linked) Traits: A number of genetic traits are linked to alleles on X and Y chromosomes of the mother and the father. Sex-linked diseases are usually found in males and include diseases like *hemophilia, muscular dystrophy, color blindness and retinitis pigmentosa* (a major form of blindness).

A. Hemophilia. People with hemophilia lack a clotting agent in their blood. The main symptom of hemophilia is bleeding and may occur during surgery or after trauma. Serious bleeding may occur without any cause, including internal bleeding from organs or joints. When males inherit recessive hemophilia allele on X chromosome they cannot mask it with a dominant allele on their Y chromosome.

Chromosomal Disorders:
Genetic diseases can be caused genetic anomalies in chromosomes, or faulty, missing or added chromosomes, e.g., like *Turner syndrome* in which a chromosome is missing, or by presence of an extra chromosome such as in *Down's and Klinefelter syndromes*. These diseases account for the majority of miscarriages in women and perhaps are a nature's way of "weeding out" serious defects.

Down Syndrome:
Down's syndrome is marked by a condition of being a "baby", and is marked by maturational retardation. This syndrome causes the individual to have low IQ, facial defects, heart problems, and shortened life span. This genetic disorder is caused when there is an extra chromosome (chromosome 21) is present.

Prenatal Screening & Genetic Testing:
A. Ultrasonography (ultrasound). The growing fetus can be monitored for healthy growth and possible disease through a number of screening procedures. Ultrasound uses sound waves.

Presents images of the fetus inside the mother's womb and is used to help monitor fetal growth and detect defects.

B. Amniocentesis. A needle is inserted in the mother's abdomen and cells are withdrawn from the amniotic fluid. Procedure used to detect chromosomal and genetic abnormalities in the fetus.
C. Chorionic Villus Sampling (CVS). In CVS a catheter is inserted into uterus and cells are taken to test the health of the fetus.

Genes & Environment Interact:

In all individuals, genes and environmental factors are an intertwined. These two interact on the development of traits and characteristics of a person in at least four ways. All of the traits are based on genes or their *genotypes,* like bone density in an individual. When a genetic trait is observable, we call it the *phenotype* of that trait, like the color of skin. Genotypes may or may not be manifested as phenotypes.

A. Range of Reaction. The range of possible phenotypes that exist for a particular genotype.
B. Canalization. Genetic limits on the effects of the environment. In experiential canalization, in contrast, it is the environment that limits the expression of genes.
C. Niche-Picking. The tendency to pick activities and environments that fit with our genetic predispositions.
D. Probabilistic Epigenesis. The likelihood that specific environmental conditions will activate specific genes that will lead to specific outcomes.

Behavior Genetics:
How different are you from your siblings and parents? What accounts for the differences and similarities? Behavior genetics is a field that tries to answer these questions.

Shared & Nonshared Environments:
Individuals with same genetic make, like identical twins, share their *heritability,* an estimate of the degree of genetic influence for a given trait or behavior. Now identical twins can share the same environment. *Shared environments,* lead to experiences that are common across all individuals who are living together. On the other hand *nonshared environment* exposes individuals to experiences that differ across people. One can imagine identical twins living apart in two different environments. Any difference in the degree of a trait that we observe may be attributed to environmental factors in which they are raised.

How Is Heritability Estimated?
There are two ways through which we can estimate heritability across individuals.

1. Twin Studies: Comparisons between measurements of identical and fraternal twins, used to estimate the genetic contribution to traits and characteristics.
2. Adoption Studies: Comparisons between measurements of children and their adoptive and biological parents used to estimate the genetic contribution to traits and characteristics

Heritability of Complex Characteristics:

1. Heritability of Cognitive Skills. Probably the most extensively studied behavioral trait is intelligence. A variety of other cognitive skills (verbal and spatial ability) have a significant hereditary component.
2. Heritability of Personality and Temperament. Genetics is an important influence on personality and temperament.

Summary
In this topic we have looked at chromosomes, DNA and genes, and the Human Genome Project (HGP). We also reviewed human reproduction, traits & genetic abnormalities, and processes of prenatal screening and genetic testing. Finally we talked about interactions between genes and environment.

Lesson 03

Introduction to Child Development

Twin and Adoption Studies

Overview of the Lesson:

Look at the field of behavior genetics.
Talk about heritability measurement through heritability estimates and concordance rates.
Discuss heredity and environment interaction.

Critical Questions:

How can we use kinship and adoptions studies to understand development in children?
What do these studies tell us about the effects of heredity and environment on development?

Behavioral Genetics:

Behavioral genetics (especially human) seeks to understand both the genetic and environmental factors that lead to individual differences in human behavior. Sir Francis Galton (1822-1911) was the first scientist to study heredity and human behavior systematically, with respect to intelligence.

Galton and Intelligence:

Galton was interested in the fact whether human abilities like intelligence were inherited. He reasoned that intelligence should be similar among relatives than general population. Second and third degree relatives he found were indeed less similar in intelligence compared to first generation (siblings).

Methodology:

For Galton, studying kinsmen was one way of determining the effect of heredity on human traits, like intelligence. However the efficacy of this methodology to relate heredity to human traits could not be as effective as studying members of family who are genetically alike, like identical twins. Identical twins share genetic information identically. Thus provide a window to study heredity effects on humans' traits.

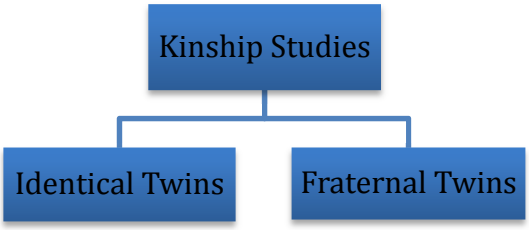
Questions to Consider

Some behavior geneticists think it is possible and useful to answer *how much* heredity factors contribute to traits. However, there is now a growing consensus among experts who believe that question above is unanswerable and perhaps not very useful. These experts believe heredity and environment are inseparable and thus work together. Let us look at both approaches one by one.

Heritability Estimates:

Heritability estimates measure individual differences in complex traits in a specific population that are due to genetic factors. Heritability estimates are obtained from kinship studies (twin studies), which compare the characteristics of family members. Modern experts use genetically related twins (identical and fraternal) to measure these estimates that range between 0.00 and 1.00.

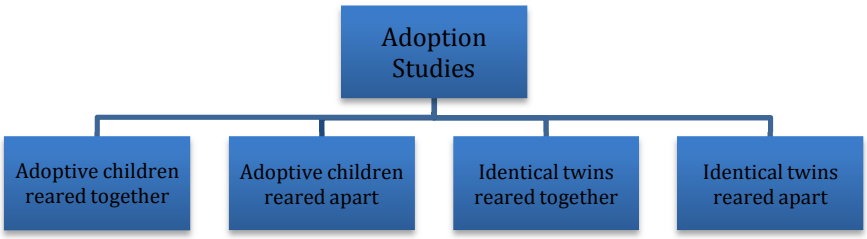
Kinship Studies:



Kinship studies (raised by biological parents) provide experts to look at gradient of genetic factors on inherited traits. Identical twins are genetically 100% similar and fraternal twins much less. And since they are

raised together, a trait, say depression, if present in one of identical twins, would also be (highly likely) present in the other twin. In fraternal twins sharing of this (depressive) trait would be much lower (less likely).

Adoption Studies



Likewise adoptive children (fraternal twins or siblings) reared together will bring forth environmental effects on their traits when compared to adoptive children reared apart.

A. Cognitive Skills. Heredity has a low to moderate influence on IQ scores (estimates at .50 heritability). Similar findings for a variety of specific cognitive skills i.e., spatial reasoning, verbal reasoning, and perceptual speed have been elucidated. Also similar data has been collected for achievement scores i.e., English usage, mathematics, social studies, and natural sciences.
B. IQ Similarity Among Relatives

Personality and Temperament:

Heritability estimates of personality and temperament go as high as .50, and change over time, which are attributed to changing environment. Heritability estimates for hyperactivity, schizophrenia, obesity, and alcoholism are fairly high.

Personality Traits:

If we look at NEO-PI five personality traits, identical twins share these traits to a greater extent than fraternal twins.

Concordance Rates:

Heritability of traits is also measured by concordance rates. Concordance rates determine what percent do both twins show a trait, when it is present in one twin. These measurements range from 0 to 100%. A score of 0 means if one twin has a trait the other twin does not have it. And a score of 100 means that if one twin has a trait the other one also has it.

Limitations:

Experts have raised serious questions about the accuracy of heritability estimates and concordance rates.
1. Each measure refers to particular population, with unique genetic and environmental influence.
2. Accuracy of measures depends upon twin pairs used to reflect genetic and environmental variation.
3. Limited usefulness. These are interesting numbers but do not tell us how traits develop.

Developing Traits: *How?*

Range of Reaction: Each individual has a unique genetic make and each responds to the same environment differently. Sometimes different genetic-environmental combinations can make two people attain the same level of a trait or ability.

Canalization: Canalization is the tendency of heredity to restrict the development of some characteristics to just one or two outcomes. When we look at behaviors or traits that are highly constrained by heredity, such

restrictive canalization has adaptive value. Because of this many children will develop certain specie-typical behaviors that will make them survive wide range of rearing conditions.

Genetic-Environmental Correlation: Genetic-Environmental correlation refers to the fact how genes influence environment in which we live.

1. Passive correlation: When the child is young she has no control over his or her environment. Parents provide environments.
2. Evocative correlation: When the child can evoke a changes in the environment. Happy baby gets more stimulation.
3. Active correlation: At older age, children extend their experiences beyond family choosing environments that compliments their heredity (also called niche picking).

The Epigenetic Framework:

Epigenesis means development resulting from ongoing, bidirectional exchanges between heredity and all levels of our environment.

Summary:

We looked at the field of behavior genetics. We also talked about heritability measurement through heritability estimates and concordance rates. Lastly we discussed heredity and environment interaction.

Lesson 04

Introduction to Child Development

Continuity of development

Overview:

Early and continuity of development in the neonate: reflexes, sleep and arousal patterns, crying behavior. Neonatal Behavior Assessment Scale and Sudden Infant Death
Learning and memory
Motor development
Sensory and perceptual processes, intermodal processing and explanations of intermodal processing

Critical Questions:

What are some of the stages through which the individual passes to early in life?
What are some considerations we need to keep in mind with reference to normal and abnormal development in early life?
Newborn reflexes include eye blink, sucking, swimming, moro, palmar grasp, tonic neck, stepping, Babinski, etc.

Palmar Grasp

Babinsky

Swimming

Infant States of Arousal:

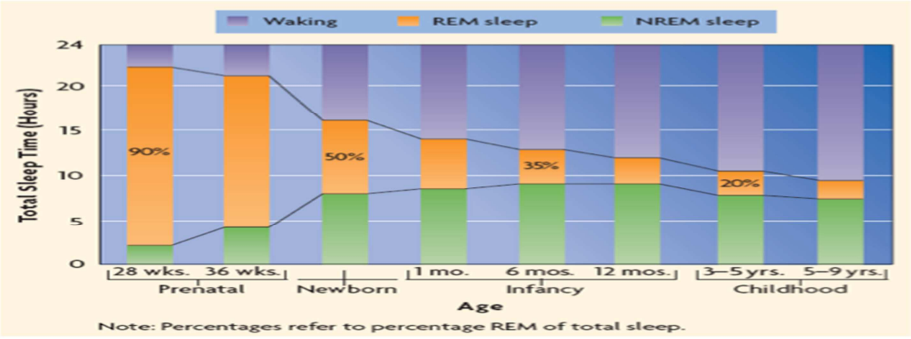
These include regular & irregular sleep cycles, drowsiness, quiet alertness, waking activity and Crying

Sleep Patterns:

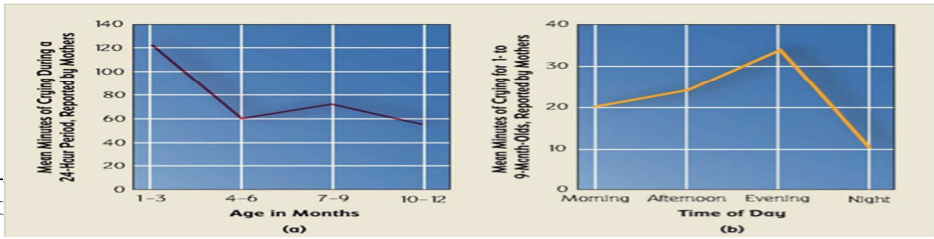
1. Sleep moves to an adult-like night-day schedule during the first year.
2. Need for sleep declines from 18 to 12 hours a day by age 2.

Childhood Sleep Changes:

See the graph below to changes in sleep pattern as the child grows. The graph also shows different kinds of sleep.



Infant Crying Patterns:



Adult response to infant cries depends on interpretation of cry: Adults use cry *intensity* and *context* to judge the nature of cry. Accuracy of this cry improves with experience. Adult can respond to the infant with empathy; develop a child-centered attitude; and think that they have control over the infant crying.

Ways to Soothe a Crying Baby:

- Hold on shoulder and rock or walk
- Swaddle
- Pacifier
- Ride in carriage, car, swing
- Combine methods
- Let cry for short time

Neonatal Behavioral Assessment Scale:

Neonatal Behavioral Assessment Scale (NBAS) was developed by Brazelton (1973) to assess a wide range of behaviors in newborns and infants up to two months old. After assessment it describes baby's strengths, adaptive responses and possible vulnerabilities. It can be used for discovering individual & cultural differences. Helping parents get to know their babies. Predicting development based on changes in scores.

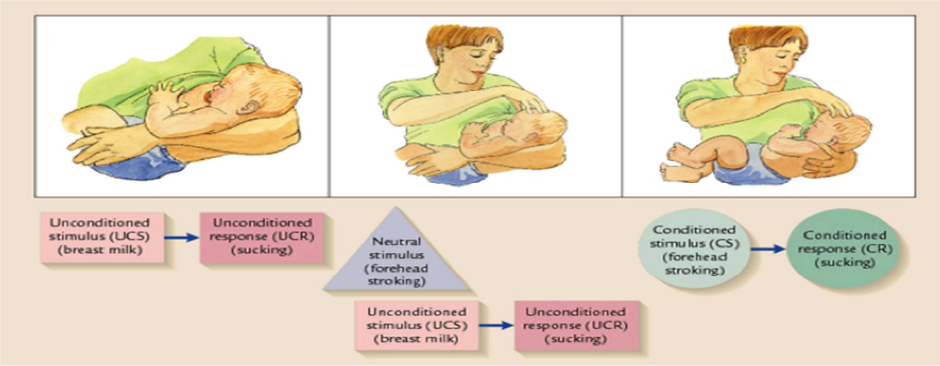
Sudden Infant Death Syndrome (SIDS):

Sudden infant death syndrome (SIDS) is the unexpected, sudden death of a child under age 1 in which an autopsy does not show an explainable cause of death; peaks between 2 and 4 months of age. It is a leading cause of death of infant mortality in industrialized nations. Quitting smoking, changing an infant's sleeping position and removing a few bedclothes can reduce the incidence of SIDS.

Learning & Memory:

Classical Conditioning:

An infant can be conditioned using classical conditioning processes. Figure below shows how an infant becomes conditioned to sucking response during breast-feeding.

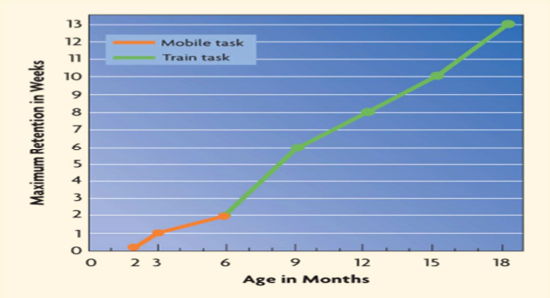


Operant Conditioning:

In the same fashion the infant can be trained to operant conditioning processes by the use of reinforcements and punishments.

Reinforcement	Punishment
Increases probability of behavior	*Reduces* probability of behavior
Presenting reinforcing stimulus	Presenting punishing stimulus
Removing punishing stimulus	Removing reinforcing stimulus

Infant Memory:
Infants not only learn, but also retain information. This retention of information increases as the infant grows. Two tasks that are age specific are used to assess infant retention.



Habituation to Study Infant Memory:
Other ways to assess infant memory is through the process of habituation to a stimulus. Infants like adults habituate to a stimulus, when shown a new stimulus along with the old, infants display retention for immediate learnt material. Paying attention to old stimulus later on shows retention of material long ago.

Imitation:
Newborns can imitate, but is harder to induce in older babies. Some researchers suggest it is a reflex. Capacity to imitate improves with age, and helps them learn. Neuroscientists believe that imitative behavior is caused by mirror neurons.

Motor Skills Development
Cephalocaudal (Head to tail): Control of head before arms and trunk, which are before legs.
Proximodistal (Center to periphery): Control of head and trunk before arms and legs.

Complexity of Motor Skills:
Increasingly complex *systems* of action develop with each skill. Four factors in each new skill:

1. CNS development
2. Body's movement capacity
3. Child's goals
4. Environmental supports

Steps in Reaching and Grasping

1. Prereaching
2. Reaching with two hands, then one.
3. Ulnar Grasp
   - Adjust grip to object.
   - Move objects from hand to hand.
4. Pincer Grasp
   - Using the thumb and forefinger to pick up things

Some Milestones in Reaching
Infants' Sense of Touch:
Newborns display reflex responses to touch on mouth, palms, soles, genitals and later on to exploratory mouthing. Pleasurable touch releases endorphins in the brain.
The infant is sensitive to pain. Pain can affect later behavior, i.e., long lasting pain can have devastating effects on the growing infant and can have serious psychological and behavioral consequences. Pain can be relieved with anesthetics, sugar, gentle holding.

Taste and Smell:
Infants prefer sweet tastes at birth and quickly learn to like new tastes. Have preferences of odors from birth, and is affected by mother's diet during pregnancy. Can locate odors and identify mother by smell from birth

Sense of Hearing:
Infants can hear a wide variety of sounds at birth and even before birth, especially in the last trimester. They prefer complex sounds to pure tones, and learn sound patterns within days. Infants are sensitive to voices and biologically prepared to learn language.

Developments in Hearing

1. 4 -7 months: Sense of musical phrasing
2. 6 – 8 months: "Screen out" sounds from non-native language, recognize familiar words, natural phrasing in native language.
3. 8 – 9 months: Detect syllables that often occur together in the same word.

Sense of Vision
Vision is the least developed of senses at birth. The infant is unable to see long distances, focus clearly with limited binocular visual ability. With the presence of sounds the infant can scan environment and try to track interesting objects. Color vision improves in first two months.

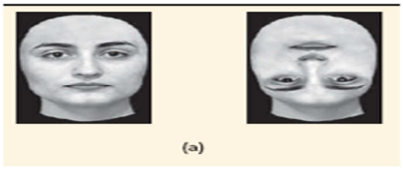
Improvements in Vision
Brain development helps infants reach adult levels of vision. At 2 months, focus and color vision develops. At 6 months, acuity, scanning & tracking; and around that time (6–7 months) depth perception becomes better.

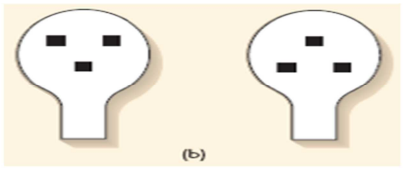
Stages in Depth Perception

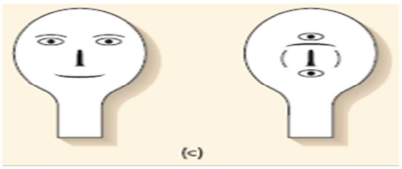
Birth – 1 month	Sensitivity to kinetic cues
2 – 3 months	Sensitivity to binocular cues
5 –12 months	• Sensitivity to pictorial cues • Wariness of heights

Stages in Pattern Perception:
Early on in an infant's life perception is governed by simple patterns. Infants and young children are unable to perceive fully complex stimulus patterns.

Face Perception:
Newborns prefer simple face-like objects (left in panel b) over the one on the right. This ability goes away in about 6-months. Infants prefer regular face to a scrambled face (panel c).







Size Perception
Infants by 1 week of age have the ability to perceive differences in size.

Object Unity
And by 2 months age they can perceive object unity.

Stages in Intermodal Perception:

1. Birth: Largely amodal sensory perceptions.
2. 3-4 months: Prefer "matching" sights and sounds
3. 5-6 months: Reach for object in the dark, coordinating sight and touch

Differentiation Theory:

Differentiation theory proposes that infants search for *invariant* features of the environment.

And, note *stable relationships* between features, like visual patterns, intermodal relationships, etc.
Gradually detect finer and finer features. *Differentiation!*

Affordances
Gibson (1966) proposed that individuals discovered invariant features of the environment by acting on it. The environment "affords" such features and makes actions future-oriented. So for the infant it is the environment that makes it possible to perceive objects and stimuli.

Summary:
We looked at:

1. Early development in the neonate with reference to reflexes, sleep and arousal patterns, crying behavior.
2. Assessment measures like Neonatal Behavioral Assessment Scale; studied learning and memory. And motor development
3. And finally discussed sensory and perceptual processes and intermodal processing and its explanation.

Lesson 05

Research Methods in Child Development

The National Survey and Epidemiological Studies

Overview:

Population and samples, definitions and use in child development.
Kinds and methods of sample extraction, sampling errors and biases
Epidemiological studies on children through development.
National epidemiological studies on children of Pakistan

Critical Questions:

What are some of the basic research procedures in studying child development?
Why is it important to carry out epidemiological studies to get a better grasp of child development?

Population & Samples:

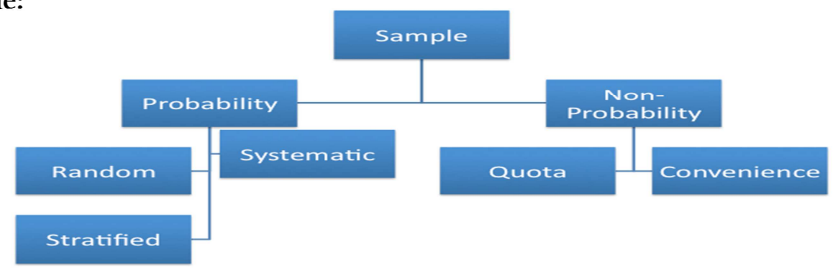
For a majority of areas in behavioral and social sciences research is driven by *statistics* and methodology that incorporates statistical *procedures* and *analysis*. At the very core of these statistical procedures is the concept of population and sample or samples that are drawn out of it.

Mathematically and statistically speaking a population is a large conglomerate of all the members or characteristics of these members in which the researcher is interested, like weight, intelligence, happiness, achievement etc. These characteristics are called *parameters*. Since research cannot be carried out on all members of a population, investigators draw samples out of this population and study these characteristics, now called *statistics*.

Kinds of Sample:

When individuals in a population have an equal chance (greater than zero) of being drawn into a sample we call it *probability sample*. On the other hand if some members of a population have no chance (equal to zero) being drawn into a sample; that sample is called *non-probability sample*.

Varieties of Sample:



Probability Samples:

Random Sample: When each member in a population has an equal probability of being selected.
Systematic Sample: Sampling begins by randomly selecting one member, and then selecting every *n*th member onwards.
Stratified Sample: When population composed of distinct categories, it leads to a sample based on these categories and is called stratified sample.

Non-Probability Samples:

Quota Sample: In quota samples, population's subgroups are proportionately sampled.
Convenience Sample: members of the population are chosen based on their relative ease of access. Sampling friends, co-workers, or shoppers at a store are all examples of convenience or accidental sample.

Sampling Errors:

Selection bias or **sampling bias** occurs when probabilities of selecting members into a sample differ from true probabilities contained in a population. In many ways non-probability sampling can suffer from such bias and can affect survey research.

Random sampling error: Or **estimation error** is an error that is caused by observing a sample instead of the whole population.

Epidemiology:

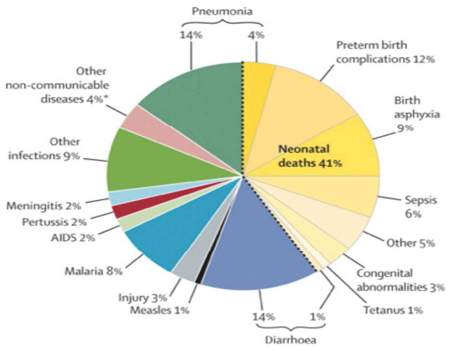
This branch of medicine studies patterns of health (or disease) in a population. Children epidemiological studies look at child diseases that focus on their causes of death (COD) or mortality. Two kinds of mortality have been the center of attention for World Health Organization (WHO).

- Neonatal mortality (birth-28 days)
- Child mortality (1-59 months)

Child Mortality:

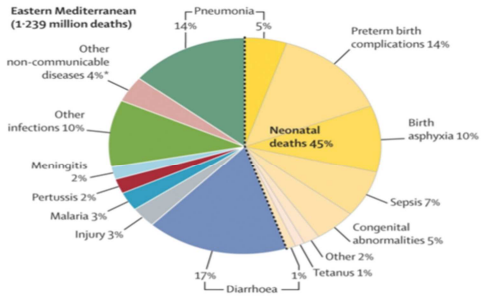
WHO Statistics tells that [About] 7.6 million children under the age of five die every year, according to 2010 figures. Leading causes of death are pneumonia, diarrhea, malaria and health problems during the first month of life. Over one third of all child deaths are linked to malnutrition according to statistics provided by WHO. Children in low-income countries are nearly 18 times more likely to die before the age of five than children in high-income countries.

Mortality Distribution: Global



Child Health Epidemiology Reference Group (CHERG) statistics (2008)

Mortality Distribution: E. Mediterranean



Child Health Epidemiology Reference Group (CHERG) statistics (2008)

Infant & Child Mortality in Pakistan:

Major reasons for neonatal and childhood mortality in Pakistan (Agha, 2000; Hobcraft, McDonald & Rutstein, 1985) includes:

1. Poor child-spacing in pregnancies
2. Water and sanitation issues
3. Social and gender inequities
4. Socio-economic issues

Goals:

Though neonatal and childhood mortality has decreased in Pakistan from 1980s to present times. The goal is to cut this mortality to two-thirds by 2015. Economic and financial burdens in Pakistan may delay these goals.

Summary:

We looked at population and samples, and they are used in research on child development.

We also discussed different kinds of samples and their extraction for research purposes. In addition we identified sampling errors and biases.

We then concentrated on epidemiological studies on children through development and talked about studies conducted for Pakistan.

Lesson 06

Research Methods in Child Development

Self-Reports and Observation

Overview:
Brief outlook on methods used for gathering data about children.
Self-reports, clinical interviews, questionnaires and tests
Observational method and its kinds
Psychophysiological methods
Advantages and disadvantages of the above mentioned methods

Critical Questions:
Why do we use different kinds of methods to study children?
What is the goal of all of these methods?
Why should we learn about these and other research strategies?

Self-Reports:

Interview:
Interview or *clinical interview* is very flexible, conversational styled self-report in which we want to know participant's or child's point of view.

1. Unstructured Interview: These interviews are highly flexible, use open-ended questions and gather as much information about the child as possible.
2. Structured Interview: Each participant is asked same questions in same way. Usually questions in this interview are closed-ended. In structured interview, questionnaires may be used to get answers from groups.

Limitations
Accuracy of participants' expressions may be misjudged. There may be distortions in participants' recall or judgments. Flexibility may make responses too varied to affect accuracy.

Questionnaires:
1. For very young non-school going children self-reporting questionnaires are not possible or fruitful, but older children can respond to questionnaires on nominal or ordinal scales.
2. Many younger children can respond to questions in a dichotomous way, and are easier to read and respond to by young children.
3. With older children who go to primary or secondary schools we can use questionnaires that are based on equal-interval questions.

Tests:
Still other forms of tests can be used to measure children's intelligence or mental disorders. Amongst these one is the draw-a-person test (or draw-a-man test), originally conceived and designed by Goodenough (1926). The test expresses dramatic differences between schizophrenic and normal children (Jaynes, 1976).
In the Draw-a-Person Test the child is asked to draw a man, a woman and him- or her-self.
Clinicians carry out analysis on these three drawings.

Observation:
Perhaps the oldest method used by any class of investigator (or thinker) has been observation. Observation method requires observation of phenomena using a variety of sensory modalities. This method has been extensively used to study psychological phenomena in children, adults and animals. There are two kinds of observation:

Naturalistic Observation: In naturalistic or "field" observation, investigator observes behavior where it

happens.

Structured Observations: Usually take place in the laboratory situation where behavior of interest can be evoked. All participants have equal chance to display behavior.

Sampling through Observation

Event Sampling: Observer records all instances of a particular behavior (events) during a specific time period.

Time Sampling: Observer records certain behaviors that occur during a time interval.

Observing Events:

Detailed observations of, say classroom learning, leads to classification of various events of the phenomena, e.g., classroom learning can involve verbal, perceptual, motor, problem solving forms of learning.

Appraisal:

Advantages	Disadvantages
Important first step to study any phenomenon (including learning)	Complex and difficult
	Observer's influence: Participants may react in unnatural ways (can be controlled)
	Observer Bias: Record what they expect, rather than what really happens. It is a serious danger in research.
	Uncontrolled

Psychophysiological Methods:

Autonomic Nervous System Activity

Measures of autonomic nervous system activity, which include heart rate (ECG), skin conductance (GSR), blood pressure, respiration, pupil size, stress hormones, etc.

Measuring Brain Functioning:

Functional Magnetic Resonance Imaging (fMRI): Functional Magnetic Resonance Imaging (fMRI) visualizes brain function, by changes in chemical composition of brain areas or changes in the flow of fluids (blood) that occur over time.

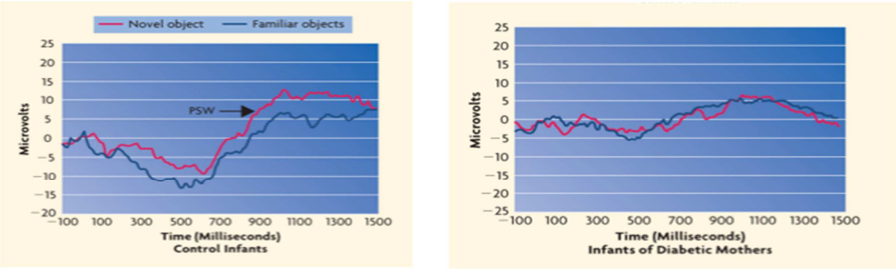
Positron Emission Tomography (PET): Increased radio-labeled glucose activity is scanned in the brain while subjects engage in different cognitive processes.

Structure function relationship, spatial resolution is good while temporal resolution is not good. It is an invasive procedure.

Near-infrared Optical Topography (NIROT): NIROT is a noninvasive procedure that simultaneously acquires hemoglobin absorption from an array of optical fibers on the scalp to construct maps of cortical activity (Kennan et al., 2002).

Event-related Potential: Event-related potential measures the brain's electrical activity (potentials) as it corresponds to impinging stimuli (events). Excellent temporal resolution (faster response) compared to PET or fMRI.

Memory Impairments in Infants: Nelson et al (2000) demonstrated that young infants' memory performance was affect by maternal diabetic load during gestation. Infant's memory deficits resulted from iron depletion in brain areas measured by ERP.



Limitations:

1. Interpreting psychophysiological results require a great deal of inference. Researchers cannot be sure that an infant or a child has processed the information in a particular way.
2. Many factors can influence physiological response, so fatigue, boredom, drive and emotions in a child can affect physiological responses.

Summary:

We looked at self-reports, clinical interviews, questionnaires and tests. We also discussed observational method and its kinds. Finally we talked about psychophysiological methods, and discussed the advantages and disadvantages of the these methods.

Lesson 07

Research Methods in Child Development

Correlation and Experimentation

Overview:

What is correlation method?
How do we make predictions using correlation method?
What is experimental method?
What is hypothesis testing and what is its relationship with theory and research?
How does experimental method determine cause-and-effect relationship?

Critical Questions:

Why do we want to use experimental method in child development?
How are correlation and experimental methods different?

Science:

Science seeks to generate confirmable propositions (hypotheses) by fitting a formal system of symbols to empirical observations (Stevens, 1951). Hidden in this definition are two important philosophical positions of rationalism and empiricism. Combined, these two positions create a powerful discipline of inquiry.

Scientific Method:

The scientific method involves gathering of data either through observations or manipulations. The investigator first forms hypotheses and tests them to draw conclusions. Conclusions get revised if necessary with additional observations or manipulations. These conclusions form the basis of theories and theory-building.

Two Important Research Methods:

1. Method of Correlation
2. Experimental Method

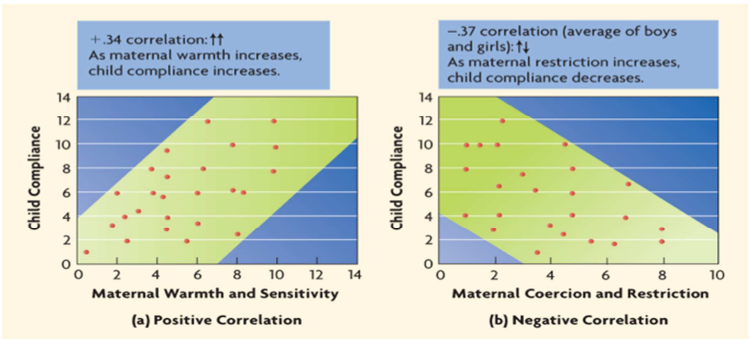
Correlation:

Research methods that attempt to determine the strength of a relationship between two or more variables or behaviors.
For example, does maternal warmth leads to children compliance?

Correlation Coefficients:

Magnitude of correlation is represented as a number between 0 and 1. Closer to 1 shows a stronger relationship than 0.
Direction of correlation is indicated by + or – sign. Positive (+): as one variable increases, so does the other. Negative (-): as one variable increase, the other decreases.

Examples:

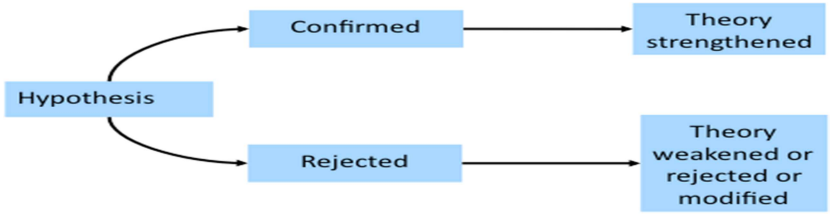


Experimental Method

Experimental method captures the empirical side of science and has many advantages.

Advantages	Disadvantages
Very productive	At times cannot be used for ethical reasons
Controlled	Difficulty of generalization
Repeatable	
Unambiguous	
Objective	

Hypothesis:
Predictions or hypotheses are testable statements that propose a causal relationship between manipulated and measured variables.



Theory:
A theory is a system of interrelated hypotheses that explain a number of observations or phenomena. There are two aspects of theory, namely,

1. Formal aspect of a theory includes words and symbols that explain observations.
2. Empirical aspect of a theory comprise of physical events and observations that are measured and quantified.

Theory & Research:
In the end research evidence (data, empirical aspects) feed a theory (formal aspects). And theory in turn proposes new predictions that need to be conformed to data.

Characteristics of a Theory:

1. Synthesizes observations
2. Generates new empirical hypothesis
3. Confirmed hypothesis makes a theory strong; else theory is modified or dropped
4. Theory is not right or wrong, only useful or not.
5. Theory is chosen based on the law of parsimony.
6. Theories contain formal and empirical aspects
7. Theories must explain empirical events.

Scientific Law:
If a hypothesis is confirmed many a times, it eventually becomes a law, and usually is represented with symbolic (mathematical) notation.

How to Conduct an Experiment?

1. Researchers begin by randomly assigning subjects to either:
    a. *Experimental group*: receives treatment.
    b. *Control group*: does not receive treatment.
2. Random assignment is an unbiased procedure that assigns participants to treatment conditions randomly.

Variables in an Experimental Study:

1. *Independent Variables:* Experimenter changes, or manipulates this variable. Expected to cause changes in another variable.
2. *Dependent Variables*: Experimenter measures the affected variable. Expected to be influenced by the independent variable.

Kinds of Experiments:

1. *Field Experiment:* Use rare opportunities for random assignment in natural settings.
2. *Natural Experiments:* Include quasi-experiments. Compare differences in treatment that already exist. Groups chosen to match characteristics as much as possible.

Experimental Methods used in Assessing Child Development:

Longitudinal: Same participants studied repeatedly at different ages.
Cross-sectional: People of different ages all studied at the same time
Sequential: Same groups of different-aged people studied repeatedly as they change ages.
Micro-genetic: Same participants studied repeatedly over a short period as they master a task.

Longitudinal Design:

1. *Advantages:* Permits study of common patterns and individual differences in development and relationships between early and later events and behaviors.
2. *Problems:* Age-related changes may be distorted because of biased sampling, selective attrition, practice effects, and cohort effects. Theoretical and methodological changes in the field can make findings obsolete.

Cross-sectional Design

1. *Advantages:* Efficient, not plagued by selective attrition, practice effects, or theoretical and methodological changes in the field.
2. *Problems*: Does not permit study of individual developmental trends. Age difference may be distorted because of cohort effects.

Sequential Design:

1. *Advantages*: Sequential design permits both longitudinal and cross-sectional comparisons. Reveals cohort effects. Permits tracking of age-related changes more effectively than the longitudinal design.
2. *Problems:* May have the same problems as the longitudinal and cross-sectional strategies, but the design itself helps identify difficulties.

Microgenetic Design:

1. *Advantages:* Offers insights into how change occurs. Requires intensive study of participants' moment-by-moment behaviors.
2. *Problems:* The time required for participants to change is difficult to anticipate. Practice effects may distort developmental trends.

Summary

We looked at what is correlation method is and how do we make predictions using this method. We then discussed what experimental method is and its kinds? What is hypothesis testing, and what is the relationship between theory and research? Lastly we saw how experimental method determines cause-and-effect relationship.

Lesson 08

Research Methods in Child Development

Case Studies and Studies: Using Combined Methodologies

Overview:
What do we understand about case study or case history method?
Putting a number of methodologies together to study the growing child
We will also briefly look at ethnography to study groups.

Critical Question:
Why do child specialists use a multitude of methodologies to assess child development?

Case Study Method:

1. A case study method is an in-depth analysis of a person like a child, or a group of individuals, or events etc.
2. In many ways the case study method has been used in social and physical sciences, and its use goes back to ancient times.
3. In modern times, Freud (1895) used case study method heavily and made significant strides in using it as a clinical tool.
4. Case study methodology is used in qualitative research, and collects-analyzes descriptive and explanatory data about the case.
5. Case study methodology, unlike cross-sectional sampling in experimental research, samples phenomena on longitudinal or sequential basis.
6. The *subject* (case) provides the instance of the phenomena, and the *object* of the study is to understand the phenomena by using the subject.

Types of Case Studies:

1. Illustrative Case Studies**:** These are primarily descriptive studies.
2. Exploratory (or pilot) Case Studies**:** These are performed before implementing a large-scale investigation.
3. Cumulative Case Studies**:** These serve to aggregate information from several sites collected at different times.
4. Critical Instance Case Studies**:** These examine situations of unique interest with little to no interest in generalizability.

Multimodal Approach:
Case study method brings together a wide range of information on one child by using:

- Interviews
- Observations
- Test scores
- Psychophysiological measures

Case Study Method: Validity
Like any other psychometric instrument case study method needs to be valid. A method is valid if it measures the concept it is trying to measure.

Case Study Method: Reliability
Reliability of case study means, whatever phenomenon is being studied with this method should bring the same or similar results when repeated.

There are some advantages as well as disadvantages of case study method.

Strengths:

Flexibility: The case study approach is a comparatively flexible method of scientific research.

Emphasis on context: By seeking to understand about a single subject or small group of subjects, case studies specialize in "deep data," or "thick description".

Weaknesses:

Inherent subjectivity: The case study is often criticized as being too subjective and even pseudo-scientific.

High investment: Case studies can involve learning more about the subjects being tested than most researchers would care to know.

Ethical consideration: Conflict of interest, biases, opinions

Ethonography:

Descriptive, qualitative technique used to study and understand a culture or social group. The method is borrowed from anthropology. In participant observation the researcher lives in community for months or years to observe and participate in the society he or she lives in.

Invisible Beings:

Ethnographic studies have revealed that East Indian Hindu parents encourage their children to communicate with "invisible" characters, whereas Christian fundamentalists discourage that (Taylor & Carlson, 2000).

Following are the strengths of enthnographic studies:

Strengths:

Social desirability: Since the investigator blends with social group, participants' behaviors are not influenced.

Detailed longitudinal observation: The researcher can gather in-depth understanding of cultural group by staying with them for extended period of time.

Weaknesses:

Subjectivity: Enthnographic studies can be subjective and biased.

Interpretations: The investigator may be affected by his interpretations of the phenomena in questions, than what actually exists.

Summary

We looked at case study or case history method. We discussed that a number of methodologies can be used to study a case or a few cases. We also looked at ethnographic studies that study culture and groups.

Lesson 09

Theories of Development

Structural-organismic Perspectives: Psychodynamic Theory

Overview:

We will look at the inherent nature of structural-organismic perspective.
And then discuss Freud's theory of psychosexual development.

Critical Questions:

How structural-organismic theories did come about as a natural outcome of explaining growth of the individual, especially the child?
How did Freud conceive of child development?

Structural-Organismic Perspective:

1. The organismic approach uses *root metaphor* to model growing biological organism (Reese & Overton 1970).
2. Growth unfolds an organism towards its adult form (end point).
3. And this structural-organismic perspective carries out a logical analysis of the developmental changes taking place from beginning to end (Kaplan 1983).
4. Structural-organismic approach is thus based on laymen thinking that a developing individual changes in stages. Just like a mango grows from seed to giant tree.
5. Variation at each stage is deemed negligible.

Structural-Organismic Perspective:

1. For Piaget, it is the thought that develops through stages and finally reaches the stage of formal operations.
2. For Freud, it is the sexual development of the individual that takes him through a number of stages finally ending with the genital stage, marked by mature sexual interests.
3. Both perspectives are based on the idea of determinism.

Psychodynamic Perspective:

Freud a neurologist, was attracted to hypnosis, and studied mental patients through clinical interviews.
He developed psychoanalytic theory that explains human personality, development and mental abnormality.

Psychoanalytic Theory:

Freud proposed that *childhood sexuality* and *unconscious motivations* influence *personality*. Human personality according to Freud was composed of *Id*, *Ego* and *Superego*. These personality components exist in *unconscious, preconscious* and *conscious* domains.

Model of Personality:

The iceberg model of personality depicts the unconscious (underwater), conscious (above water), and preconscious (at the surface of the water). The *Id* hides underwater in the unconscious mind, and is a reservoir of mostly unacceptable thoughts, wishes, feelings and memories. *Superego*, partially unconscious, represents internalized ideals (the conscience). *Ego*, mediates the demands of id and superego.

Psychosexual Stages:
Psychosexual stages or periods have a characteristic sexual focus that leaves their mark on adult personality. Foundations of personality were laid down within the first *five* years of life.

The five developmental stages are:

- Oral
- Anal
- Phallic
- Latency
- Genital

Oral Stage:
The oral stage of the child spans from birth to 24 months of age. In this stage the infant receives pleasure from his or her mouth (oral zone). Activities such as sucking, chewing and biting deliver pleasure. Fixation at this stage leads to excessive eating or smoking when adult.

Anal Stage
This stage of the child development spans from 2-3 years of age. Pleasure focuses on bowel and bladder elimination. The child has to cope with the demands of control (expulsion and retention). Excessive punishment (usually mother's) to control bowel and bladder elimination can lead to hostility (towards her).

Phallic Stage
In this stage the child's age ranges from 3-7 years of age. Pleasure focuses on the genitals. Boys tend to have erotic feelings towards mother, hostility towards father. Also girls develop a special attachment towards their fathers.

Latency Stage
This stage of the child spans from 7-11 years of age. Sexuality and its associated pleasures become dormant. The child explores individuals other than family members.

Phallic Stage
This final stage of the child development runs from 11 years to adulthood. Same gender hostility is suppressed, affection for the opposite sex increases.

Psychosexual Stages: Summary:

Oral: Age 0 to 2
Infant seeks oral gratification by sucking, biting, and babbling.

Anal: Age 2 to 3
Potty training helps toddlers balance their needs for anal gratification with society's demand to be clean and neat.

Phallic: Age 3 to 7
In early childhood an unconscious desire for the opposite-sex parent is controlled by identification with the same-sex parent.

Latency: Age 7 to 11
Sexual urges are repressed, and the child prefers same-sex companions.

Genital: Age 11 to adult
With puberty sexual urges reappear, and the adolescent learns about mature relationships.

Summary
We looked at the inherent nature of structural-organismic perspective and then discussed Freud's theory of psychosexual development.

Lesson 10

Theories of Development

Piagetian Theory & Vygotsky's Sociocultural View

Overview

Piaget's theory of child development
Vygotsky's Sociocultural View and some criticisms he has to offer against Piagetian theory.
Information-processing theories

Critical Questions:

How does Piaget's theory explain child development? What is the major premise of his theory?
What does Vygotsky's view proclaims about child development?
How is information-processing theory different from structural-organismic theories?

Binet-Simon Scale:

1. Easy tasks included, following a lighted match visually, or shake hands etc.
2. Slightly harder tasks required naming body parts, repeat a series of 3 digits, define words like "house" or "fork" etc.
3. More difficult test items required drawings from memory or constructing sentences from words.
4. The hardest tasks included repeating back 7 random digits, rhyming words, and answering questions involving complexity etc.
5. Number of successfully completed tasks determined the child mental age. If an eight year-old child passed all the items, usually passed by 8 year-olds, but nothing beyond, then this child would have a chronological and mental age equaling eight years.

Intelligence Testing:

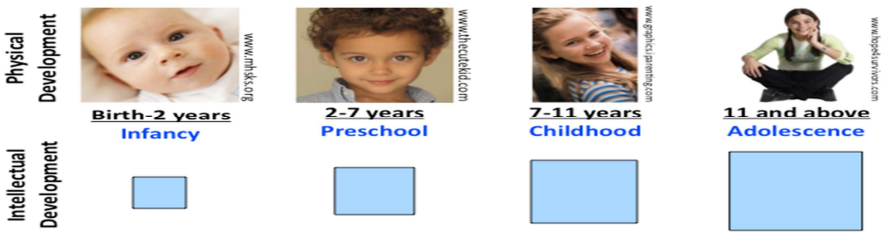
1. When Piaget worked for Binet, he was fascinated by the mistakes children made on the scale, and found that children of the same age-group made the same kind of mistakes. These mistakes were qualitatively different for one age-group of children than for another.
2. Piaget employed open-ended questions (clinical method) to study children.

Piaget's Conclusions:

1. Piaget realized that intelligence cannot be measured by conventional intelligence tests.
2. The individual and the environment are changing constantly, so *intelligence* works as a mode (trait) to optimize individual's response in its survival.
3. Intelligent act leads the individual to deal effectively with his environment, i.e., make him adapt to his environment.
4. Piaget concluded that intelligence could not be inherited, but was a dynamic trait changing all the time due to biological maturation and the individual's experience.
5. This understanding finally culminated in what Piaget called *genetic epistemology* (1950), or the study of development of knowledge.

General Summary:

A general understanding of Piaget's theory is based on the idea that humans pass through stages of physical and intellectual development, as our bodies grow so does our intellect.



Cognitive Structure:
A cognitive structure consists of schemas (or schemata), and results from both biological maturation and cumulative experience. Therefore, a cognitive structure develops and grows over an individual's life span.

Schema:
A schema is an element of the cognitive structure, engages in a class of actions. So, grasping, sucking, reaching etc., are all schemas because a variety of actions can be made by them.

Actions:
A schema can lead to an overt action (behavioral response) or a covert action (thinking). So when an individual grasps a book that is an overt action. However, when one thinks of grasping an object (a golf club) that is a covert action.

Assimilation & Accommodation:
1. The process of responding to the environment in accordance with one's cognitive structure is called *assimilation*. In assimilation existing cognitive structures are matched with physical environment.
2. *Accommodation* is a process that modifies cognitive structure or more simply a process of learning.

Stages of Development

Age	Stage	Description
Birth to 2 years	Sensorimotor Stage	Reflex base, circular behavior, Object permanence
2 to 7 years	Preoperational Stage	Understanding of symbols, egocentric
7 to 11 years	Concrete Operational Stage	More than one point of view, no abstract problems.
11 years and above	Formal Operational Stage	Abstract thinking, reason logically.

Sensorimotor Stage:
A stage between birth-2 years, and is marked by infant's inability to express a formal language.
The infant begins to learn about the world through sensory and motor interactions. At first the infant carries out simple reflex actions (grasping) followed by voluntary actions of grasping.
Between 1-4 months, the child practices *primary circular reactions*, actions that serve as stimuli and responses. For example, sucking her thumb feels good, so she sucks some more.

Preoperational Stage:
However, the child is quite egocentric during this stage, i.e., she sees things pretty much from her own point of view. Piaget and Inhelder (1948) used the "three mountain test" to show egocentrism.
Period of intuitive thought (4-7 years) is a part of this stage in which problem solving is without logical rules, and thus children are unable to correctly carry out conservation problems.

Concrete Operational Stage:
By slightly 7-years most children, have the ability to conserve volume, length, mass and number. A child knows that number of marbles is equal in the long and the short column.
This stage lasts from 7-11 years; the child not only uses symbols but can manipulate them logically. Thus uses logical operations to solve problems. But the problems need to be concrete in context.

By 7-8 years, children learn logical operations can be reversed. So a big ball of clay can be divided into small balls and put back together. The mass of big and small balls remain the same. Similarly, reversibility of operations can work at the thinking level: If the child can add 3 + 5 = 8, she can also subtract to verify the relation 8 – 3 = 5.

By 9-10 years at last children master area conservation and by 10-11 years, the child learns *class inclusion*. When shown 8 orange and 4 green candies, and asked whether there are more orange candies or more candies, the child in this stage will say "more candies". This stage also marks *transitivity* as a cognitive property or ability to make logical inferences on the basis of separate relationships develops at this stage, e.g., if John is taller than Frank, and Frank is taller than Bob, then John is taller than Bob. Finally, at this stage sorting and seriation problems are correctly solved.

Formal Operations Stage:
This stage ranges from 11 to adulthood. Now the individual is able to solve abstract problems, moving on from concrete operation problems. At this stage the individual starts to *systematically search for solutions* like the pendulum and other problems. In short *hypothesis testing* begins at this stage; adolescents and adults quickly find answers to pendulum problem, like what factors would determine the speed of pendulum. Is it the length of string, weights, or the initial swing? With hypothesis testing they work it out and find that it is the string's length that determines the speed.

Lev Vygotsky:
A Russian psychologist who suggested cognitive development as an apprenticeship in which children advanced by interaction with others more mature. Vygotsky died young (37) and did not fully develop his theory beyond childhood.
Vygotsky defined *zone of proximal development* (ZPD) as the distance between child's actual *developmental levels* to solve a problem to *potential development* to solve the problem with peer assistance. And suggested teachers should attempt to keep students in this zone in order to achieve maximum achievement.

Evaluations:

Contributions:
- Qualitative and developmental aspects of learning
- Description of developmental stages of attaining knowledge and learning

Criticism:
- Theory is based on clinical insights. Some experimental evidence fails these insights.
- Developmental stages may not generalize to non-western cultures.
- Vygotsky says that intellectual development may be speeded-up with assistance before stage reaches its maturation.

Information Processing Theory:
A completely different approach about child development comes from information-processing theory which considers human mind just like a computer.
Just as information processing systems use flow-charts etc to solve problems, human mind also processes problem and learns from experience in the same way.
To study, how humans solved problems and use information in a reiterative way. A 5-year old was given a problem to build a bridge with blocks across an imaginary river down below.
Information theory criticizes Freudian, Piagetian, and Vygotsky's stage theories and suggests that learning, problem solving, and other cognitive processes are similar at all ages in a human, present in lesser or greater extent.

Summary:
We looked at Piaget's theory of child development; and Vygotsky's Sociocultural View along with some strengths and weaknesses in both theories.
Finally we briefly discussed Information-processing theory.

Lesson 11

Theories of Development

Behaviorism, Cognitive, Social Learning Theory

Overview:

We will discuss behaviorism and its many flavors and tie them to child development.
What does cognitive perspective have to offer for child development?
What is social learning theory? How does this theory differ from conventional behaviorism to explain child development?

Critical Questions:

What does behaviorism has to offer for child development?
How do cognitive and social learning perspectives provide us with an understanding of child development?

Behaviorism:

The school of behaviorism has its roots heavily grounded in animal physiology; and its classical form was originated by Pavlov, and augmented by Watson.
This form of behaviorism relies on reflex behaviors and its modification.

Classical Conditioning:

Modification of reflexive behavior entails a learnt association that occurs between a specific and neutral stimulus called classical conditioning.

Generalization:

Generalization refers to increased capability of producing a CR by stimuli that are similar to the first CS that lead to conditioning. After conditioned fear of the white furry rat was inculcated in "Little Albert," he was afraid of other stimuli that resembled the white rat, like a furry rabbit, a dog, or a Santa Claus mask, etc., (Watson & Rayner, 1920).

Cortical Mosaic:

This excitatory and inhibitory activity in the brain forms a cortical mosaic. *Momentary cortical mosaic* determines how an organism will respond to its environment at a given moment. And a *dynamic cortical mosaic* is a stable mosaic in the midst of changing environment,

Summary:

Classical conditioning theory suggests that an association builds between CS and the US leading to UR/CR. CS elicits CR, and this connection is mediated through an empty organism.
Operant conditioning (Thorndike and Skinner) on the other hand proposes that a response like salivation (CR) prepares the organism to receive food (US).

Verbal Behavior:

Like any other behavior, language is also a behavior (verbal behavior) and consists of speaking, listening, writing and reading behaviors. These behaviors are governed by antecedent conditions (stimuli), and consequences (reinforcements). Skinner outline four of such verbal behaviors listed below in the table.

ABC of Verbal Behavior:

Type	Antecedent (A)	Behavior (B)	Consequence (C)
Mand	State of Deprivation or aversive stimulation	Verbal utterance	Reinforcer that reduces state of deprivation
Echoic	Verbal utterance from another individual	Repetition of what the speaker says	Conditioned reinforcement (praise)

			from the other person
Tact	Stimulus (usually object) in the environment	Verbal utterance naming or referring to the object	Conditioned reinforcement from the other person
Autoclitic	Verbal utterance (often a question) from another person	Verbal response (answer to a question)	Verbal feedback or reinforcement

Comparison of Behaviorism and Gestalt psychology:

Behaviorism	Gestalt
Elements of behavior	Mind or behavior must be studied in "wholes", not as elements or parts.
Molecular behavior	Molar behavior or mind
Observation and Experimentation	Introspection, Observation and Experimentation
Approach: Behavioral	Approach: Cognitive

Law of Prägnanz:
Law of Prägnanz (Prägnanz mean "essence") is a tendency that makes every psychological event simple, concise, symmetrical, harmonious and complete.
Not only was this law used as a guiding principle for studying perception, but also memory, learning, personality and psychotherapy.

Productive Thinking:
To generate productive thinking, students should arrange and rearrange the problem in many ways until the solution emerges based on understanding.
Wertheimer added that learning with logic or S-R associations would lead to limited learning. He came up with a number of examples to show that.

Finding Areas:
Students can be taught to find areas of rectangles by using algebraic formulas like length X height (L X H). However, when students are given non-standardized figures, such formulas lead to erroneous answers.
The correct way to learn to find areas is to understand the concept of unit area or a grid. Unit area can then be applied to any standard or nonstandard figure, to calculate its area.

Bobo Doll Study:

http://www.youtube.com/watch?v=vdh7MngntnI

Vicarious Reinforcement:
Bandura showed in his bobo doll that children imitate model's behavior.

1. Behavioral learning has a cognitive explanation.
2. Learning did not require reinforcement.
3. Reinforcement (incentive) directs learned activity (performance).

Summary:
We looked at Behaviorism as a basis to talk about learning in children. We did the same for cognitive perspective and finally discussed social learning theory

Lesson 12

Theories of Development

Dynamic Systems Perspectives; Contextual Perspectives; Socio-cultural Theory; Bronfenbrenner's Ecological Theory

Overview:

Brief prelude to socio-cultural perspective of child development
Bronfenbrenner's Ecological Theory and contextual perspective on child development
The Dynamic Systems View of child development.

Critical Questions:

How is context so important in child development? Looking at many socially oriented perspectives
How does Dynamic Systems View help us integrate all these perspectives?

Socio-Cultural Theory:

Socio-cultural theory (Vygotsky) is relatively a new theory in psychology that explains important contributions *society* makes to individual development.
According to Vygotsky, "Every function in the child's cultural development appears twice: first, on the social level (inter-psychological), and later, on the individual level (intra-psychological)."

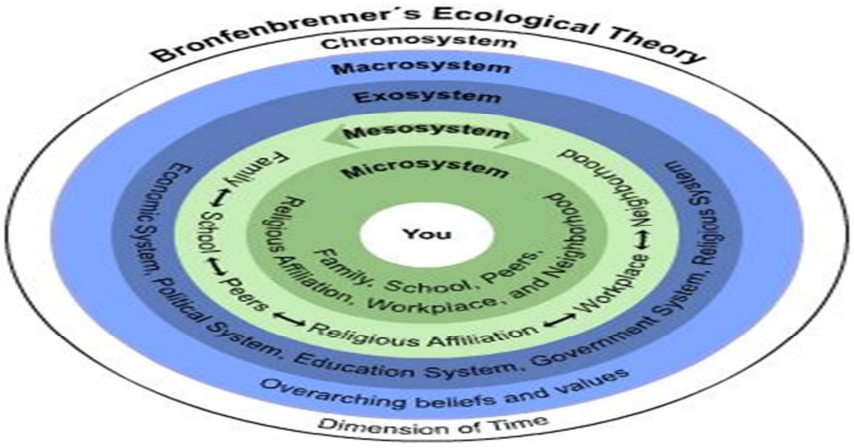
Principles:

According to Vygotsky:

- Development cannot be separated from its social context.
- Learning can lead to development.
- Children construct their knowledge.
- Language plays a vital role in mental development.

Ecological Systems Theory:

1. This theory centers on ecology of the child during development.
2. Bronfenbrenner proposes complex "layers" of environment, each affecting the child during development.
3. Changes in any layer of the environment ripples across other layers.
4. The interaction between child's maturing biology and these layers steers his development.
5. Children are both products and producers of their environment.



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The inner most layer of the environment constitutes the microsystem, which consist of immediate surroundings, including the person's family, peers, school, and neighborhood.

Next layer consists of *mesosystem* that holds relations between the different microsystems or connections between contexts. Some common examples are the connection between family experiences and school experiences.

The *exosystem* further removed from the individual, may directly or indirectly affect the individual's behavior. For example, what a wife or child experience at home may be influenced by the husband's experiences at work.

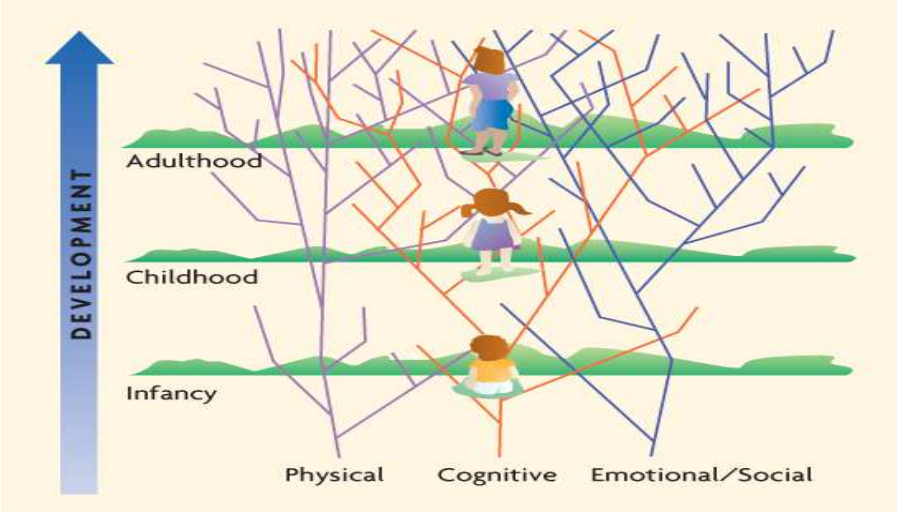
Macrosystem defines the culture in which individuals live. Socioeconomic status, poverty, and ethnicity make this culture.

Finally the last layer termed as *chronosystem* refers to the patterning of environmental events over the life of an individual and socio-historical events or circumstances.

Contextual Perspective:
Both in Socio-cultural theory of Vygotsky, and Ecological System Theory of Bronfenbrenner propose context (society, environment) to play an important role in the developing child.
Although biology of the child is important, behavior is largely shaped by his context.
This view heavily tilts on the nurture side of the nature-nurture equation.

Dynamic Systems View:

1. Dynamic System View takes an *integrated system* approach putting the child's brain, mind, body, physical and social worlds and investigates how the child masters new skills as these worlds change.
2. Dynamic System approach suggests that children do not change linearly in a line, but more like a web fibers branching out in many directions, each representing a evolving skill.
3. Dynamic System View has been inspired by other disciplines, like biology and physics, in addition draws on information-processing, contextual, sociocultural, ecological and evolutionary theories.



Summary:
We looked briefly at *Vygotsky's Socio-Cultural Perspective* of child development. We added more to this perspective by adding *Bronfenbrenner's Ecological System Theory* and *Contextual Perspective* on child development. Finally we discussed the *Dynamic Systems View* of child development.

Lesson 13

Theories of Development

Span Perspective; Ethological and Evolutionary Approach

Overview:
We will look at ethology and comparative psychology explaining child development.
How does evolutionary theory help us understand child development?

Critical Questions:
Do you believe that traits like intelligence and personality are inherited or learned?
Why do you believe in one or the other or both?

Ethology:
Ethology (or comparative psychology) is a field of inquiry that has its roots in biology and evolution.
Investigators like Lorenz and Tinbergen studied instinctive behaviors as model systems to understand adaptation.
These instinctive behaviors became the basis to understand attachment behaviors in animals and children.

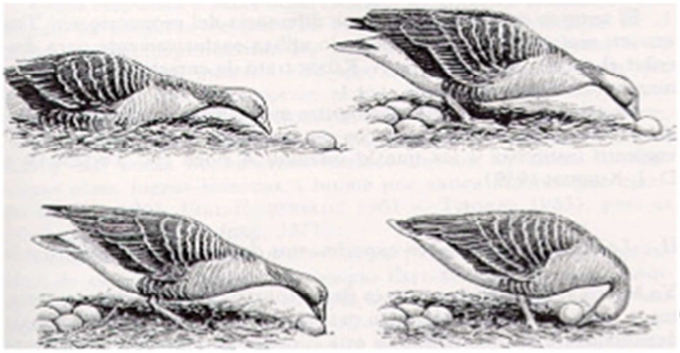
Instinctive Behaviors:
Instincts are complex pre-programmed genetically controlled behaviors also called Fixed Action Pattern (FAP), migration and nest building are but some its examples.

Instincts in Humans:

Humans also show many instinctive behaviors, e.g., smiling, crying, frowning, kissing, cuddling and aggressive behaviors. Included in these is the "Eyebrow-flash" during smiling (Eibl-Eibesfeldt & Hass, 1972; 1990).

Characteristics of Instincts:

1. Instincts are under innate genetic control. All geese roll the egg in the same way.
2. Instincts require little or no feedback. If hatchlings are lost, dominant "paternal instinct" leads cardinal to feed gapping minnows.
3. Instincts can be triggered by stimulating brain "trigger" cells.
4. Instincts require coordination of many muscles thus more complex than simple reflex actions.



Imprinting:

1. Imprinting is a process that modifies instinctive behaviors. Includes filial (following mother or a substitute) and sexual (courting member of another specie) imprinting.
2. Imprinting takes place during "sensitive period" of individual development.
3. Many behaviors are released (releasers) to make mothers and caregivers form close bonds of attachment.
4. These attachment bonds play a vital role in individual's adult life.

Konrad Lorenz and filial imprinting (1938)

Konrad Lorenz and sexual imprinting (1938)

Sensitive Period:

So imprinting can take place during a window of opportunity early in life called the sensitive period. In humans too there is a sensitive period, an optimal time for certain capacities to emerge. The individual is especially responsive to environment. Developmental changes are hard to induce later. Boundaries less defined than during the sensitive or critical period

Harlow & Attachment:

Harry Harlow (1960) studied attachment in non-human primates. He, like Lorenz, suggested that attachment bonds developed not just because of feeding but other factors like bodily comfort and love.

Bowlby & Attachment:

Likewise Bowlby (1952) was influenced by Lorenz ideas of imprinting and went on to use ethological perspective in child-caregiver attachment.

"According to Bowlby, the infant's relationship to the parent begins as a set of innate signals that call the adult to the baby's side (Pendry, 1998)".

Ainsworth & Attachment:

1. Ainsworth empirically used separation anxiety to study attachment between children and their caregivers, and found three kinds of attachments.
2. Infants were either securely attached to their caregivers; when separated they protested but greeted the caregiver on her return.
3. Or, infants were insecurely attached or were avoidant; for they did not display distress at separation.
4. The third kind of infants, were ambivalent or anxiously attached and showed great deal of anxiety at separation and anger and resistive behavior at the caregiver's return.

Evolutionary Developmental Psychology:
Expands upon ethology
Seeks to understand adaptive value of human competencies
Studies cognitive, emotional and social competencies and change with age

Summary:
We looked at ethology and comparative psychology explaining child development. We also discussed Harlow, Bowlby, and Ainsworth theories. Lastly we touched upon how evolutionary theory helped us understand child development.

Lesson 14

Theories of Development

Stages of Prenatal Development

Overview

We will look at the process of germination and fetal growth.
We will also discuss problems and diseases that take place during prenatal development.

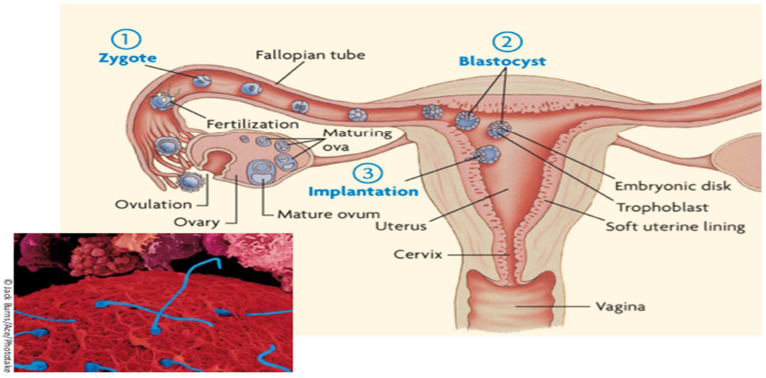
Critical Questions

How does germination take place?
How does the embryo-fetus develop? What are some of the things that we need understand about prenatal development?
What are some of the risks in prenatal development?

Prenatal Development:

Period	Duration	Key events
Zygote	0-2 weeks	Fertilization, implantation, start of placenta
Embryo	3-8 weeks	Arms, legs, face, organs muscles start developing. Heart begins beating
Fetus	9-30 weeks	Growth and finishing

Germination:



Conception & Differentiation:

Ovulation: Release of an egg (ovum) from the female ovary.
Conception: The process of fertilization where a sperm cell combines with an egg cell to create a new organism (zygote).
Differentiation (embryonic induction): Process that occurs during cell division in which each new cell is committed to becoming a particular structure.

Zygote: 7-9 days old

Food & Shelter

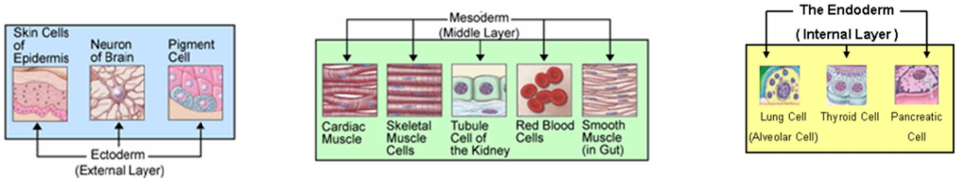
Chorion: Protective membrane that surrounds the amnion.

Placenta: Permits food and oxygen to reach developing organism, and removes waste products to be carried away.

Umbilical Cord: Placenta grows into umbilical cord. Delivers blood to developing organism. Removes waste from developing organism.

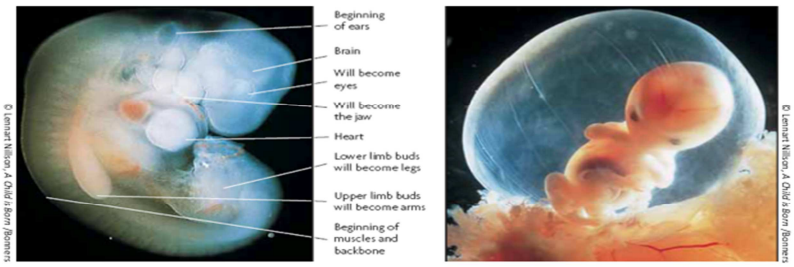
Embryonic Growth:

1. Last Half of the First Month
   - Ectoderm
   - Mesoderm
   - Endoderm
   - Neurons



2. Second Month
   - Rapid growth: eyes, ears, nose, jaws, neck
   - Buds become arms, legs, fingers, and toes
   - Responds to touch

Embryo:



Fetal Period:

Third Month

Lungs begin to expand and contract

Sex is evident on ultrasound

The Second Trimester

Mother can feel movements

Vernix, lanugo develops

Brain weight increases tenfold from 20th week to birth.

The Third Trimester

Age of viability: 22-26 weeks

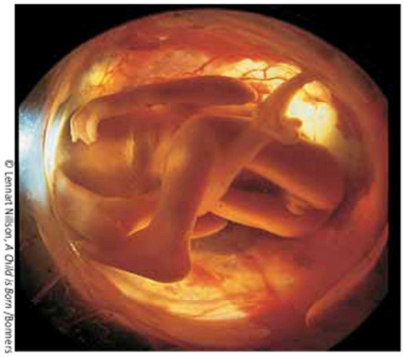
Cerebral cortex enlarges

Fetus spends more time awake

Fetus at 11 weeks:

The fetus at 11 weeks can kick, bend its arms, open and close its hands and mouth and suck its thumb.

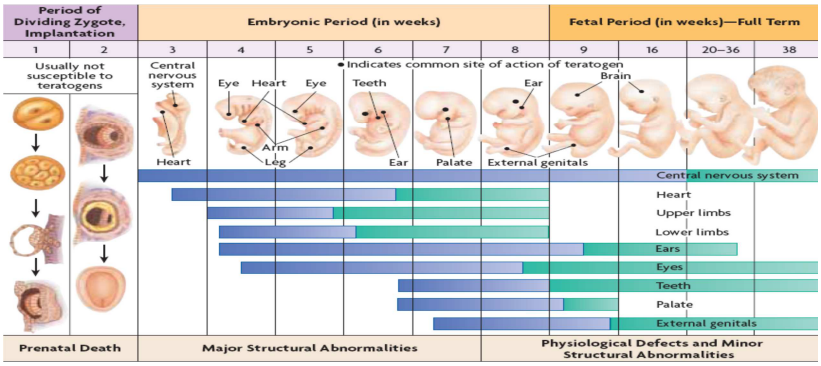
Second & Third Trimester:



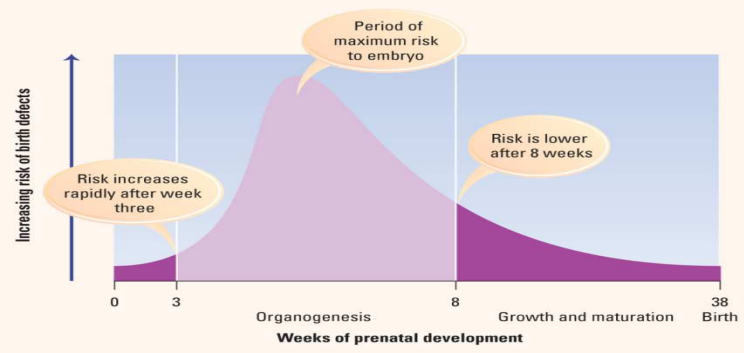
Twenty-second week

Thirty-sixth week

Sensitive Periods:



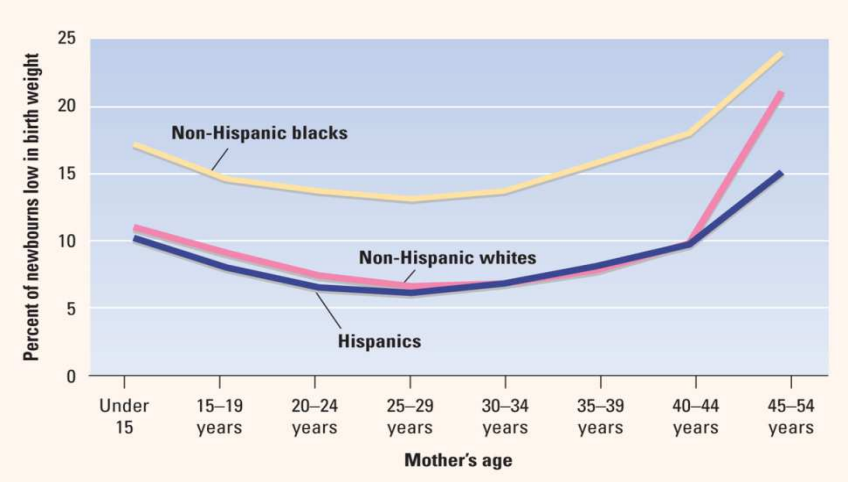
Sensitive Period: Risks:



Prenatal Development & Later Health

1. Low Birth Weight and greater chance of
   - Heart disease
   - Stroke
   - Diabetes
2. High Birth Weight and greater chance of
   - breast cancer

Low Birth Weight: Ethnicity:



Teratogens:

Teratogens are any kind of drug or substance that interferes with the development of fetus, usually causing birth defects.

Teratogens: Risks to the Baby:

Premature: Babies born earlier or smaller than average.
Preterm Birth: Births that occur before 37 weeks of gestation.
Low Birth Weight: Weight less than 5 ½ pounds at birth (2 pounds lower than average).

Alcohol:

Alcohol use during pregnancy is catastrophic.

Fetal Alcohol Syndrome (FAS): A syndrome of birth defects caused by prenatal exposure to alcohol.
Fetal Alcohol Effects (FAE): Lowered IQ, hyperactivity, growth deficiencies, and physical malformations.

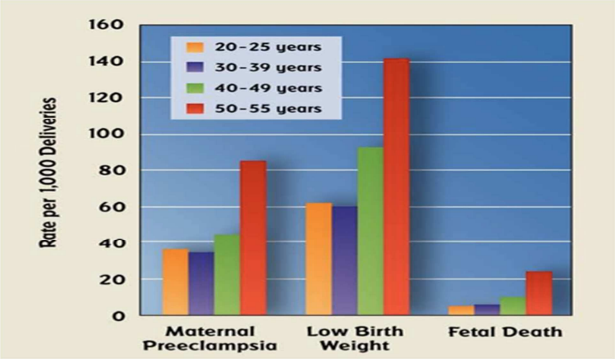
Cocaine & Smoking:

Cocaine: Fetal exposure to cocaine retards growth can cause preterm birth, and malformations in the brain, intestines, and genital-urinary tract.
Cigarette Smoking: Harmful chemicals, including nicotine, carbon monoxide, and cyanide. These chemicals damage the placenta; reduce the blood supply, oxygen, and nutrients available to the fetus.

Viral & Infectious Diseases

If a woman is carrying an infectious disease, like herpes, syphilis or HIV-AIDS while pregnant, it can endanger the fetus.

Maternal Age & Birth Complications



Healthy Prenatal Development:

- Exercise
- Nutrition
- Lower Emotional Stress
- Younger Age
- Spaced Previous Births

Summary:

We discussed the process of germination and fetal growth. We also discussed the problems and diseases that take place during prenatal development.

Lesson 15

Prenatal Development and Birth

Birth and the Beginnings of Life

Overview:

In this lecture we will look at child's birth and beginning of his or her life.

We will also look at what are some of the early events that take place in the neonate's life. These will include birthing complications, vulnerabilities, and early human associations.

Critical Questions:

Why do you think the process of birthing and important event for the mother and her child?

How do we assess the neonate?

Natural or Prepared Childbirth:

1. Classes
2. Relaxation & Breathing Techniques
3. Labor Coach and Birth Attendants
    - Certified nurse-midwives
    - Doula (social support)

Natural or Prepared Childbirth

Most child deliveries in Pakistan are assisted through midwives or medical staff. Extended families provide support for prepared childbirth.

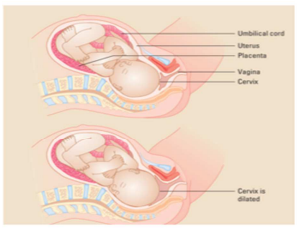
The Stages of Birth:

Stage 1 Dilation: The gradual opening of the cervix caused by labor contractions.

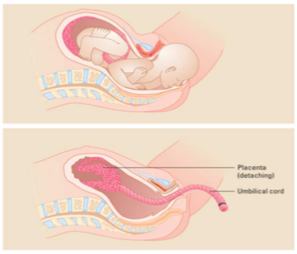
Stage 2 Delivery: The baby actually moves through the birth canal.

Stage 3 Afterbirth: The placenta and other membranes are delivered through the birth canal.

The Stages of Birth:



Dilation



Delivery & Afterbirth

Labor and Delivery Medications:

Some form of medication is used in more than 80% of North American births.

1. Analgesics
2. Anesthetics
3. Epidural analgesia

Birth Complications:

1. Oxygen Deprivation (Anoxia)
2. Breech Position: bottom down position.
3. Placenta Abruptio: the separation of placenta from uterus wall before baby is delivered.
4. Rh Factor Incompatibility.
5. Fetal Distress

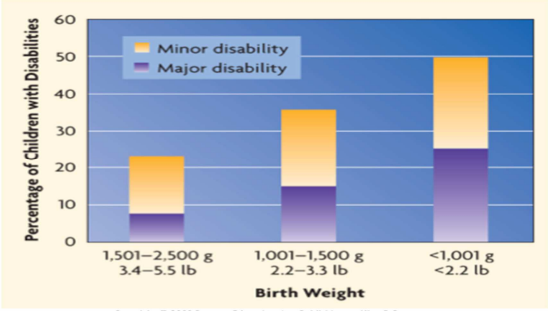
Long-Term Effects of Anoxia:

After initial brain injury, another phase of cell death can occur several hours later.
To prevent secondary damage, researchers are using head cooling devices and pre-cooled water blankets.
The greater the oxygen deprivation, the poorer children's cognitive and language skills in middle childhood.

Preterm & Small-for-Date Babies:

- Preterm: Born weeks before their due date. May be appropriate weight for length of pregnancy.
- Small-for-Date: May be born at due date or preterm. Below expected weight for length of pregnancy.

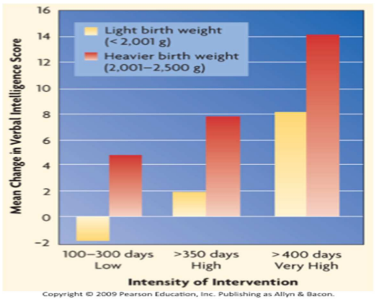
Low Birth Weight & Disabilities:



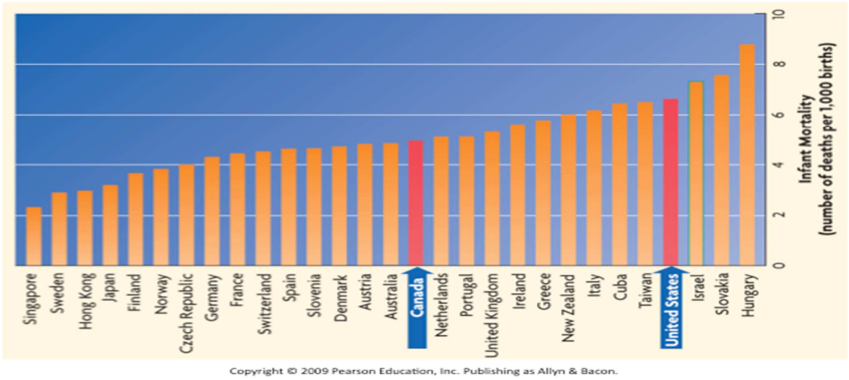
Interventions for Preterm Infants:

1. Isolette
   Respirator
   Feeding tube
   Intravenous medication
2. Special Infant Stimulation
   "Kangaroo Care"
3. Parent Training

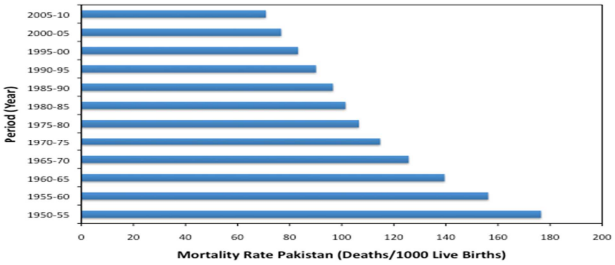
Intervention Intensity:



Infant Mortality: World:



Infant Mortality: Pakistan:



The New Born!

APGAR Test: A brief assessment of the newborn conducted at 1 and 5 minutes after birth; used to identify newborns that are at risk and need medical attention.

Becoming a Family: Parenthood

It usually takes about 6 months to adjust to a new baby (although time may vary).

The transition to parenthood often brings to the forefront any issues that a new parent has with his or her own parents.

The transition is easier if the new parents are realistic in their expectations.

Becoming a Family: Siblings

An older sibling may have a difficult time with a new baby.

- Increases in whininess
- Sleeping difficulties
- Withdrawal
- Clinginess
- Aggressive behaviors

Summary

In this lecture we saw child's birth and beginning of his or her life.

We also looked at what are some of the early events that took place in the neonate's life.

Lesson 16

Prenatal Development and Birth

Socio-cultural Perspective

Overview:

In this topic we will look at newborns with special interest in interpersonal processes that are formed and maintained with parents, caregivers, and siblings.

We will also look at variety of research that addresses physiological, psychological and social aspects of these bonds during early development.

And introduce the field of prenatal and perinatal psychology.

Critical Questions:

What kind of relations are formed and maintained between the newborn and his family members?

How good is our understanding of these relationships?

Prenatal Bonding:

1. The mother and the prenatal baby form an early bond. The bond is highly emotional, and generally tend to affect the unborn baby at an emotional and physiological level.
2. A variety of emotional experiences directly affect the prenatal baby physiologically via the placenta.
3. Not long ago doctors thought it is not necessary to bond with the baby.
4. But today many researchers and experts think that human voices, communication, and music is required in establishing a strong bond between parents and prenatal baby.

Prenatal Psychology:

Is an interdisciplinary field that explores the psychological and psychophysiological effects and implications of the earliest experiences of the individual, before birth ("prenatal"), as well as during and immediately after childbirth ("perinatal").

It also looks at the health and learning ability of the individual and on their relationships.

Prenatal Psychology: History

Otto Rank became convinced that birthing trauma led to neurotic behavior. Wrote "The Trauma of Birth (1932)" and developed psychoanalysis around it.

Birth Without Violence (1975), by Frederick Leboyer became the basis of "Leboyer and Odent baths".

Prenatal Stimulation:

1. Prenatal stimulation enhances visual, auditory, and motor development.
2. Improves learning and growth. Babies tend to have higher intelligence and creativity.
3. Provides babies with early bond of trust and love.
4. Stimulated babies rate high on APGAR scores and have higher IQs.
5. Good head and general movement control. The infants show more alertness, confidence and peacefulness.

Brain Stimulation:

When the brain of a neonate is stimulated new neuronal connections are established.

This determines intelligence, social, and emotional skills of the child.

And has profound effects on human personality and aptitude.

Brain Development:

In fifth week after conception, the first synapses form (spinal cord). By the sixth week, first fetal movements are regulated by them.

Other movements limbs (8 weeks) and fingers (10 weeks), as well as some surprisingly coordinated actions (hiccupping, stretching, yawning, sucking, swallowing, grasping, and thumb-sucking) around 12 weeks.

Brain Development:
Most women sense the first fetal movements around 18 weeks of pregnancy.
The second trimester marks the onset of other critical reflexes like diaphragm and chest muscles and coordinated sucking and swallowing reflexes controlled by the brainstem.
Heart rate, breathing, and blood pressure then follow culminating in conscious experiences at the end of the third trimester

Other Family Members:
Siblings and grandparents are the next set of individuals that form close bonds with the prenatal and perinatal baby.
Younger siblings are more effective and form close bonds than older siblings. But the picture is complicated.
Likewise grandmothers (maternal) form closer bonds with the prenatal baby than other grandparents

Siblings:
An older sibling may have a difficult time with a new baby.

- Increases in whininess
- Sleeping difficulties
- Withdrawal
- Clinginess
- Aggressive behaviors

Sibling Rivalry:
Sibling rivalry is common among many cultures. Younger siblings (same gender) form competitive relations with the prenatal and postnatal baby.
Sibling rivalry is generally affected by parental attention, birth order and personality.
Freud suggested this rivalry was due to oedipal forces, sibling competed for the same parent.
Other biological and evolutionary causes include competition for resources.

Summary:
In this topic we looked at newborns with special interest in interpersonal processes that are formed and maintained with parents, caregivers, and siblings.
We also looked at variety of research that addresses physiological, psychological and social aspects of such bonds during early development and the field of prenatal and perinatal psychology.

Lesson 17

Infancy: Sensation, Perception and Learning

Physical Development of the Newborn

Overview

We will discuss birth of the child in this section, with special emphasis on premature birth and infant mortality due to a number of diseases that take place in infants.
The lecture will also look at brain and body development and early learning.
This brain-body development will include sensory and motor development.

Critical Questions

What kinds of infants are at risk when born? What do we understand by prematurity of birth and Infant mortality?
How does the body and the brain of an infant grows?
How do sensory and motor capabilities develop in the neonate?

What is Prematurity?

Normal gestational period of fetus is 280 day or 40 weeks (Normal range 38-42 weeks). A birth of a baby that takes place before 37 weeks of gestation is considered preterm and is generally premature.

Period	Second trimester									Third trimester																	
Week	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Term					Preterm																Normal					Post-Mature			

On or before 24 weeks the chances of survival are 50% for a fetus, because many organs of the body are not mature. A surviving neonate suffers from many health risks.

What is Prematurity?

Most organs in preterm births that occur between 34-37 weeks have optimal level of functioning, except the lungs. Lungs mature in the womb, and if not mature, the baby needs to be raised in a ventilator for lungs to mature.

It is generally said that preterm babies are premature and term babies are mature. In other words prematurity is inversely related to gestational age.

Prematurity and Health Problems

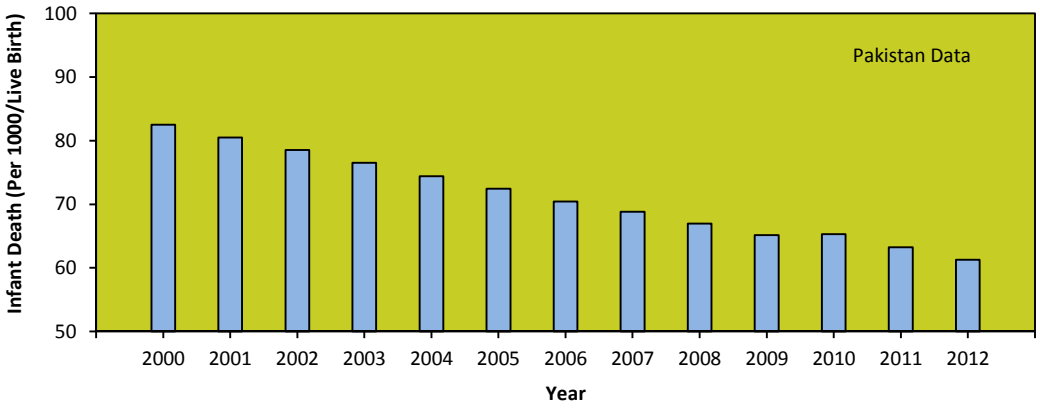
1. **Neurological Problems.** Many neurological problems including apnea, retinopathy, cerebral palsy and intra-ventricular and brain hemorrhage, white matter abnormalities causing language dysfunction are common in preterm babies. Preterm children are at a greater risk for having poor connectivity among many brain regions leading to a variety of learning disabilities.
2. **Cardiovascular and Respiratory Problems.** In preterm babies cardiac valve malfunction and chronic lung disease is common.
3. **Gastrointestinal and Metabolic Issues.** These issues include hypoglycemia, feeding difficulties, rickets of prematurity, hypocalcaemia, inguinal hernia, and necrotizing enterocolitis.
4. **Hematologic Complications.** Include anemia of prematurity, thrombocytopenia, and hyperbilirubinemia (jaundice) that can lead to kernicterus.
5. **Low Birth Weight.** Weight less than 3 ½ pounds (below the 10th percentile) at birth lead to greater

potential for health risks.

Infant Mortality

Preterm babies are at a greater risk of dying between birth and 1 year of age.
Infant mortality is related to:

- poor or absent prenatal care,
- teenage pregnancy,
- poor nutrition,
- risky health behaviors during pregnancy (drug abuse),
- higher rates of prematurity and
- low-birth weight births.

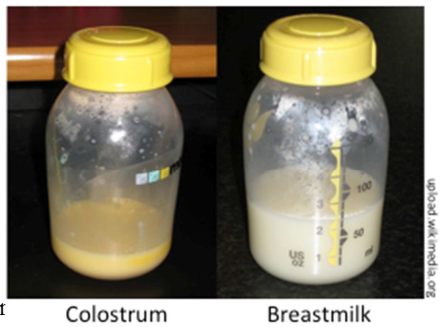


Prenatal Care

Access to and appropriate use of good-quality prenatal care (hospitals, neonatal nursing homes) results in healthier babies. Another important component of prenatal ca
mother's knowledge about prenatal care.

Feeding and Nutrition

Nearly all health officials agree that breast milk provides the best form of nutrition for most infants.
Colostrum – A thick, yellowish substance in breast mild containing important antibodies.
Babies who are breastfed are at a lower risk for a variety of conditions.


Colostrum Breastmilk

Thinking Critically

Think about any families you know that have young babies.
Are they feeding breast milk to their babies, or are they using infant form
What are the main factors that you think led to their choice?

Physical Growth
At birth, the average newborn weighs 7 ½ pounds.
Infants double their weight by the time they are 5 months.

The Nervous System
The brain and the spinal cord together form the central nervous system.
The nervous system gives rise to all of our thoughts, emotions, and behaviors.
The most complicated organ in the body, the brain is one of the first structures to form.
Neurons – are specialized cells that process information and allow communication in the nervous system.

The Nervous System

Major Structures in the Brain and Spinal Cord

The Nervous System
Synaptogenesis. One form of neuron maturation in which dendrites and axons branch out to form connections with neurons.
Myelination. A form of neuron maturation in which the fatty insulation grows around the axons.
Apoptosis. Programmed cell death. Process by which many neurons die during periods of migration and heavy synaptogensis.

Sleep Patterns
During the first month, newborns spend two-thirds of their time sleeping.
This pattern slowly changes to an adult pattern of sleep (8 hours) between 5-9 years of age.
Co-sleeping – In many cultures infants and young children sleep with one or both parents.
Sleeping with infants and children give caregivers rest and strength so that they can continue with their care when the infant or child wakes up.

Sensory Capabilities

Seeing (Vision)
How clear is their vision?
Visual acuity – the ability to see fine detail.
Researchers estimate that visual acuity in newborns is somewhere between 20/150 and 20/600, and reach 20/20 by 6 to 12 months.
Can they see different color?
Color vision is relatively mature by 6 months.
How deep is that drop? Early depth perception.
Depth perception is available by the time infants learn to crawl.

Hearing (Audition)
Even before birth, fetuses react to loud noises.
By 6 months of age infants respond to a broad range of sounds including rattles, voices, songs, and many other environmental noises.

Smell and Taste (Olfaction and Gustation)
Immediately after birth, their facial expressions show that newborns react to certain odors in a manner similar to adults.
They express pleasant facial expressions to sweet and fragrant smells and annoyance to putrid and burnt smells.
Similarly, infants show taste preferences immediately after birth, even before their first feedings. Like sweet, and dislike bitter tastants.

Motor Capabilities

Reflexes
Reflexes are involuntary movements that are elicited by environmental stimuli.
Rooting reflex. If you touch a newborn's cheek, the infant's head will turn in the direction of the touch.
Sucking Reflex. If anything touches an infant's lips, the infant automatically begins to suck.
Grasping Reflex. When an object touches an infant's palm; the baby's fingers will automatically wrap around the object and grip.

Voluntary Movements
Gross Motor Development. Process of coordinating movements with the large muscles in the body.
Fine Motor Development. Process of coordinating intricate movements with smaller muscles.
Proximodistal

- Palmar grasp
- Pincer grasp
- Tripod grasp
- Stepping reflex

Early Experiences
Parenting practices differ across cultures, infants in some cultures receive more vigorous physical stimulation than do babies in other cultures.

Toilet Training
Toilet training develops from an interaction of physical maturity, cognitive understanding, cues and feedback from the environment, and motivation.
Most toddlers gain voluntary control and coordination over the muscles that control their bladder and bowel movements by the time they are 18 to 24 months old.

Summary
We discussed birth of the child in this section, with special emphasis on premature birth and infant mortality due to a number of diseases that take place in infants.
We also looked at brain and body development and early learning.
This brain-body development include sensory, motor and other experiential developments.

Lesson 18

Infancy: Sensation, Perception and Learning

Sensory and Perceptual Capacities

Overview:

We will discuss early sensory and perceptual processes, especially the sense of touch and taste.
We will also include in our discussion intermodal processing, and explanation of intermodal processing.

Critical Questions:

What are some of the stages through which the individual passes to early in life?
What are some considerations we need to keep in mind with reference to normal and abnormal development in early life?

Infants' Sense of Touch:

- Newborn's reflex responses to touch on mouth, palms, soles, genitals
- Later, exploratory mouthing
- Pleasurable touch releases endorphins

Sensitive to pain

- Pain can affect later behavior.
- Relieve pain with anesthetics, sugar, gentle holding.

Taste and Smell:

- Infant prefers sweet tastes at birth and quickly learns to like new tastes.
- It has preferences of odors from birth and is affected by mother's diet during pregnancy
- Infant can also locate odors and identify mother by smell from birth.

Sense of Hearing

- Infant can hear a wide variety of sounds at birth
- Infant prefers complex sounds to pure tones.
- It learns sound patterns within days.
- It is sensitive to voices and biologically prepared to learn language

Developments in Hearing:

Four to Seven months	Sense of musical phrasing
Six to eight months	"Screen out" sounds from non-native languages. Recognize familiar words, natural phrasing in native language
Eight to nine months	Detect syllabus that often occur together in the same world.

Sense of Vision:

- Least developed of senses at birth
- Unable to see long distances, focus clearly
- Scan environment and try to track interesting objects
- Color vision improves in first two months.

Improvements in Vision:

- Brain development helps infants reach adult levels of vision.
- At 2 months, focus and color vision develops.
- At 6 months, acuity, scanning & tracking.

- At 6–7 months, depth perception.

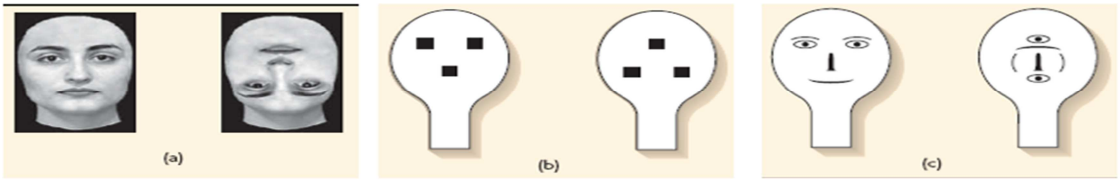
Stages in Depth Perception:

Birth to one month	Sensitivity to kinetic cues
Two to three months	Sensitivity to binocular cues
Five to twelve months	Sensitivity to pictorial cues, wariness of heights

Stages in Pattern Perception:

Three weeks	Poor contrast sensitivity and prefers large simple patterns
Two months	Can detect detail in complex patterns, scans internal features of patterns
Four months	Can detect patterns even if boundaries are not really present
Twelve months	Can detect objects even if two-thirds of drawing is missing

Face Perception:
Newborns prefer simple face-like objects (left in panel b) over the one on the right. This ability goes away in about 6-months.
Infants prefer regular face to a scrambled face (panel c).



Size Perception:
Infants by 1 week of age have the ability to perceive differences in size.

Object Unity:
Infants 2 months old can perceive object unity.

Stages in Intermodal Perception:

Birth	Largely amodal sensory perception
Three to four months	Prefer "matching" sights and sounds
Five to six months	Reach foe object in the dark, coordinating sight and touch

Differentiation Theory:
Differentiation theory proposes that infants search for *invariant* features of the environment.
And, note *stable relationships* between features, like visual patterns, intermodal relationships, etc.
Gradually detect finer and finer features. *Differentiation!*

Affordances:
Gibson (1966) proposed that individuals discovered invariant features of the environment by acting on it. The environment "affords" such features and makes actions future-oriented.

Summary:
We discussed sensory and perceptual processes, especially with reference to touch, smell and taste, hearing and vision. We also discussed amodal and Intermodal processing and its explanation.

Lesson 19

Brain, Body, Motor Skills and Sexual Maturation

Nervous System and Brain Development in Infancy

Overview

We will look at major milestones the development of the brain in the neonatal baby.
We will also discuss major functions of the brain as they emerge when the brain develops.

Critical Questions

Why should we study the brain? Why is this organ so important?
What should we understand about the brain as it develops?

Nervous System

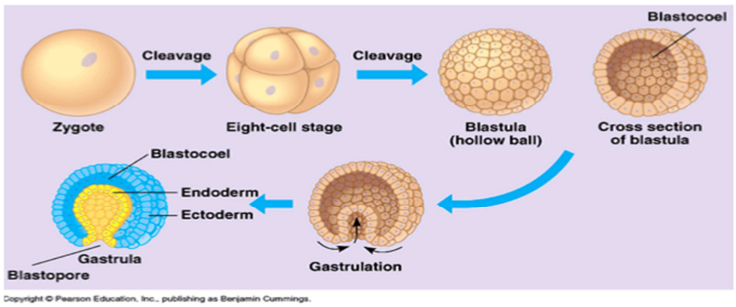
1. Nervous system is the most complicated piece of machinery in the universe, more complicated than a supercomputer.
2. Adult nervous system contains about a trillion of neurons, with many more neuronal connections.
3. The nervous system is divided into two parts, the central nervous system involved with higher brain functions and peripheral nervous system engaged in carrying out lower brain functions, like reflex actions.
4. Nervous system consists of neurons and glial cells. Neurons communicate within nervous system linking the outside and inside worlds.
5. Glial cells provide nutrition and support to neurons.

Neuronal Communication:

- Neurons communicate with one another using electrochemical messaging.
- They communicate with sensory organs and muscles and other organs in the body, to make the individual interact with the environment.
- Communication in neurons takes place in the form of action potentials and synaptic potentials.

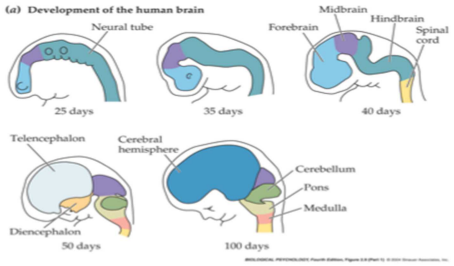
Embryonic Induction:

Embryonic induction leads to development of three layers in the embryo. Ectoderm results in forming the nervous system.



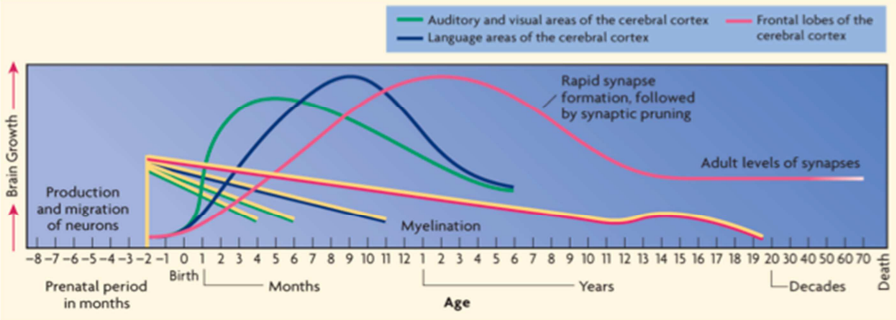
Brain Development:

The brain begins as a tube (neural) those balloons with development into separate compartments, forming different parts of the nervous system.

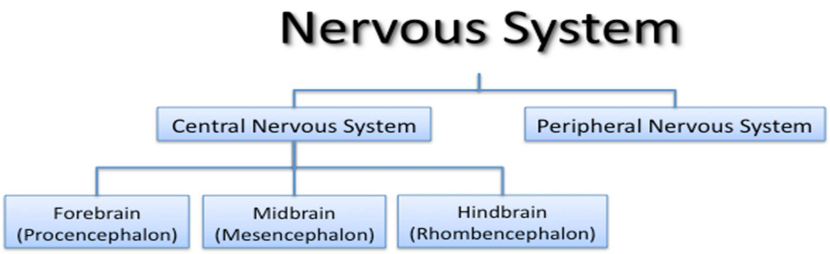


Brain Development: Milestones

The brain begins as a tube (neural) that balloon with development into separate compartments, forming different parts of the nervous system.

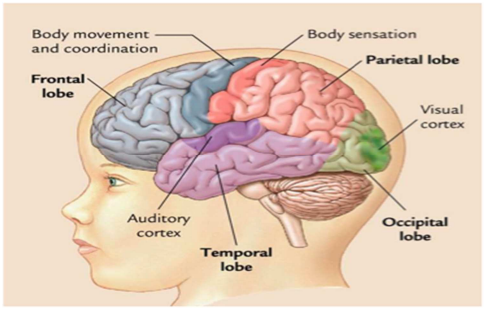


Nervous System:



Cerebral Cortex:

Each hemisphere of the cortex is divided into four lobes. Each lobe is responsible for specific sensory and motor functions.



Lateralization of Cerebral Cortex:

Left Hemisphere	Right hemisphere
Sensory information and control of right side of body	Sensory information and control of left side of body
Verbal abilities	Spatial abilities
Positive emotion	Negative emotion
Sequential, analytical processing	Holistic, integrative processing

Brain Plasticity:

- In infants and young children, parts of brain are not yet specialized.
- Recover better from brain injury.
- Language recovers better than spatial skills.
- Still have some problems with complex mental skills.

- Older children, even adults, have some plasticity in the brain.

Handedness:
Reflects dominant cerebral hemisphere
- Right-handed (90%) - left hemisphere
- Left-handed (10%) - both hemispheres

May be genetic basis, but affected by experience
- Position in uterus
- Practice

Few left-handers show developmental problems.
- Left hemisphere damage may link left-handedness & some mental problems

Brain Development: Sensitive Periods:
Stimulation is vital when brain is growing rapidly.
1. Experience-Expectant Growth: (Ordinary experiences "expected" by brain to grow normally).
2. Experience-Dependent Growth: (Additional growth as a result of specific learning experiences).

Summary:
We discussed major milestones the development of the brain in the neonatal baby.
We also talked about major functions of the brain as they emerge when the brain develops.

Lesson 20

Brain, Body, Motor Skills and Sexual Maturation

Nutrition, Physical Growth,
Sexual Maturation & Sleep Patterns

Overview:
We will look at major nutritional needs of the child and associated physical growth.
We will also take a look at sexual maturation.
Finally we will take a look at sleep patterns of the growing individual.

Critical Questions:
What is balanced nutrition for a growing child? How do cultures regulate this balanced nutrition for the growing child?
How does an individual become sexually mature? What are gender differences in sexual development?
How sleep patterns change in an individual? How has modern life affected sleep regulation?

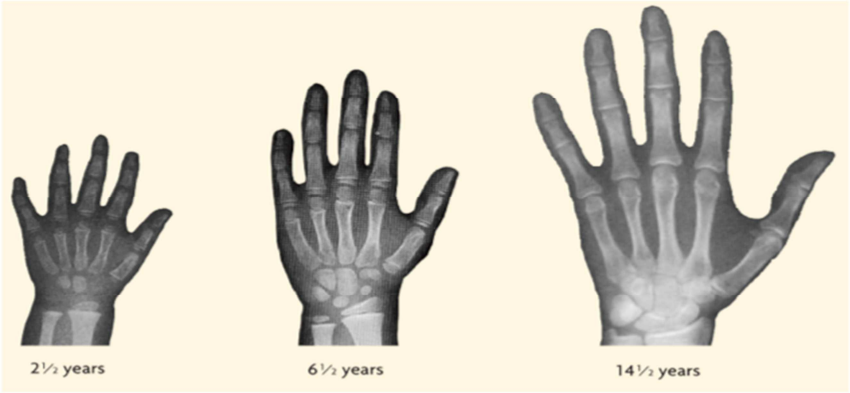
Allometric Development:
Body proportions change over development. An infant 15 months old has a bigger head size compared to the body than an adult.

Growth Curve: Gender Differences
Between ages 6-8 years boys grow faster than girls. This reverses between 10-14 years.
Finally boys after 14, attain higher greater height than girls.
Girls display growth spurt around 11 years and boys just before 14.

Fat-Muscle Makeup:

Period	Fat	Muscle
Birth/infancy	Fat peaks at 9 months in boys and girls. Girls have more fat than boys	Muscles are not added slowly
Childhood	From around age 8, girls add more fat on arms, legs, trunk and hips than boys	Muscles are added slowly
Adolescence	Girls continue to add fat but boys lose it	Boys add much more than girls

Skeletal Maturity:

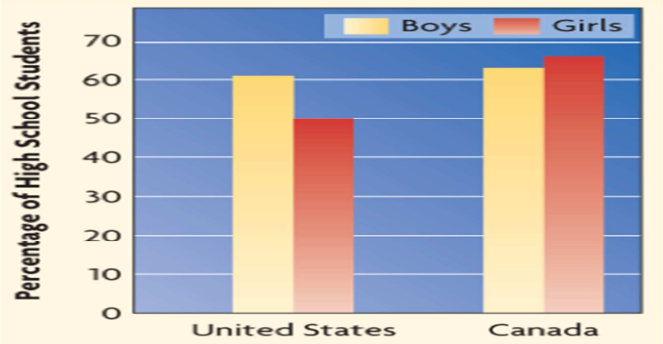


Motor Skills: Gender Differences:

1. Physical: During childhood, there are small differences across gender. During adolescence, boys develop more strength, speed, and endurance than girls.

2. Social: There is more athletic pressure on boys and may lead to more practice.

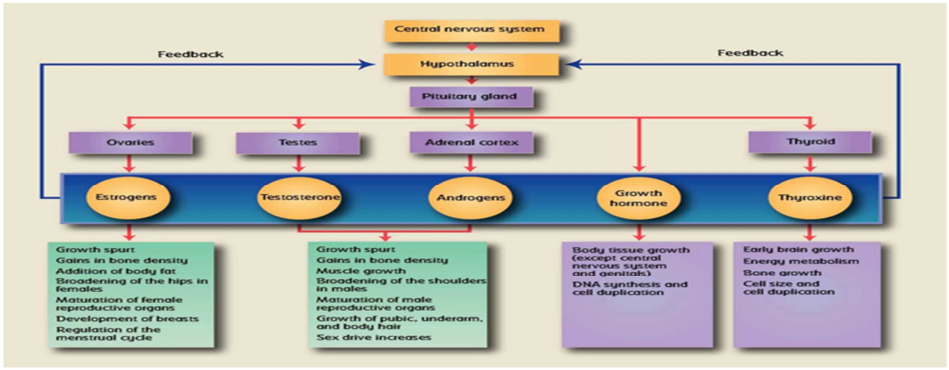
Sports Participation: Culture
Participation in sports differs across gender. In the US more boys than girls participate in sports. The opposite is true in Canada.



Benefits of Team Sports:
1. Regular physical activity.
2. Greater social competence, self-esteem.
3. Parents and coaches must emphasize
   - Effort
   - Improvement
   - Teamwork
   - *Not* competition

Hypothalamus & Pituitary Gland:
At the base of the brain there are two glands that regulate hormones. Among others these hormones regulate growth.

Hormonal Influences on Growth:



Hormonal Changes in Puberty:
1. Growth hormone & thyroxine increase around ages 8 to 9 years of age.
2. Estrogens (More in girls along with adrenal estrogens)
3. Androgens (More in boys, along with testosterone).

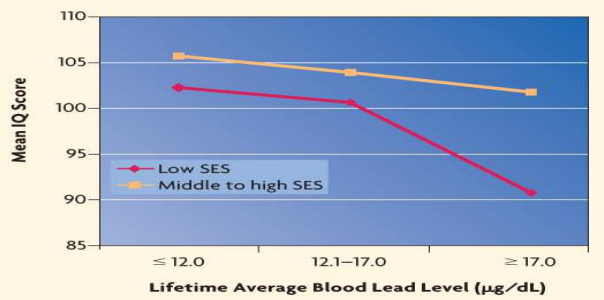
Worldwide Variations in Body Size:
1. Shortest children (South America, Asia, Pacific Islands, parts of Africa)
2. Tallest children (North & Central Europe, Australia, Canada, U.S.)

3. Also ethnic variations in *growth rate.*

Factors That Affect Physical Growth

1. Heredity.
2. Nutrition.
3. Infectious Diseases
4. Emotional Well-Being

Lead Exposure and Growth:



Benefits of Breastfeeding

- Correct fat-protein balance
- Nutritionally complete
- More digestible
- Better growth
- Disease protection
- Better jaw and tooth development
- Easier transition to solid food

Nutrition in Childhood

- Appetite becomes unpredictable
- Like familiar foods
- Need high-quality diet

Social environment influences food choices

- Imitate admired people
- Repeated exposure to foods
- Emotional climate, parental pressure
- Poverty

Nutrition Problems

- Little focus on eating
- Too few meals with family
- Not enough fruits and vegetables
- Too many fried foods and soft drinks
- Poverty and lack of nutritional food

Nutrition in Adolescence

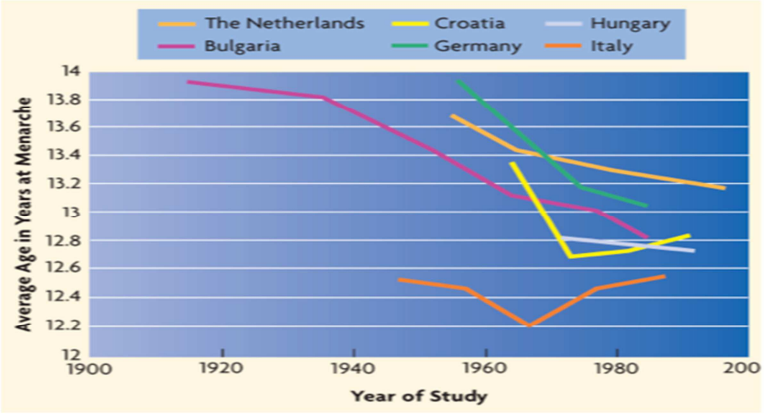
- Food intake increases.
- Poor food choices.
  Fewer fruits, vegetables, milk, breakfasts.
  More soda and high-fat fast food

- Iron, calcium, magnesium, vitamin B_2 deficiencies are common.
- More family meals are linked to healthier eating.

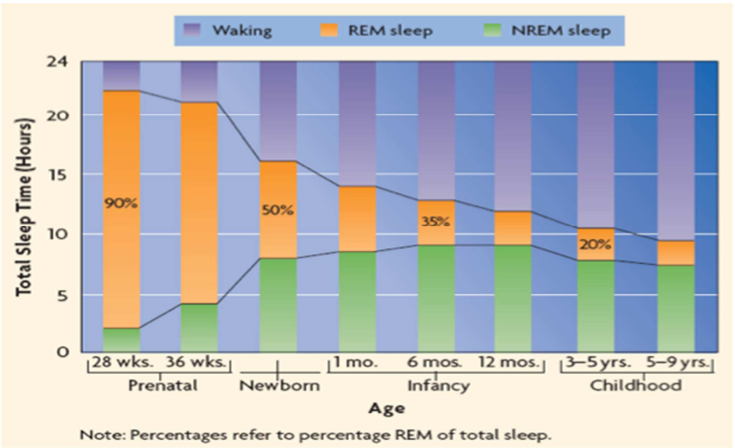
Malnutrition:

Types:	Consequences
Marasmus	Physical growth
Kwashiorkor	Growth and weight problems
Iron deficiency	Poor mo0tor development
Anemia	Learning. Attention problems
Food insecurity	Passivity, irritability, anxiety

Trends in Menarche:



Childhood Sleep Changes:



Summary:

We looked at major nutritional needs of the child and associated physical growth.
We also looked at sexual maturation.
Finally we looked at sleep patterns of the growing individual.

Lesson 21

Brain, Body, Motor Skills and Sexual Maturation

Being over or underweight and Obesity

Overview:

We will discuss being overweight and becoming obese.
We will discuss factors that lead to being overweight and obese, and the effects of being fat.
Finally we will take a look at being underweight and diseases associated with being underweight.

Critical Questions:

What are the causes and risks of being overweight and obese?
How are some developing nations moving towards these problems?
What are some of the diseases associated with being underweight?

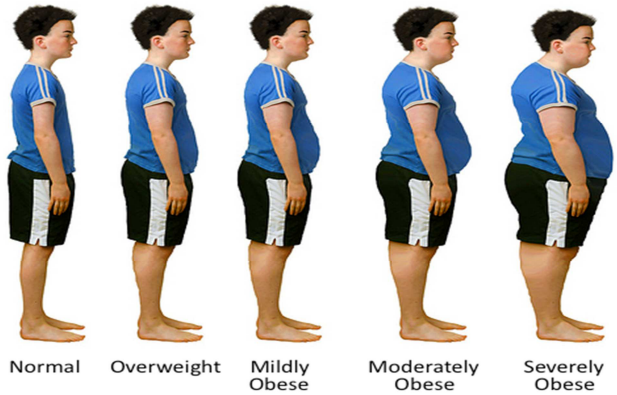
Definition:

Being overweight or being obese means an abnormal accumulation of body fat, usually 20% or more over individual ideal weight. We use body mass index (BMI) to measure to access weight issues.

Weight	BMI
Underweight	< 18.5
Normal	18.6 - 24.9
Overweight	25.0 – 29.9
Mildly Obese	30.0 – 34.9
Moderately Obese	35.0 – 39.9
Extremely Obese	> 40.0

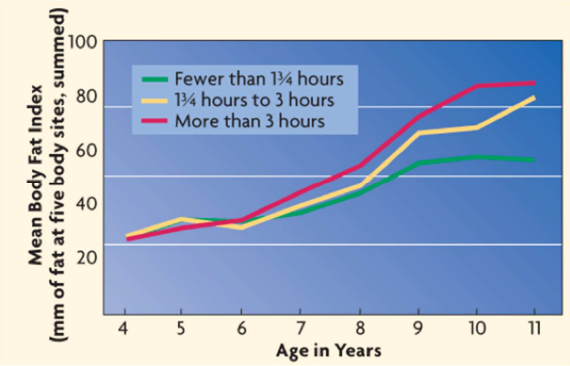
$$BMI = Weight\ (kg)/Height\ (m)^2$$

Categories:



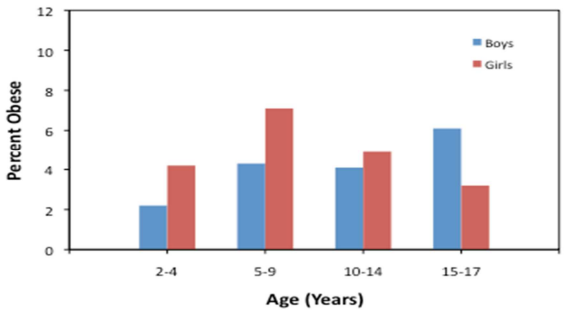
Causes:

- Genetics (Overweight parents)
- Gender (Women are more susceptible)
- Activity (Reduced; Televison).
- Socioeconomic Status (Poverty)
- Alcohol
- Smoking (Cessation)
- Prescribed Drugs (Tricyclics)
- Family and cultural eating habits
- TV Watching

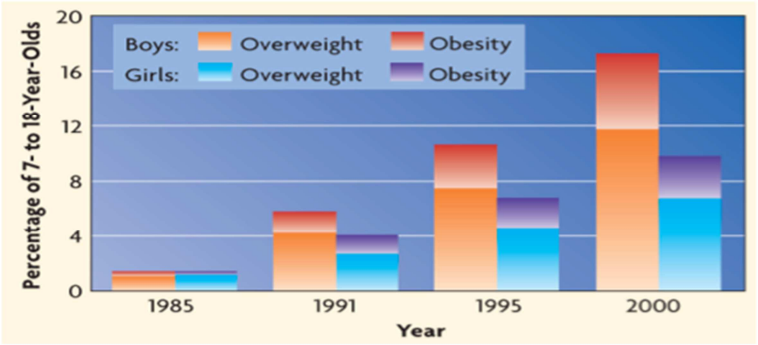


Cheeseburger
Size of the cheeseburger today has increased in calories (from 333 to 590 calories) over a 20-year period.

Obesity Across Gender:
The data below comes from Australia and depicts general trends in obesity in boys and girls across four age groups.

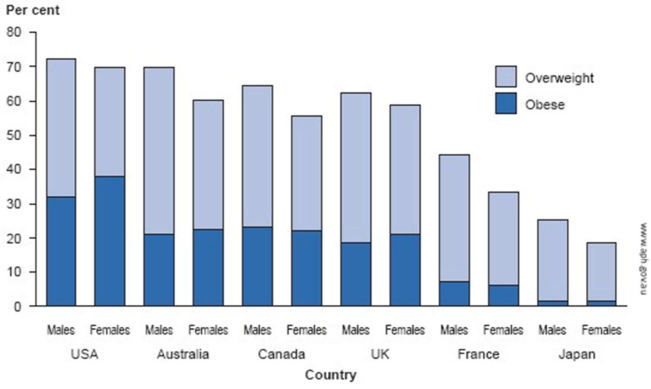


Overweight and Obese: China
The following data depicts overweight and obese children (7-18 years) in china. Boys tend to show greater obesity than girls.



Number of Obese (US)
The total number of obese in the US has steadily increased from 1980 to present times. It is expected to reach 45% by the year 2020.

Nation Comparison
See below for a comparison of being overweight or obese among many different nations of the world.



Health Risks

- Blood pressure, cholesterol
- Respiratory problems
- Diabetes
- Liver, gall bladder disease
- Sleep, digestive disorders
- Cancer
- Early death

Psychological & Social Consequences:

- Feeling unattractive
- Stereotyping
- Teasing, social isolation
- Depression
- Problem behaviors
- Less schooling, lower income, marriage problems

Underweight:

By definition an underweight individual is below 18.5 BMI.

Underweight Problems:

- A number of physical and mental diseases are associated with being underweight, e.g., hyperthyroidism, cancer, and tuberculosis.
- Women suffer from amenorrhea and osteoporosis.
- Anorexia nervosa.
- Increased mortality rate for the obese individuals

Anorexia Nervosa:

- An eating disorder in which the individual is afraid of gaining weight. Anorexia begins early in life around 9 -14 years and continues as the individual grows. It occurs in girls 10 times more than boys and can affect individuals of any race, SES or cultural background.
- Anorexia is never truly cured but to a great extent managed by medical assistance.
- Individuals with anorexia usually have a distorted body image.

Summary:

We looked at what is meant by being overweight and becoming obese.
We also discussed factors that lead to being overweight and obese, and the effects of being fat.
Finally we looked at being underweight and diseases associated with being underweight.

Lesson 22

Brain, Body, Motor Skills and Sexual Maturation

Need for Exercise, Play for growth and Security

Overview

We will look at the effect of exercise on growth and development of the child.
We will also study need for play during development.
And finally look at sense of security as the child grows into adulthood.

Critical Questions

Why does the growing child need exercise?
Why is play and games important during development?
And how are exercise, play and other factors lead to security in the individual?

Exercise

Exercise is any bodily activity that enhances physical fitness, health and wellbeing. Exercise during growth and development; promotes strength, improves cardiovascular, develops athletic skills and maintains appropriate body weight.

Kinds of Exercise

Exercise kinds are three:

1. Flexibility exercise
2. Aerobic exercise
3. Anaerobic exercise

Flexibility exercise largely consists of stretching.
Aerobic exercise includes, walking, running, hiking, swimming, tennis etc.
Anaerobic or resistance exercise consists of weight training, functional training, and sprinting. Though all kinds of exercises are recommended for children, and adolescents, however the intensity of exercise needs to be lower for younger children.

Exercise and Disease

Exercise improves physical skills and motor coordination during growth and development.
During development exercise can boost the immune system in the child.
This can prevent diseases like cardiovascular disease, type-2 diabetes and obesity.
Exercise can also prevent mental diseases like depression and maintain positive mental outlook on life.

Kinds of Play

1. Exploratory Play (rattles, squeeze toys).
2. Construction Play (blocks, model kits).
3. Pretend & Role Play (dolls, stuffed toys, cars).
4. Game & Activity Play (jigsaws, video games)
5. Sports & Recreational Play (tricycles, bicycles)
6. Media Play (Paint, paper, musical instruments).
7. Educational & Academic Play (books, educational software).

Exploratory Play

Rattlers and squeeze toys are used at an early age in the child's life (infancy). These toys make the infant learn elementary motor skills, interact with the environment and get better control over their senses.

Construction Play

At a slightly more advanced stage in infancy, the child can engage in construction play. In this play the infant or a growing child uses blocks and model kits to engage in creativity.

Pretend & Role Play

From a very young age the children start engaging in role or pretend playing. They become mommies and "doctors" to their dolls and play objects. Children learn roll playing, social interactions.

Game & Activity Play

Young children play games like jigsaw puzzles or video games to improve motor skills, eye hand coordination and interaction with others.

Sports & Recreational Play:
When children become older and a little stronger and are able to walk they start playing recreational games. Such play boosts their self-esteem and pleasure in achievement.


Media Play:
Painting, playing with musical instruments constitutes media play. Children learn and become creative in these play behaviors.

Educational & Academic Play:
Painting, playing with musical instruments constitutes media play. Children learn and become creative in these play behaviors.


Security:
Early in life children get their security from their parents and caregivers and then objects they find pleasure in. Soft cuddly blankets and pillows provide sense of security.
However when children become older and are more independent, they develop a sense of security about themselves.
Playing games and doing exercise requires them to become aware of their security issues.

Parental Security & Safeguards:
Even though relatively older children have a sense of security while playing or exercising, they still need parental supervision.
Parents need to know "where", "what" and "who" the child is with.
Children learn to close doors, windows etc. when home alone, developing a sense of security.
Around adolescent age children have a sense of security that is similar to adults.

Summary:
We looked at the effect of exercise on growth and development of the child.
We also studied need for play during development.
And finally look at sense of security as the child grows into adulthood.

Lesson 23

Emotional Development and Attachment

Emotions and Emotion Regulation

Overview

We will look at what emotions are, how do they develop in the growing individual.
We will also look at how emotions arise and are regulated.
And finally look at different theories of emotions.

Critical Questions

How do we define and understand emotions?
How do emotions develop in the growing child, and what are some of the basic emotions that exist across different cultures?
What are some of the theories that talk about emotional activation and regulation?

Emotion

Emotions are physiological and cognitive processes that involve rapid appraisal of situations that have personal significance; they energize behavior and prepare individual for action and come with facial expressions.

Functions of Emotions

1. ***Cognition:***
   - Lead to learning
   - Essential for survival
   - Can impair learning
2. ***Social:***
   - Affect behavior of others
   - Regulate one's own behavior
3. ***Health:***
   - Influence well-being, growth
   - Stress related to diseases

Appearance of Emotions

Happiness

- Smile (exists from birth)
- Social smile (6-10 weeks)
- Laugh (3-4 months)

Anger

- General distress (from birth)
- Anger (4-6 months)

Sadness

- Less common than anger
- Often a response to a disruption in caregiver-infant communication

Fear

- First fear (6-12 months)
- Stranger anxiety (8-12 months)

Universal Emotions

Experts believe there are six universal emotions that exist in all cultures and societies, these include: happiness, anger, sadness, fear, disgust, and surprise. All these emotions exist during early childhood and continue to express as the individual grows.

Early Childhood Fears

One of the most prominent emotions in young children is fear, which can result from a variety of objects, or thoughts, largely due to imagining monsters and ghosts; and being afraid of darkness. Children may also be fearful of going to preschool or childcare center and animals.

Self-Conscious Emotions

In children many emotions, including fear, can be triggered as an unconscious response, but there are other emotions which the child is conscious of and include, shame, guilt, embarrassment, pride, and envy. Such "self-conscious" emotions begin in children when they are about year and a half old. Experiencing these emotions requires children to be guided by adults.

Development of Emotional Self-Regulation

Infancy

- Develops over first year when brain develops
- Caregivers important

Early Childhood

- Learn strategies for self-regulation
- Personality affects ability
- Fears common

Middle Childhood-Adolescence

- Rapid gains
- Fears shaped by culture
- Coping skills lead to emotional self-efficacy

Coping Strategies

Generally people engage in two kinds of coping strategies to relieve their stress and tension. Problem-centered coping strategies work against

Problem Centered Coping	Emotion Centered Coping
Used when situation is seen as changeable	Used if problem centered coping does not work or the situation is seen as unchangeable
Identify the difficulty	Internal private control of distress
Decide what to do about it	

Emotional Display Rules

Cultures and religious doctrines can teach children to behave differently to emotional stimuli. A comparison between Hindu and Buddhist children shows large differences in expressing "anger" and being "okay" across emotionally charged situations. Buddhist children on average expressed less anger to Hindu children, considering them "okay" compared to Hindu children.

Understanding Emotions of Others

In early infancy, emotional contagion causes the infant to mimic facial expressions, vocalizations, postures, and movements of another person like mother or father and come together in an emotion way. As the child grows older (5-months or older) she starts to recognize emotional expressions in others and later on to socially reference situations around her based of evaluating an emotional response in others.

Cognitive Development & Emotional Understanding

As children age, they judge causes of emotions better, they can:

- Balance external and internal factors
- Recognize thinking & feeling are connected
- Consider conflicting cues
- Appreciate mixed emotions

Development of Empathy

- Newborns sense other babies' distress.
- Requires self-awareness.
- Increases over school years.
- Adolescents can empathize with general life conditions.

Theories of Emotion

Common-sense view of emotion, says when I see a fear-inducing stimulus (snake) I get afraid and start to tremble. James Lange Theory on the other hand suggests, that I tremble (physiological activity) first and become afraid. Cannon-Bard Theory suggests that I tremble and fell afraid about the same time. And finally, Schachter-Singer Theory says, I label my trembling as fear because I appraise the situation as fearful.

Summary

We looked at what emotions are, how do they develop in the growing individual.
We also looked at how emotions arise and are regulated.
And finally looked at different theories of emotions.

Lesson 24

Emotional Development and Attachment

Development, Nature and Quality of Attachment

Overview

We will look at attachment and that intimate bond that exists between the child and her caregiver.
We will also discuss different forms of attachments.
And finally look at theories of attachment.

Critical Questions

How do we define and understand human attachment?
How do animals and humans need attachment?
What are some of the theories that talk that explain attachment behavior?

Definition

Attachment is defined as an enduring emotional tie to a special person, characterized by a tendency to seek and maintain closeness, especially during times of stress.

Importance of Attachment

Attachment has deep-rooted implications for infant's sense of security. Investigators like Freud, Erikson, and behaviorists like Watson, described its impact on development.

Roots of Attachment Theory

Lorenz (1965) experimentally demonstrated that a ducking would follow a surrogate mother if it "imprints" to it during its sensitive period. John Bowlby applied the science of ethology largely developed by Lorenz, Tinbergen and von Frisch to infant attachment using principles behind imprinting. Attachment was based on evolution innate behaviors, in the infants, which initiated during sensitive period and were important in survival.

Roots of Attachment Theory

Roots of attachment theory are also based on seminal experiments carried out by Harry Harlow.
During sensitive period animals developed strong attachment to surrogate mothers that provided contact comfort.

Four Stages of Attachment Development

Birth - 6 weeks (Pre-attachment Phase).
Baby's innate signals attract caregiver and the caregivers remain close by when the baby responds positively.

Attachment in the Making

Between 6 wks to 8 months the infant develops a sense of trust that caregiver will respond when signaled. Infants respond more positively to familiar caregiver or parent. Babies don't protest when separated from parent.

Clear-cut Attachment

Between 8 to 24 months, babies display separation anxiety. Babies protest when parent leaves.

Reciprocal Relationship
Between 24 months to about 3 years, toddlers increase their understanding of symbols and language improves. Toddlers understand that parents will return.

Factors Affecting Attachment
1. Opportunity for attachment.
2. Quality of caregiving:
    - responds promptly and consistently
    - interactional synchrony – the sensitively tuned "emotional dance"
3. Infant characteristics:
    - infant's temperament, special needs, prematurity, or illnesses.
4. Family circumstances: Stress can undermine attachment.
5. Parents' internal working models:
    - Parents' own attachment experiences.
    - Parents' ability to accept their past.

Quality of Attachment
Mary Ainsworth designed the "strange situation" lab experiment with 8 different episodes of separation and reunion. Attached infant used mother as a secure base. And was soothed by the mother during the reunion. Established three forms of attachments.

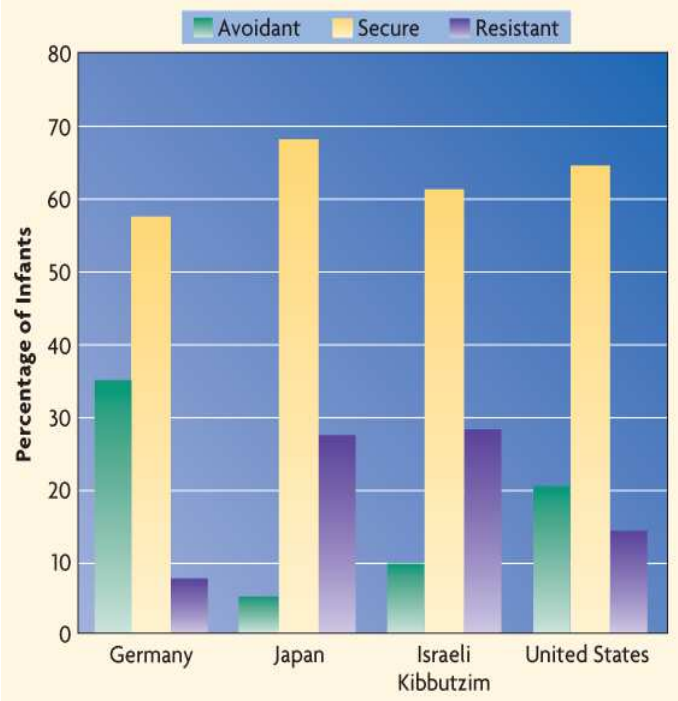
Secure Attachment
Uses caregiver as a secure base. May show distress at separation, but the baby can be soothed at reunion. Sixty to sixty-five percent of North American children can be categorized as securely attached.

Insecure-Avoidant Attachment
Unresponsive to parent when she is present. Not distressed by parting. Avoids or slow to greet parent on return. Twenty percent of North American children can be categorized to express insecure-avoidant attachment.

Insecure-Resistant Attachment
Infants remain close to parents and not eager to explore. Distressed by separation. During reunion, infants are both clingy, resistant and complain. Twelve percent of North American children can be categorized as insecure-resistant.

Disoriented Attachment
No coherent strategy for handling separations or reunions. Baby looks dazed and confused. Five to ten percent of North American children can be put into this category.

Cultural Variations



Summary

We looked at attachment and that intimate bond that exists between the child and her caregiver.
We also discussed different forms of attachments.
And finally looked at theories of attachment.

Lorenz, K. (1965). *Evolution and Modification of Behaviour*. University of Chicago Press: Chicago.

Lesson 25

Emotional Development and Attachment

Theories of Adolescent Emotional Maturation

Overview

We will describe early theories of emotional development in children and also look at more modern theories of emotional development.
We will specifically discuss Hall, Sullivan and Erickson theories.
And other more recent theories with regards to emotional development.

Critical Questions

How have different thinkers theorized development of emotions in children?
What similarities and differences exist between these theories?

George Stanley Hall

G. S. Hall and his student Arnold Gesell worked on defining child emotional development in *Darwinian* terms. They collected normative data on children emotions and behavior for the first time and argued that this methodology was best in doing so. Hall argued that development in the child mimics human history in evolutionary terms. He conceived of human development consisted to two land marks pre- and post-adolescence. Pre-adolescence was a savage stage marked with instinctive behaviors, and individual did not need any training based on reasoning or logic.
During adolescence, the individual went through what he called storm and stress, with three major aspects:

- conflict with parents
- mood disruptions, and
- risky behavior

Wrote: *Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime and Religion (1904) and Aspects of Child Life and Education (1921).*

Harry Stack Sullivan

Sullivan had his deep-rooted training in psychoanalysis, but emphasized interaction the individual had with others in forming personality or developing conflicts. Established the field of social psychiatry.
Talked about three modes of interactive experiences:

- prototaxic (momentary knowledge, very vague),
- parataxic (diversified experience not logically connected)
- and syntaxic ('consensually validated' meaning of language).

Stages of development:

- Infancy (birth-language appearance, uncommunicative)
- Childhood (articulate sounds-need for playmates)
- Juvenile Era (early school-need for an intimate relation)
- Preadolescence (brief period of genital sexuality)
- Adolescence (Stage of sexual activity)
- Late Adolescence (era of partially developed personality)
- Adulthood (relationships of love for some other person)

Erick Erickson

Like Sullivan, Erickson was also affected by psychoanalysis. He accepted many of Freudian theories, but rejected his over emphasis on sexuality. Also suggested that personality continues to develop beyond 5 years.

Erikson's Psychosocial Stages

Birth-1 year	Basic trust vs. mistrust
1-3 years	Autonomy vs. shame and doubt
3-6 years	Initiative vs. guilt
6-11 years	Industry vs. inferiority
Adolescence	Identity vs. identity confusion
Emerging Adulthood	Intimacy vs. isolation
Adulthood	Generativity vs. stagnation
Old Age	Integrity vs. despair

Differential Emotions Theory

Ekman and Izard (1960s) suggest basic emotions like sadness, surprise, disgust, fear, happiness and anger are innate and universal.

Evidence comes from cross-cultural studies, where people of different cultures judge the above emotions based on facial expression as similar.

Where Izard thinks that facial expressions are directly linked with physiological state of emotions, Ekman thinks maybe indirectly. Izard argues that emotional expression is developmentally innate. Babies express emotions of disgust when tasting something bitter, and smile in sleep even in mother's womb.

Saarni & Campos (2008) argue emotions in younger individuals may not express meaningfully in appropriate contexts.

Genetic Explanations

MZ twins are more similar in when they begin to smile and how often they smile (sociability), and feel fear of strangers and general fearfulness (behavioral inhibition) than DZ twins. Stranger distress occurs at same age in all cultures regardless of childrearing practices.

Separation Protest (infant's distress at being separated from mother, comes at about 6 months to 39 months) also occurs in all cultures at about the same time. Similarly, performance anxiety occurs around 18-24 mos. Concerned about being evaluated (Shame, embarrassment and guilt would be typical emotions).

Cognitive Explanations

In an unfamiliar event the infant develops tension and responds by with cognitive effort to master the meaning of the event; when the infant is successful, tension is released and he smiles. Context effects in fear of stranger can be explained by increasing cognitive sophistication, e.g., how close the mother is, whether the stranger is smiling or sober.

Functionalist Perspective

Functionalist perspective combines cognitive and learning explanations. Emotions (hope, joy, frustration, anger, and fear) are linked to goals. Some goals are innate: Baby wanting to be near mother, and some are learned, like wanting a new car.

Emotions are also linked to establishing and maintaining social relationships.

Summary

We described early theories of emotional development in children and also look at more modern theories of emotional development.

We specifically discussed Hall, Sullivan and Erickson theories of emotional development.

And other more recent theories with regards to emotional development.

Lesson 26

Emotional Development and Attachment

Resilience and Coping with Traumatic Experiences

Overview

We will identify and define concepts related to trauma, stress, coping, and resilience.
Understand the nature of coping and resilience processes, and differentiate culturally-based key aspects of coping and resilience.
Discuss coping and resilience issues specific to children and youth exposed to traumatic events.

Critical Questions

What is the nature of trauma, coping and resilience?
How do children face trauma, cope and become resilient to events in their lives?

Trauma

Trauma is a Greek word that literally means "a wound". We can divide trauma into many kinds: All kinds of traumatic events, whether they are physically debilitating or not, result in stress. Stress is defined as the effect of anything in life to which one must adjust.
Stressor: Reason that causes stress.
Stress Capacity and Load: The amount of stress a person can carry, and the amount, or quantity, of stress a person has in their lives.

Types of Stress Reaction

- Physiological.
- Emotional.
- Cognitive.
- Behavioral.

Reaction to Stress

Reaction to stress may vary by age, developmental maturity, and experience. Children's reactions are likely to vary by stage of recovery.

Reactions to Stress in Children 1-5 Years old

Helplessness and Passivity
Generalized fear
Heightened arousal
Cognitive confusion
Difficulty talking about event
Sleep disturbance
Separation fears/clinging

Reactions to Stress in Children 6-11 Years old

Feelings of responsibility-guilt
Traumatic play and retelling
Sleep disturbance
Anger/aggression
Change in behavior, mood, personality
Somatic symptoms
Fear and anxiety

Reactions to Stress in Children 12-18 Years old

Self-consciousness
Life-threatening reenactment
Abrupt shift in relationships

Depression
Social withdrawal
Sleep/eating disturbances

Coping
Constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person (Folkman & Lazarus, 1984).

Coping Strategies
Biological – fight or flight
Cognitive – how we think about the situation
Behavioral – behavioral responses related to our thinking
Learned – strategies learned from observation
Intentioned – voluntary/involuntary

Model of Stress and Coping: Lazarus
Lazarus and his colleagues proposed a model of stress divided up in three stages or sequences. In the first stage antecedent conditions like individual goals, goal hierarchies, beliefs about oneself, belief about the world, and personal resources determine how stress would ensue. These also include environmental factors like harms-losses, threats-challenges, and costs-benefits. When confronted with a stressful event, the individual then goes through processes like appraisal, person-environment relationships, reflect on relational meaning, and reappraise the event. Finally the stress leads to outcomes, like emotions, morale, functioning, and health. To summarize:

1. Stressful experiences are construed as person-environment transactions.
2. Transactions depend on the impact of the external stressor.
3. Impact is mediated individual/environmental antecedents, by the person's repeated appraisal of the stressor, and coping responses.
4. The system changes from moment to moment.

Emotion Focused Coping
Emotional coping efforts are directed toward regulating emotional states. So the individual can engage in:

- Denial/avoidance
- Distraction or minimization
- Wishful thinking
- Self-control of feelings
- Seeking meaning
- Self-blame
- Expressing/sharing feelings

Problem Focused Coping
On the other hand problem-focused coping directs its efforts to act on the source of stress to change the person, the environment, or the relationship between the two:

- Planned problem solving
- Confrontation

Development and Coping
Usually during development,

1. Emotion-focused coping increases with age.
2. For problem-focused coping there are mixed findings, and are based on the individuals solving skills. People who tend to have better solving skill will engage in problem-solving coping.
3. Negative appraisal varies in dimensionality.
4. As age progress people become physically and cognitively avoidant to stressful events.

Coping and Culture

The culture has a great effect on how an individual copes with the stressful event. Individualistic cultures promote problem-focused coping more than emotional-focused coping as opposed to collectivist cultures. There are large differences between Western and Eastern cultures, for many Western cultures are individualistic and Eastern collectivistic. In collectivistic cultures, we find more of the following than in individualistic cultures:

- Family support
- Respect for authority figures
- Intra-cultural coping
- Relational universality
- Forbearance
- Social activity

Resilience

Resilience in children is largely dependent upon a number of factors. So in one condition, children may demonstrate resilience at one point in life and not at another, or may demonstrate resilience only in some aspects of life. What determines this? Masten & Obradovic (2006) propose a pattern of positive adaptation in the context of past or present adversity (trauma, stress).

Resilience: Child Characteristics

Which children are more likely to express resilience compared to others? The experts in the field of child development suggest the following seven characteristics:

1. Social/adaptable temperament
2. Strong cognitive abilities
3. Effective emotional and behavioral regulation strategies
4. Positive view of self
5. Positive outlook
6. Faith/sense of meaning in life
7. Characteristics valued by society and self (talents, humor, appearance)

Resilience: Family Characteristics

1. Individual resilience is best understood and fostered in the context of the family and larger social world, as a mutual interaction of individual, family, socio-cultural, and institutional influences.
2. Crisis events and persistent stresses affect the whole family, posing risks not only for individual dysfunction, but also for relational conflict and family breakdown.

Family Resilience

1. Family processes and mediates the impact of stress for the growing child and relationships.
2. Protective processes foster resilience in children by buffering stress and facilitating adaptation.
3. Maladaptive responses increase vulnerability and risks for the growing child and her relational distress.
4. All children and families have the potential for greater resilience.

Aspects of Family Resilience

1. Family Belief System

• Making meaning of adversity – sense of coherence
• Positive outlook
• Transcendence and spirituality

2. Organizational Patterns

• Flexibility – Capacity for change
• Connectedness/Cohesion – emotional/structural bonding
• Social and economic resources – Extended networks

3. Communication Processes

• Clarity – clear communication
• Open emotional expression – trust, emotional interaction,

• Collaborative problem solving – conflict management

Resilience: Family Correlates

1. Stable/supportive home environment
2. Parents involved in child's education and activities
3. Parents have same characteristics as child resilience correlates
4. Socioeconomic advantages
5. Postsecondary education of parents
6. Faith and religious affiliations

Summary

We identified and defined concepts related to trauma, stress, coping, and resilience.
We also discussed the nature of coping and resilience processes, and differentiates culturally-based key aspects of coping and resilience.
Finally discussed coping and resilience issues specific to children and youth exposed to traumatic events.

Reference

Masten, A. S., & J. Obradovic. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences, 1094*, 13-27.

Lesson 27

Language and Communication

Theories of Language Development

Overview

We will discuss three theories of language development in humans. The three theories are based on empiricist, nativist, and interactionist perspectives.
Understand the difficulties and problems these theories have.
Talk briefly about the nature of communication in animals.

Critical Questions

What is the nature of language and how it is acquired?
How does language help humans form social and emotional bonds?

Theories of Language Development

Empiricists: Children learn language through operant conditioning (reinforcement and imitation)
Nativists: Language Acquisition Device (LAD) biologically prepares infants to learn rules of language through universal grammar.
Interactionists: Inner capacities and environment work together to make children learn language; social context is important.

Empiricist Perspective

Behaviorists take the empiricist's view on enplaning how we learn or develop a language. They argue that imitation, reinforcement and correction are responsible for learning any language.

Verbal Behavior

So like any other behavior language is also a behavior, verbal behavior and consists of speaking, listening, writing and reading behaviors. These behaviors are governed by antecedent conditions (stimuli), and consequences (reinforcements). As the child grows through development, she or he processes a number of different kinds of verbal behaviors, e.g.,

Types of Verbal Behavior

Mand (from demand or command): A listening or talking behavior. The child listens to a command (mand) given by an adult and is aptly reinforced. The child may also request (mand) something and is reinforced with the object of request.
Echoic Behavior: A talking behavior. A word or a sentence repeated verbatim. Can be loud or silent as in reading. The adult says "cookies" (stimulus) the child echoes the word (behavior) and gets a smile (reinforcement).
Tact: A talking behavior. A verbal behavior, in which individuals correctly names or identifies (tact) objects (stimuli) and the other individuals reinforce them for a correct match.
Autoclitic Behavior: A talking behavior. This behavior (autoclitic) occurs when a question (stimulus) is posed. The answer to the question is followed by reinforcement (praise). Also called intra-verbal behavior.

Summary of Verbal Behavior

Type	Antecedent (A)	Behavior (B)	Consequence (C)
Mand	State of deprivation or aversive stimulation	Verbal utterance	Reinforce that reduces state of deprivation
Echoic	Verbal utterance from another individual	Repetition of what the speaker says	Conditioned reinforcement (praise) from the another person
Tact	Stimulus (usually object) in the environment	Verbal utterance naming or referring to the object	Conditioned reinforcement from another person
Autoclitic	Verbal utterance (often a question) from another person	Verbal response (answer to a question)	Verbal feedback or reinforcement

Criticisms of Behaviorist's Ideas

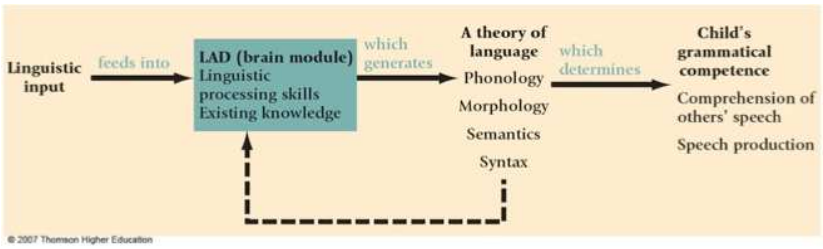
Behaviorism does not explain all behaviors including language (verbal behavior). Language is not learnt through imitation; otherwise we would need to learn infinite number of sentences to communicate. Despite reinforcing ungrammatical sentences children learn correct grammar.

Nativist Perspective

Noam Chomsky, who argued that humans are biologically programmed to acquire language, largely fueled criticisms on behaviorist's ideas about language learning. Chomsky suggested that humans possess a language acquisition device (LAD), which is activated by verbal input (Chomsky, 1986). Chomsky talks about universal grammar – a set of common of rules used universally by all in their respective languages. Similar ideas are also proposed by Slobin (1985), who proposes Language-Making Capacity (LMC) as a nativist viewpoint of language acquisition.

Model

Below see a proposed model of language acquisition as envisioned by nativist.



Support

- Presence of linguistic universals
- Language is species specific.
- Brain specialization and language (modular)
- Broca's area – speech production
- Wernicke's area – speech comprehension
- Sensitive-Period Hypothesis – language most easily acquired - birth to puberty

Sensitive-Period Hypothesis

- Criticisms to Nativists Ideas
- Other species show auditory discrimination early in life.
- Doesn't explain language development.
- Overlooked the role of the environment

Interactionist Perspective

- Humans are biologically and cognitively prepared to acquire language:
- Gradually maturing nervous system, develop similar ideas at same age.
- Biological maturation affects cognitive development, affecting language.

Language: Cognitive Effects

Grammatical complexity increases as a function of the size of children's productive vocabulary.

Support

- Language is a means of communicating. Requires using language not mere exposure.
- Lessons from joint activities
- Conversations require taking turns
- Lessons from Child-Directed Speech

- Short, simple sentences (motherese) become more complex with language development
- Respond to ungrammatical speech
- Expansion – corrected and enriched version
- Recast – new grammatical forms

Animals & Language

Animals possess the ability to use sound and gestural signals to communicate. Insects like bees, and mammals like non-human primates use nonverbal signals to communicate with one another.

Can Animals Learn a Language?

Hayes and Hayes (1951) tried to make chimpanzees to speak, however discovered that chimps do not have vocal apparatus like humans to make speech like verbalizations.

Gardner and Gardner (1969) used American Sign Language (ASL) to train a chimp named Washoe, who learnt 160 signs.

Savage-Rumbaugh (1991) trained bonobo pygmy chimpanzees (Kanzi and Panbanisha) to touch geometric symbols on a computer to learn a language.

Kanzi is regarded as the first ape to demonstrate real comprehension of spoken speech. Today, his vocabulary includes more than 500 words! His comprehension of spoken language is at least equivalent to that of a two-and-a-half-year-old child.

Summary

We discussed three theories of language development in humans. The three theories were based on empiricist, nativist, and interactionist perspectives.

Understood the difficulties and problems these theories have.

And talked briefly about the nature of communication in animals.

References

Chomsky, N. (1986). Knowledge of Language: Its Nature, Origin, and Use. New York: Praeger.

Slobin, D. (1985). Crosslinguistic evidence for the language-making capacity' in D. Slobin (ed.): The Crosslinguistic Study of Language Acquisition. Vol. 2: Theoretical Issues. Hillsdale, NJ: Lawrence Erlbaum.

Lesson 28

Language and Communication

Social and Creative Uses of Language

Overview

Understand the social aspects of language during development.
Relate how growing children learn language.
How simpler forms of language become more complicated and sophisticated.

Critical Questions

Why does language learning becomes more sophisticated with growth of the individual?
What aspects of language are learnt earlier and which ones later in life?

Receptivity to Language

Newborns are sensitive to speech delivered by the mother called motherese. Motherese consists of non-linguistic and linguistic speech sounds to which the infant pays attention. The infant begins to recognize and respond to phonetic speech sounds called categorical speech, i.e., acoustical speech is mapped on to phonetic categories that make it possible to start forming syllables and words.
Infants at this young age (7 months or so) also start using statistical analysis (rule-learning) for sentences and use algebraic formulations in paying attention the structure of the sentence. During infancy, parents or caregivers focus on child-directed speech (like motherese). This speech, because of number of reasons, works as a stepping-stone for children learning their language.

First Speech Sounds

- Cooing - 2 months (Vowel sounds)
- Babbling - 4 months
- Consonants & vowels
- Universal timing
- Range expands

Becoming a Communicator

Joint attention (infants readiness to communicate depends on parental and infant's joint attention)
Give-and-take (Game play that involves give and take initiates language learning)
Preverbal gestures
Protodeclarative acts include eye contact or gestures made by the infant to coordinated attention with a social partner. On the other hand, protoimperative acts use eye contact or gestures to elicit obtaining an object or modifying an event (Nichol, Martin & Fox, 2005).
Word-gesture combinations. In infancy gestures and words combine to regulate language milieu.

Deaf Children

Deaf children who have hearing parents who are not fluent in sign language show delays in development of language and make-believe play.
Deaf children of deaf parents do not have the same difficulty.
Deaf children need access to deaf adults and peers to experience natural language learning.

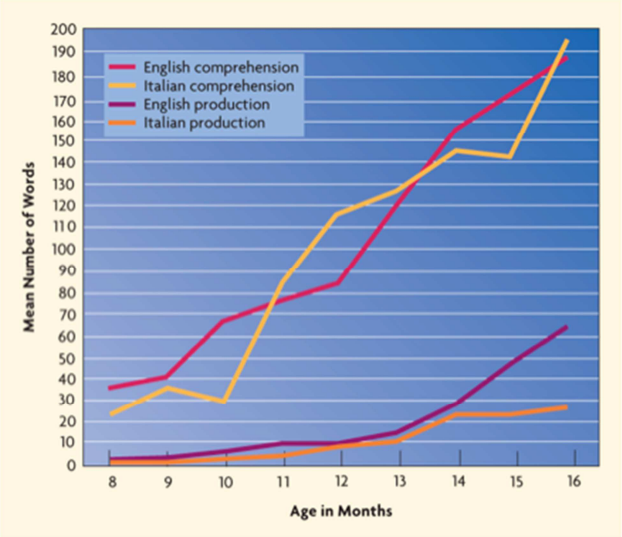
Phonological Development

Early Phase
First words – infants can only pronounce few sounds
Related to semantic development – these sounds are precursors of meaning
Understand more than can say – infants understand more about what is spoken to them than they can say it.
Phonological Strategies
Later development
Refine syllable stress patterns - related to meaning

Phonological Progress
Minimal Words – small length words are learnt first
Add ending consonant – from words that end in vowels (like ba), growing children learn to say words that end in consonants (like bat).
Adjust vowel length – learn to lengthen or shorten vowel length.
Add unstressed syllables – also learn to stress certain syllables in words.
Produce full word, correct stress pattern – and finally learn to say the word correctly. May still need to refine sounds

Early Semantic Development
Comprehension before production (there is a 5 month lag between the two)
First words linked to cognition and emotions.
Vocabulary spurt 18-24 months
Fast-mapping – young children learn to associate (map) and object in environment to word that

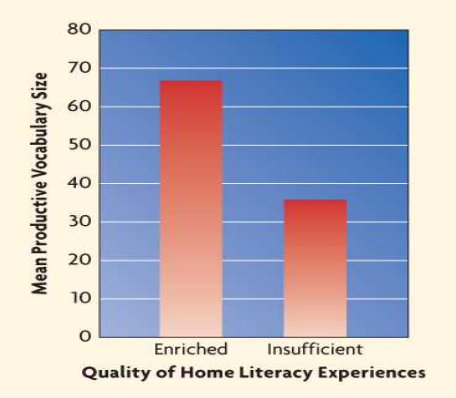
Comprehension & Production
The figure below shows that both learners of English and Italian steadily increase their comprehension of language over a period of 16 months, while producing language takes longer.



Individual Differences in Language Development
The following factors are important in learning a language during development:

- Gender
- Temperament
- Language environment
- Language Style
- Referential
- Expressive

Home Literacy
Relationship of quality of home literacy experiences to productive vocabulary at two years of age.



Types of Early Words

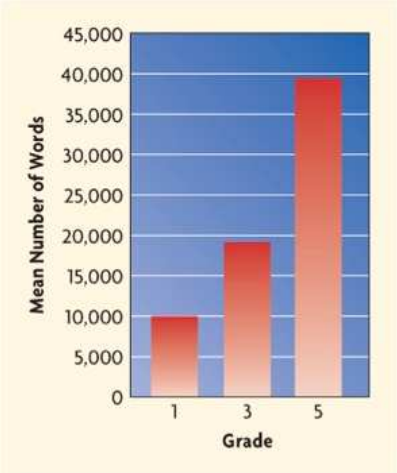
Object vs. Action	• More objects than actions • Objects are easier concepts • Parents rarely name verbs • Influence by culture and language
State	• Modifiers or labels for attributes-size, color, possession • Learn general distinctions before specific

Semantic Development: Preschoolers

- Underextensions
- Overextensions
- Word coinages
- Metaphors

Semantic Development: Elementary School

- Big vocabulary increase
- Fast-mapping continues
- Analyze word structure
- Use words precisely, understand multiple meanings - metaphors, puns



Semantic Development: Adolescence

During adolescence the following are added to language:

- Abstract terms
- Sarcasm, irony
- Figurative language
- Proverbs

Semantic Development: Factors

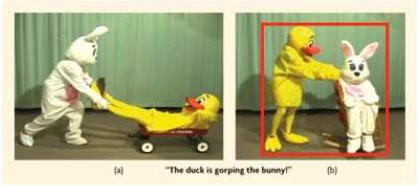
So what are some of the factors that lead children and adolescents to develop their language absorbing meaning (semantics) of what is said? Among many factors the following are a few:
Adult feedback (how adults use or communicate back with meaningfulness).
Cognitive processing (How does working memory-phonological store works to process meaningfulness).
Strategies improve meaningfulness in language when children use lexical contrast (night-day), mutual exclusivity bias, where words can be learnt by disambiguation, correction, rejection and restriction of newly learnt words (Merriman & Bowman, 1989). Syntactic bootstrapping, when children learn an unfamiliar verb, by using extra-linguistic context, and social information, that makes children learn the meaning of words provided by social interaction.

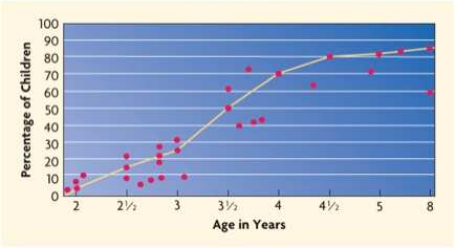
Early Grammatical Development

- Telegraphic speech (2-word combinations)
- Simple sentences
- 3 words
- Follow adult rules piecemeal, gradually refine and generalize

Subject-Verb-Object Order

Children younger than 4 years cannot put subject-verb-object order correctly. So in the picture below, majority of three-year olds think that the sentence "The duck is groping the bunny" is depicted by picture a, than by picture b. It is not before 4 years of age that these children start making or using the correct order.





Development of Grammatical Morphemes

Structural complexity affects the order as it is acquired. If the structure of the sentence has complex order, children take longer to learn and use it. One difficulty for these children comes from learning grammatical morphemes, which may transform words from one tense to another (e.g., walk to walked). That is why children use overregulation, i.e., applying rules without appropriate exceptions. It is not uncommon to observe a child who has learnt the past tense of a verb walk(ed) may use an inappropriate form of the verb hit as hitted.

Pragmatic Development

Two-year-olds can have effective conversations with their peers and adults, displaying social rules of interaction. During early childhood they learn when to turn the conversation over to another person (turnabout). By middle childhood, children understand the intention behind the speaker's narrative, even though she may be saying

something different on the surface (Illocutionary knowledge). At this stage of development children begin to understand shades (shading) of difference in interactive conversation.

Pragmatic Development: Enhancement
Adult interactions in conversations and shared reading (dialogues about stories from books or otherwise) enhance social (pragmatic) aspects of language; siblings and peers aid this enhancement.

Narrative Skills

- Leapfrog narratives – 4 years (Few evaluations)
- Chronological narratives – 4½ to 5 years
- Classical narratives – 6 years
- Narrative styles learned from adults
- Topic-associating style
- Haiku style

Speech Registers

- Social routines
- Polite language
- Children sensitive to speech registers early - 4-7 years
- Important to social acceptance

Metalinguistic Awareness

- Ability to think about language as a system
- 4- and 5-year-olds have early understanding
- Flowers in middle childhood
- Phonological awareness
- Associated with reading success
- Advanced in bilingual children

Summary
We discussed the social and creative aspects of language during development.
Discussed how growing children learn language.
How simpler forms of language became more complicated and sophisticated.

References
Nichols, K. T., Martin, J. N., & Fox, N. A. (2005). Individual differences in the development of social communication: joint attention and temperament. Cognition, Brain, Behavior, 9(3), 317-328.

Merriman W, E., & Bowman L, L. (1989). The mutual exclusivity bias in children's word learning. Monographs of The Society For Research In Child Development, 54(3-4), I-132.

Lesson 29

Language and Communication

Nature of Language and Thought in Infancy

Overview

In this topic we will focus on language and thought processes in the infant.
We will try and relate language processes that take place within the first two years of life and
Also discuss thought processes that take place in this period.

Critical Questions

What so unique about language in the first two years of life?
What sort of thinking takes place in the infant during this period?

Prenatal Life: Prosody

Fetuses appear to be sensitive to prosody of language (rhythm, tempo, intonational patterns).
Variations prosody becomes the basis of differences in languages, and that is why speakers of the same language can sound so distinct.

Infant Directed Talk

Infant Directed Talk (IDT) or Child Directed Speech (CDS) used by adults when talking to babies like motherese. It is common throughout the world, and includes an affectionate high-pitched tone with extreme intonation accompanied by exaggerated facial expressions.
Infants prefer IDT (CDS) to speech directed to adults.

Phonemic Perception

Infants are born with the ability to discriminate between speech sounds in any language, which primes them to learn any language.
Around 7 months, infants gradually begin to specialize to sounds they hear and by the first year infants' speech perception is similar to that of their parents.

Sensitivity to Language Patterns

In addition to focusing on the speech sounds that are used in their native language, infants become increasingly sensitive to many of the numerous regularities in that language
Stress patterns: An element of prosody.
Distributional properties: In any language, certain sounds are more likely to appear together than are others.
Older infants are also sensitive to the minute pauses that occur between words in speech

Vocalizations

At around 6 to 8 weeks of age, infants begin producing drawn out vowel sounds (Cooing).
As the repertoire of sounds expands, infants become increasingly aware that their vocalizations elicit responses from others and they begin to engage in dialogues of reciprocal sounds with their parents.

Babbling

Between 4 and 10 months of age, infants begin to babble by repeating strings of sounds (consonants and vowels).
A key component of the development of babbling is receiving feedback. Deaf babies' vocal babbling occurs late and is very limited.
If deaf babies use ASL sign language their use of hand movement is analogous to vocal babbling.
As infants' babbling becomes more varied, it conforms more to the sounds, rhythm, and intonation patterns of the language they hear daily.
Preverbal gestures (gestures that begin before spoken language emerges)

Word Production

Most infants produce their first words between 10-15 months of age. First words typically include names for people, objects, and events from everyday life.

The period of one-word utterances is referred to as the holophrastic period, because the child typically expresses a "whole phrase" with a single word.

Word Production

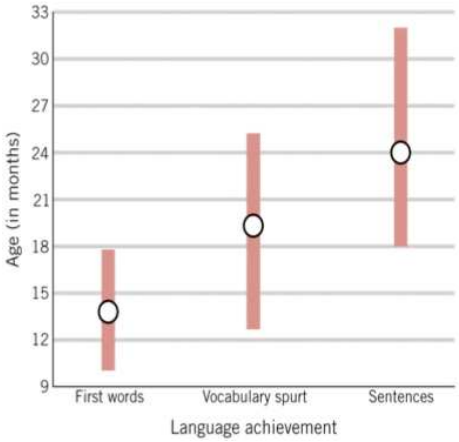
Overextension, using a given word in a broader context than is appropriate, represents an effort to communicate despite a limited vocabulary. A word means the same for many objects, e.g., ball for any spherical object.

Underextension, A word that is associated with a particular object, e.g., dolly to mean a particular doll only.

Language Achievement

On average, American children say their first word at around 13 months, experience a vocabulary spurt at around 19 months, and begin to produce simple sentences at around 24 months.

However, there is great variability in when different children achieve each of these milestones.



Making Sentences

Most children begin to combine words into simple sentences by the end of their second year

Children first make two-word utterances that have been described as telegraphic speech.

Children are capable of producing four-word sentences around 2½ years of age.

Sensorimotor Stage: Early Thinking

Between birth-2 years, infant's is unable to express a formal language.

The infant begins to learn about he world through sensory and motor interactions. At first the infant carries out simple reflex actions (grasping) followed by voluntary actions of grasping.

Between 1-4 months, the child practices primary circular reactions, actions that serve as stimuli and responses. For example, sucking her thumb feels good, so she sucks some more.

Between 4-12 months, the infant engages in secondary circular reactions. These actions involve the environment. Squeezing a rubber ducky, makes it "quack," so let us do it again, and again. Before 6-7 months the infant has no concept of object permanence, which develops through the process of interiorization, later on.

(till about 6 months)

Between 12-24 months, the child works on tertiary circular reactions. A form of active experimentation in which the same reaction is repeated over and over in a variety of ways. Hitting the drum with a stick, then hitting a toy, and, then food, and then mama.

At 18 months, the child develops mental representation, i.e., the ability to hold an image for a period of time. A child may press a button and turn light "on" in a doll's house.

Summary

In this topic we focused on language and thought processes in the infant.
We looked at language processes that take place within the first two years of life and discussed thought processes that take place in this period.

Lesson 30

Language and Communication

Multilingualism, Education and Mother Tongue

Overview

In this topic we will focus on learning two or more languages. And address issues relating to whether it is good to learn more languages or not.
We will also look at bilingual education and its advantages.
And finally discuss bilingualism or multilingualism in the developing child.

Critical Questions

Why should we learn two or more languages?
How does the developing child affected by learning two languages?
What are some types of bilingual education systems?

Mother Tongue

A person, who speaks two languages that differ from one another, is called a bilingual.
Bilingual's native language or mother tongue is called his first language and his non-native language his second language.
A person may know more than two languages yet he is called a bilingual.

Reasons for Bilingualism

About half the people in the world are somewhat bilingual (Fabbro, 1999). The reasons for their being bilingual are:

- Live in bilingual regions, e.g. Quebec.
- First language is not official language e.g. South Africans
- Studied in school or grew up in bilingual homes.
- Immigration.

Why Study Multilingualism?

More children educated in 2nd or 3rd language than in 1st.
Multilingual countries

- US: min 14.3 million Spanish-English bilinguals
- Eritrea: educated in Tigrigna, Arabic, and English
- India: 15 official languages, 1,650 spoken
- New Guinea: 870 languages, typical person speaks 3 languages

Additive vs. Subtractive Bilingualism

An individual who acquires proficiency in his second language with no loss in his first language is termed as additive bilingualism. However, if the second language replaces the first language it is called subtractive bilingualism.

Multiple Languages: Questions

Is language faculty "monolingual" or "multilingual"?
This question is difficult to address. Many investigators believe that language-learning faculty is singular in nature that learns two languages, "the bilingual is not two monolinguals in one person" (Grosjean, 1989, but see below Theories).
Does learning a second language cause developmental delays?
Linguists largely agree that qualitative and quantitative developmental aspects of learning a single or more than one language are similar (Meisel, 2006).

Bilingualism: History
Early researchers believed that learning two languages would compromise limited cognitive capacities, thus it was disadvantageous to learn a second language.
Flawed research. Lower-class French children compared with middle-class English children on IQ and achievement. Tests were in English.
Modern linguists and psycholinguists think it depends. For some aspects, like learning two languages does not cause developmental delays for example in conceptual vocabulary, but on other tests.

Theories
Mish-Mash theory: A singular Language Acquisition device (LAD) initially treats two languages as one; mashes them up, and differentiate them later.
Differentiation theory: We are all born multilingual! Distinguish languages from the start and keep them separate.

Babies Babble Bilingually
French-English babies distinguish supra-segmental (rhythm, stress-timing) patterns (Maneva & Genesee, 2002).
Babbling with French father: shows phonological features of French
Babbling with English mother: shows phonological features of English

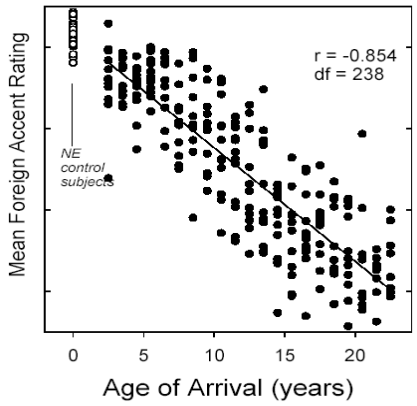
Other Developmental Features
Word segmentation (Polka & Sundara, 2003).
One-year old bilinguals restrict mutual exclusivity (no two words have the same meaning) to each language!
All children keep syntactic systems (two word phrases) separate.

Advantages in Bilingualism
Bilingual improve expertise in first language. Structure, morphemes, and printed symbols are better understood.
More mental flexibility.
Show awareness of phonological components of language.
Recognize grammar better than monolinguals. "The dog meows" was recognized to be grammatically correct by bilinguals.
Show more awareness on a number of metalinguistic measures.
Bilinguals children are more sensitive to some pragmatic aspects of language.
Bilinguals children are better at following complicated instructions.
Bilingual perform better than monolinguals on creativity tests.
Bilinguals perform better at concept formation, nonverbal intelligence tests, reorganization of visual patterns, and problem solving tasks that require them to ignore irrelevant information.

Bilingualism and Attitudes
Learning a second language improves attitudes towards native speakers of the language.
English Canadians who gained proficiency in French also developed more positive attitudes towards French Canadians than controls.

Disadvantages in Bilingualism
Trivial. Pronunciation difficulties
Response time slows down, during recognition tasks, language processing speed, and decision-making.
However these disadvantages are small compared to advantages the bilinguals have.

Age and Bilingualism
Research suggests that age of acquisition does influence the mastery of phonology or speech sounds. Individual who acquire second language in early life have no or little accent than those who acquire it later.



Types of Bilingual Education

Language immersion (Strong in Canada)
English-only (Favored in U.S., but risk of semilingualism)
Bilingual education (Support and instruction in native language while learning English)

Summary

In this topic we focused on learning two or more languages. And addressed issues relating to whether it is good to learn more languages or not.
We also looked at bilingual education and its advantages.
And finally discussed bilingualism or multilingualism in the developing child.

References

Fabbro, F. (1999). The neurolinguistics of bilingualism. An introduction. Hove, East Sussex, UK: Psychology Press.
Genesee, F. (2001). Bilingual first language acquisition: exploring the limits of the language faculty. Annual Review of Applied Linguistics, 21, 153-168. doi:10.1017/S0267190501000095
Grosjean, F. (1999). The bilingual's language modes. In J. L. Nicol (Ed.). One mind, two languages: Bilingual language processing (pp. 1-25). Oxford: Blackwell.
Maneva, B., & Genesee, F. (2002). Bilingual babbling: Evidence for language differentiation in dual language acquisition. In B. Skarbela et al. (Eds.), Boston University Conference on Language Development 26 Proceedings (pp. 383--392). Somerville, MA: Cascadilla Press.
Meisel, J. M. (2006). The Bilingual Child. In T. K. Bhatia & W. C. Ritchie (Eds.). The Handbook of Bilingualism. Malden, MA: Blackwell.

Lesson 31

Intelligence and Achievement

Individual Differences in General Abilities and Intelligence

Overview

In this topic we will discuss intelligence; its definition, its measurement and the way individuals differ in their intellectual abilities.
We will also look briefly at theories of intelligence.
Finally we will look at genetic-environmental influences on IQ.

Critical Questions

Is intelligence a single, general ability or is it a cluster of different mental abilities?
What are some theories of intelligence? How do they explain intelligence?

Defining Intelligence

It is difficult to define intelligence. Experts disagree on defining intelligence.
"Intelligent" behaviors change with age.
Most people suggest intelligence involves:
Verbal ability
Practical problem-solving
Social competence

General Intelligence Factor (g)

Spearman (1904) theorized that a general intelligence factor (g) underlies other, more specific aspects of intelligence. Based this on how he noticed people who did well on one test tended to do similarly well on others.

Mental Abilities

Intelligence is a cluster of seven different "primary mental abilities" each independent from the other (Thurston, 1927). Examples: Verbal comprehension, numerical ability, reasoning & perceptual speed etc.
The g factor was just an overall average score of these independent abilities.

Triarchic Theory of Intelligence

Sternberg (1985) proposed a Triarchic theory of multiple intelligences consisting of 3 mental abilities.
Stresses both the universal aspects of intelligent behavior and the importance of adapting to a certain social and cultural climate. Also called Successful Intelligence.
Analytic intelligence: mental processes used in learning how to solve problems.
Creative intelligence: ability to deal with novel situations by drawing on existing skills and knowledge.
Practical intelligence: ability to adapt to the environment (street smarts).

Intelligence	Examples
 Analytic	Analyzing Comparing Evaluating
 Practical	Applying Using
 Creative	Inventing Designing

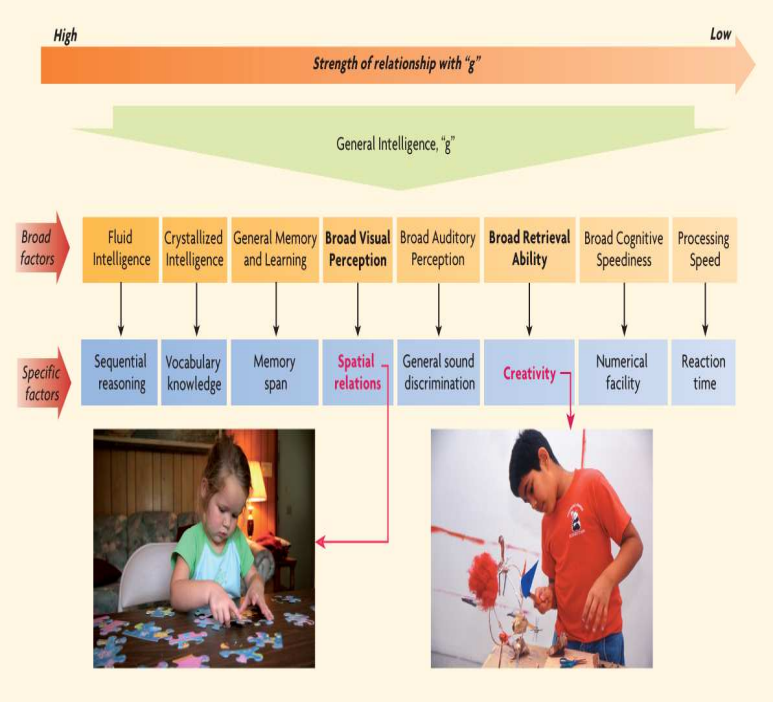
Multiple Intelligences

Gardner (e.g., Gardner & Hatch, 1989) proposed eight multiple independent intelligences – that allow a person to solve problems, create products that are valued within one's culture.

Intelligence	Examples
Verbal-Linguistic	Reading comprehension Writing
Logical-Mathematical	Solving math and logic problems
Bodily-Kinesthetic	Balance Strength Endurance
Visual-Spatial	Judging distance Map reading Geometry
Musical-Rhythmic	Appreciating and creating music Music theory
Interpersonal	Listening Cooperation Sensitivity to others
Intrapersonal	Knowledge of self
Naturalistic	Appreciate nature Ability to work with plants and animals

Theory of Intelligence: Three-Stratum

The intelligence can be now viewed on three strata with general intelligence at the top, connected to braid factors of intelligence like fluid intelligence, crystallized intelligence etc., followed by more specific factors in the lowest stratum. So sequential reasoning is related to fluid intelligence that highly correlates with general intelligence g.



Fluid and Crystallized Intelligence

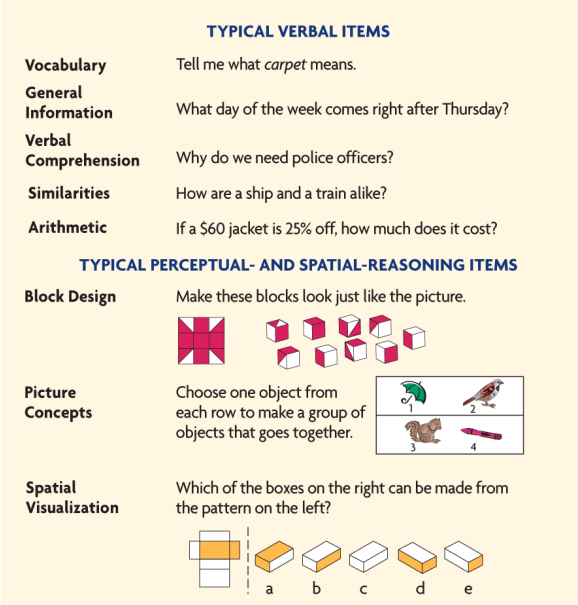
Fluid Intelligence	Crystallized Intelligence
The ability to think and reason abstractly and solve problems	Learning from past experiences.
Independent of learning, experience and education, e.g., solving puzzles.	It includes reading, comprehension and vocabulary exams.
It increases throughout childhood and adolescence and declines progressively beginning around age 30 or 40	This type of intelligence becomes stronger as we age and accumulate new knowledge and understanding.

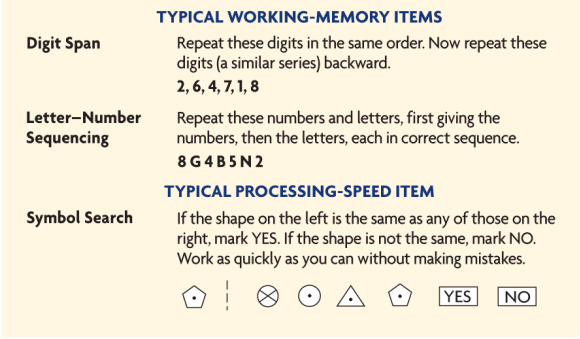
Commonly used Intelligence Tests

Individual Tests	Stanford-Binet, Weschler
Aptitude Tests	SAT, ACT
Achievement Tests	Classroom Tests
Infant Tests	Bayley Scales, Fagan Test

Intelligence Tests for Children

Here are some sample questions for intelligence tests used for children.





Intelligence Tests (Types)

Group Tests	Individual Tests
Allow testing of large groups	Examiners need training and experience.
Require little training to administer	Provide insights about accuracy of score.
Useful for instructional planning	Identify highly intelligent children and also those with learning problems.
Identify students who need individual testing	

Stability of IQ Scores

Correlational Stability	Absolute Scores
Compares how children score relative to age-mates, from one time to the next	Examines same child's profile of scores tested repeatedly
Better correlations, when older at first testing and when tests are close together	Most children fluctuate
	Some either increase or decrease with age

Heritability-Environmental Effects

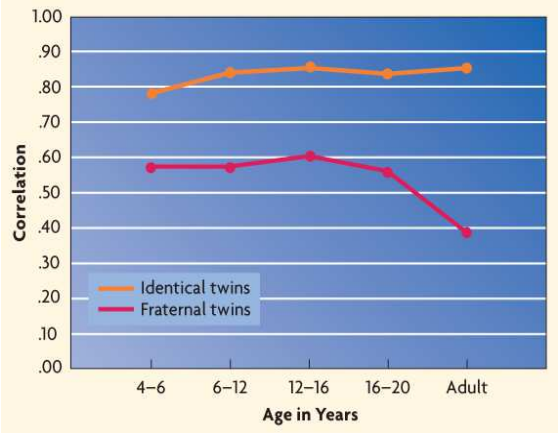
The heritability of IQ is higher under advantaged than disadvantaged rearing conditions. Lewontin's proposal of seeds in different soils.

Environmental Cumulative Deficit Hypothesis. Negative effects of underprivileged increase the longer they last.

Early cognitive deficits lead to more deficits. Harder and harder to overcome.

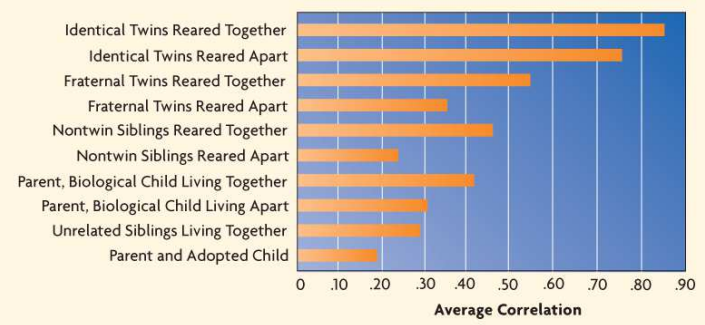
IQ Correlation for Twins

Clearly the graph below shows that IQ between identical twins is higher and stays stable over many years of development than fraternal twins. For adult fraternal twins it decreases dramatically.



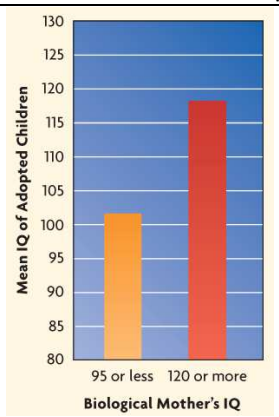
Genetics and IQ

Genetics may account for about half of differences in IQ. Experts disagree about interaction with environment.

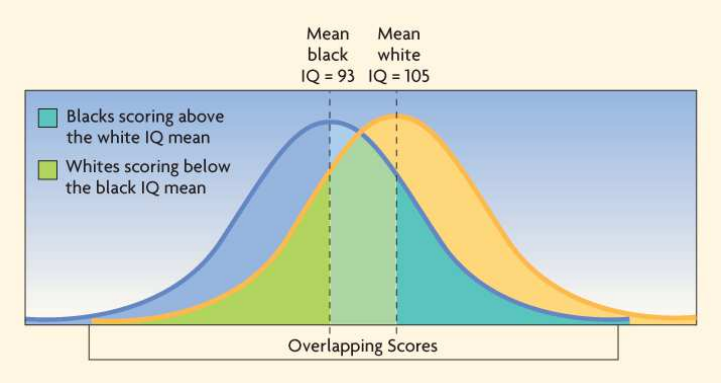


Adoption and IQ

Adoption studies show influence of both genetics and environment.
Ethnic differences in IQ may be more cultural than genetic
(see figure on the right).



Racial Distributions of IQ



Summary

In this topic we discussed intelligence; its definition, its measurement and the way individuals differ in their intellectual abilities.
We looked briefly at general abilities in people and talk about theories of intelligence.
Finally we looked at genetic-environmental influences on IQ.

References

Gardner, H., & Hatch, T. (1989). Multiple intelligences go to school: Educational implications of the theory of multiple intelligences. Educational Researcher, 18(8), 4-9.
Spearman, C. E. (1904). 'General intelligence', objectively determined and measured. American Journal of Psychology, 15, 201–293.
Sternberg, R. J. (1985). Beyond IQ: A triarchic theory of human intelligence. New York: Cambridge University Press.
Thurstone, L. L. (1927). A law of comparative judgment. Psychological Review, 34(4), 278–286. doi:10.1037/h0070288

Lesson 32

Intelligence and Achievement

Achievement Motivation and Intellectual Performance

Overview

We will discuss how can we measure motivations to achieve, and how this is associated with intellectual performance.

We will also look at some other factors like parenting with which educational achievement motivation is associated.

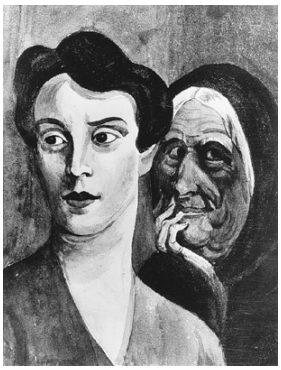
Critical Questions

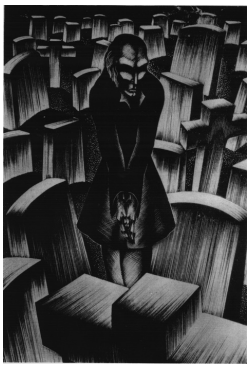
What is achievement motivation? How is this linked with intellectual performance?

How can parents influence need to achieve in school going children?

Achievement Motivation

Henry Murray coined the term achievement motivation; who developed the Thematic Apperception Test (TAT) to measure it. Achievement motivation or need to achieve is a desire for significant accomplishment, mastering skills and control, reaching high standards of performance that can be measured by TAT. The TAT includes 31 pictures on which the individuals develop thematic stories. Based on these stories clinicians assess their self and their interpersonal relationships etc. Some of these pictures are given below:





Recently David McClelland (1917-1998) has worked on need to achieve (nAch), measuring it using similar methodology to Murray. The subjects are shown 4-6 pictures (for 20 seconds each) were people are working or involved in a task. Subjects write a story about each picture addressing these questions below:

Story Questions

Who is the person?

What is happening?

What led up to situation?

What is being thought or wanted?

What will happen?

What will be done?

Ring Toss

In order to measure need to achieve ring toss game has been used. High nAch children picked middle distance to throw their rings on to the peg. The challenge was not impossible to achieve. Low nAch children picked larger distances (couldn't win), or near distances (couldn't lose).

Parenting Styles

Parents who reward their children for self-control, independence and set high standards… such children develop high nAch. Child works at her own level, makes mistakes, but is encouraged by parents for good performance; parents who set impossible high standards for children result in low nAch. Such parents punish their child when he or she doesn't achieve goal, or jump in and solve the problem. Parent's actions don't encourage self-control and the child begins to fear failure.

IQ as a predictor of Achievement

Academic Achievement	IQ correlated with achievement test scores, grades, staying in school
Occupational Attainment	IQ predicts adult attainment well, but not perfectly personality and practical intelligence are also important
Psychological Adjustment	Moderately correlated Low IQ related to school failure, aggression, delinquency

Differential Educational Achievement

Class differences in educational achievement have persisted since 1950's.

Students from middle class backgrounds pass more exams, stay on more at school and are more likely to go to university.

Why? Are the Middle Class (MC) children more intelligent?

Psychologists & Sociologists

Where psychologists think IQ is correlated with school achievement, sociologists think IQ tests are unreliable and culturally biased.

For example, Bowles & Gintis (1976) found no link between IQ and educational or economic success.

Sociologists think language, previous experience, and parental interest leads to better school achievement in children.

Middle Class (MC)

Parents of MC gave greater attention, expected more and gave more rewards to children's education than working class (WC; Douglas 1964).

Blackstone and Mortimore (1994) suggested WC parents cared as much as MC. But WC parents feel less confident about dealing with schools.

Comparison

MC Children	**WC Children**
Elaborate language code of MC suits academic performance	Restricted language codes of WC is not suited to academic study
More complex speech, details and explanations are given	Simple speech, meanings don't need to be made explicit
Cultural Capital-the education system is biased towards the MC (Ball, Bowe & Gewirtz 1994)	None
Schools in wealthy MC areas are better equipped.	None
Parents with money provide more educational aids-computers, books, private tutors etc. (Smith & Noble 1994)	None

Questions

Q. Why then do psychologists find a high correlation between IQ and need to achieve?

Perhaps a large number of MC students go to schools and colleges.

Summary

We discussed how can we measure need to achieve, and how this is associated with intellectual performance. We looked at some other factors like parenting with which educational achievement motivation is associated.

Lesson 33

Intelligence and Achievement

Learning Theories and Classroom Teaching

Overview

Understand and know different theories of learning. Also understand advantages and disadvantages different learning theories.

We must also know how these theories could be applied to classroom use.

Critical Questions

What are learning theories, their advantages and disadvantages?

How are these theories applied to classroom situations?

Learning: Definition

A relatively permanent change in an organism's knowledge or behavior due to experience (cf. Kimble, 1963; Mayer, 1982).

Theories

Six major theories of learning have been useful in relating to classroom teaching:

1. Behaviorism
2. Cognitivism
3. Social Learning Theory
4. Social Constructivism
5. Multiple Intelligences
6. Brain-Based Learning

Behaviorism

Behaviorism defines learning as an outward expression of new observable behaviors.

Classical & Operant Conditioning

Reflexes (Pavlov)

Feedback-Reinforcement (Thorndike, Skinner)

Behaviorism in Classroom

Use of rewards and punishments lead to learning in the classroom.

Student learning rests squarely with the teacher.

Education needs to be lecture-based, highly structured.

Behaviorism: Criticisms

Behaviorism does not account for processes taking place in the mind that cannot be observed.

Advocates for passive student learning in a teacher-centric environment

Knowledge itself is given and is considered as absolute.

Learning is too much structured lacking flexibility and creativity.

Cognitivism

Grew in response to Behaviorism and is based on acquiring knowledge that can be stored cognitively in symbols.

Learning is the process of connecting symbols in a meaningful & memorable way.

Focuses on the mental processes that facilitate symbol connection.

Two kinds of cognitive learning theories: Discovery learning (Jerome Bruner) and Meaningful Verbal Learning (David Ausubel).

Discovery Learning

Bruner (year?) said anybody could learn anything at any age, provided it is stated in terms they can understand.

Discovery learning focuses on powerful concepts not isolated facts.

These concepts can then be transferred to many situations.
Confront the learner with problems and help and them find solutions.

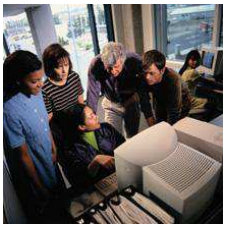
Meaningful Verbal Learning
New material is presented in a systematic way, and is connected to existing cognitive structures in a meaningful way.
When learners have difficulty with new material, go back to the concrete anchors. Provide a discovery approach, and they will learn.

Cognitivism in Classroom
Inquiry-oriented projects
Opportunities for the testing of hypotheses
Curiosity encouraged
Staged scaffolding

Cognitivism: Criticisms
Like Behaviorism, knowledge given is considered absolute.
Input – Process – Output model is mechanistic and deterministic.
Does not account for individuality
Little emphasis on affective characteristics like motivation.

Social Learning Theory (SLT)
Grew out of cognitivism (largely Bandura, 1973).
Learning takes place through observation and sensorial experiences.
Imitation: Individuals adopt the modeled behavior more readily and completely if the person they are observing is admired.
Attend to pertinent clues.
Code for memory (store a visual image).
Retain in memory.
Accurately reproduce the observed activity.
Possess sufficient motivation to apply new learning.
Identification with the Model
Children want to be like the model.
Children believe they are like the model.
Children experience emotions like those the model is feeling.
Children act like the model.
When children identify with a nurturing and competent model, they feel pleased and proud, and when they identify with an inadequate model, children feel unhappy and insecure.

SLT in the Classroom
Collaborative learning and group work.
Modeling responses and expectations.
Opportunities to observe experts in action.



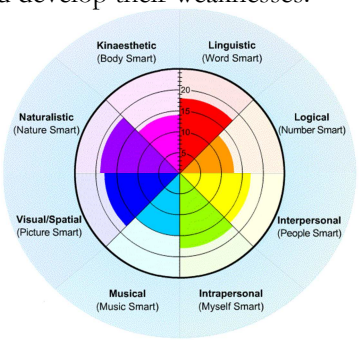
Social Learning Theory: Criticisms
Does not take into account individuality, context, and experience as mediating factors.
Suggests students learn best as passive receivers of sensory stimuli, as opposed to being active learners.
Emotions and motivation not considered important or connected to learning.

Social Constructivism
Grew out of and in response to Cognitivism, framed around metacognition. Knowledge is actively constructed.
Learning is a search for meaning by the learner; Contextualized; inherently social activity; based on dialog and is the responsibility of the learner
Largely Vygotsky ideas of social Learning (zone of proximal development).

Social Constructivism: Classroom
Journaling
Experiential activities
Personal focus
Collaborative & cooperative learning

Social Constructivism: Criticisms
Suggests that knowledge is neither given nor absolute.
Often seen as less rigorous than traditional approaches to instruction.
Does not fit well with traditional age grouping and rigid terms/semesters.

Multiple Intelligences (MI)
Grew out of Constructivism, framed around metacognition.
Enables students to leverage their strengths and purposefully target and develop their weaknesses.
Delivery of instruction via multiple mediums
Student-centered classroom
Authentic Assessment
Self-directed Learning



Multiple Intelligences: Criticisms
Lack of quantifiable evidence that MI exist.
Lack of evidence that use of MI as a curricular and methodological approach has any discernible impact on learning.
Suggestive of a departure from core curricula and standards

Summary
We understood different theories of learning, and looked at advantages and disadvantages of different learning theories.
We also tried to relate these theories to classroom use.

Lesson 34

Socialization: The Family, Peers and Friends

The Family System

Overview

Know the basis of family, its origin, its constitution and its importance.
Understand the institution of marriage, its kinds and its relation to family. And how does the individual grows socioemotionally in the family.

Critical Questions

How do we define family? What are its kinds and makes a family?
Why is family so important and what are its functions?

Family (Definitions)

Family is a fundamental social group in any society, typically consisting of one or two parents and their children; Or a group of individuals living under one roof and usually under one head; Or a group of people living together on the basis of blood-ties, relationships and same residence.
Kinds: nuclear and extended families.

Marriage & Family

In most societies, families come together on the basis of marriage. And sexual relations among family members are dictated by rules governing incest.
In many religions and social groups marriage between, parents and children, grandparents and grandchildren, brothers and sisters, uncles-aunts and nieces-nephews is prohibited.
This makes kinship possible.

Origins of Family

Origins of families comes about because of evolutionary pressures.
Families, especially mothers assume responsibility for children's enhanced survival.
Fathers invest care and time
Extended kinship groups also helped

Functions of Family

Reproduction: Perhaps the most important function of family is reproduction; procreation of the next generation. Incest is guarded not only on the basis of religion and other social sanction, but has evolutionary basis.
Economic services: Family provides economic functions. Head of the house-hold usually a male brings home economic resources.
Social order: Family brings social order in its members and society.
Socialization: The process that helps the newborns get acclimated in society and social groups.
Emotional support: Family provides emotional support to the newborns and guides their emotional development.

Family as a Social System

Family System A network of interdependent relationships	
Bidirectional influences	All parties in the interaction influence each other
Direct influences	How people act with each other
Indirect influences	"Third parties" that affect family members

Beginnings of a Family

Many profound transitional changes take place with the beginning of a family; roles eventually often become more traditional.

Marriage can be strained

Problems in marriage before children predict problems afterwards in marriage. Sharing care can help.

Later parenthood eases transition.

Intervention for high-risk parents.

Benefits to Families with Strong Community Ties

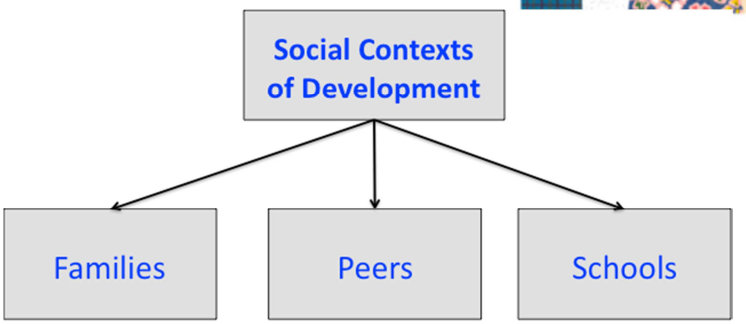
Parental interpersonal acceptance.

Parental access to information and services.

Child rearing controls, role models.

Direct assistance with child rearing.

Family & Social Contexts



Family & Modern Times

Divorced Family:

The quality of parental relationships, the use of support services, the type of custody, and the socioeconomic status all affect students.

Elementary school children did best when the parent and the school environment were authoritative.

Single parents:

Have less time, money, and energy, yet many still find ways to raise competent children.

Socioeconomic Variations:

Minority students: Families tend to be larger and depend more on the extended family for support.

Low-income parents:

Tend to value external characteristics such as obedience and neatness.

See education as the teachers' job.

Middle-class families:
Often place high value on internal characteristics such as self-control and delayed gratification.
See education as a mutual responsibility.

Summary
We looked at and discussed the basis of family, its origin, its constitution and its importance.
Related to the institution of marriage, its kinds and its relation to family. And how does the individual grows socioemotionally in the family.

Lesson 35

Socialization: The Family, Peers and Friends

Determinants of Parenting, Childrearing Practices and Styles

Overview

In this topic we will try to look at the basis of parenting, parenting styles and child-rearing practices. We will look at types of families, family nurturance and maltreatment.

Critical Questions

What are some styles of parenting? What leads to good child-rearing practices?
What are some child-malpractices?

Parenting

Parenting begins when a husband and wife becomes father and mother.
Traditional parents may have biological children of their own, but children may be adopted or chaperoned in other cases.
Parenting styles affect development. Interactions include punishment, child abuse, co-parenting, time and effort, and nurturing.

Parenting Styles

Authoritative: limits placed, but also warm, nurturing, encouraging independence within those limits ("Let's talk about it").
Authoritarian: highly controlling, little discussion ("My way, or the highway").
Permissive (indulgent): involved, but with few demands or restraints.
Uninvolved (Neglectful): uninvolved in child's life.

Child-Rearing Styles

	Acceptance	Involvement	Control	Autonomy
Authoritative	High	High	Adaptive	Appropriate
Authoritarian	Low	Low	High	Low
Permissive	High	Too low or too high	Low	High
Uninvolved	Low	low	Low	Indifference

Making Parenting Matter

Teach moral values.
Help overcome unfavorable disposition (Adaptive parenting)
Foster positive capacities (Rich varied experiences)
Use authoritative style.

Development and Child-Rearing

Middle Childhood (Coregulation)
Adolescence (Fostering emotional and behavioral autonomy)

SES and Child-Rearing

High SES (Affluence)	Low SES (Poverty)
Many benefits. Children may get more • Father involvement • Time, energy, material resources • Involvement in decisions	Can be stressful; children may get more • Commands • Criticism • Coercive discipline • Physical punishment • Uninvolved father
Risks: • Accomplishment pressure • Isolation from adults	

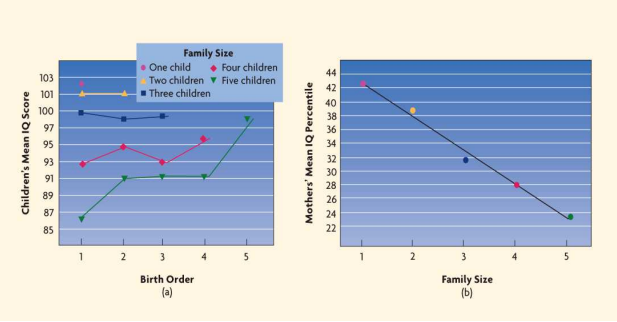
Ethnicity and Child-Rearing
Compared to European-Americans, some groups might use.
More warmth
More strict control
More extended family
Parenting depends on cultural values and family context.

The African-American Extended Family
Emotional support, shared income and resources.
Associated with more positive mother-child interaction during the preschool years.
Plays an important role in transmitting African-American culture.

Types of Families
Traditional
Employed parents
One-child
Gay & lesbian parents
Single parents
Divorced parents
Blended
Extended

Traditional Family
Smaller numbers of children (Average fewer than two)
Mothers' careers
Have first child later
Divorce

IQ and Large Families



Growing Up With Siblings
Early
Can be difficult transition for firstborn

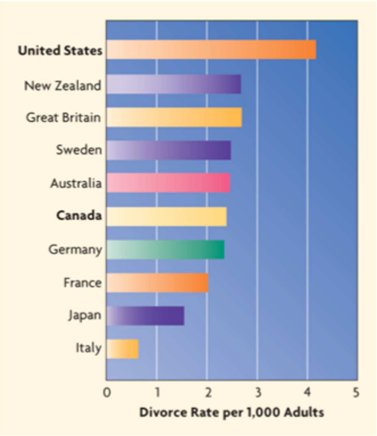
Infants find older siblings comforting
Play together by second year
Temperament, parenting, family context affect relationship
Middle Childhood/Adolescence
Rivalry increases in middle childhood
Still provide companionship
Must adjust to adolescence

One-Child Families
Only children
Higher in self-esteem and motivation
Do better in school
Attain higher levels of education than children with siblings
Closer relationships with parents
Can be less accepted in their peer groups

Gay and Lesbian Parents
Children similar to children of heterosexuals in
Mental health
Peer relations
Gender identity
Sexual orientation
May develop more empathy and tolerance

Single Parents
In the US 90% of single parent families comprise of mothers.
Most of these are young African-American women most likely to postpone marriage, and marry later.
Risks
Poverty
Poor child outcomes
Rely on extended families

International Divorce Rates



Consequences of Parental Divorce

Immediate Effects	Long Term Effects
1. Instability, conflict, drop in income **2.** Parental stress, disorganization **3.** Consequences affected by: • Age • Temperament • Sex	**1.** Improved adjustment after 2 years **2.** Boys and children with difficult temperaments more likely to have problems **3.** Father's involvement affects adjustment

Blended Families

Mother-Stepfather	Father-Stepmother
1. Most frequent **2.** Boys usually adjust quickly **3.** Girls adapt less favorably **4.** Older children and adolescents of both sexes display more problems	**1.** Often leads to reduced father-child contact **2.** Children in father's custody often react negatively **3.** Girls and stepmothers slow to get along at first, more positive interaction later

Maternal Employment & Child Development

Benefits

- Higher self-esteem
- Positive family and peer relations
- Fewer gender stereotypes
- Better grades
- More father involvement

Drawbacks

- Less time for children
- Risk of ineffective parenting

Support for Working Parents

Flexible schedules, job sharing
Sick leave
Involvement of other parent
Equal pay and opportunities
High-quality childcare

Child Maltreatment

Physical abuse
Sexual abuse
Neglect
Emotional abuse

Factors Related to Child Maltreatment

Parent characteristics
Child characteristics
Family characteristics
Community
Culture

Child Sexual Abuse

Victims	• More often female • Reported in middle childhood
Abusers	• Usually male • Parent or known by parent
Consequences	• Emotional reactions • Physical symptoms • Effects on behavior
Prevention and Treatment	• Prevention: education • Treatment: long term therapy

Summary

In this topic we looked at the basis of parenting, parenting styles and child-rearing practices. We also looked at types of families, family nurturance and maltreatment.

Lesson 36

Socialization: The Family, Peers and Friends

Sibling and Peer Relations

Overview

We will look at peers, and peer's relationships. Our discussion will include friendships and its different aspects. We will also look at school life of the growing child. This will include factors that affect success at school.

Critical Questions

How do peers and friends affect the process of socialization?
What are some important factors that affect school life? How do school lives differ in different cultures?

Cognitive Play Categories

Period	Play	Description
0-2 years	Functional	Simple, repetitive motor movements, with or without objects
2-6 years	Make believe	Acting out every day and imaginative roles
3-6 years	Constructive	Creating or constructing something
After 6	Games with rules	Understanding and following rules in play

Peer Sociability in Play

Activity	Description
Nonsocial Activity	Unoccupied, onlooker behavior Solitary play
Parallel Play	Plays near other children with similar toys, but does not try to influence them
Social Interaction	Associative play Cooperative play

Peer Sociability

More, diverse peers the greater the peer sociability
Children and adolescents apply their social and emotional knowledge at taking different perspectives of their peers, this usually increases prosocial acts.
Rough & Tumble play leads to developing dominance hierarchy in peer groups.

Parental Influences on Peer Relations

Direct	Indirect
Arrange informal peer activities	Secure attachment
Guidance on how to act toward others	Authoritative parenting
Monitoring activities	Parent-child play
	Parents' own social networks

Other Influences on Peer Relations

- Age Mix of Children
  - Piaget: children benefit from interaction with other children equal in status
  - Vygotsky: benefit from interaction with older peers
- 2. Cultural Values

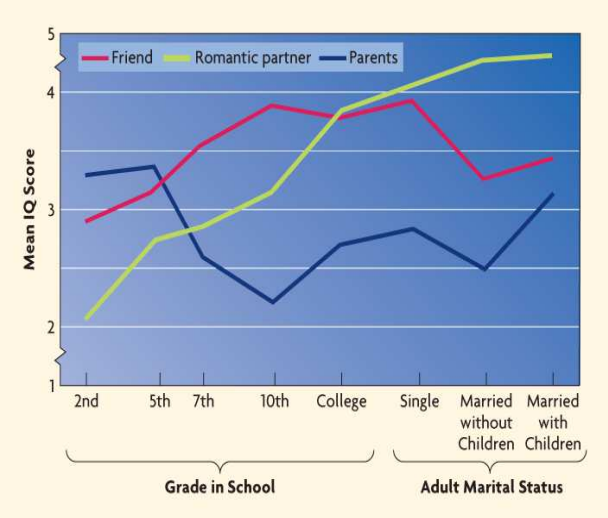
Thinking About Friendship

- Handy Playmate (4-7 years)
- Mutual Trust & Assistance (8-10 years)
- Intimacy, Mutual Understanding & Loyalty (11-15 years & up)

Selectivity and Stability of Friendships

- More selective with age (From 4-6 best friends in early adolescence to 1-2 in emerging adulthood).
- Remarkably stable at all ages (Younger children more dependent on environment).

Self-Disclosure to Friends



Interactions between Friends

- Compared to non-friends, friends have more:
  - Positive interaction
  - Emotional expression
  - Prosocial behavior
  - Self-disclosure
- Also more if there is aggression and hostility among friends, more
  - Disagreement and
  - Competition arises.

Resemblances Between Friends

- Friends often similar in:
  - Age, sex, ethnicity, SES
  - Personality, popularity, academics, prosocial behavior, judgments of others (biases)
- Similarities increase supportiveness of friendship
- Adolescents may explore identity by making different friends

Gender Differences in Friendships

Boys: Activities, status
Friendships more variable
Depends on gender identity
Girls: Emotional closeness
Get together to "just talk"
Danger of co-rumination
Other-sex friends
Either very popular or very unpopular adolescents

Benefits of Friendships

1. Opportunities to explore self

2. Form deep understanding of another
3. Foundation for future intimate relationships
4. Help deal with life stress
5. Can improve attitude and school involvement

Bullies and Victims

Bullies	Victims
Usually are boys	Passive when should be active
Physically, relationally aggressive	Given in to demands
High status, powerful	Lack defenders
Popular, eventually become disliked	Inhibited temperament
	Physically frail
	Overprotected, controlled by parents

Cliques & Crowds

Clique

Small group of 5–7
Good friends
Identified by interests, social status
"popular" and "unpopular"

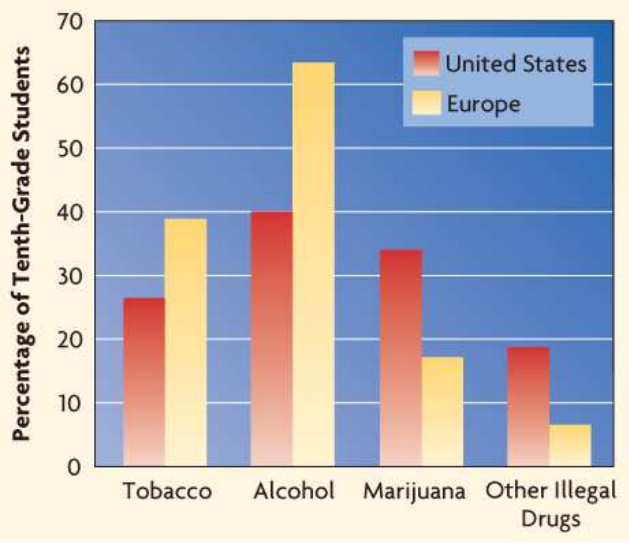
Crowd

Larger – several cliques
Membership based on reputation, stereotype

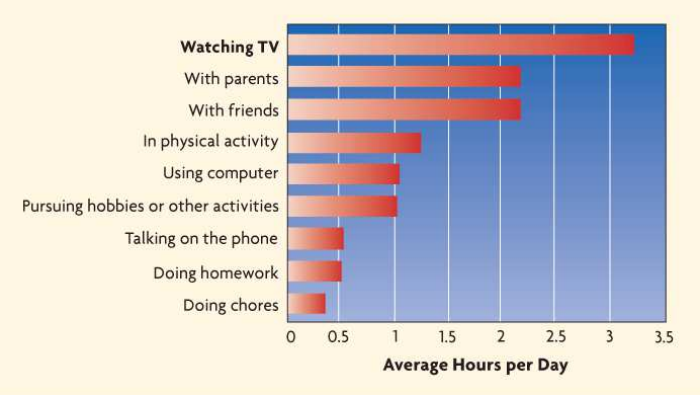
From Cliques to Dating

- Boys' and girls' cliques come together
- Mixed-sex cliques hang out
- Groups of several couples form and spend time together
- Individual couples

Adolescent Substance Use



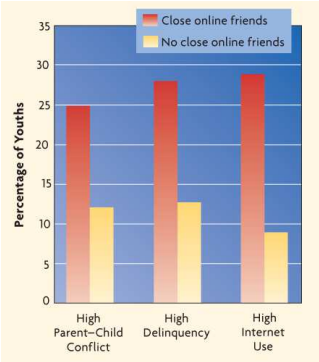
How Kids Spend Their Time



Dangers and Benefits of TV

Dangers	Potential Benefits
Aggression (males more than females) Ethnic, gender stereotypes	Learning (Educational shows)
Ethnic, gender stereotypes	Prosocial behavior
Consumerism	
Time away from other activities	

- Computers and Internet access in virtually all North American schools
- Small-group collaboration
- Programming skills
- Homework
  - Word processing
  - Internet research
- Worries about "digital divide"



Computers and Social Learning

Games: Risks

Attention problems, stereotypes, addiction

The Internet and Communication: Risks

Other users, isolation

Regulating Media Use

- U.S. regulations, V-chip
- Canada mandates V-chip and program ratings.
- Parents bear most of the responsibility for regulating children's exposure to media content.

Regulating TV and Computer Use

- Limit TV viewing and computer use.
- Avoid using TV or computer time as a reward.
- Encourage child-appropriate media experiences.
- Watch TV with children, when possible.
- Link TV content to everyday learning experiences.
- Model good TV and computer practices.
- Explain Internet technology and safety practices to school-age children and adolescents.
- Use an authoritative approach to child rearing.

Academic Achievement and Class Size

- Small (13-17)
- Regular (22-25)
- Regular with a teacher plus a full-time teacher's aide (Small class children scored higher in reading and math achievement each year).

Academic Achievement: Other Factors

- School recess
- School readiness
- School transitions
- 4. Teacher-Student interaction
- Children with learning difficulties

Educational Philosophies

- Traditional versus Constructivist views
- New Philosophical Directions (Social-constructivist view; Communities of learners)

Asian vs. North American Schools

Asian schools show more:
Cultural valuing of academic achievement
Emphasis on effort
High-quality education for all
Time devoted to instruction

Summary

We looked at peers, and peer's relationships. Our discussion included friendships and their different aspects. We also looked at school life of the growing child. This included factors that affected success at school.

Lesson 37

Gender Roles and Gender Differences

Sex and Gender Roles

Overview

Understand the basis of gender stereotyping. How do parents infuse and children acquire gender roles. We also briefly look at biological basis of gender roles.

Understand the similarities and differences in abilities and personalities of individuals across different genders.

Critical Questions

How do children acquire gender role? How much do parents, children themselves, heredity and environment play a role in making children become specific to a gender?

What are some differences and similarities across genders in abilities and personality traits?

Gender Stereotypes

1. Masculine (Instrumental traits: role of providing for the family and protecting it from harm).
2. Feminine (Expressive traits: being kind, nurturing, cooperative and sensitive).

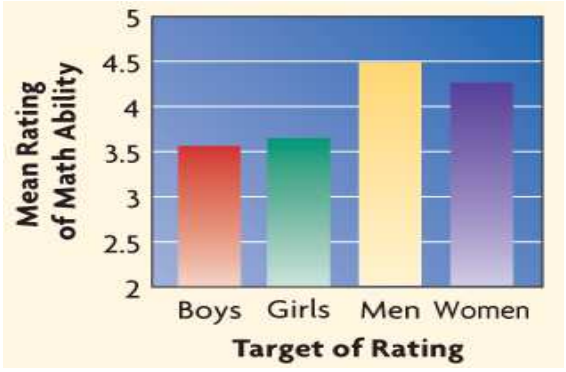
Sex differences in the socialization of five attributes in 110 societies (Barry, Bacon & Child, 1957).

	Percentage of societies in which socialization pressures were greater for:	
Attribute	Boys	Girls
Nurturance	0	82
Obedience	3	35
Responsibility	11	61
Achievement	87	3
Self-reliance	85	0

Gender Stereotypes: Development

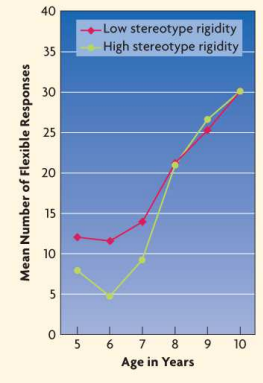
Early Childhood	Stereotypes begin around 18 months and strengthen and become rigid through early childhood (demonstrate cognitive limitations)
Middle Childhood-Adolescence	Stereotypes extend to include personalities and school subjects More flexible about behavior

School Subject Stereotypes



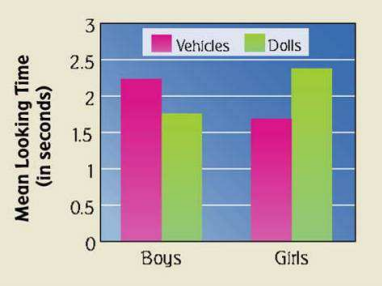
Gender Stereotypes: Age & Flexibility

From age 5-7 years, children show greater rigidity of stereotypical responses if they belong to a group with high stereotype rigidity compared to low stereotype rigidity. From age eight and beyond their responses become equal and less rigid.



Stereotypes & Gender-Role Adoption

Evidence mixed for influence of stereotypes on gender-role adoption
Stereotypes influence role adoption
Preferences influence stereotypes
Stereotype flexibility may be more important



Sweden: Gender Equality

"Equal roles family model"
Paid paternity leaves
Law allows for reduced hours for parents of children under 8, with no reduction in benefits

Results:

Young people view gender traits as learned and domains of expertise, rather than inborn traits or rights and duties.
Adults hold more favorable attitudes toward maternal employment.

David: Sex Reassignment

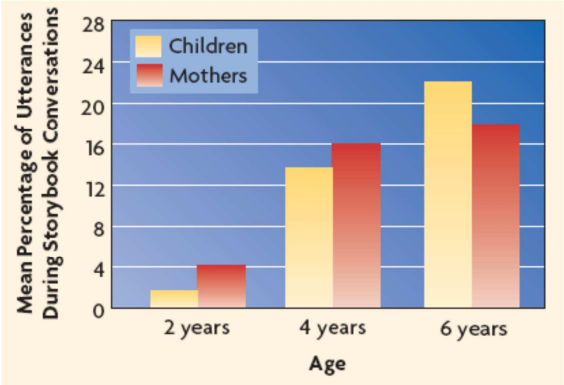
First infant sex reassignment on record on a genetically and hormonally normal child.
Named "Bruce" at birth, parents changed his name to "Brenda," after accident.
Brenda resisted her parents' efforts to raise her as a girl.
Case confirms the impact of genetic sex and prenatal hormones on a person's sense of self as male or female.

Gender Stereotyping & Gender-Role Adoption

- Biology
  - Evolutionary adaptiveness
  - Cross-cultural similarities
  - Hormones
- 2. Environmental
  - Perceptions & expectations of adults (Parents, teachers)
  - Observational learning
  - Peers, siblings

Mother-Child Conversations

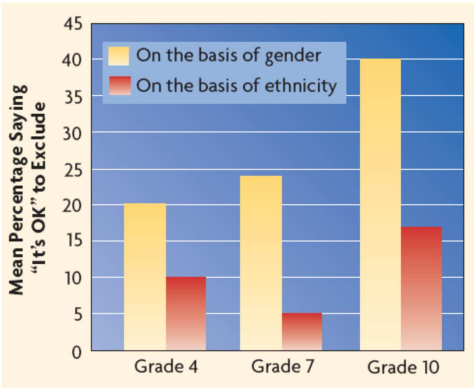
Children learn about gender roles through mother-child conversations.



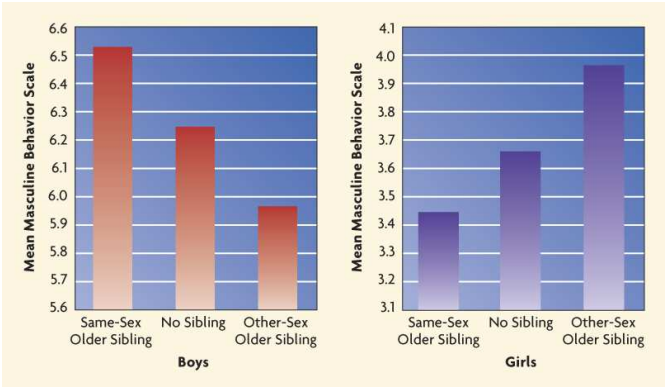
Parenting and Gender Typing

Early Childhood	• Parents encourage gender-specific play and behavior • Reinforce dependence in girls, independence in boys • Language indirectly teaches roles
Middle Childhood-Adolescence	• Achievement more important (gender affects perceived competence) • Parents continue to demand independence from boys ➢ Mastery-oriented help ➢ Autonomy-granting

Gender Segregation



Siblings and Gender Typing

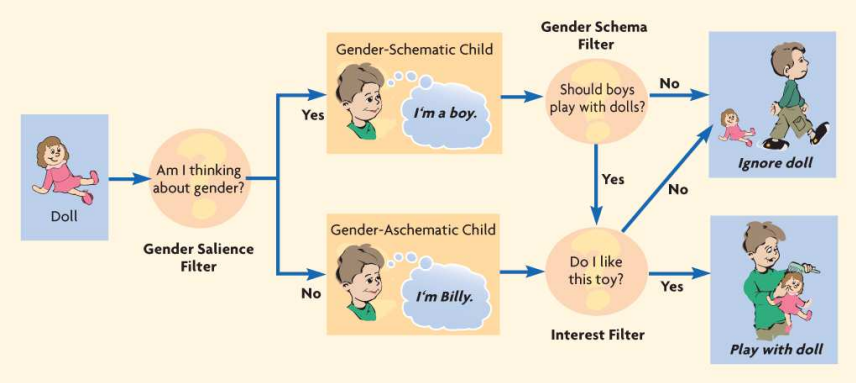


Theories of Gender Identity

Social Learning Theory	Gender typing behavior leads to gender identity.
Cognitive-Developmental Theory	Self-perceptions (gender constancy*) come before behavior.

1. *Gender labeling
2. Gender stability
3. Gender consistency

Gender Schemas and Behavior



Gender Identity: Middle Childhood

Adjustment linked to:

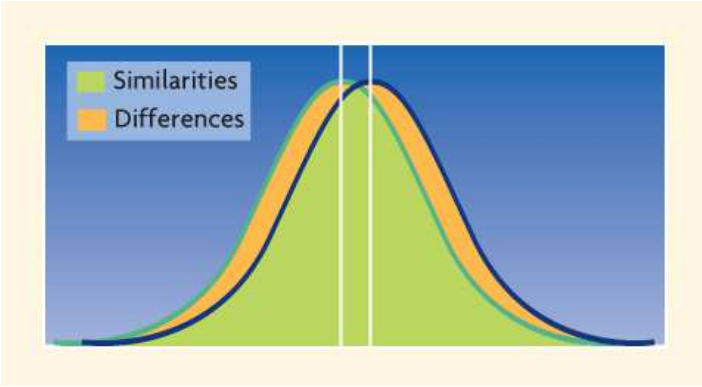
- Gender typicality
- Gender contentedness
- Pressure to conform to gender roles

Gender Identity: Adolescence

- Increased gender stereotyping of attitudes and behavior.
- Biological, social, cognitive factors.
- More in early adolescence, declines mid to late adolescence.

Sex Overlap: Abilities & Personality

There are greater similarities than differences in individuals of the opposite gender.

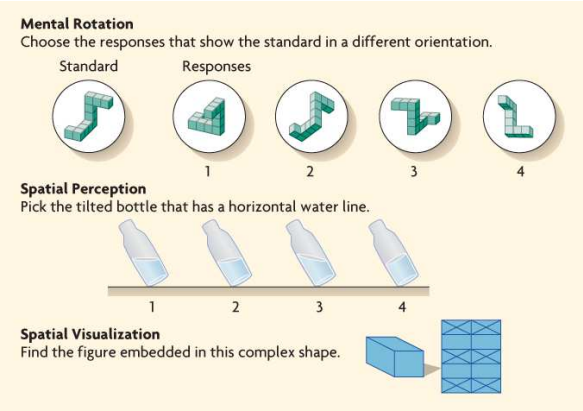


Mental Abilities

Skill	Performance	Biological Influences	Environmental Influences
Verbal	Girls do better from early ages, throughout school	Girls: advantage in left hemisphere of brain	Parents talk more to girls Language arts considered "feminine".
Math	Boys better at abstract reasoning Gap larger at higher levels, although shrinking	Boys: better numerical memory, spatial reasoning	Mathematics considered "masculine". Parents see boys as better at math

Sex Differences in Spatial Abilities

Biology and environment jointly explain variations in spatial and math performance across genders.



Sex Differences in Personality Traits

Girls compared to boys are more:

- Emotionally sensitive, but behavior differences small.
- Compliant
- Dependent
- Likely to suffer depression

Sex Differences in Aggression

Boys more physically aggressive (but differences in verbal & relational aggression is less clear in boys and girls)
Biological influences (Androgen hormones)
Environmental influences
Family
Consequences of aggression
Peers

Non-Gender Stereotyped Children

Developing non-gender stereotypical children involves learning at:
Home
School
Society

Summary

We looked at the basis of gender stereotyping. How do parents infuse and children acquire gender roles. We also briefly looked at biological basis of gender roles.
And also looked at the similarities and differences in abilities and personalities of individuals across different genders.

Reference

Barry, H., Child, I. L., & Bacon, M. K. (2009). Relation of child training to subsistence economy. American Anthropologist, 61(1), 51-63.

Lesson 38

Gender Roles and Gender Differences

Theories of Gender Identity

Overview

Understand the theories of gender role and gender identity.
Understand the debate that goes on between biological and social perspectives on gender roles and identity.

Critical Questions

What are some biological and social influences on gender role-playing or gender identity?
How are societies looking gender roles in present times?

Theories about Gender Roles

Several theories have been proposed to account for sex differences and the development of gender roles. Some theories emphasize the role of biological differences between the sexes and others emphasize social influences. Some emphasize how society influences children; others suggest choices children make and their consequences.

Evolutionary Theory

Males and females face different evolutionary pressures
Natural selection created fundamental differences in male and female roles
Females need to be nurturing
Males need spatial skills for hunting

Evolutionary Theory: Criticisms

Applies to differences that apply cross-culturally
Ignores differences limited to cultures or historical periods
Social roles hypothesis
Cultures assign roles based on gender
Socialization practices

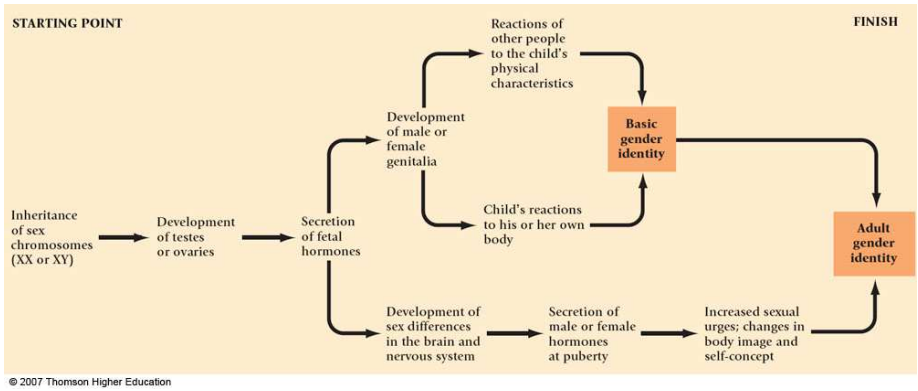
Biosocial Theory

Biosocial theory states that biological and social influences interact to determine a person's behaviors and role preferences (Money & Ehrhardt, 1972).
First critical event occurs at conception, when the infant receives the X or Y chromosome.
Prenatally the fetus is exposed to masculine and feminine hormones.
Once a child is born, social factors immediately come into play. Child is labeled.

Social-Labeling Influences

Parents and other people label and begin to react to the child based on his or her genitals.
Puberty, combined with one's earlier self-concept as a male or female, provide the basis for an adult gender identity and gender role preference.

Biosocial Theory



Biosocial Theory: Evidence

Genetic influences may contribute to some sex differences in personality, cognitive abilities, and social behaviors.
Hormones and congenital defects can have great effects.
However, it appears that at least half of the variability in people's masculine and feminine self-concepts is attributable to environmental influences.

Androgen-Insensitivity Syndrome

An X-linked recessive disorder (affecting males). The male brain and body remain unresponsive to androgens and are feminized due to maternal estrogens.
At puberty the testes do not descend and secondary female sexual characteristics appear due to circulating estrogens.
Individuals are often reared as girls and do not discover that they are 'male' until they fail to menstruate at puberty.

Congenital Adrenal Hyperplasia

An autosomal recessive disorder. The adrenal glands are unable to produce sufficient quantities of cortisol. ACTH is not inhibited and produced in large amounts.
The fetus is exposed to excessive amounts of androgens which have a masculinizing effect.
Affected females display masculinized genitals and behavior. Affected males may show precocious puberty.

Psychoanalytic Theory

Freud believed that one's gender identity and preferences for a gender role emerge during the phallic stage.
Said that boys identify with father's out of fear of being castrated, thus resolving their Oedipus complex.
Girls, in trying to please their father's incorporate their mother's feminine attributes.

Social Learning Theory

According to Bandura (1962) children (around 2 years) acquire gender identities and gender-role preferences in 2 ways:
Direct tuition: children rewarded or punished for behaviors.
Observational learning: in watching others children adopt attitudes and behaviors.

Cognitive-Developmental Theory

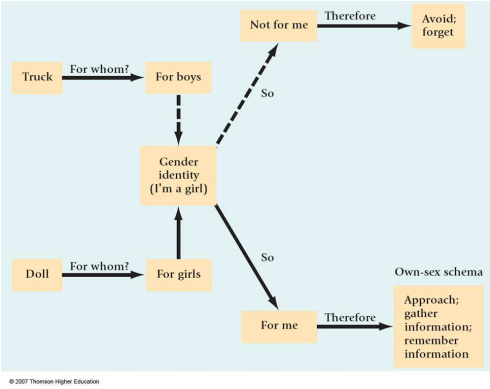
Gender-role development depends on cognitive development; children must acquire certain understandings about gender before they will be influenced by their social experiences (Kohlberg, 1966).
Children actively socialize themselves; they are not merely passive pawns of social influence.
Basic gender identity: by age 3, children have labeled firmly themselves as boys or girls.
Gender stability: child recognizes that gender is stable over time.
Gender consistency: child recognizes that gender is invariant despite changes in activities or appearance.

Cognitive-Developmental Theory: Criticism

Gender typing begins well before children acquire a mature gender identity.
Gender reassignment is very difficult after age 3.

Gender Schema Theory

Martin and Halverson (1983) claim that establishment of gender identity motivates a child to learn about sexes.
Child incorporates information into gender schemas-organized sets of beliefs and expectations about males and females



Androgyny: Modern Times

Androgyny-individual incorporates both masculine and feminine attributes into his/her personality.
Bem (1974) demonstrated that these people act more flexibly than more traditionally gender-typed individuals.

Summary

Biological theories account for major biological developments. Social-theories account for differential reinforcement processes. Cognitive development explains the growth of categorization skills. Gender schemas are also important as they models as children age.
Looked at the debate that goes on between biological and social perspectives on gender roles and identity.

References

Bandura, A. (1962). Social learning through imitation. University of Nebraska Press: Lincoln, NE.
Bem, S. L. (1974). The measurement of psychological androgyny. Journal of Consulting & Clinical Psychology, 42, 155-62.
Money, J., & Ehrhardt, A. A. (1972). Man and woman, boy & girl. Baltimore, MD: Johns Hopkins University Press.

Lesson 39

Morality, Altruism and Prosocial Development

Theories of Moral Development

Overview

Understand the basis of moral behavior, along with its development of when models or guides are available.
Understand how punishment can or cannot inculcate moral behavior.
Know different theories of moral behavior.

Critical Questions

What is the role of punishment in moral behavior?
What are some important theories of moral behavior? What are their strengths and weaknesses?

Morality: Childhood Beginnings

Within the first two years of child, morality hardly resembles its adult form.
The infant and later child begins to relate to his "self", develops self-control, and understands rules and regulation rudimentarily.
At birth, infants have a sense of self as a distinct agent, separate from the surrounding world, but self-awareness is limited.
At the end of the first year, learn that their own goals frequently conflict with those of others.
Empathy emerges and improves through early childhood.
Cultural variations influence emergence of self-awareness behaviors.
Becomes aware of qualities that make his or her "self" unique begins at 20 months.

Inductive Discipline

Effects of misbehavior on others
Helps child notice others' feelings and distress
Makes it clear to the child, that he or she caused the distress, therefore generate empathy-based guilt

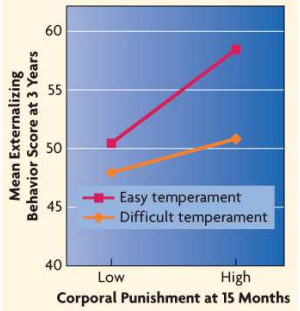
Good Models of Moral Behavior

Warmth and responsiveness
Competence and power
Consistency between words and behavior

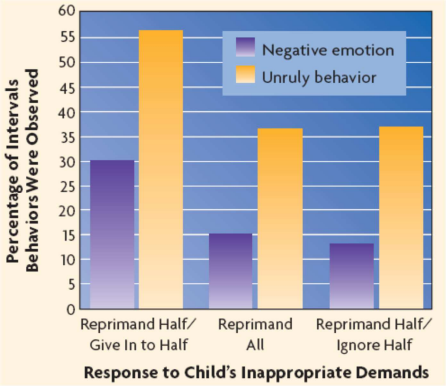
Punishment: Early Childhood

Physical (corporal) punishment and frequent punishment have undesirable side effects

Effectiveness of punishment increased by	• Consistency • Warm parent-child relationship • Explanations
Alternatives to punishment	• Time out • Withdrawing privileges • Positive discipline

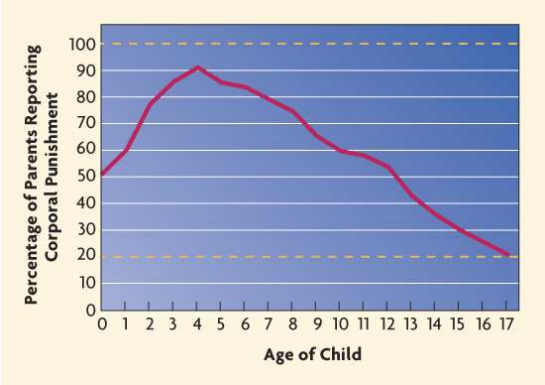


Results of Inconsistent Punishment



- Positive Discipline
- Build mutually respectful bond.
- Let child know how to act ahead of time.
- Praise mature behavior.

Corporal Punishment and Age of Child



Physical Punishment: Ethnicity

In African-American culture, physical punishment is:

•Mild

•Delivered in a context of parental warmth

•Aimed at helping children become responsible adults

The meaning and impact of physical discipline vary sharply with cultural context.

Theories of Moral Development

Biological	Evolutionary, genetic heritage. Brain areas.
Psychoanalytic	Freud: superego and guilt.
Behaviorist	Rewards and punishments.
Social learning	Modeling moral behavior.
Cognitive-Developmental	Children as active thinkers about social rules.

Biological Theory

1. Biological theories propose that selection pressures make individuals (humans and animals) evolve social interactions that are beneficial for survival.
2. Moral behaviors are based on such interactions.
3. The fields of sociobiology and evolutionary psychology both propose that human social behavior (like morality) mutually benefits the group and in turn the individual.

Psychoanalytic Theory

1. Freud, for example, argued that children develop moral conscience by age five.
2. This conscience is an internal representation of societal norms and allows the child to become a contributing member of society.
3. But this conscience also becomes an obstacle to instinctual desires for sex and aggression.
4. To Freud, then, conscience was double edge sword which was necessary to be happy, but at the same time a cause of deep anguish and pain.

Behaviorist Theory

1. Behaviorism does not really believe in good and evil in terms of religious or moral system.
2. All behaviors are simply based on reinforcement and punishment.
3. Children like adults emit behaviors due to reinforcing and punishing consequences.
4. Any behavior that is deem "good" is usually reinforced and increases, and one that is considered "evil" is punished.

Social Learning Theory

1. Moral codes like other beliefs, when internalized determine behavior. These codes develop through interactions with the model and direct experience.
2. Departure from the code results in self-contempt.
3. Bandura suggests that human moral behavior is inconsistent and is based on situation.

Moral Conduct

Let us look at some examples of how behavior changes with respect to moral standards.

Type	Moral code	Situation
Moral Justification	Do not steal	I stole for I had a family to feed.
	Do not kill	I killed the ruthless oppressor.
	Do not lie	I lied to save a life.
Euphemistic Labeling	Do not kill animals	I put animals to sleep.
	Do not kill humans	I killed for honor.
	Do not lie	I lied not to hurt others.
Advantageous Comparison	Stealing is wrong	I just stole, he killed a man.
	Do not kill	I killed one, he killed many.
	Do not lie	I just lied, he embezzled.

Piaget's Theory of Moral Development

1. Young children internalize moral rules conveyed by parents and other authorities (heteronomous morality) followed by increasing autonomy (autonomous morality) from those rules in late childhood or early adolescence.
2. Older children negotiate and remake some of the moral rules of society. In so doing, they not only voluntarily take ownership of the new rules but society also evolves in an increasingly democratic direction.
3. Entry into adolescence was a time for moral renewal at both the individual and collective levels. Not in all societies, however. According to Piaget, it could not occur in what he described as "primitive" cultures where adolescents conform to their elders without question.

Heteronomous Morality	Autonomous Morality
View rules as handed down by authorities, permanent, unchangeable, require strict obedience.	Rules as socially agreed on, changeable.
Judge wrongness by outcomes, not intentions.	Standard of ideal reciprocity.
	Judge on outcomes and intentions.

Moral Development: Kohlberg

Preconventional Level	Stage 1: Punishment and Obedience Stage 2: Instrumental Purpose
Conventional Level	Stage 3: "Good boy-good girl" (Morality of interpersonal cooperation) Stage 4: Social Order Maintaining
Post conventional Level	Stage 5: Social Contract Stage 6: Universal Ethical Principle

Sex Differences in Moral Reasoning

1. Kohlberg: rights and justice orientation.
2. Gilligan: caring for others orientation (Ethics of Care).
3. Both sexes use both orientations, but females may stress care more.
4. Greater experience as caregivers.

Summary

We related the basis of moral behavior, along with its development when models or guides were available.
Understood how punishment could or could not inculcate moral behavior.
Discussed different theories of moral behavior.

Lesson 40

Morality, Altruism and Prosocial Development

Altruism and Prosocial Development

Overview

Prosocial behavior is not understood fully, but probably involve the interplay of cognitive, social, emotional, biological, and environmental factors. We will discuss these factors.

We will also look at moderators that effect prosocial behavior in addition to factors that cause or increase likelihood of prosocial responding

Critical Questions

What is prosocial behavior? How are benevolent and altruistic behaviors related?

What are some important theories of moral behavior? What are their strengths and weaknesses?

Types of Prosocial Behavior

Prosocial behavior (broadest term)

Action intended to benefit another

Can be done to gain either external or internal reward

Benevolence (slightly narrower term)

Action intended to benefit another, but not to gain external reward)

Altruism

Action intended to solely benefit another

No external reward to the helper

No internal reward to the helper

Distinctions

Type of behavior	Definition	Example
Prosocial Behavior	Any action intended to benefit another (regardless of motive)	Giving a large tip to a waiter to impress your boss with your generosity
Benevolence	Benefits another intentionally for no external reward	Sending $20 to a charity to make yourself feel good inside
Pure Altruism	Benefits another intentionally for no external or internal reward	Jumping on a rail road track to help a stranger who has fallen

Prosocial Behavior

Definition: Voluntary behavior intended to benefit another including:

Emotional responding (i.e., empathy, sympathy, personal distress)

Moral reasoning

Altruism

Prosocial behavior is important to the quality of social interactions.

Altruism

Altruism is a sub-category of moral prosocial behaviors.

Definition: "Intrinsically motivated voluntary behavior intended to benefit another: acts motivated by internal motives such as concern for others or by internalized values, goals and self-rewards or the avoidance of punishment" (Eisenberg & Mussen, 1989).

Empathy

"An affective response that stems from the apprehension or comprehension of another's emotional state or condition and that is identical or very similar to what the other person is feeling or would be expected to feel" (Eisenberg, Wentzel & Harris, 1998), e.g., Feeling extreme sorrow at the death of a best friend's relative.

Sympathy
"An affective response that frequently stems from empathy (but can derive directly from perspective taking or other cognitive processing), and consists of feelings of sorrow or concern for the distressed or needy other" (Eisenberg, Wentzel & Harris, 1998), e.g., Feeling badly for a friend whose boyfriend cheated on her.

Personal Distress
A self-focused, aversive emotional reaction to the vicarious experiencing of another's emotion, stemming from exposure to another's emotional state or condition (Eisenberg, Wentzel & Harris, 1998), e.g., feeling anxiety when driving your nervous boyfriend to the testing site to go take his GRE.

Prosocial Behavior: Why?
Egoistic (Will benefit the individual in some way in the long run).
Other-oriented (Understand and care about the well-being of others).
Practical Concerns (e.g., If I do not help my student who is choking, she may die).
Morality (Altruism).

Innate Bias
Controversy about whether or not humans are biologically predisposed towards positive other-oriented emotions (i.e., empathy, sympathy, etc.)
Infants cry in response to hearing other infants cry (Martin & Clark, 1982).
Animals help and share with one another (Wilson, 1978).
Plomin et al. (1993) found no evidence for genetic influence on change in empathy ratings in babies 14 to 20 months, although genetic factors may have an influence on the stability of empathy over time.
Wachs and King (1994) suggests that the role of biology in the development of prosocial behavior is probabilistic rather than deterministic.

Cultural Factors
Findings from lab studies suggest that children from traditional rural and agricultural communities and traditional ethnicities are more cooperative than children from urban or Westernized cultures (Eisenberg & Mussen, 1989).
Kibbutz adults are more helpful than adults who are not raised on a kibbutz (Yinon, Sharon, Azgad, & Barshir, 1981).

Cultural Factors
Differences in achievement of the same ethnic group arise based on differences in geography and environment.

Characteristics of Prosocial Cultures
Live in extended family.
Female role important (economic contribution).
Work less specialized.
Government less centralized.
Early assignment of chores in young children.
Responsible for the welfare of the family, group, class, society.
In Japanese and Chinese schools, privileges of students depend on group not individual accomplishments (Stevenson, et al., 1991).
However the prosocial moral reasoning of children from different cultures and locations (urban to rural) is quite similar.

Ways of Teaching Children to Act Prosocially
Inductions (with emotionally charged explanations of moral behavior).
Discipline (Reward prosocial behaviors, punish antisocial behaviors).
Modeling.
Learning by doing.

Inductions
Giving a child reasoning or explanations for why to behave prosocially.
Focus on the consequences of child behavior on parent or other involved.
Related to prosocial behavior in 2-3 year old toddlers (Zahn-Waxler, et al., 1979; Miller et al., 1996).
Willingness to comply goes in both directions (parent to child & child to parent).

Discipline
Punishment
Power-assertive techniques (physical, threat, deprivation)
Excessive and arbitrary demands and expectations

Reward
Mixed support for this, bad when reward not present, no prosocial behavior.
Good in immediate context, especially with praise (about child's dispositional goodness), thanks, or positive other response.

Modeling
Children who view generous models are more generous and helpful themselves as compared to controls.
Multiple models are more effective than one model.
Many experimenters have found effects days or months after child viewed generous model, especially when combined with rehearsal, positive reinforcement, or with internal self-attributions

What else leads to prosocial behaviors?
Parental emotion-related socialization linked to children's empathic responding (Eisenberg, Wentzel & Harris, 1998).
Moderate exposure to other's sadness, tension, and fear with constructive coping techniques from parents enhances other-oriented prosocial responding.
Personality and temperament.
Attachment.

Prosocial Responding: School Age
With teachers' request (Authority and punishment-related reasons for compliance).
With peers' request (Other-oriented or relational motives; Eisenberg, Lundy, Shell, & Roth, 1985).
Little is known about the relation for older children.

Prosocial Development: Cognitive Correlates
Cognitive ability has been posited to underlie the capacity of children (identification) to respond prosocially.
Intelligence is associated with certain types of prosocial responding in terms of quality, not quantity.
Capable of perspective taking to understand the emotional and cognitive state of another person.
Motivation to respond when identifying another's perspective.
Children who are more mature with respect to perspective taking are more likely to be in more situations in which it would be appropriate to respond prosocially.

Emotional Responding
Children, within a specific context, who have a sympathetic disposition are more prosocial.
Sympathy may be moderated by dispositional perspective taking (Knight et al., 1994) and moral reasoning (Miller et al., 1996).

Personality
Consistent responding over time related to personality and dispositional type.
Social competence is associated with sympathy and empathy, while aggression, delinquency, competitiveness, and acting-out are not.

Children who act prosocially usually have a positive self-concept (e.g., Larrieu & Mussen, 1987) whereas children who fear disapproval may not act prosocially if they are not positive it will draw approval).
Prosocial behavior is correlated with moral functioning (other-oriented goals, social responsibility, integrative concern, and guilt), e.g., especially in older children and adolescents who view themselves as moral and value their morality.
Prosocial children are well-regulated and low in impulsivity (Block, Block & Harrington, 1973).

Summary

We discussed the fact that prosocial behavior is not understood fully, but probably involve the interplay of cognitive, social, emotional, biological, and environmental factors. We will discuss these factors.
We also looked at moderators that effect prosocial behavior in addition to factors that cause or increase likelihood of prosocial responding.

References

Block, J., Block, J. H., & Harrington, D. M. (1974). Some misgivings about the matching familiar figures test as a measure of reflection-impulsivity. Developmental Psychology, 10(5), 611-632.
Eisenberg, N., Lundy, N., Shell, R., & Roth, K. (1985). Children's justifications for their adult and peer-direct compliant (prosocial and nonprosocial) behaviors. Developmental Psychology, 21, 325-331.
Eisenberg, N., & Mussen, P. H. (1989). The roots of prosocial behavior in children. Cambridge University Press.
Eisenberg, N., Wentzel, M., & Harris, J. D. (1998). The role of emotionality and regulation in empathy-related responding. School Psychology Review, 27, 506–521.
Knight, G. P., Johnson, L. G., Carlo, G., & Eisenberg, N. (1994). A multiplicative model of the dispositional antecedents of a prosocial behavior: predicting more of the people more of the time. Journal of Personality and Social Psychology, 66, 178–183.
Larrieu, J., & Mussen, P. (1986). Some personality and motivational correlates of children's prosocial behavior. Journal of Genetic Psychology, 147, 529–542.
Martin, G. B., & Clark, R. D. (1982). Distress crying in neonates: Species and peer specificity. Developmental Psychology, 18(1), 3.
Miller, P. A., Eisenberg, N., Fabes, R. A., & Shell, R. (1996). Relations of moral reasoning and vicarious emotion to young children's prosocial behavior toward peers and adults. Developmental Psychology, 32(2), 210-219.
Plomin, R., Kagan, J., Emde, R. N., Reznick, J. S., Braungart, J. M., Robinson, J., ... & DeFries, J. C. (1993). Genetic change and continuity from fourteen to twenty months: The MacArthur Longitudinal Twin Study. Child Development, 64(5), 1354-1376.
Stevenson, H. W., Chuansheng C., & Shinying, L. 1992 Chinese Families. In Parent-Child Socialization in Diverse Cultures. Jaipaul L. Roopnarine and D. Bruce Carter, eds. Pp. 17–33. Norwood, NJ: Ablex.
Wachs, T. D., & King, B. (1994). Temperament: Individual differences at the interface of biology and behavior. American Psychological Association.
Wilson, E. O. (1978). What is sociobiology? Society, 15(6), 10-14.
Yinon, Y., Sharon, I., Azgad, Z., & Barshir, I. (1981). Helping behavior of urbanites, moshavniks, and kibbutzniks. The Journal of Social Psychology, 113(1), 143-144.
Zahn-Waxler, C., Radke-Yarrow, M., & King, R. A. (1979). Child rearing and children's prosocial initiations toward victims of distress. Child Development, 50, 319–330.

Lesson 41

Developmental Psychopathology

Risk and Protective Factors

Overview

We will look at different kinds of risk and protective factors in young individuals and adolescents.
Also discuss different intervention models that help control risky behaviors and maintain mental health.

Critical Questions

What is risky behavior? How can an individual be protected against them?
What are some important models that can be used to intervene risky behaviors?

What are risk and protective factors?

Risk or stress factor: A condition that increases the probability of a disorder (e.g., abuse, neglect, violence exposure, poor health care).
Protective factor: A condition that inhibits, reduces, or buffers the probability of a disorder (e.g., parental monitoring, problem-solving skills, school connectedness).

How can risk factors increase?

Risk and protective factors encompass psychological, behavioral, family, and social domains.
Children and adolescents under excessive stress with few protective factors are most at risk for emotional, behavioral, and other problems, while children and adolescents with relatively low stress and many protective factors are least at risk for problems.

Adolescent Health Study (1997)

At the University of Minnesota Dr. Michael Resnick, developed the Adolescent Health Program.
Took an initial sample: 91,000 adolescents (7th – 12th graders) and followed some 20,000 of them over one year.
The goal was to understand the determinants of risk and health behavior among American youth at the individual, family, school, and community levels.

Risk Factors

- Access to guns at home. Suicide and involvement in interpersonal violence.
- Access to tobacco, alcohol, illicit substances. More likely their use.
- Repeating a grade in school. Engagement in risky behaviors, greater distress.
- Working greater than 20 hours/week. More distress, increased likelihood of smoking and getting involved with kids engaging in risky behaviors.

Protective Factors

- Connectedness with Family/Parents
- "Perceived Availability" – emotional availability of parents.
- Connectedness with School
- Fairness of teachers
- Caring teachers
- Sense of belongingness
- Academic Success (Note: Size of school, private/public/religious, and student: teacher ratio did not predict outcomes.

Outcomes

If protective factors were in place the individuals were less likely to:

- Use cigarettes
- Use alcohol
- Use marijuana

- Initiate sex early
- Attempt suicide

The Asset Approach

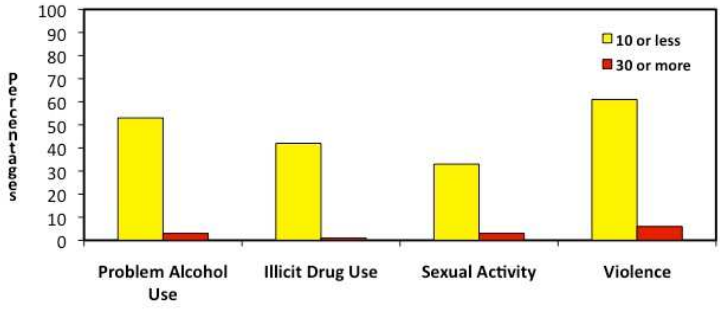
Search Institute, non-profit organization, since 1989, has been carrying out research on developmental assets that promote healthy behavior in youth. Forty developmental assets are outlined.
Based on research with 217,000 sixth to twelfth graders in 318 communities.
Number of assets and the degree to which they develop lead to positive and healthful ways.

A few Assets

Receive support	Want to do well
Neighbors encourage	Read for pleasure
Feel safe	Stand up for beliefs
Adult positive models	Accept responsibility
Feel valued	Resist peer pressure
Family has standards	Optimistic
Parents feel that the school helps	Life has purpose

Assets and Risks

Greater number of assets led to lesser problems in adolescents.



How many assets are needed?

While there is no "magic number" of assets, 31 is a good benchmark for experiencing their positive effects most strongly.
The average young person surveyed in the United States experiences only 19.3 of the 40 assets.
Overall, 56% of young people surveyed have fewer than 20 of the 40 assets.

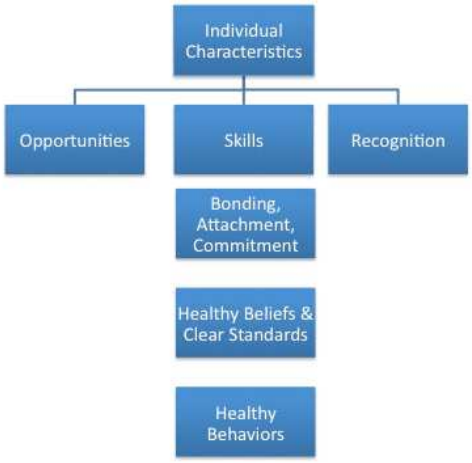
Social Development Model

Social Development Research Group, University of Washington, (Catalano, 2004) have proposed protective and risk and protective factors are associated with health and risk behaviors in youth.
Two key protective factors:
Bonding to prosocial family, school and peers
Clear standards or norms for behavior

Social Development Model

Three processes that promote these protective factors:
Opportunities for involvement in productive prosocial roles
Skills to be successfully involved in these roles
Consistent systems of recognition and reinforcement for prosocial involvement
Buffer against: conduct problems, school misbehavior, truancy, and drug abuse.

Social Development Strategy



A Four-Pronged Approach

1. Decrease stress or risk factors
2. Increase protective factors
3. Train in core skills
4. Implement interventions

Paradigm Shift…

Providers and programs are being encouraged to focus more on fostering resiliency and less on identifying pathology

Resilient individuals are more likely to be able to withstand stress and avoid negative outcomes

Individual Risk Factors

Impulsivity	Disconnected from school
Aggressive or violent behavior	Hopelessness
Disregard for others	Negative self-concept or low self-esteem
Sensation seeking	Prenatal exposure to drugs or alcohol
Language problems	Low birth weight
Poor interpersonal boundaries	Poor or irregular attachment
Affiliates with anti-social youth	Unsatisfactory relationships
Biological risk factors (head injury, infection, nutrition, exposure to toxins)	Emotional immaturity
	Poor scholastic work skills
Acute health condition	Delinquency
Low intelligence	Substance abuse
Attention deficits	Stressful life events
Unsatisfactory relationships	
Apathy or emotional blunting	

Family Risk Factors

- Family history of mental illness
- Parental crime/incarceration
- Familial abuse/neglect
- Familial substance abuse
- Lack of parental support
- Family isolation

- Large family size
- Death of a caregiver
- Physical/mental illness of a loved one

School/Community Risk Factors

- Underachieving schools
- Peer rejection/isolation
- Poverty
- Limited access to health/mental health care
- Poor community resources
- Neighborhood crime and violence
- Few recreational outlets
- Social discrimination
- Overcrowding
- Exposure to trauma/violence

Individual Protective Factors

Being easy to get along with having good social skills Feeling empathy Shaving a positive and optimistic outlook Taking responsibility for his/her actions Having a sense of personal identity Having a strong sense of what is right and wrong	Having defined goals for the future Believing in one's self Asking for help Having good problem solving skills Being proactive

Family, School, Community Protective Factors

- Caring relationships with adults who support the students and model healthy behavior.
- Family cohesion.
- Positive and high expectations that the student will succeed.
- Opportunities for meaningful participation in relevant, engaging activities.

Summary

We looked at different kinds of risk and protective factors in young individuals and adolescents.
Also discussed different intervention models that help control risky behaviors and maintain mental health.

Lesson 42

Developmental Psychopathology

Genetic Abnormalities and Genetic Counseling

Overview

We will look at different kinds of genetic disorders and their symptoms.
Also discuss genetic counseling and role of genetic counselors in helping children with genetic disorders.

Critical Questions

What are genetic disorders? How do they occur?
What are different techniques and procedures used in genetic counseling?

Mutations

Gene mutations can be either inherited from a parent or acquired.
A hereditary mutation is a mistake that is present in the DNA of virtually all body cells, and can be passed from generation to generation, from parent to newborn.
Cells, have the remarkable ability to recognize mistakes and fix them before they pass them along to their descendants.
But a cell's DNA repair mechanisms can fail, or be overwhelmed, or become less efficient with age. Over time, mistakes can accumulate.

Genetic Abnormalities

Many dominant or recessive gene diseases are due to dominant or recessive alleles (genes). One such dominant gene disease is Huntington's disease. Recessive gene diseases include cystic fibrosis, sickle-cell disease and Tay-Sachs disease.

Huntington's Disease

Huntington's disease is a nervous system disease in which some parts of the brain (nerve cells) degenerate.
Patients express behavioral disturbances, hallucinations, irritability, moodiness, restlessness or paranoia.
Quick, sudden, sometimes wild jerking movements of many body parts. Slow, uncontrolled movements
Unsteady gait. Dementia, disorientation, confusion, loss of judgment, loss of memory, personality changes, speech changes.
Caused by a genetic defect on chromosome 4, due to a dominant allele. The defect causes a part of DNA, to repeat CAG many more times than it is supposed to.

Cystic Fibrosis

Cystic fibrosis is a lung disease, in which thick sticky mucus builds up in lungs, digestive tract and other areas of the body. This is a genetic disease and is a recessive gene disease.
This sticky mucus in the lungs can be life-threatening due to infections and also seriously affects digestive and reproductive systems.
Caused by recessive alleles on chromosome 7 both form the mother and the father.

Hemophilia

People with hemophilia lack a clotting agent in their blood.
The main symptom of hemophilia is bleeding and may occur during surgery or after trauma. Serious bleeding may occur without any cause, including internal bleeding from organs or joints.
When males inherit recessive hemophilia allele on X chromosome they cannot mask it with a dominant allele on their Y chromosome.

Down Syndrome

Downs syndrome is marked by a condition of being a "baby". Maturational retardation. This syndrome represents low IQ, facial defects, heart problems, and shortened life span.

Symptoms of Down Syndrome

- Low muscle tone.
- Single deep crease across center of palm.
- Looseness of joints.
- Small skin folds at the inner corners of the eyes.
- Excessive space between first and second toe.

Kleinfelter's Syndrome

Chromosomal disorder (XXY) in males with some development of breast tissue normally seen in females.
Little body hair is present, and such individuals are typically tall, have small testes.
Infertility results from absent sperm.
Evidence of mental retardation may or may not be present.

Turner's Syndrome

Turner syndrome (X) is associated with underdeveloped ovaries, short stature, and is only in women.
Bull neck, and broad chest. Individuals are sterile, and lack expected secondary sexual characteristics.
Mental retardation typically not evident.
Chromosomal or monogenic?

Sickle Cell Anemia

An inherited, chronic disease in which the red blood cells, become crescent shaped.
As a result, they function abnormally and cause small blood clots. These clots give rise to recurrent painful episodes called "sickle cell pain crises".

Muscular Dystrophy

Muscular dystrophy is a disease in which the muscles of the body get weaker and weaker and slowly stop working because of a lack of a certain protein.
Can be passed on by one or both parents, depending on the form of MD (therefore is autosomal dominant and recessive).

Diabetes

Color Blindness
Cause: X-linked recessive
1/10 males have, 1/100 females have. Why the difference?
Individuals are unable to distinguish shades of red-green.
Are you color blind?

Prenatal Screening & Genetic Testing

Ultrasonography (ultrasound)
Amniocentesis
Chorionic Villus Sampling (CVS)

Genetic Counselors & Counseling

Clinical geneticists are medical doctors with special training in genetics. In addition to educating families about genetic conditions, they perform clinical exams and order lab tests to diagnose the causes of birth defects and other genetic conditions. They can explain how a genetic condition may affect a person and give advice about treatment options and recurrence risks for future pregnancies.
Genetic counselors are health professionals with specialized graduate degrees and experience in the areas of medical genetics and counseling.
Most enter the field from a variety of disciplines, including biology, genetics, nursing, psychology, public health and social work (NSGC 1981; 1983).

What Do Genetic Counselors Do?

Provide information and support to families who have members with birth defects or genetic disorders and to families who may be at risk for a variety of inherited conditions.

Identify families at risk, investigate the problem present, interpret information about the disorder, analyze inheritance patterns and risks of recurrence and review available options with the family.

Types of Genetic Counselors

The majority of genetic counselors practice in the following areas of specialty:

1. Prenatal
2. Pediatric
3. Cancer Genetics

Prenatal GC Example

Begum Rashid is a 28 year old woman. She is 17 weeks pregnant and this is her first pregnancy. She has a routine blood test at her OB's office. She is told that it screens for Down syndrome and some other conditions. A week after the test, she receives a call from the nurse saying she came back "screen positive" for trisomy 18. The nurse tells her the chance her baby has trisomy 18 is 1 in 100. She is referred to a genetic counselor.

Role of Prenatal GC

- Review results of screening test.
- Obtain pregnancy and family history.
- Explain the cause and features of trisomy 18.
- Discuss further testing options.
- Facilitate decision making.
- Follow-up with further testing results.
- Use counseling skills to help patient cope with test results.

Pediatric GC Example

Razia is a 2 year old girl who was born with profound hearing loss. She is the only individual in her family with hearing loss. She was recently evaluated by an ENT to consider cochlear implants. The ENT recommended that she have a Genetics evaluation to understand the cause of her hearing loss.

Role of Pediatric GC

- Work closely with a medical geneticist.
- Review medical records.
- Obtain pregnancy, medical and family history.
- Discuss known causes of hearing loss.
- Discuss testing options.
- Coordinate testing.
- Counsel regarding test results and recurrence risk.
- Provide written information.
- Identify appropriate community resources.

Cancer GC Example

Marium is a 15 year old woman who is referred to a genetic counselor because her sister was recently diagnosed with ovarian cancer at age 52. Her father and paternal grandmother were also diagnosed with breast cancer at ages 58 and 45 respectively. Mary tells you her sister has a mutation in the BRCA2 gene.

Role of Cancer GC

- Obtain medical records and relative's test results as appropriate.
- Obtain family and medical history.

- Pedigree analysis.
- Discuss features and genetics of Hereditary Breast and Ovarian Cancer.
- Discuss risks and benefits of genetic testing.
- Review cancer risks and options for risk reduction.
- Arrange for testing if desired and follow-up counseling.

Summary

We looked at different kinds of genetic disorders and their symptoms.
Also discussed genetic counseling and role of genetic counselors in helping children with genetic disorders.

References

NSGC (1981). Strategies in Genetic Counseling: An update. National Society of Genetic Counselors First Annual Educational Conference Book, National Foundation-March of Dimes.
NSGC (1983). A publication of the NSGC.

Lesson 43

Developmental Psychopathology

ADHD and Autism

Overview

We will look at two prominent disorders in children that lead to many functional and social inadequacies. These include autism and attention deficit/hyperactivity (ADHA) syndrome.
Also discuss symptoms, causes, and treatment of these diseases.

Critical Questions

What are autism and ADHD disorders?
What are their basic symptoms, possible causes and treatments?

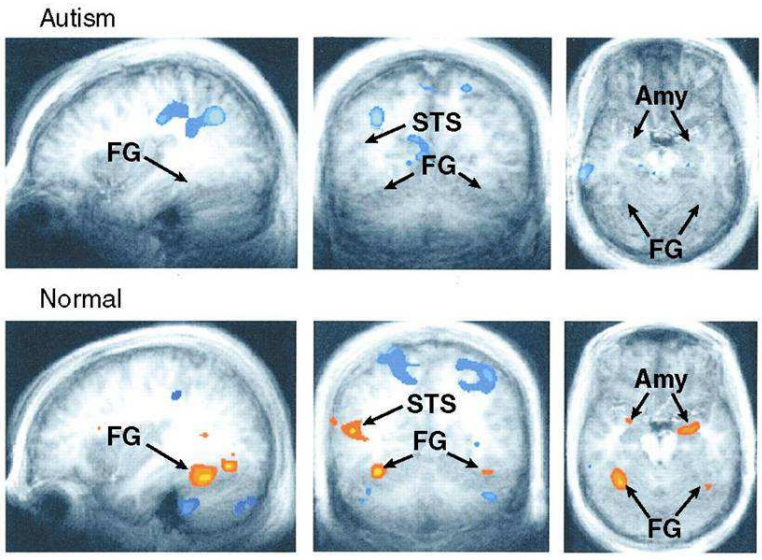
Autistic Disorder

A chronic disorder whose symptoms include failure to develop normal social relations with other people, impaired development of communicative ability, lack of imaginative ability, and repetitive, stereotypical movements.

Autistic Disorder: Causes

Biological:

Research and mental health professionals are convinced autism is caused by biological factors.
There is a 70 percent concordance rate for monozygotic twins.
Between 2 and 3 percent of siblings of individuals with autism are themselves autistic.
A hereditary disorder caused by the absence of an enzyme that converts the amino acid phenylalanine to tyrosine; causes brain damage unless a special diet is implemented soon after birth.
Researchers have found evidence for structural abnormalities in the brains of autistics, but so far we cannot point to any single abnormality as the cause of the disorder.



Attention-Deficit/Hyperactivity Disorder (ADHD)

The principal characteristics of ADHD are inattention, hyperactivity, and impulsivity. These symptoms appear early in a child's life.
There are three patterns of behavior that indicate ADHD. Children with ADHD may show several signs of being consistently inattentive. They may have a pattern of being hyperactive and impulsive. Or, they may show all three types of behavior.

Inattention

- Often becoming easily distracted by irrelevant sights and sounds (hypervigilant).
- Often failing to pay attention to details and making careless mistakes.
- Rarely following instructions carefully and completely losing or forgetting things like toys, or pencils, books, and tools needed for a task.
- Often skipping from one uncompleted activity to another.

Hyperactivity-Impulsivity

- Feeling restless, often fidgeting with hands or feet, or squirming while seated.
- Running, climbing, or leaving a seat in situations where sitting or quiet behavior is expected (lack of impulse control).
- Blurting out answers before hearing the whole question (lack of impulse control).
- Having difficulty waiting in line or taking turns.

ADHD: Causes

There is strong evidence that hereditary factors play a role in ADHD.
Thirty-six percent of all findings were positive 17% were trends, and 47% were negative.
Genetic investigations have supported the role of both dopamine D4 receptor gene (DRD4) and dopamine transporter gene (DAT1) in the vulnerability to the disorder.
The DAT1 gene has been postulated as a candidate gene for attention-deficit-hyperactivity disorder:
Lower DA binding in basal ganglia
Increased DA transport in frontal lobes

ADHD: Other Causes

Possible correlation between the use of cigarettes and alcohol during pregnancy.
Lead paints?
Sugar sensitivities?
Head injuries?

ADHD: Still Other Causes

Brain structure involvement:
Studies of brain structure of people with ADHD do not reveal any localized abnormalities, though the total volume of their brains is approximately 4% smaller than normal.
Possible candidates:
Frontal lobes
Medial temporal lobes
Caudate nucleus
NIMH Child Psychiatry Branch studied 152 boys and girls with ADHD, matched with 139 age- and gender-matched controls without ADHD. The children were scanned at least twice, some as many as four times over a decade. As a group, the ADHD children showed 3-4 percent smaller brain volumes in all regions—the frontal lobes, temporal gray matter, caudate nucleus, and cerebellum.

The Reticular Activating System

Decreased NE activity in RAS.
Poor attention, learning difficulties, memory deficits, lack of behavior control.
Treatment with amphetamines increase RAS activity.
Increased RAS activity.
Hyperactivity, restlessness, hypervigilant.

ADHD: Treatment

Treatment may include Clonadine (NE Antagonist).
Adderall, Dexedrine (amphetamine salts and dextro-amphetamine, DA & NE increase).
Concerta, Ritalin (methylphenidate).

Cylert (pemoline, DA agonist? Mechanism not well described, rarely used).

Summary

We looked at two prominent disorders in children that lead to many functional and social inadequacies. These include autism and attention deficit/hyperactivity (ADHA) syndrome.
Also discussed symptoms, causes, and treatment of these diseases.

Lesson 44

Developmental Psychopathology

Aggression, Behavioral Problems and Conduct Disorders

Lecture based on Suzin Whitten, MD PowerPoint Presentation

Overview

We will look at frustration and its effects in terms of behavior disorders. We will also discuss oppositional defiant disorders, conduct disorders and mention disruptive behavior disorders.

We will then discuss, symptoms, and treatment strategies of all of these disorders.

Critical Questions

What are oppositional defiant disorders, conduct disorders and disruptive disorders? How do they occur?

What are different therapeutic techniques in helping these disorders?

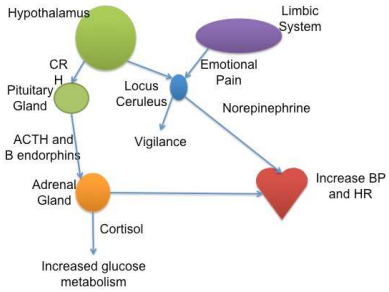
Aggression

Behavior with goal/intention of harming another who is motivated to avoid harm

- Stable over time and may not "grow out".
- Persistent aggressive behavior needs early intervention
- Consider comorbid conditions.

Aggression: Causes

- Both genetic factors and child rearing practices contribute.
- Boys generally tend to be more aggressive than girls.
- Family unemployment, discord, criminality, psychiatric disorders or unmarried mothers.
- Exposure to aggressive models on TV, in play, in life.
- Brain physiology (stress response).



Brain on Stress

- Corticotropin releasing hormone system
- Locus ceruleus (norepinephrine system)
- Limbic system

The Link to Aggressive Behavior

- Reduction of autonomic responsiveness.
- Lower pulse rate and skin conductance in presence of arousing stimuli.
- Adaptive response to continual insults when exposed to stress at an early age.
- Lower cortisol levels, NT dysfunction.

Behavior Issues: 2-4 yrs

- Need for autonomy v dependence on parents, frustration and anger.
- Lying, impulsiveness, breath holding, defiance, and temper tantrums.
- 50% of preschoolers are brought to the attention of physicians for destructive and disobedient behaviors

Behavior Issues: School Age

- School achievement and acceptance by peers.
- Lying and fantasy v lying and avoidance.
- Aggressive play and fighting.
- Stealing as impulsive, expression of anger and frustration, may be learned.
- Truancy, running away, and unsupervised fire starting are never developmentally appropriate.

Behavior Issues: Adolescence

- Progressive individuation and separation from the family.
- Importance of peer relationships.
- Intense emotions and wide swings in mood are typical.
- Abstraction, new mental power, omnipotence.
- Rigid concepts of right and wrong, idealism.
- Sexual activity (41% by 10th grade, 61% by 12th).

Behavior Disorders

1. Oppositional Defiant Disorder (ODD)
2. Conduct Disorder (CD)
3. Disruptive Behavior Disorder (DBD)

Oppositional Defiant Disorder

A pattern of negativistic, hostile, and defiant behavior lasting at least 6 months, during which 4 or more of the following are present:

- often loses temper.
- often argues with adults and actively defies or refuses to comply with adults' requests or rules.
- often deliberately annoys people.
- often blames others for his/her mistakes.
- often touchy or easily annoyed by others.
- often angry or resentful.
- often spiteful or vindictive.

Two to 16 % population.
Boys before puberty have equal chances of getting oppositional defiant disorder than after puberty.
Gradual onset, emerge in home setting.
May be the antecedent to Conduct Disorder but usually does not persist after adolescence.

Treatment

- Parent training to manage child behavior.
- Child individual therapy to develop efficient anger management, decrease negativity, and improve social skills.
- Family therapy to improve communication.

Conduct Disorder

A repetitive and persistent pattern of behavior in which the basic rights of others or major age appropriate societal norms or rules are violated, as manifested by the presence of 3 or more of the following criteria for the past 12 months with one criterion present in the past 6 months. Fifteen criteria are broken down into 4 categories.

1. Aggression to people and animals
2. Destruction of Property
3. Deceitfulness or Theft
4. Serious Violation of Rules

Conduct Disorder: Childhood Onset

- Age < 10.
- Male > female.
- Frequently display physical aggression.
- Have disturbed peer relationships.
- ODD during early childhood.
- Concurrent ADHD is common.

- Greater risk for Antisocial Personality.

Conduct Disorder: Adolescent Type

- Age > 10.
- Less likely to display physical aggression.
- More normative peer relationships.
- Less likely to persist beyond adolescence.
- More common in urban settings.
- 6-16% males, 2 to 9 % females.
- More likely to die from homicide, suicide, violent accident, drug overdose.
- Associated with lower than average intelligence, particularly verbal IQ.

Conduct Disorder: Comorbid

- ADHD is common (30 - 50%).
- Learning disorders (10 – 90%).
- Anxiety (15 - 24%).
- Depression (15 - 24%).
- Substance abuse (? >80%).

Conduct Disorder: Risks

- Parental rejection and neglect.
- Difficult infant temperament.
- Inconsistent child rearing practices with harsh discipline.
- Physical or sexual abuse.
- Lack of supervision.
- Early institutional living.
- Frequent change of caregiver.
- Large family size.
- History of maternal smoking during pregnancy.
- Peer rejection.
- Association with delinquent peer group.
- Neighborhood exposure to violence.
- Familial psychopathology (ASPD, substance dependence)

Conduct Disorder: Treatment

- Parent management training.
- Social Cognitive and problem solving skills training.
- Peer and school based interventions.
- Community intervention strategies.
- Treatment of comorbid disorders.
- Early intervention > later intervention.

Summary

We looked at frustration and its effects in terms of behavior disorders. We also discussed oppositional defiant disorders, conduct disorders and mentioned disruptive behavior disorders.
We then discussed, symptoms, and treatment strategies of all of these disorders.

Lesson 45

Developmental Psychopathology

Special Children and Children with Learning Disabilities

Overview

We will look at special children with mental retardation and discuss if these children are educable or not.
We will also discuss other forms of learning disabilities which include dyslexia, dyscalculia, and dysgraphia.

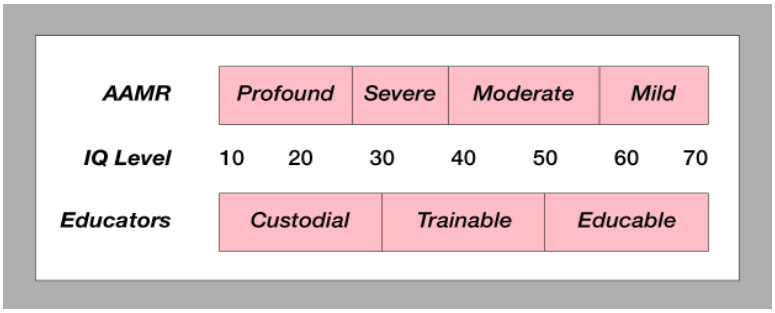
Critical Questions

Who are children with special needs? How does mental retardation make children vulnerable to learning and education?
What are different other forms of learning disabilities, including dyslexia, dyscalculia, and dysgraphia?

Mental Retardation

Significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period (AAIDD definition). Test scores, social skills, and age of onset determine the placement.
Organic mental retardation: retardation caused by a specific biological or physical problem, only about 25% of the cases, usually more severe.
Familial mental retardation: represents the lower end of the normal distribution of intelligence; does not involve biological damage.

Mental Retardation: Levels



Occurrence

Mental retardation and physical disabilities account for the population traditionally thought of as disabled.
Most teachers will work with these children in school.
This group makes up only a small portion of those classified as disabled, but may require a large part of the resources needed.

Organic Mental Retardation

Down syndrome is one of the biological reasons for organic mental retardation.
Down syndrome children are characterized by a distinctive set of physical characteristics. These physical characteristics need to be factored in program planning.
Mothers under 16 over 40.

Needs

The MR child will need modifications in rules and simplification of directions to perform in class activities.
Their skill and fitness level tends to be below normal.
Studies show that the MR child can develop skills and fitness with instruction and practice.

Programming

Children with Mental Retardation can benefit from physical activity.
Programming needs to be inclusive as much as possible.

Learning Disability

Typical learning difficulties include:

- Dyslexia,
- Dyscalculia, and
- Dysgraphia
- Attention deficit/hyperactivity disorder.

Dyslexia

Dyslexia is brain's inability to translate written images into meaningful language. Also called specific reading disability, dyslexia is the most common learning disability in children.

A learning disability is a condition that produces a gap between someone's ability and his or her performance. Most people with dyslexia are of average or above-average intelligence, but read at levels significantly lower than expected.

Learning disabilities affect about 5 percent of all school-age children in public schools in the United States. The majority of schoolchildren who receive special education services have deficits in reading, and dyslexia is the most common cause.

Dyslexia: Signs & Symptoms

- They may have difficulty comprehending rapid instructions.
- Following more than one command at a time or
- Remembering the sequence of things.
- Reversals of letters (b for d) and,
- Reversal of words (saw for was) are typical among individuals who have dyslexia.
- Individuals with dyslexia may also try to read from right to left,
- May fail to see (and occasionally to hear) similarities and differences in letters and words,
- And may not recognize the spacing that organizes letters into separate words, and may be unable to sound out the pronunciation of an unfamiliar word.

Dyslexia: Screening & Diagnosis

There's no single test for dyslexia. Diagnosis involves an evaluation of

- medical
- cognitive
- sensory processing
- educational and
- psychological factors

It is usual to undergo vision, hearing and neurologic examinations to see whether another disorder may be causing or contributing to your poor reading ability.

Other evaluation include: Receive a psychological assessment to determine whether social problems, anxiety or depression may be limiting his or her abilities

Dyslexia: Causes & Treatment

Dyslexia seems to be caused by a malfunction in certain areas of the brain concerned with language. The condition frequently runs in families.

There's no known way to correct the underlying brain malfunction that causes dyslexia.

Treatment may involve a multisensory education program and emotional support for the child.

Psychological testing will help you identify the areas you need to work on.

People with milder forms of dyslexia often eventually learn to read well enough to succeed in school.

Dyscalculia

The word "dyscalculia" means difficulty performing math calculations. In other words, it just means "math difficulty". And specifically, it means a learning disability, which affects math. Sometimes confusion arises when we start dealing with the term "dyscalculia" as it relates to "special education services".

There are very strict criteria, which determine if a student has a learning disability as it is defined by special education rules.

When a student's math difficulties are severe enough to meet this criteria, special education services are indicated.

On the other hand, "dyscalculia" has no clearly defined criteria. A student with any degree of math difficulty may be considered to have "dyscalculia" by some educational specialists. This frequently occurs when a student receives an educational evaluation outside of the public school system.

Dyscalculia: Strategies

- Work extra hard to "visualize" math problems.
- Draw a picture to help understand the problem.
- Take extra time to look at any visual information that may be provided (picture, chart, graph, etc.).
- Read the problem out loud and listen very carefully. This allows you to use your auditory skills (which may be strength).
- Use examples.
- Ask for or try to think of a real-life situation that would involve this type of problem.
- Do math problems on graph paper to keep the numbers in line.
- Ask for uncluttered worksheets so that the child is not overwhelmed by too much visual information.
- Spend extra time memorizing math facts. Use rhythm or music to help memorize.

Dysgraphia

"Dysgraphia" is a learning disability resulting from the difficulty in expressing thoughts in writing and graphing.

It generally refers to extremely poor handwriting.

Difficult to determine. If determined, special education services are indicated.

The term is seldom used within public schools because of the lack of any generally recognized or measurable criteria.

Dysgraphia: Problems

Students with dysgraphia often have sequencing problems or rational information processing.

These students often have difficulty with the sequence of letters and words as they write. As a result, the student either needs to slow down in order to write accurately, or experiences extreme difficulty with the "mechanics" of writing (spelling, punctuation, etc.).

They also tend to intermix letters and numbers in formulas. Usually they have difficulty even when they do their work more slowly. And by slowing down or getting "stuck" with the details of writing they often lose the thoughts that they are trying to write about.

Students with ADHD often experience significant difficulty with writing and formulas in general and handwriting in particular.

Dysgraphia: Symptoms

Students may exhibit strong verbal but particularly poor writing skills.

- Random (or non-existent) punctuation. Spelling errors (sometimes same word spelled differently); reversals; phonic approximations; syllable omissions; errors in common suffixes. Clumsiness and disordering of syntax; an impression of illiteracy. Misinterpretation of questions and questionnaire items. Disordered numbering and written number reversals.
- Generally illegible writing (despite appropriate time and attention given the task).
- Inconsistencies: mixtures of print and cursive, upper and lower case, or irregular sizes, shapes, or slant of letters.
- Unfinished words or letters, omitted words.

- Inconsistent position on page with respect to lines and margins and inconsistent spaces between words and letters.
- Cramped or unusual grip, especially holding the writing instrument very close to the paper, or holding thumb over two fingers and writing from the wrist.
- Talking to self while writing, or carefully watching the hand that is writing.
- Slow or labored copying or writing - even if it is neat and legible.

Dysgraphia: Strategies

- Encourage students to outline their thoughts. It is important to get the main ideas down on paper without having to struggle with the details of spelling, punctuation, etc.
- Have students draw a picture of a thought for each paragraph.
- Have students dictate their ideas into a tape recorder and then listen and write them down later.
- Have them practice keyboarding skills. It may be difficult at first, but after they have learned the pattern of the keys, typing will be faster and clearer than handwriting.
- Have a computer available for them to organize information and check spelling. Even if their keyboarding skills aren't great, a computer can help with the details.
- Have them continue practicing handwriting. There will be times throughout a student's life that they will need to be able to write things down and maybe even share their handwriting with others. It will continue to improve as long as the student keeps working at it.
- Encourage student to talk aloud as they write. This may provide valuable auditory feedback.
- Allow more time for written tasks including note taking, copying, and tests.

Summary

We looked at special children with mental retardation and discuss if these children are educable or not.
We also discussed other forms of learning disabilities, which included dyslexia, dyscalculia, and dysgraphia.