

Lecture 1: Lifespan Development

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What is Development?

"changes that occur over time in thought, behaviour, reasoning & functioning of a person due to biological, individual, & environmental influences"

Subcategories of Development

1. Physical/Perceptual Development:
 - brain development, changes in perceptual and motor abilities, changes in body systems and how they function.
 - Ex: walking, jumping, ability to see & hear

2. Cognitive Development:
 - development of thought processes, intellectual abilities, attention, memory, problem solving, and language.
 - Ex: academic, developing knowledge

3. Emotional and Social Development:
 - changes in regulation of emotions, in interpersonal skills, relationship formation, moral reasoning.
 - Ex: moral reasoning

Common Breakdown of Periods of Development

- 1) Prenatal period: conception to birth
- 2) Infancy and toddlerhood: birth to 2 years
- 3) Early childhood: 2 to 6 years
- 4) Middle childhood: 6 to 11 years
- 5) Adolescence: 11 to 20 years
- 6) Early adulthood
- 7) Middle adulthood
- 8) Late adulthood

When does development end?

Development ends when life ends.

But...

- Age ≠ Development!
 - Age does not cause development
 - Experience and genetics cause development

- In developmental psychology, we look at age-related changes
- Everyone goes through this but not at the same rate

Issues in Developmental Psychology

1. Nature vs. Nurture

Does nature (genetics) or nurture (environment) play a bigger role in our development? What is the relative contribution of each?

For example...

- Humans are arguably the only species with language, and language skills typically emerge around the same age
 - indicates a genetic component
- Not all humans develop language, and different people develop different languages
 - indicates an environmental component

Key terms:

Genotype: genetic makeup

- Differences in genotype are due to parental genetic material.

Phenotype: characteristics of individual

- Differences in phenotype are due to differences in genotype and/or differences in environment.
 - » Observable/measurable

Heritability

- Extent to which individual differences in phenotypes are due to genetic factors
- Question of HOW MUCH
 - Ex: measuring intelligence in children & teens: heritability estimate = 0.50 (twin studies)
 - genetic differences explain about 50% of variation in intelligence in children and teens
- Heritability can tell us how much individual difference is explained by genetics, but it can't tell us how individual differences arise

Canalization

- Some behaviours/traits are simply not very responsive to the environment: genetics limit possible outcomes to only one or a few outcomes

- Ex: infant motor development: sitting, reaching
- A strongly canalized characteristic will come out a certain way unless very strong environmental effects occur

Gene-environment co-variation

- Niche-picking: we tend to do things we're naturally good at or enjoy
 - Passive or active
 - Good genes for sports
 - Enjoys sports, asks to be enrolled in them (active)
 - Gets lots of practice
- Evocative correlation
 - Behaviour influences others

Nature vs. Nurture: Fraternal birth order effect

- Do older brothers affect the sexual orientation of younger brothers when the latter are still in utero (nature)
OR
Does the effect exert itself later, in childhood or early adolescence? (nurture)
- Bogaert (2006) did this and found that boys with older biological brothers were more likely to be homosexual, but boys raised with older step-brothers were not

2. Continuity vs. Discontinuity

- ◆ Does development occur smoothly or in steps?
 - Continuous: skills and abilities gradually add up and emerge at a relatively constant rate
 - Discontinuous: skills and abilities remain relatively stable for some time, then new ones suddenly emerge
- ◆ Continuity model emphasizes the importance of learning: as we're exposed to more experiences, their effects gradually influence us
- ◆ Discontinuity model emphasizes the importance of maturation: we'll only see change in skills and abilities when the body is ready to respond to certain experiences (stage theory)

– Some types of development are continuous, some are discontinuous, and some are best explained by a combination of both

3. Normative vs. Ideographic Development

- ▶ Normative: focus on typical norms of development

- By what age are most children crawling?
- ▶ Ideographic: focus on individual differences in development
 - Susie is 18 months old and not crawling yet. What is causing this delay?

Lifespan Development Perspective

- Development is lifelong
- Development is multidimensional and multidirectional
 - Affected by biology, psychology, and society
 - Consists of improving and worsening abilities
- Development is plastic
- Development is influenced by many forces:
 - Age
 - History
 - Non-normative

Theories of Development

- ❖ Many theories
- ❖ Plenty of disagreement among the theories
- ❖ They differ partly because of what aspect of development they focus on, and partly because they suggest different developmental processes

Theories of Development

To criticize or not to criticize?

- The theories are classics and have shaped the field...but are they above criticism?

No! Any good theory and research must be held to a high standard

- But we must also consider the zeitgeist (situations)

Try to critically evaluate the theories with the goal of pulling out information and ideas that can still be applied based on our current understanding of development.

Early theorists (philosophers)

- ★ John Locke (**empiricism**)
 - ◇ Tabula rasa
 - ◇ Experience is everything
- ★ Jean-Jacques Rousseau (**nativism**)
 - ◇ Children are born with some inborn knowledge or readiness to

learn

- ◇ We should let them explore instead of structuring their learning
- ◇ Experience and innate knowledge are both key

★ Charles Darwin

- ◇ We inherit certain strengths/weaknesses from our parents (genes)
- ◇ Variability between people influences the chance of survival, allowing for natural selection – adaptations to the environment
- ◇ Individual development somewhat mirrors the evolution of the species

Categories of Theories

- Psychoanalytic (Freud, Erikson)
- Cognitive (Piaget)
- Learning (Watson, Skinner, Bandura)
- Biological (Gesell)

Psychodynamic Perspective

▷ Freud's theory of psychosexual development

- ✧ Stage theory of personality development
- ✧ Maturational and social influences
- ✧ Definition of 'sexual': anything that gives pleasure

- ✧ *Oral stage* (about birth to 12 months)
 - sucking, eating
- ✧ *Anal stage* (about the second and third year of life)
 - bowel movements, toilet training
- ✧ *Phallic stage* (about the third to sixth year of life)
 - Interest in genitals develops
 - Oedipus complex (competition with parent of same sex, incestuous fantasies)
- ✧ *Latent stage* (about the sixth to the twelfth year of life)
 - Desires are repressed by superego; stage of relative calm
- ✧ *Genital stage* (from puberty onwards)
 - Search for romantic love
 - Independence from parents

Fixation and regression

- ✧ Excessive gratification or frustration at any given stage can lead to a fixation with that stage

- * Ex:
oral stage: obsessed with food, bites nails, smokes
- * Extreme fixations can lead to a regression to an earlier stage in life
 - Freud believed this was the case in emotional disorders
 - Ex: depression → refusal to eat (loss of appetite)

Evaluation of Freud

PROS

- first serious consideration of unconscious
- emphasized influences of nature and nurture
- emphasized importance of early experience on individual development

CONS

- culture-bound
- sexist
- childhood stages developed from work on adults
- not disprovable
- not scientifically-based

▷ Erikson's Psychosocial Theory

- * Human development = sequence of stages controlled by genetic factors
- * Social/cultural and environmental factors affect the rate of development but not the sequence
- * In each stage, we face a crisis when our environment demands certain adaptation
- * Each stage has two basic weaknesses (ex: Trust vs. Mistrust)

8 Stages in Development:

1. Trust vs. Mistrust (Birth-18 mos)
2. Autonomy vs. Shame and Doubt (1.5-3 yrs)
3. Initiative vs. Guilt (3-6 yrs)
4. Industry vs. Inferiority (6-12 yrs)
5. Identity vs. Role Confusion (adolescence)
6. Intimacy vs. Isolation (young adults)
7. Generativity vs. Self-Absorption (adults)
8. Ego Integrity vs. Despair (old age)

Cognitive Perspective

▷ Piaget's Theory

- ❖ Extensive, still influences the fields of development and cognition today
- ❖ **Focus: how children think, and how their thinking changes over time**
- ❖ How children interpret experiences and surroundings is influenced by their cognitive structures ('schemes')
 - These schemes emerge over time and change in complexity
- ❖ The child as the scientist:
 - Children are inquisitive and seek to understand their world
 - They form theories and test them
 - If proven wrong, they reformulate them
- ❖ Each stage represents a radical change in thinking
- ❖ Children go through stages at different rates, but in the same order
 - Transition between stages is not due to genetic programming or teaching
 - Due to child's interaction with environment – they form new cognitive structures

Three important concepts:

- (1) *Assimilation*: Try to fit new information into existing cognitive structures
 - Ex: grab new toy: fits into existing grasping scheme
- (2) *Accommodation*: If new information doesn't fit into existing structures, must modify structures
 - Ex: move box before grabbing new toy: grasping scheme has pushing step added.
- (3) *Organization*: the tendency for our cognitive structures to become more systematic and linked with each other
 - Ex: infant can look at objects and grasp objects. Now combines the two: looks, then grasps.

Schemes: templates on how to behave or think during a particular situation in response to particular stimuli

PIAGET'S THEORY

1. Sensorimotor intelligence (Birth-2 years)
 - Organization of sensory & motor schemes
 - Behaviours such as grasping, sucking, reaching, looking start as reflexes but become organized
 - By the end of this stage, children are varying actions to observe results – basic problem-solving

2. Preoperational thought (2 to 7 years)
 - Develop understanding of symbols; thoughts influenced mostly by physical appearance
 - Acquire some language skills
 - Pretend play
 - Able to use mental imagery but still primarily focused on their perspective of events
3. Concrete operations (7 to 11 years)
 - Developing logical reasoning skills
 - No longer fooled by physical appearance
 - Can determine and understand the relation between objects
 - Still have trouble imagining all possibilities and consequences

Conservation develops (video)

- Focus on one aspect to the exclusion of another
- Young children: cannot look at all aspects (just concentrate on one)
- Children > 11 yrs: are able to look at all aspects

4. Formal operations

- 11 years and above
- Developing abstract reasoning
- Can consider hypothetical outcomes
- Can consider and evaluate abstract issues
- Able to think about their own thinking

Learning Perspective

- ✿ Behaviours develop through conditioning
 - Conditioning is an interplay between stimulus, response, and reinforcements/ rewards
 - Watson focused a lot on **Pavlovian (classical) conditioning**
 - Development happens because we form associations between reflexes and stimuli
 - We learn that 'milk' means something that you drink because we often hear that word when we have experience with the drink.
 - **HOWEVER: Way too simplistic!**
 - With **classical conditioning, a behaviour develops because it has come to be associated with a particular stimulus**
 - Ex: you are scared of doctors because you often experience pain at the doctor's office.

- ◆ Unconditioned Stimulus: needle
- ◆ Unconditioned Response: pain
- ◆ Conditioned Stimulus: doctor's office
- ◆ Conditioned Response: fear of doctor's office
- With operant conditioning, a behaviour develops because it leads to some consequence
 - Consequences that increase the chance of a behaviour in the future are reinforcers
 - Consequences that decrease the chance of a behaviour in the future are punishers

Shaping

- ⇒ Some behaviours happen by chance and individual learns to repeat it
- ⇒ But some behaviours are very complex and might never happen by chance!
- ⇒ We can reinforce successive approximations to the desired behaviour

Observational learning

- We learn by watching others do things
- The consequences they experience influence the likelihood that we'll imitate them
- To learn through modelling, we must:
 - Pay attention to the model
 - Remember what was observed
 - Be able to reproduce the modelled behaviour
 - Be motivated to display the behaviour
- We are more likely to reproduce an observed behaviour if:
 - we observe the model being rewarded for the behaviour
 - the model is attractive, trustworthy, capable, admired, powerful, or high in status

Biological Perspective

- ✧ Maturation Theory
- ✧ Motor development is a prearranged plan with the body ('maturation'); experience unimportant
- ✧ Development goes from general to specific
 - Cephalocaudal trend (head to feet)
 - Proximodistal trend (centre to periphery)
- ✧ Within a species, happens in a specific sequence

- ✧ Rate of development is determined by maturation alone (not experience)

Research Methods

- Focuses on objective measures
- Focuses on measures that are:
 - observable
 - measurable/quantifiable
 - reliable

General Research Methods

- **Observational approaches**
- **Reports**
- **Case studies**
- **Psychophysiological methods**

Observational

- 1) Naturalistic: observing individuals in an everyday setting (e.g., daycare, school)
 - Advantages: see typical behaviour
 - Disadvantages: no control over setting, conditions, task, etc.; observer's presence can influence subjects
 - 2) Structured: observing individuals in a laboratory
 - Advantages: conditions are identical for all subjects
 - Disadvantages: behaviour may not be typical of child's everyday behaviour; observer's presence can influence subjects
- Many approaches for recording behaviour during observations
 - One approach is time sampling
 - Record behaviour within pre-set intervals for a period of time

Issues with Observation

- Must ensure reliability
- Have clear observation protocol
 - What behaviour(s) will be observed?
 - What constitutes an instance of the behaviour?
 - Minimize interpretation
- Focus on behaviour, not motives/internal states
- Can influence participants

Reports

- 1) Clinical Interview: Flexible questions that are dependent on previous answers (open-ended)
 - Advantages: allows for breadth and depth of information based on what the subject reports
 - Disadvantages: difficult to compare participants; socially acceptable responses; forgetting details; dependent on strong language skills
- 2) Structured interviews, questionnaires, and tests: Standardized administration and same questions for all participants.
 - Advantages: easy to compare participants; facilitates collection and scoring of data
 - Disadvantages: provides less depth; no opportunities for follow-up questions; forgetting details

Psychological tests

- can often be used to predict later success
- also used to match groups in experiments

Case studies

- Provide a complete and focused assessment on one unique individual.
 - Advantages: very descriptive; may give insights into a specific case; may lead to theory development
 - Disadvantages: poor generalization; unsystematic observations; can lead to biased interpretation or reporting

Psychophysiological methods

Advantages:

- can help explain individual differences in behaviour
- can help identify perceptions/emotions in children who cannot yet fully verbalize them

Disadvantages:

- cannot fully explain how someone processes stimuli
- physiological reactions can be influenced by other factors

Lecture 2: Prenatal Development

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Stages of Prenatal Development

- Duration of gestation: 40 weeks ('gestational age')
 - Ranges from approximately 37 to 42 weeks
 - Note: if in relation to fertilization, 38 weeks total ('fertilization age')
- The 40 weeks are broken down into 3 trimesters
- The trimesters are conceptual guidelines
 - Remember: age does not equal development!

3 other stages of development that are based more on development than age:

- 1) Pre-embryonic period (period of the zygote)
- 2) Embryonic period (period of the embryo)
- 3) Fetal period (period of the fetus)

These stages have windows of time associated with them, but the distinction between stages is due to qualitative differences in development.

Pre-embryonic period (period of the zygote)

- ◆ Day 0 to Day 14
- ◆ Combination of ovum and sperm creates zygote
- ◆ Gets 23 chromosomes from each parent
- ◆ Gender decided at fertilization
 - Mom gives X; Dad gives X or Y chromosome
- ◆ Zygote moves down the fallopian tube and starts to implant in the wall of the uterus about 7-9 days after fertilization.
- ◆ Implantation takes about 1 week to complete; marks end of the period of the zygote.

Embryonic period (period of the embryo)

- ◆ Week 2-Week 8
- ◆ Brain, organs, and limbs start to form
- ◆ Structural development:
 - Neural tube forms
 - Cardiovascular system develops and circulation starts
 - Heart is the 1st major organ to begin functioning
 - Normal heart rate about 2x adult's –120-180bpm
 - Then face develops (eyes, ears, nose), along with urinary system (kidneys)

- Followed by skeletal development (cartilage)
 - Limb buds
 - Teeth form below gums
 - Embryo is 1.5" long, weighs 1/3 oz
- ◆ End of Embryonic Period
 - All major systems are present
 - First bone cells appear
 - Embryo has complete human form
 - Now a fetus

Fetal period (period of the fetus)

- ◆ From Week 9 to birth
- ◆ Rapid growth in body size

Eyes

- By 3rd month:
 - Eyeballs formed
 - Optic nerves link to brain
- Eyelids form around 9 weeks
 - Fetus sensitive to light by 16 weeks
- Light necessary for normal development?
 - At 4 months, doctor shines a light on mom's belly, fetus will turn away (this is a good sign bc it means they can see the light); Uterus is a dark place

Gender

- In embryo form, indistinguishable
- Distinguishable from external sex organs by week 12
 - But mistakes are always possible

Limbs

- Weeks 13-16:
 - Legs grow longer
 - Hands, feet formed
- Bone cells grow

Brain

- By 20 weeks:
 - Neurons all formed (but not in final structure)
 - Will still grow in size, but not number
- Myelin still forming
 - Cortical cells developing
 - Forming folds of cerebral cortex

Brain Development

- 27 weeks – cerebral cortex cells have developed (in number)
 - Structural changes still occurring
 - Synaptogenesis: establishing connections between cells
 - Myelination: prevents leakage in and speeds nerve transmission
 - Functional changes:
 - By birth, specialization of lobes in cortex has occurred
 - Frontal (movement), parietal (sensation), temporal (hearing, memory), occipital (vision)
 - Until development of cerebral cortex (i.e., first 2-3 months), most fetal behaviours are largely reflexive (driven by midbrain).
- Weeks 21-38:
 - Skin formed but transparent
 - Lungs develop, though not totally mature
 - Viable around 22 weeks *at the earliest*
 - Motor behaviours exist
 - thumbsucking, yawning, swallowing
 - Gains fat (for temperature regulation)

Hearing functions by mid-3rd trimester

How do we know?

Babies immediately blink when they hear a loud sound.

- Could be a test for deafness

Abnormal Prenatal Development

- Maternal environment
- Environmental (teratogens)
- Genetic (coding)

Maternal environment

Zygote: the developing organism from union of sperm and egg to about the second week gestation

- Period ends with implantation of the fertilized egg in the uterine wall

Ectopic Pregnancy

- Egg gets implanted in fallopian tube wall instead of uterus
- Why are ectopic pregnancies more likely in early adulthood than any other time?
 - High risk of STDs, scarring of the uterus, so egg must be stuck (blocking entrance from the fallopian tubes)
- Why are STDs more likely in early adulthood?
 - People are likely to have more partners in this period of life

Maternal environment

- Breech
 - Complete (baby cross-legged)
 - Incomplete (baby's feet come out first)
 - Frank (baby's butt comes out first)
- Cord around neck/compressed
 - MAJOR EMERGENCY
- Major Stress
 - Miscarriage, premature, LBW, respiratory illness, cleft palate, irritable, infant sleep problems
 - Mechanisms:
 1. Stress response draws blood to major organs, makes less available to fetus in uterus
 2. Stimulant hormones cross placenta
 3. Interaction with other risk factors (e.g., smoking, drinking)
- RH factor incompatibility
 - mom Rh-, Baby Rh+
 - exposure to baby's blood leads mom to develop antibodies
 - MR, miscarriage, heart damage, jaundice
 - 1st child rarely affected
 - vaccines available to decrease antibody formation if Rh-mom has already had one Rh+ baby
- Nutrition
 - Pre-pregnancy nutritional status important
 - Nutrition throughout key also
 - Poor nutrition associated with miscarriage, LBW, deformities; though tough to tease apart from teratogen exposure in low-income moms
 - Some nutrients especially crucial: iron, fatty acids, vitamin D, folic acid
 - Multivitamins can help
 - Cognitive effects depend on postnatal environment: with good nutrition and environment, may have no long-term effects

Sensitive periods

- Times in development when the individual is very easily able to change with exposure to a given experience
 - Learning language is easier before age 10
 - Exposure to teratogens at different times during development will influence which body system is affected
- Different body systems have different sensitive periods

Teratogens

- Developing baby is most susceptible to damage during embryonic period
 - Period of very rapid growth, foundations for all major systems laid down
- Though there are other growth spurts, so there tend to be sensitive periods for other types of damage
- Any environmental agent that causes damage during the prenatal period (physical or behavioural)
- Single teratogen = variety of defects, variety of teratogens = same defect
- Longer exposure/higher dose = more harm
- Dad's exposure to teratogens also important
- Effects depend on genes, timing, dose, and postnatal environment

Types of Teratogens

- Disease
- Drugs/Alcohol
- Toxins

Disease

Rubella (German measles)

- can cause miscarriage, physical deformities of eyes, intestines, urinary system, and heart, LBW, deafness, MR (CNS damage), mental illness
- Large effect size: 50% of moms infected during embryonic period had babies with problems

STDs

- Gonorrhoea – blindness (if eye infection untreated), ectopic pregnancy, premature birth, miscarriage
- Syphilis – miscarriage, LBW, joint pain, tooth and skeletal deformities, skin lesions, heart defects
- Chlamydia – causes pneumonia and conjunctivitis
- Herpes – blindness, developmental disability (CNS damage), neurological deficits (motor problems), skin/mouth ulcers, eye & brain infections

HIV/AIDS

- fetus infected through placenta
- infant infected through breast milk
- along with illness transmission, can cause facial deformities
- AIDS progresses quickly in infants; often death within first 2 years
- new drug treatments prevent transmission and help infected children

live longer

Drugs

- Thalidomide (1950s, 1960s)
- Taken for morning sickness
- Led to abnormal development of limbs, eyes, organs (depending on timing of exposure)
- First major indication of the effect of drugs and other teratogens on fetal development

DES

- synthetic hormone prescribed to prevent miscarriage (1945-1970)
- babies appeared normal, but led to later problems with reproductive organs
- Girls: vaginal/cervical cancer, premature births, LBW, miscarriage, infertility
- Boys: genital abnormalities, testicular cancer

Accutane

- Used to treat acne
- Eye, ear, skull, heart, brain, immune damage if exposed in first trimester
- Use two methods of birth control!

Aspirin

- LBW
- Neonatal death (death around 1y.o)
- Lower childhood IQ

Caffeine

- LBW
- Miscarriage
- Infant withdrawal symptoms

Smoking (nicotine)

- higher incidence of preterm births & LBW
- miscarriage, neonatal death (SIDS)
- attention, cognitive problems, colic
- though also consider correlation with mom's SES
- must also consider 2nd-hand smoke

Mechanism: nicotine causes placenta to grow abnormally through constriction of blood vessels, reducing transfer of nutrients and thus

fetal weight gain. CO displaces O2 in bloodstream, making it less available.

Prescribed medications

- Ex: anti-depressants
- Must consider risks vs. benefits in terms of baby and mom
- Some linked to perinatal respiratory distress

Alcohol

- Fetal Alcohol Spectrum Disorder (FASD): Cluster of physical and cognitive abnormalities that appears in the children of mom who drink alcohol during pregnancy
- Severity: Fetal alcohol syndrome > partial FAS > Alcohol-related neurodevelopmental disorder

Cognitive effects: mental retardation, poor attention, hyperactivity

Physical effects: facial abnormalities, slow physical growth (permanent deficiency)

Cocaine, Heroin, Methadone

- Premature, LBW, breathing problems, neonatal death, addicted at birth. Feverish, irritable, sleep problems, shrill cry. Often compounded by poor prenatal nutrition and care.
- Beyond infancy: attention deficits, slow motor development, academic problems (though varying findings)
- Parenting may explain individual diffs. in recovery
- Effects can 'hitchhike' into zygote via sperm

Marijuana

- LBW, small head, higher newborn startle rate, disturbed sleep, possible attention and problem-solving problems later in life, depression
- Babies addicted to heroin, cocaine, or LSD, who have withdrawal symptoms are more irritable, low eye contact, low alertness, not cuddly or clingy
- Attachment problems
- Plus, drug addicted moms won't care for babies that much

Environmental Toxins

Radiation

- Miscarriage, neonatal death, slow growth, underdeveloped brain, eye and skeletal malformations, cancer

Lead

- Premature, LBW, brain damage, physical defects
- Effects most extreme with exposure in 1st trimester

PCBs

- Were used to insulate electrical stuff
- Lower BW, smaller heads (indicator of brain damage), memory and language problems, irritable

Mercury

- Developmental disability, speech and swallowing problems, lack of coordination, miscarriage, stillbirth
- Disrupts neuron migration
- Japan 1950s
- Large fish

☆ Paternal exposure can also lead to abnormalities!

Genetics (coding)

- Several genetic disorders (e.g., Down syndrome, Fragile X syndrome, etc.)
- Lead to a variety of outcomes
- Many are sex-linked
- Genetic testing/genetic counselling

Fetal Assessment

Fetoscopy

- Involves insertion of a tiny camera into the womb to directly observe fetal development
- Can also take fetal blood for diagnosis of other disorders

Fetal surgery

- Weeks 15-18
- Risk of miscarriage

Maternal Serum Screening

- used to assess blood alphaprotein level, which is associated with neural-tube defects (e.g., spina bifida)
- administered in Weeks 16-20

Chorionic Villus Sampling

- small sample of the placenta is removed

- performed Weeks 9-11 (early), fast results
- tests for birth defects (DNA)
- risk of miscarriage, limb deformities

Amniocentesis

- cells taken from the amniotic fluid, can test for a variety of disorders
- later in pregnancy (usually no earlier than 14 weeks)
- lower risk of miscarriage

Ultrasound

- used alone or with other approaches
- low risk
- sound waves reflect off fetus; visual representation
- assess: age, gross abnormalities, gender, twins

Lecture 3: Early Social Development

December 8, 2013 08:58 PM

Emotional Development

"...emotional development would appear to underlie many other areas of development psychology, and has serious implications for how we conduct research on children... Consequently, it is important for all of us to be cognizant of the emotional context in which research is carried out, and the emotional maturity and engagement of each individual child."

What are Emotions?

3 components of emotions:

- 1) Physiological component: blushing, change in heart rate, sweating
- 2) Expressive component: facial expression
- 3) Experiential component: feelings and thoughts

Basic Emotions

- ▶ Ekman's model of basic emotions:
 - Happiness
 - Anger
 - Sadness
 - Disgust
 - Surprise
 - Fear
- ▶ Considered to be universal (maybe innate) and represented by distinct facial expressions
- ▶ Further evidence: blind expressions

General emotional development

Primary emotions

- Emerge 2-7 months
- Anger, sadness, joy, surprise, fear

Secondary emotions

- In second year
- Embarrassment, shame, guilt, envy, pride
 - Self-conscious emotions (people will notice what you do)
 - By 7-9 months, infants can experience all the basic emotions and display the corresponding facial expressions
 - Happiness: 1.5-3 months

- Anger: 4-6 months
- Fear: 6-7 months
- May experience these emotions when younger but:
 - not yet physically cable to producing the observable expressions
 - the emotion is not fully developed yet

Recognizing Emotions

- In general, production > recognition
 - The two abilities are positively correlated
- Evidence:
 1. Social referencing (someone else's emotional display)
 2. Imitation of facial expressions during infancy

Social referencing:

Visual Cliff experiment @ 12 months

If mom expresses:

- joy: 74% of infants cross
- fear: 0%
- interest: 73%
- anger: 11%
- sadness: 33%

♡ Infants also rely on mom's facial reactions when faced with a novel toy or person

♡ Effectiveness of social referencing fades with development

Imitation:

- Evidence that neonates imitate different emotional expressions
- Judges (blind to model) guess which expression infant was viewing
 - Judging was correct above chance levels
 - Baby was imitating

Regulating Emotions

- Hard for infants, but they have some abilities to regulate emotions
- Strategies:
 - Do-it-yourself: sucking thumb/pacifier, looking away, falling asleep, rubbing/touching
 - Parental help: carrying, rocking, speaking softly
- With development, emotion regulation relies less on parents
- Cognitive strategies are used

- Ex: didn't get toy they really wanted, they convince themselves they didn't really want it in the first place
- Language used to express and regulate emotions
- Children learn consequences of emotional outbursts
 - No tantrums are appreciated; will not get what you want
- Physical growth/maturation also helps

The Beginnings of Specific Emotions

Smiling & Laughter

- Reflex smile: Newborn's smile seems to reflect internal (not external) stimulus
- Social smile in response to specific external events appears between 6-10 weeks
- Girls generally smile more than boys
- Infant smiling quickly becomes part of an early communication system

Fear & Anger

- Newborns exhibit distress
- Anger develops by about 2-4-6 mos and increases in frequency and intensity over first two years
- Cognitive influences: as understand causal mechanisms, know what to get angry at
- Fear of strangers: Around 6 mos; emerges gradually
 - Many factors determine how an infant will react to a particular stranger

Fear of Strangers:

- Stranger's personal characteristics influence babies' emotional reactions
 - Children perceived as less threatening than adults
 - Predictable, friendly strangers elicit less fear
- Less fearful in a familiar setting and when they feel as if they have some control over the situation
- Social referencing – "reading" others' ⇒ ex: reading mom's expression

Complex Emotions

- Self-conscious emotions (2o emotions)
 - Shame, embarrassment, pride, guilt, envy
- Require sense of self and socialization
- Help develop socially-appropriate behaviour
- Begin to emerge sometime in 2nd year

- By age 3, children show all the self-conscious emotions

Variations in Emotional Development

- Emotional development (like other types of development) is subject to individual differences
- Different patterns of emotional development are said to be due to consistent and enduring emotional styles known as temperaments

Temperament

- Several different approaches to temperament but all approaches agree that:
 - Temperaments are genetic predispositions to behave and react in a specific manner (including emotional manner)
 - Shape our personality and emotional development
 - Interact with the environment
 - They are relatively stable across time and across different situations
 - Characteristic modes of responding to environmental events
 - includes:
 - ◇ Activity level
 - ◇ Irritability
 - ◇ Soothability
 - ◇ Fearfulness
 - ◇ Sociability

Measuring temperament

- Parent interviews/questionnaires
- Behaviour ratings by medical staff or caregivers
- Observations by researchers
- Physiological measures
 - Brain imaging
 - Hormonal

Thomas and Chess: temperament profiles

–Easy

- Positive mood, regular habits, adaptable

–Difficult

- Negative moods, high-intensity reactions, withdraws from novelty, slow to adapt to new routines

–Slow-to-warm-up

- Moody, inactive, withdraws at first but eventually adapts to novelty

Temperament & Later Development

- Temperament is quite stable
- But environmental situations influence behaviour
- Children at the extremes are more stable

- Does gender stereotyping influence temperament?
 - ◇ Sociability: mutual eye contact
 - ◇ Generally, females > males
 - Is this present at birth, or does it develop?
 - Newborns: no gender differences in frequency or duration
 - 4-months: females looked longer

Attachment

⇒ Theories:

- Psychoanalytic: babies learn to love mom bc they feed them (breastfeeding → oral)
- Behaviourist: conditioned to love mom; food makes baby happy, mom makes and gives food, baby loves mom
- Ethological: parents keep baby alive

⇒ Forms foundation for later relationships

⇒ Attachment does NOT depend on hunger satisfaction

Harlow & Zimmerman (1959)

- Monkeys raised with cloth or wire surrogate
- Preferred cloth one –Even when wire one was only source of food

Ethological Theory - 4 phases of attachment:

- 1) Preattachment (birth-6wks)
 - built-in behaviours draw adult to infant; remains near since infant calms with presence
 - OK being left with stranger
- 2) Attachment-in-the-making (6wks-6-8mos)
 - Differential responding to parent begins, but still OK being left with stranger
- 3) Clearcut attachment (6-8mos-1.5-2yrs)
 - Separation anxiety
 - Work hard to maintain parent's presence (secure base, following)

4) Reciprocal relationship (1.5-2yrs onward)

- Separation anxiety decreases with understanding from language and cognitive development
- Negotiations with parent

Strange Situation (experiment)

- 1) Mom and infant enter the room alone
- 2) Infant allowed to explore room while mom watches
- 3) An unfamiliar researcher enters the room, Mom exits shortly after
- 4) First separation: Infant is alone with the stranger
- 5) First reunion: Mom mother returns to the room, greets and comforts infant
- 6) Second separation: Mom and stranger both leave room
- 7) Stranger returns to room, interacts with infant
- 8) Second reunion: Mom returns, greets and soothes infant

Secure Attachment (60%)

Use parent as secure base; may cry in absence; seek contact and stop crying with return.

- Less likely to develop psychopathologies
- If they do develop difficulties in functioning at school, better able to overcome the difficulties by adolescence
- Better able to cope with stressful periods and events in general
- Greater feelings of competence at school, at work, and in relationships in their late adolescence

Insecure-Avoidant (15%)

Ignore parent when present; not distressed in absence; respond similarly to stranger and parent; avoid greeting and cuddling upon return.

- Difficulty feeling emotionally close to anyone; typically feel isolated
- Do not seek support, comfort, and understanding from others
- Tend to develop non-anxiety related disorders

Insecure-Resistant (10%)

Fail to explore, clingy in absence; angry, difficult to comfort upon return.

- More likely to develop anxiety-related disorders in adolescence
- More dependent on adults around them such as teachers
- Display less resourcefulness

Insecure-Disorganized (15%)

Show contradictory behaviour at return.

- Created for the individuals who did not fit in the other categories
- More behavioural problems, especially aggression-related behaviours
- Greater risk to develop less commonly diagnosed types of psychopathology, including dissociative disorders

Influences on Attachment

Caregiving hypothesis (Ainsworth, 1979)

- Attachment style is result of caregiving style
- Secure attachment – sensitive caregiving
- Avoidant attachment – impatient, rejecting, or overstimulating caregiving
- Resistant attachment – inconsistent caregiving
- Disorganized – abusive behaviours

Temperament hypothesis: Infant's temperament explains attachment

- Temperament is weakly correlated with attachment
- But evidence that training moms to respond sensitively to irritable 6-month-olds led to gains in attachment security, sociability, cooperativeness that were maintained 3 years later.
- Goodness-of-fit may be the more important issue

Family circumstances

- institutionalized children can have trouble forming relationships, behaving appropriately, reading facial expressions
- major change can modify attachment
- Parents' childhood attachment judgements correlate with child's attachment

Effects of early social deprivation

Infants

- Seldom cry or vocalize
- Become rigid and unresponsive when handled
- Socially unresponsive
- Do not initiate social interaction
- Delayed motor development
- Passive; sense of learned helplessness

Toddlers and Older Children

- Retarded language skills
- Immature social behavior
- Often aggressive; antisocial

- Often hyperactive
- Low IQ scores

Aiding recovery from early deprivation

1. Place in homes where they receive lots of attention from affectionate and responsive caregivers
2. Place with highly educated, relatively affluent parents
3. Place in a high-quality environment as early young as possible (ideally, before age 2)
4. Expose to younger, non-deprived peers (younger peers don't tend to reject a socially inept child)

Attachment in Different Cultures

- Attachment types have been developed within North American culture
- Cultural practices may impact the measurement of attachment styles
- Measuring attachment styles with current approaches may have limited cross-cultural applicability

Lecture 4: Physical Development (Part 2)

November 1, 2013 09:16 PM

Note: Slide 45

Perception in Infancy

- A major challenge is to figure out what infants can perceive
 - Bc they cannot communicate with words what they can perceive

Research Methods in Infancy

Preference method

- Two stimuli presented simultaneously
- Infant's attention (looking) to each measured
 - Gross measures of looking
 - (ex: Mom's picture on left, stranger's pic on the right - measure time where baby looks)
 - Eye tracking
 - Records where eye is looking

Eye tracking

- What features do infants (and adults) look at when they see pairs of animals?
- How do they compare the two stimuli?
 - Track eye movements
- Do infants and adults use different comparison strategies for different types of stimuli?
 - Track eye movements to tell where exactly people are looking
 - Looking back and forth? Looking at 1 animal first, than the other? Comparing features [nose, mouth] of each animal?

Habituation method

- Stimulus presented repeatedly until infant's response decreases
- **Habituation**: Infants (and adults) look less and less as a result of consistent exposure to a particular stimulus - **they are not interested**
 - What cognitive process does this reveal?
 - Shows that babies have **memory** bc they remember and get bored of seeing the same thing over and over again
- **Dishabituation**: Re-orienting to a presented alternate stimulus (after habituation to the original stimulus) - **they are interested**
 - What cognitive process does this reveal?
 - Babies can tell the difference (they can discriminate therefore they are learning)

Brain activity

- ◇ fMRI, EEG
- ◇ Observe changes in activity for different stimuli
- ◇ Changes may indicate ability to discriminate

Violation of expectation

- ◇ Tests infant perception, understanding, beliefs
 - Do they understand the world?
- ◇ Shown possible and impossible event
 - Baby will find impossible event 'surprising': will spend more time looking

Non-nutritive Sucking

- Pacifier sucking controls stimulus presentation
 - Sucking decreases with interest

Facial expressions

- ◇ Detailed coding systems
 - Video of responses, coding done at slow speed

The Forgotten Senses

- ◆ In perceptual and developmental research the focus is on vision and hearing
- ◆ Smell, taste, and touch have received less attention from researchers
- ◆ Why do you think that is?
 - Need to communicate about them
 - Not as "important"

Smell

- ◇ Important to survival: helps in determining what is edible
 - Important for avoiding illness & food poisoning
 - Ex: smelling rotten milk
- ◇ Within hours of birth, infants have relaxed, happy-looking faces when exposed to sweet smells
 - Ex: exposing babies to smell of bananas = makes them smile
- ◇ When exposed to unpleasant smells, they frown and/or turn away from the smell
 - Ex: exposing babies to the smell of rotten eggs = makes them frown
- ◇ In many animals, odor aids in parent-child recognition
- ◇ Is this true of humans?
 - Evidence that mothers, fathers, and even extended family can recognize the infant by smell alone
 - Infants are also capable of using their sense of smell to identify their caregiver, *especially* their mothers

Study: MacFarlane (1975)

- ◆ Procedure: two breast pads (one from mom, one unused), one on either side of the baby.
- ◆ Which one does the infant turn his head towards?
 - 2-day-olds: equal duration of orientation
 - 6-day-olds: longer duration of orientation to mom's breast pad
- ◆ From *6 days and older*: if given the choice between mom's breast pad and another nursing woman's breast pad, infant indicates preference for his own mom's breast pad
- ◆ At *2 weeks of age*, preference for mom's odor is not limited to breast pads
 - Using underarm pads, same effects are found
 - Preference for mom's odor above everyone else
 - Preference for *any* woman's odor above no odor
- ◆ Neonates also have a preference for the odor of their own amniotic fluid compared to another neonate's amniotic fluid

Taste

- ◆ Develops prenatally:
 - How could we test preference during this time?
- ◆ Born with fully functioning receptors for sweet, sour, and bitter tastes
- ◆ Similarly to odors, infants have specific facial expressions and behaviours associated with each taste

- ◆ Infants are able to detect flavours in their mother's milk
 - Ex: if mom eats garlic, infant will be able to taste the garlic flavour in the milk

Breast-feeding and beer (Mennella & Beauchamp, 1993)

- ❖ Babies can taste the beer through the milk and they don't like it
- ❖ Infants have taste preferences
 - especially strong for **sweetness**
- ❖ Preferences can be influenced by experience
 - Does type of formula influence childhood flavour preferences?
 - Milk (sweet)
 - Soy formula (bitter)
 - Hydrolysate formula (sour)
 - If exposed at a young age, baby will love as they grow older
 - Love for salty food will develop later in life

Touch

- ◇ Skin is receptive to touch, pressure, pain, and temperature
- ◇ This sense develops prenatally (1st to develop)
- ◇ Infants can demonstrate a sensitivity to touch as soon as they are born: they react to touch, can be soothed by touch
 - Infant massage: increase in growth, attentiveness
- ◇ Also react to pain
 - Ex: crying when receiving a shot, cortisol increases

Temperature

- Infants are very susceptible to changes in temperature
- Have difficulty regulating temperature through sweat
- They can't regulate the temperature around them because of a lack of motor and verbal skills

Kangaroo care

- Regulates temperature

Other benefits of skin-to-skin:

Castral et al. (2008)

- Heel prick for PKU test
- 59 healthy premature newborns
- Randomly assigned to skin-to-skin or crib
- Pain measures: facial expression, HR, cry, sleep/wake state
 - Results
 - Facial expression: skin-to-skin lower score overall, faster return to baseline
 - Experience less pain
 - Heart rate: skin-to-skin lower (non-significant trend)
 - Cry: skin-to-skin less likely to cry and cried for shorter period
 - Sleep/wake state: skin-to-skin more likely to return to sleep sooner after procedure
- Important because early experiences with pain can sensitize the child to pain

Hearing

- ◇ Develops prenatally (eyeblink reflex)
 - Reliably shown after 28 weeks gestation
- ◇ Fetus can hear specific language patterns
 - Moms read story in utero; babies prefer familiar story 3 days after birth
 - French babies can discriminate when a voice is speaking French and Russian
 - Cry patterns match accent
 - Fetus can learn mom's voice
 - Physiological responses to mom's voice but not stranger's
- ◇ Infants do not hear as well as adults
 - Bc of the fluid in their ears
 - Worse at hearing very quiet sounds
 - Up to 3 months: they can hear lower pitch (man's voice) better than higher pitch (woman's voice)
 - By 6 months: more sensitive to high-pitched sounds
 - Hearing continues to improve until 10 years of age

Sound localization

- Ability follows a u-shaped curve
 - Good in first month after birth
 - Declines in months 2 & 3
 - Reappears by 4 months
- Improves beyond infancy

Recalibration and Sound Localization

- Sound must travel farther to reach right ear as opposed to left ear.
- Difference in time of arrival gives a cue to localization.
- Head creates a sound shadow.
- Sound is slightly less loud in one ear than the other.

Hearing and language

▷ Babies:

- Prefer sounds within range of human voice
- Prefer vocal music over instrumental
- Prefer female over male voice
- Prefer mother's language
- By 4.5 mos, prefer own name
- Have good speech sound discrimination
 - Ex: /ba/ vs. /pa/ (banana vs. pineapple)
 - Even better than adults

A difficult task in language: Categorizing phonemes

- ▶ Voice Onset Time (VOT)
 - Time it takes between release of air and the start of vocal fold vibration
- ▶ English - /b/ less than 20ms, /p/ greater than 40ms
- ▶ Other languages - different VOTs

Categorizing phonemes

- ▷ It's not like every instance of a 'b' we hear has exactly 20ms VOT
 - **B**at vs. **Ca**b
 - 20ms = average VOT
- ▷ How do we deal with this variability?

Categorical Perception of Phonemes

- ▶ There isn't a graded membership, it's a "ba" or a "pa", and that's it
- ▶ Categorical boundaries (of phonemes) differ cross-culturally
- ▶ Japanese: /r/ /l/ are in the same category
- ▶ How is this learned?
 - Every child acquires boundaries of their language. Is any of this innate (learned)?

Werker & Tees (1984)

- Infants 6-12 mos; longitudinal study
- Conditioned head turn procedure
- Hindi or Salish phoneme contrasts
- How many infants (at each age) can make distinction?
- Experience hearing the language is critical (seems to be around 9 months)
- We are born with the ability to discriminate all phonemes
 - But we 'forget' the ones we don't need
 - They are lost or assimilated into the same category
- Perceptual narrowing

Related work: Narrowing of Face Perception

- The other-race effect
 - ADULTS: Better at processing faces from their native racial group
 - INFANTS: Other race effect appears around 6-9 mos
- African, Chinese, Middle Eastern & Caucasian faces
 - 3 months: All races
 - 6 months: Chinese & Caucasian
 - 9 months: Caucasian only

Vision: Visual Acuity

- Vision is poorly developed at birth (no light available during prenatal development)
- Of the 5 senses, takes the longest to reach adult levels in all aspects
- Adult acuity 20/20
- Newborn acuity 20/400 to 20/800
- So at what an infant can see at 20 feet, and adult can see at 400 to 800 feet
- By 3 months, acuity is 20/100; 1 year, acuity is 20/50; by 4 yrs it is 20/20
- Acuity improves very rapidly during first 6 months

Why?

- Poor accommodation by lens
 - Brain control mechanism still immature
- Photoreceptors less numerous than adults, and more widely spaced
 - infant's fovea collects about 350X less light than adult's
- Ocular muscles are still developing, so the eyes tend to wander/cross
 - Visual cortex still immature

Vision: Contrast Sensitivity

- Ability to discriminate illumination, orientation, aspects of contour (seeing edges), etc.
- Poor at birth; require sharper visual contrasts, need lower spatial frequency (how close things are)
 - Babies need to have big spaces in between things

- Like acuity, improves rapidly during first 6 months

Vision: Faces

- Infants orient towards faces
- Innate attraction?
 - Babies love faces
- Infants have a preference for A over B
- How infants look at faces changes with development
- Focus on contour a lot at first (edges of face)
- Features and spacing between features become more important to them at around 3 months of age
- Babies prefer attractive faces!
 - People say average faces are more attractive
 - Why?
 1. Symmetry of face
 2. Social cues from parents
 3. Person looks like parents
 4. Close to 'face' prototype

Vision: Depth Perception

- Present at birth and steadily improves
- Binocular vision
 - If strabismus (lazy eye) not fixed by 3 yrs, permanent deficit in binocular vision

Visual cliff:

- ✧ Tests depth perception by using patterned materials and an elevated clear platform to make the other side appear lower than the one the infant is placed on
 - Importance of locomotor experience

Intermodal Perception

- Ability to use one sensory modality to identify something already familiar in another sensory modality
 - Putting together more than 1 sense
 - Ex: recognizing a golf ball by touch instead of sight, knowing that a voice (auditory) goes with a person (visual)
- Reliable evidence of intermodal perception in three- and four-month-olds; depends on task

Testing for representation

- ❖ We know infants can use many senses – how do we know they are forming a representation that combines the two senses?

Haptic-visual representation

Oral haptic-visual (Meltzoff & Borton, 1979)

- ❖ Baby sucks on soother – smooth or bumpy
- ❖ Baby then shown pictures of each soother
- ❖ Baby looks longer at the one they sucked

Hand haptic-visual (Streri & Gentaz, 2004)

- ❖ Explore item with right hand, look at it longer
- ❖ Explore item with left hand, *no looking preference*

Auditory-visual representation

- * 4-month-olds watch movie that matches the soundtrack instead of one that doesn't
- * 3.5-month-olds look at mom when she talks and look at dad when he talks
- * 4-month-olds look at men when they hear a man's voice and women when they hear a woman's voice
 - Even with strangers' faces
 - Also match kid voices to kid faces and adult voices to adult faces

Synesthesia

- * Perceptions consist of **mixing of the senses**
 - Associate a certain sound with a particular colour
 - See a particular letter in a consistent colour
 - Hypothesis:
 - Neurological differences in brain activity of people with synesthesia
 - More connections between areas that co-activate
 - Neonatal hypothesis:
 - all babies are born with these connections
 - In most people, the cross-modal connections get pruned
 - ◆ Failure to prune may be passed down from mom via gene mutation on X chromosome
- * Of course, even if born with the phenotype for less synaptic pruning, you still have to learn associations between words, smells, sounds, colors, etc. These are learned in childhood.

Lecture 5: Cognitive Development in Infancy

November 1, 2013 09:28 PM

What is cognition?

- Memory, attention, language, inner experiences
- In early 1960's, Piaget's theory began to replace behaviorism in US
- Focused on cognition in children: what do children understand about their environment, causality, numbers, time, constants, change, etc.
- Truly developmental: acknowledged different capacities of children of different ages
- Based on observations of children answering questions during unstructured interviews

Major Piagetian Concepts

- **Schemes:** psychological structures that change with age and allow the child to make sense of experiences.
- **Adaptation:** change in schemes through direct interaction with environment
 - Assimilation
 - Use current schemes to interpret the external world
 - Accommodation
 - Create new schemes or adjust old ones after noticing old schemes are not correct
 - Equilibrium vs. disequilibrium
 - ◆ Equilibrium: steady, comfortable condition
 - ◆ Disequilibrium: cognitive discomfort
- **Organization:** internal combination of schemes into complex system

A stage theory

- ▶ All children pass through the same stages in the same order
- ▶ Proposed ages, but these are flexible
- ▶ Emphasis on *sequence*, rather than *timing*

Piaget's Stages of Cognitive Development

- Sensorimotor intelligence (birth-2 yrs)
- Pre-operational thought (2-7 yrs)
- Concrete Operations (7-11 yrs)

– Formal Operational (11/12 yrs on)

The Sensorimotor Period

- Children move from reflexive behaviour to the beginnings of symbolic thought and goal-directed behaviours
- Circular reactions
 - ★ Body-centred → object-centred → environment expts
 - Repeats, happens @ 1st accident

6 Sensorimotor Substages

(1) Reflex activity (0-1 month)

- Not intentional or repeated

(2) 1° circular reactions (1-4 mos) (developing schemes)

- Gain voluntary control of actions
- Simple repetitive actions that focus on basic motor responses to their own bodies (pleasurable, satisfying)
- Responses differ with environment

(3) 2° circular reactions (4-8 mos) (discovering procedures)

- focus on objects outside body
- accidental interactions repeated because they are pleasurable and interesting
- imitation of familiar behaviours

(4) Coordination of 2° circular reactions (8-12 mos) (intentional behaviour)

- Organization of schemes
- Intentional, goal-directed behaviour
- Object permanence begins (but still fall for A not B search error)

A-not-B error

- Hide object in location A several times
- Then hide object at location B
- 8-10-month-olds look at A (which is wrong); 12-month-olds look at B (which is correct)

(5) 3° circular reactions (12-18 mos)

- Circular reactions are creative and experimental
- Deliberate exploration
- Better imitation, obj. permanence

(6) Mental representation (18-24 mos)

- Able to create mental representations

- Allows problem-solving through symbolic instead of trial-and-error approaches
- Deferred imitation
- Make-believe play (imagination)

Was Piaget Right?

Object permanence:

- Piaget thought young infants did not develop object permanence until Substage 4 (8-12 mos)
 - Fragile understanding, evidenced by A-not-B error

A-not-B task:

- Effect of memory: infants do better if the locations are very distinct
- Motor inhibition:
 - ✧ Babies reach to A even when object is visible at B
 - ✧ Babies look to B first, but reach to A

Object permanence:

- tied to babies' actions at substage 3 (4-8 mos)

Baillargeon's Test of Object Permanence

- Babies stared longer at the impossible event bc they thought it was weird

Was Piaget Right?

Imitation

- ✧ Piaget claimed imitation was limited until 12 months
- ✧ Claimed deferred imitation developed at the end of the Sensorimotor Period
- ✧ But 2-3-week-olds imitate facial expressions!
- ✧ Neonates too!!

Language development

- * A communication system using representation of concepts
 - ◆ Arbitrary associations
 - Different languages use different arbitrary

Structural concepts of language

- * Semantics
 - ◆ Morphemes
 - The smallest units of sound that carry meaning

- prefixes, suffixes, prepositions, and auxiliary verbs
- modify the meaning of words and sentences
- Prefixes and suffixes: 'bound' morphemes
 - cannot occur alone in sentences
 - Ex: box vs. boxes (-es designates plurality)
- Prepositions and auxiliary verbs: 'free' morphemes
 - can occur alone in sentences
 - Ex: My neighbor is standing by the fence.
- ◆ Syntax
 - Grammar
 - Rules of order of words & sentences
- ◆ Pragmatics
 - Conversation skills/rules
 - Ex: Changing way of speaking to a 5yo to a 25yo to a 75yo.
- ◆ Phonemes (oral)
 - Smallest units of sound
 - a = "ah"

Theories of Language Development

- ☀ Behaviorist (learning) perspective
- ☀ Nativist perspective
- ☀ Interactionist perspective

Behaviorist Perspective

- ☀ Emphasis is on contingency between behaviour and environmental consequences
 - ◇ Behaviour leads to reinforcement
 - ◇ Shaping of approximations
- ☀ Learning through imitation
 - ◇ Sometimes coaxed

Nativist Perspective

- ☀ Humans are biologically programmed to acquire language
 - ◇ Noam Chomsky's Language Acquisition Device (LAD)
 - Language Acquisition Device (LAD) allows to learn language, innate
 - Often incorporates a sensitive period argument
 - If not dev. @ a certain age, difficult to learn language
 - Argued children are born with a system that knows the

rules

The Interactionist View

- ✱ Most modern theorists take an interactionist position
 - ◇ Children are biologically prepared for language
 - ◇ But they require extensive experience
- ✱ Children play an active role in acquiring language
- ✱ Stress the social context of language learning
- ✱ Needs: biological maturation, cognitive development, linguistic environment, child's actions & linguistic utterances
- ✱ Support exists in the environment
 - ◇ Joint activities with parents
 - ◇ Motherese (infant-directed speech)
 - ◇ Experience conversing
- ✱ Interacts with innate abilities
 - ◇ Child is biologically prepared to learn language
 - ◇ BUT, social interaction also required

Features of motherese (child-directed speech):

- Babies LOVE baby-talk

- Phonological characteristics
 - Clear enunciation
 - Higher pitch
 - Exaggerated intonation
 - Slower speech
 - Longer pauses

- Syntactic characteristics
 - Short utterance length
 - Sentences well-formed
 - Fewer subordinate clauses

- Semantic characteristics
 - Limited range of vocab
 - Repetition of new words
 - ‘baby talk’ words
 - Reference mainly to here and now

- Pragmatic characteristics

- More directives
- More questions
- More attention devices
- Repetition of child's utterances

Receptive language

- ✧ Receptive language develops before productive language
 - Around 1 year of age, children are pretty good at understanding many words
 - Produce their first word sometime around this age

Language Production: Prelinguistic Stages

- ✧ Reflexive vocalizations (birth-2 mos)
- ✧ Cooing & laughing (2-4 mos)
 - Practice making sounds
- ✧ Babbling and vocal play (4-6 mos)
 - Practice making sounds
- ✧ Canonical babbling (6-10 mos)
 - No evidence that baby is saying "mama" or "dada" (ie: they are saying "mamamamama" or "dadadadadadada", not for communication purposes)
- ✧ Modulated babbling (10 mos on)
 - Using words
 - Sounds like a conversation but they are not

One-word utterances: The Holophrastic Period

- Holophrase (onset: 10-18 mos)
 - Single-word utterance with meaning of entire sentence
- Typically refer to important people, objects that move, familiar actions, or outcomes of familiar actions
- Learning the meaning of words is a fast-mapping process
 - Link word and meaning after 1-2 exposures

Holophrastic Period: Errors

- Overextension
 - Specific words used to describe broader set
 - Ex: 'Car' for all motorized vehicles
 - Ex: 'Open for opening door' = untying shoes, peeling orange

- Underextension
 - General words used to describe only one specific instance
 - Ex: 'Candy' only for peppermints, not lollipops or other types of candy
- Coining
 - Make up words if they don't know the term
 - Ex: 'nose-beard' = mustache, 'fix-man' = mechanic

Two-word utterances: The Telegraphic Period

- Word learning slow at first (1-3 new words/week)
- Then hit naming explosion/word spurt (onset: 18-24 mos)
 - Rapid acquisition of new words for objects
 - By adulthood, we have learned about 60 000 words
 - When vocabulary is at about 200 words, telegraphic speech starts
- Speech is like a telegram: contains only crucial content
 - *More milk* = *I'd like more milk, please.*
 - *Where ball* = *Where is the ball?*
 - *Mama dress* = *Mama's dress is pretty.*

Varieties of social feedback

- **EXPANSIONS**: Adult interprets child's utterance and expands it to a grammatically correct form
 - *The adult is rewording/rephrasing what the child is saying*
 - Child: "Doggie go"
Adult: "Yes, the doggie is going away."
 - Child: "Me cookie?"
Adult: "You would like a cookie?"
- **RECASTS**: Rather than repeating the intent of the child's utterance, adult offers a semantically related, grammatical utterance
 - *The adult is creating a conversation with the child*
 - Child: "Doggie go"
Adult: "That doggie lives down the street"
 - Child: "Me cookie?"
Adult: "Grandma made dessert today, didn't she?"

Beyond toddlerhood

- 2 years: vocabulary of 200 words
- 6 years: vocabulary of 10 000 words!
 - Fast-mapping
 - Social cues

- Sentence context
- 11+ years: over 30 000 words

Lecture 6: Early Childhood Development

November 1, 2013 09:28 PM

Piaget's Stages of Cognitive Development

- Sensorimotor intelligence (birth-2 yrs)
- Pre-operational thought (2-7 yrs)
- Concrete Operations (7-11 yrs)
- Formal Operational (11/12 yrs on)

The Pre-operational Period

- Thinking!!
- Can form representation, but limited
 - Centration
 - Fooled by appearances
 - Egocentric
- Symbolic activity
 - Language
 - Deferred imitation
 - Make-believe play
 - Becomes detached from real-life conditions over time
 - Becomes less self-centred over time
 - Becomes more complex

Evidence of representation

- Dual representation: viewing an object as an object and a symbol
 - Snoopy test (*hide small Snoopy in small model of room, ask child to find big Snoopy in real room*):
 - Demonstrated by 3-year-olds but not 2½-year-olds
 - Note that we see this age-related change reflected in make-believe play

Animistic thinking

- Belief that inanimate objects have life-like qualities
- Ex: 'The sun was angry so it chased the clouds away'
'Let's turn the TV off – it's tired'

Egocentrism (from your own perspective)

- 3 mountains problem:
 - After walking around the display, child is seated opposite a doll
 - Task: Which picture shows what the doll would see?
 - Children early on have difficulty

Conservation

- Piaget: conservation most important development of this period
- Problems with conservation:

- Inability to understand reversibility
 - Ex: ball of play-doh gets flattened, and then rolled back into a ball
- Centration
 - Focus on only 1 characteristic
- States vs. transformations

Hierarchical classification

- Ex: Are there more red hearts or hearts?
 - Young children would not understand that 'hearts' includes red hearts, and would say there are more red hearts

Was Piaget right?

- Evidence for different outcomes if problems are simplified
 - His tasks tend to be confusing, unfamiliar elements and many pieces of information
 - Also uses a lot of language, so children may get confused
- Many naturally-occurring instances of effective reasoning in preschoolers

Egocentrism

- ✧ Inclusion of familiar objects, using methods other than picture selection show that 3- and 4-year-olds understand other perspectives
- ✧ Everyday situation: preschoolers adapt speech to suit audience

Animistic thinking

- More common for items that move and have headlights (e.g., trains: Thomas the Tank Engine)
- Less common for familiar objects they interact directly with (e.g., crayons) than less interactive objects (e.g., moon)

Conservation

- ✧ Number: 6 items – no conservation;
3 items – conservation
- ✧ Familiarity:
 - can conserve checkers
 - can conserve playdough

Effect of language

- Show kids a rock painted like an egg and a real egg
- Verbal test: 'is it really truly an egg?'
 - Until 6 or 7yo, they will say 'yes'
- Physical test: 'choose the object that is really truly an egg'
 - By age 3 most kids choose the egg, not the rock

Hierarchical classification

- Can organize items into global categories

So...was he right?

- Partly...
- Children do have some logical reasoning skills, but they are limited and fragile
- A heavy focus on language could lead to underestimates of what children understand

Theory of Mind

- An individual's understanding of their own mind and other people's minds
- An understanding that behaviour is driven by mental states which are influenced by beliefs, desires, and intentions
- An understanding that what one thinks is true and what is actually true might not be the same
- An understanding that someone else's beliefs will not necessarily be the same as one's own
- ToM has been incorporated into the study of autism, alcoholism, schizophrenia, brain injuries, typically developing children and adults, animals

Measuring ToM

- ▶ False belief: a belief based on inaccurate information
- ▶ If child has ToM, can realise that without the accurate information, people will act according to their false beliefs
- ▶ Child must be able to differentiate between his own beliefs, and those of others
- ▶ Unexpected transfer test:
 - ◇ Individual puts item somewhere, then leaves
 - ◇ Second individual moves item
 - ◇ Individual comes back. Where will he look?

Wimmer & Perner, 1983

- ▶ If child has developed ToM, what will his answer be?
 - ◇ Place A (before the second individual moved the item)
- ▶ If the child hasn't developed ToM, what will his answer be?
 - ◇ Place B (where the second individual put the item)

Why do we have to test false beliefs?

- ▶ Differentiate knowledge

Why do children fail?

- ▶ Is it because they haven't yet developed strong metacognitive skills?
 - ◇ Metacognition: the ability to think about your own thinking
 - ◇ Smarties box task: can they even correctly state one of their true beliefs in the past?
 1. What do you think is inside the box? Smarties.
 2. *pulls out a pencil out of the box*
 3. When you first saw the box, before you saw what was inside, what did you think was inside?
 - Children under 4 will say pencil
 - If children cannot reflect on their own beliefs, how can they reflect on other

people's?

What if we clarify the wording?

- ▶ "What did you think was inside the box before we opened the lid?"
 - ◇ 3-year-olds more likely to answer correctly

Can children use false beliefs to their advantage?

- Yes - if they have ToM
- Task: Child told to hide car
 - ◇ No ToM: child drives it over, hides it, and isn't concerned with the tracks
 - ◇ ToM: wipes away tracks, and some also create misleading tracks to another spot

ToM and age

- Piaget would have said ToM develops after the preoperational stage, when kids move beyond egocentrism
- But the number of children who can solve false belief tasks increases sharply at 4 years!
- Some evidence that younger children have preliminary ToM: it is performance limitations not absence of ToM

Modified False Belief Task

- Child listens to the story and sees dolls acting it out
- Then asked to simply look where the first character will search for her toy upon her return
- Most 3-year-olds and even some 2-year-olds look at correct location
 - suggests they possess some implicit understanding that others may hold and act on false beliefs
 - can demonstrate this without requirement of verbal response

Language and ToM

- Development of ToM correlated with language development
- Meta-analysis: overall language abilities accounted for 18% of the variance in false belief task performance (Milligan, Asington, & Dack, 2007)

Experience and ToM: Specific language experiences

- Measured how moms interacted with 33-month-olds
 - With some, narratives included a lot of references to psychological motives
 - With others, narratives referred to behaviour, without reference to underlying motives
- Tested 6 months later on false belief task
 - Children with 'motives' experience did better than those without it

Experience and ToM: Hearing-impaired children

- Hearing-impaired children with hearing parents are delayed in their development of ToM relative to hearing-impaired children with hearing-impaired parents
 - Pass test at a later age bc parents have a more difficult time communicating with

child

- Hearing-impaired children with hearing-impaired parents show similar developmental timelines for ToM to hearing children with hearing parents

Experience and ToM: Large families

- Have better ToM at an earlier age
- Thought to be from interactions/arguments with siblings which give opportunities to learn about mental states

Lecture 7: Social Development

November 1, 2013 09:29 PM

Self-concept

- *The set of attributes, abilities, attitudes, values that one sees as defining oneself*
- Starts to develop in preschool years
 - Influenced by cognitive development
- Influences interactions with others
 - Ex: says 'mine' when playing with toys (with other children)
- Stronger self-concept leads to more possessive behaviour

Self-concept

- Early: focus on what child enjoys and owns
- Later: focus on personality characteristics

Self-esteem

- ▶ Starts to develop around age 4
- ▶ Not very accurate – kids often assert that they're really good at everything they do
- ▶ Kids who are criticized (or not supported in their attempts) stop trying new things

Gender typing

- ❖ Children use gender categories by about age 2
 - Either a **BOY** or a **GIRL**
- ❖ Generalize concept to lots
 - Toys: boys play with hardware tools, girls play with tea sets & dolls
 - Colours: boys like blue, girls like pink
 - Activities: boys are more active, girls are more gentle
 - Behaviours: boys need to act tough and competitive, girls need to be sweet and nice
 - Etc...
- ❖ Age 4: starts seeing stability in gender

'Nature' of gender typing

- ❖ Ancestral environment: men fought for mates, women cared for children
 - Genetic patterns may have passed on from then

- ❖ Exposing animals prenatally to androgens leads to more male-type behaviour
 - Female animals exposed to testosterone are more aggressive, engage in more active play
- ❖ Congenital adrenal hyperplasia (CAH)
 - Disorder
 - Inability to make sufficient cortisol by adrenal gland leads to overproduction of androgens
 - In females causes:
 - Female reproductive organs but ambiguous genitalia
 - More hair, acne during adolescence, early puberty
 - Rapid growth during childhood
 - *Behavioural outcomes*
 - During childhood and adolescence:
 - male-typical behaviour common
 - play with boys' toys, increased aggression, good spatial ability
 - *reduced* female-typical behaviors (ex: play with girls' toys, interest in babies)
 - Later in life:
 - More male-dominated occupations, more active sports, more interest in typically male topics (ex: cars)

'Nurture' of gender typing

- ❖ Parents supply different expectations
 - Boys should be tough, competitive
 - Girls should be gentle, kind
- ❖ Parents supply different toys
 - Influenced by marketing strategies
 - Boys: Sports equipment, cars, tools
 - Girls: Dolls, tea sets, kitchen appliances
- ❖ Parents interact in more when child engages in gender-typical activities
 - Ex: Dad will play with son if he plays with cars, not with dolls
- ❖ Less focus on gender-typing, and less gender-typed parents (e.g., stay-at-home dad) leads to less gender-typed kids
- ❖ Teachers perpetuate gender typing as well
- ❖ Peers pressure gender-typical behaviour
 - Praise, involvement in gender-typical activities
 - Ridicule of gender-crossed activities

David Reimer

- ❖ Canadian boy whose penis gets burnt off during circumcision, has a twin brother
- ❖ With the help of Dr. Money, David's mother turns David into a girl named Brenda
- ❖ Dr. Money argues for nurture (if David was raised as a girl = he will be a girl), but this is not supported bc even though David was raised as Brenda, he always felt uncomfortable and other kids treated him differently

* Notes from movie:

- Max was born as a female but wanted to be male
- SDM bigger in males than in females
- Effects sexual activity, programmed @ birth

Development of gender identity:

Cognitive-developmental theory

- Self-perception leads to behaviour

1. Gender labelling: Knowledge that you are boy/girl
2. Gender stability: Belief that gender is permanent
3. Gender constancy: understanding that appearances don't change gender

Social learning theory

- Behaviour leads to self-perception of gender

1. Observation and imitation of models + rewards and punishments for gender-stereotyped behaviour
2. Gender-typed behaviour

Gender schema theory

- combination of social learning and cognitive approach

1. Learn through consequences and observation
2. Organize experience into gender schema
3. In a given situation,
 - gender-organized thinking ("I am a girl")
 - gender-typed behaviour ("what would a girl do?")

- Not all kids have strong male/female schema
- Some are more masculine, some are more feminine, and some are androgenous
 - Experience can influence schema strength
- Test of gender schema: Bem Sex Role Inventory (BSRI)

Decreasing gender stereotyping

- Model gender-atypical behaviour
- Provide toys typical for both genders (gender neutral)
- Minimize language/media perpetuating gender stereotypes
- Point out exceptions to gender stereotypes

Parenting styles

- Four types, differentiated on:
 - Acceptance and involvement
 - Control
 - Autonomy granting

Authoritative parenting

- High acceptance and involvement
- Adaptive control (firm, reasonable)
- Appropriate autonomy granting (gradual)
- Linked to very good outcomes
 - Social, emotional, academic

Authoritarian parenting

- Low acceptance and involvement
- High control
- Low autonomy granting
- Linked to low self-esteem, anxiety, defiance

Permissive parenting

- High acceptance
- Low involvement
- Low control
- High autonomy granting
- Linked to impulsive, rebellious behaviour and disobedience, dependence on adults, poor academic skills

Uninvolved parenting

- Low acceptance and involvement
- Low control
- No opinions on autonomy
- Extreme form: neglect
- Linked to major problems
 - academic, social, mood

Lecture 7a: Cognitive Development in Middle Childhood & Beyond

November 1, 2013 09:31 PM

Piaget's Stages of Cognitive Development

- Sensorimotor intelligence (birth-2 yrs)
- Pre-operational thought (2-7 yrs)
- Concrete Operations (7-11 yrs)
- Formal Operational (11/12 yrs on)

Period of Concrete Operations

- Period in which the child acquires such concepts as conservation and classification and can reason logically
- Improvements may be closely related to memory capabilities
- Child masters different forms of conservation – knowledge that the quantitative properties of objects are invariant
 - Conservation of number achieved first
 - Then length, mass, volume
- Decentration (ability to focus on more than 1 characteristic), reversibility

Categorization

- ✧ Hierarchy of classes/class inclusion
- ✧ Sorting within classes
- ✧ Example: 20 wooden beads (17 red, 3 white)
 - Are there more red beads or wooden beads
 - Which would make a longer necklace: the red beads or the wooden beads?
 - The Concrete Operations child knows that a subclass (dogs) can never be larger than its superordinate class (animals)

Seriation

- ✧ ordering stimuli along some quantitative dimension
 - e.g., 10 sticks of various lengths
 - Pre-operational child will have trouble ordering them according to length
 - Concrete operational child can do this task efficiently

Transitive inference

- combine relations logically to reach a conclusion

Spatial reasoning

- ❖ Develop ability to perform mental rotations
 - Can use 'mental walk' approach to give clear directions

Limitations

- Logical thought only clear in concrete situations
- Still have trouble with abstract concepts
 - e.g., can do transitive inference with pictures, but not with words

Mary is taller than Susan. Susan is taller than Chloe. Who is taller?

The Period of Formal Operations (*Formal Operational (11/12 yrs on)*)

- Begins around 11/12 years, sometimes later, sometimes not at all
- Characterized by flexible and abstract reasoning, multiple possibilities for the solution to a problem
- The use of symbolic skills and higher education are factors associated with formal operations

Hypothetico-Deductive Reasoning

- Hallmark of the formal operational period
- Rigorous logical system for evaluating hypotheses using various mental actions
 1. Problem presented
 2. General theory
 3. Deduce specific hypotheses
 4. Test each
- Start with possibility, move to reality

Propositional thought

- ❖ Able to evaluate the logic of propositions without referring to real-world circumstances
 - Ex: mathematical statements, advanced physics
- ❖ Able to reason about hypothetical/imaginary statements
 - Ex: black holes, time travel

Pendulum problem

- What influences the speed of swinging pendulum?
- Testing different hypotheses

Evaluation: Formal Operations

- Piaget argued these were universal trends, but not everyone reaches formal operational thought

Did Piaget Judge the Child's Abilities Accurately?

- Studies suggest that Piaget underestimated children's abilities at every age

Does Cognitive Development Proceed in Stages?

- Current thinking is that development does not proceed in invariant stages
- Development is more gradual than dramatic shifts, or a combination of the two
- Little role for social and cultural influences
 - Yet intervention can accelerate development

Overall Assessment

- Piaget's influence is enormous
- Used innovative techniques to answer important questions
- Led to current emphasis on cognitive factors in development

Lecture 8: Adolescence

December 8, 2013 09:02 PM

Puberty

- Regulated by genetically influenced hormonal processes
- Girls typically reach puberty about two years earlier than boys

Hormones

- Changes start around age 8-9
- Growth hormone (GH) and thyroxine levels increase
 - Body growth and skeletal maturation

Sexual maturation: Sex hormones

- estrogens and androgens are present in both genders, but in different amounts
- Boys: testosterone from testes [androgens]
 - muscle growth, body and facial hair, other male sex characteristics
- Girls: estrogens from ovaries
- breasts, uterus, and vagina mature, feminine body proportions, accumulation of fat, menstruation

Body Growth

▷ Growth spurt:

- Grow 10-11 inches in height
- Gain 50-75 pounds during the growth spurt
- AFTER the growth spurt, girls can carry babies

▷ Body Proportions

- Hands, legs, feet grow first (reverse of cephalocaudal trend)
 - Boys: shoulders → hips
 - Girls: hips → shoulders, waist

Athleticism

- Among boys, athletic competence is strongly related to peer admiration and self-esteem
- Performance-enhancing drugs used quite commonly by boys
- Up to 8% of high school seniors (males) report using them
 - Ex: Steroids
- Involvement in sports associated with benefits to cognitive, social, and motor development

Sexual Maturation

- Primary sexual characteristics: changes to reproductive organs
- Secondary sexual characteristics: visible on outside of body
 - o Girls
 - budding of breasts and the growth spurt
 - followed by menarche (around age 12½ Canadians)
 - pubic hair and breast development are then completed, underarm hair appears
 - o Boys
 - enlargement of testes, scrotum
 - pubic hair emerges, penis grows
 - growth spurt peaks around age 14 (genital changes nearly done)
 - facial and body hair emerge, voice deepens

Brain Development

- pruning of unused synapses in the cerebral cortex continues
- growth and myelination of stimulated neural fibers accelerates
- links between the cerebral hemispheres and the frontal lobes and other brain areas expand, supporting a variety of cognitive advances
- neurons become more responsive to excitatory neurotransmitters

Why are teens so moody?

- Hormone levels have a moderate relation with moodiness
- Might be more that they're facing a lot of negative life experiences
 - o Conflict with parents, romantic relationships ending, peer struggles, etc.
- May also be because teens need more sleep
 - o Always stay up late
- Lots of peer pressure, expectation to live up to 'cultural script'

Parent–Child Relationships

- Cross-culturally, puberty is related to a rise in parent–child conflict
 - o Why?
 - o At that age we do not understand them, but as we age and mature, we begin to understand their point of view and agree with what they have said
- May substitute for physical departure that would have happened in ancestral environment upon sexual maturation
 - o Psychological distancing

- Conflicts with daughters > sons
- Maybe because parents are more restrictive with girls

Effects of Pubertal Timing

- Early-maturing boys tend to do well socially
 - o They are more confident, attractive, independent & popular
- Early-maturing girls tend to have emotional and social difficulties
 - o They are more quiet, withdrawn, anxious & unpopular
- Why do you think this is true?
 - o Boys → look more like a man (fit the desired body type)
 - o Girls → look curvy (so identified as overweight), "sexually promiscuous" (will attract attention from older boys, embarrassing)

Relationship between family experiences and pubertal timing

- 756 white families; children followed from birth through eighth grade.
- Throughout childhood:
 - o Parents observed on type of interactions with child (parental sensitivity, intrusiveness, positive regard)
 - o Parents completed a questionnaire on child-rearing strategies (harsh, firm, lax)
 - o Also completed an attachment questionnaire about their feelings toward and beliefs about their child
 - o Child pubertal timing was assessed using maternal reports and annual physical exams.

Results

- Negative family experiences predicted early pubertal onset in girls (not boys)
 - o Ex: poor attachment with parents, harsh parenting
 - o Maternal harsh control in childhood was an especially strong predictor of early menarche.
- Positive family experiences, such as parental sensitivity during play, did not predict pubertal timing.
- Biological factors are more predictive of pubertal timing than environmental factors.
 - o Maternal age of menarche was a stronger predictor of girls' pubertal timing than family experiences.
- When environmental factors are considered, family experiences—particularly negative ones—seem to be especially influential

- Other studies have shown that boys with a history of family conflict, harsh parenting, or parental separation also tend to reach puberty early
 - Divorced families: boys reach puberty earlier

The Importance of Fitting in with Peers

- Adolescents feel most comfortable with peers who match their own level of biological maturity.
 - **Early-maturing girls** and **late-maturing boys** have trouble because they don't have many same-age peers at their stage of development
- Early-maturing adolescents of both sexes tend to seek out older friends
 - Can lead to problems
- Difficulties tend to last for early-maturing girls but not boys

Eating Disorders

Risk factors in girls:

- Early puberty
- Poor body image
- Family focus on weight

Anorexia Nervosa

- Excessive limitation of food intake caused by compulsive fear of getting fat.
- Distorted body image
- About 1% of North American and Western European teenage girls are affected
 - Rapid increase in past 50 years with cultural expectations
- Boys account for about 10% of cases
 - Usually diagnosed with something else (doctors don't ask boys about not eating - they don't think it's a problem)
- Anorexics generally lose 25-50% of their body weight
 - 6% die
- Treatment: combination of hospitalization, medication, and family therapy

New potential treatment:

- Deep brain stimulation
 - 6 women, whom most conventional therapy had failed, tried this
 - Implanted electrodes in an area of the brain that influences

- regulation of mood and anxiety
 - Stimulation for 9 months
 - 3 women gained weight, improved overall mood
- However, more research is needed

Bulimia Nervosa

- strict dieting and excessive exercise accompanied by binge eating, often followed by deliberate vomiting and purging with laxatives
- can cause life-threatening damage to the throat and stomach
- 2-4% of teenage girls
- pathological anxiety about gaining weight
- Risk factors:
 - Genetics, overweight, early puberty, impulsive/sensation-seeking personality
- feel depressed and guilty about abnormal eating habits
 - Makes it easier to treat than anorexia
 - However, a person with Bulimia is not underweight so it is harder to spot
- Treatment: support groups, nutrition education, medication

"EATING DISORDERS ARE MY FRIEND" (video)

- 10% M, 90% F
- The reason to diet is not always to be skinny or lose weight, it may be to "be in control"
 - Want to be in control of their life for once, so by controlling what you eat, you feel "powerful"
 - However, the eating disorder actually controls them
 - Choice to "not eat" was no longer a choice
 - Weight loss also brings attention & approval
- Cut out too much fat, brain cannot THINK

Sexuality

- Teens get contradictory, confusing messages about sex
- Adults (such as parents and teachers) emphasize that sex at a young age and outside of marriage is wrong
 - broader social environment (e.g., TV, movies) emphasizes excitement and romanticism of sex

Sexually Active Teens

- About 50% of teens have had sex
- Most have had 1-2 partners by the end of high school

- Boys have sex earlier than girls

Factors influencing sexual activity

- Early sexual activity is more common low SES (social economic status) teens
 - (ie: teens from poorer families)
 - Could be because:
 - They are not educated about sex
 - Want to get away from home and start their own life
 - Want to gain intimacy with partner
 - Want to have fun and be free
- Living in a hazardous neighborhood also increases the likelihood that teenagers will be sexually active
 - life history hypothesis
 - Die young → procreate before they die

Contraceptive Use

- 20% of sexually active teenagers don't use contraception consistently
- Planning in advance is crucial
- Teenagers who talk openly with their parents about sex are more likely to use birth control

Adolescent Parenthood

Risk factors:

- Low SES
- Ethnic minority and low-income
- Parent had adolescent pregnancy (ie: teen mom)

After the birth of child:

- Chance of completing high school decreases
- Chance of marrying decreases; if marry, high chance of divorce
- 1/3 are pregnant again within 2 years
- More likely to be on welfare or working low-pay job

There are better outcomes:

- If teen mom finishes high school, avoids additional births, and finds a stable marriage partner

Prevention Strategies

- Effective sex ed programs that teach techniques for handling sexual situations, deliver accurate messages, and provide specific information about contraceptives and ready access to them.
- Controversial to provide easy access to contraceptives
 - but abstinence-only focus has been ineffective in delaying sexual activity and preventing pregnancy
- In Canada and Western Europe, contraceptives are available to teens and subsidized by universal health insurance
 - teenage sexual activity is no higher than in US
 - but pregnancy, childbirth, and abortion rates are lower

Puberty Facts (T or F?)

1. Menarche takes place immediately before the peak of the height spurt. (F)
 - a. The first menstrual cycle takes place AFTER.
2. In the sequence of pubertal events, the growth spurt occurs at the same age for both boys and girls. (F)
 - a. For girls, the growth spurt occurs BEFORE the boys
3. Compared to girls, boys tend to get less social support for the physical changes of puberty. (T)
4. Most researchers agree that high sex hormone levels are primarily responsible for adolescent moodiness. (F)
5. Psychological distancing between parents and children is normal during adolescence, and most parent–child conflict is mild. (T)
6. Late-maturing boys and early-maturing girls tend to be popular, self- confident, and sociable. (F)

Kohlberg's Theory of Moral Development

- Clinical interviews with 10- to 16-year-old boys, giving hypothetical moral dilemmas
- For each dilemma: What should the main character do? Why?
- Longitudinal study for 20 years

Heinz dilemma:

A woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to produce. He paid \$200 for the radium and charged \$2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get

together about \$1,000 which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said: "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug for his wife. Should Heinz have broken into the laboratory to steal the drug for his wife? Why or why not?

Kohlberg's Stages of Moral Understanding

- 3 stages
 - Moral understanding is promoted by:
 - Actively struggling with moral issues, noticing weaknesses in your current reasoning
 - Improving skills in perspective taking
- **Preconventional Level**
 - morality is externally controlled; children accept the rules of authority figures and judge actions by their consequences.
 - **Stage 1: Punishment and obedience**
 - Children focus on fear of authority and avoidance of punishment as reasons for behaving morally.
 - Ex: Don't steal because you'll be caught and go to jail
 - **Stage 2: Instrumental purpose**
 - Children view moral decision as flowing from self-interest
 - Ex: The risk of stealing isn't worth it because the wife is likely to die anyway
- The Conventional Level
 - People emphasize conformity to social rules because they believe that actively maintaining the current social system ensures positive relationships and societal order.
 - **Stage 3: "good boy-good girl"** (morality of interpersonal cooperation)
 - Obeys rules in order to promote social harmony, based on ideal reciprocity (do unto others as you'd do for yourself) and ability to see relationship from outside perspective.
 - Ex: Don't steal; it will dishonour your family. Society will think badly of you, so you'll regret it.
 - Stage 4: social-order-maintaining:
 - The individual takes societal laws into account and believes that rules must be enforced evenhandedly, and members of society must uphold rules to maintain societal order.
 - Ex: If he steals and it's OK, everyone will start stealing and society will collapse.

- The Postconventional Level
 - Move beyond unquestioning support for own society's rules and laws. Now define morality in terms of abstract principles and values that apply to all situations and societies.
 - **Stage 5: Social contract**
 - View laws and rules as flexible instruments for furthering human purposes. Follow them when they are consistent with individual rights and the interests of the majority.
 - Ex: Laws say not to steal, but laws shouldn't violate right to life
 - Stage 6: Universal ethical principle
 - Define right choice by self-chosen ethical principles of conscience that are valid for all people, regardless of law and social agreement.
 - Ex: Doesn't make sense to value property above life. We have a duty to save each other from dying.

Flanagan, Stout, & Gallay (2008)

- How do teens' opinions of right to engage in risky behaviours change with age?
- 1500 teens followed for 3 years.
 - early adolescents (12–13 years), middle adolescents (14–15 years), and late adolescents (16 years and older).
- Survey about rights concerning health. Two scales:
 1. Health as an Individual Right
 2. Public Health Beliefs
- 4 stories: friend smoking cigarettes, drinking alcohol, using drugs, or planning to go to a party where alcohol would be served.
 - How likely would you be to intervene or ignore their friend's behavior?
 - Between early and late adolescence: increase in view of health as an individual right.
 - But older teens also more likely than younger teens to endorse government's right to intervene in individual choices in behavior.
 - by late adolescence, we develop a sophisticated understanding of health in which an individual's right to experiment with risky behaviors must be weighed against public welfare.
 - Compared to boys, girls were more likely to endorse public health over individual rights and more likely to intervene in

friend's risky behavior.

Influences on Moral Reasoning

Parenting Practices

- Teens who gain most in moral understanding have parents who engage in moral discussions and encourage prosocial behavior
- Those whose parents lecture, use threats, or make sarcastic remarks show little or no change in moral reasoning.

Schooling

- More schooling = more likely to be Stage 4 or higher
- Higher education introduces teens to social issues that beyond personal relationships to entire political/cultural groups.

Peer Interaction

- Interaction among peers who present differing viewpoints promotes moral understanding
- Negotiations and compromises with peers help teens realize that social life can be based on cooperation between equals, not just authority

Culture

- People in industrialized nations move through Kohlberg's stages *more quickly* and advance to a higher level than those in village societies (no higher than Stage 3)
- But studies have confirmed an age-related trend consistent with Kohlberg's Stages 1 to 4 across diverse societies
-

Religion and Moral Development

w About 50% of Canadians report being religious

- US: 65%
- Italy, UK: 33%
- Europe: less

Teens who remain part of a religious community demonstrate more moral values and behavior.

Lecture 9: Early & Middle Adulthood

December 8, 2013 09:03 PM

Selecting a Vocation

- In societies with many career possibilities, occupational choice is a gradual process that begins long before adolescence.
- Theories of vocational development involve:
 - o fantasy period: early-mid childhood; kids fantasize about career options
 - o tentative period: age 11-16; kids think about careers in terms of their interests, then in terms of their abilities & values
 - o realistic period: late teens-early twenties; start to narrow their options

Factors Influencing Vocational Choice

1. Personality

- Theory of personality types that affect vocational choice:
 - ◇ *Investigative*: enjoys working with ideas → scientific occupation
 - ◇ *Social*: likes interacting with people → human services
 - ◇ *Realistic*: prefers real-world problems and working with objects → mechanical occupation
 - ◇ *Artistic*: high need for individual expression → artistic field
 - ◇ *Conventional*: likes well-structured tasks, values material possessions & social status → business
 - ◇ *Enterprising*: adventurous, persuasive, strong leader → sales, supervisory positions or politics
- Research shows a moderate relationship between these personality types and vocational choice
- But many people are blends of several personality types and can do well at more than one kind of occupation.

2. Family Influences

- Higher-SES youth are more likely to select high-status, white-collar careers.
- Lower-SES youth tend to choose less prestigious, blue-collar careers.
- Higher-SES parents
 - ◇ more likely to give their children information about the world of work

- use parenting practices that promote curiosity and self-direction
- Number of years of schooling completed powerfully predicts occupational status
- But parental pressure to do well in school and encouragement toward high-status occupations predict vocational attainment beyond SES

3. Teachers

- Young adults who choose careers requiring extensive education often report that teachers influenced their choice.
- The power of teachers in offering encouragement and acting as role models can serve as an important source of resilience.

4. Gender Stereotypes

- Women are moving more into vocations typically held by men, but the progress is still slow
- Engineers, lawyers, doctors, business execs still mainly male; nurses, teachers still typically female
 - ◇ This is because during:
 - ◇ Adolescence: Gender-stereotyped messages in high school decrease girls' confidence in their abilities
 - ◇ Young adulthood: concern about succeeding in male-dominated fields
 - ◇ Adulthood: concern about managing family and career responsibilities
- Men have changed little in their interest in non-traditional occupations
 - ◇ Although many men do work happily in them

Dropping out of post-secondary school

- 45% of US post-secondary students at colleges and 30% at universities drop out; most within the first year
- What happens to them?
 - 119 young adults who had started university but dropped out. Interviewed 7 years after starting college/university.
 - Interviewed about reasons for leaving school, contentment with decision, current employment.
- Results:
 - **decision to drop out did not necessarily predict negative outcomes**

- ◇ More than half of the participants transferred to another school, and 83% of those graduated
- ◇ Only 2.5% of the participants were unemployed
- ◇ When asked about reasons for leaving school
 - 65% identified typical reasons in emerging adulthood (changing career direction, identity exploration, and mobility of residence)
 - 35% mentioned negative circumstances (failing grades, medical problems, financial difficulties)
- Most were content with their decision to leave drop out

ERIKSON'S THEORY

- ◇ Conflict of early adulthood: *intimacy versus isolation*
- ◇ Maturity involves balancing the desire for self-determination with the desire for intimacy.
- ◇ Previous stage: identity vs. confusion
 - For both men and women, identity achievement is positively correlated with fidelity and love, while identity moratorium (searching for identity) is negatively associated with fidelity and love.
- ◇ Erikson believed that successful resolution of intimacy versus isolation prepares the individual for the middle adulthood stage, which focuses on generativity - caring for the next generation and helping to improve society.

Close relationships: Romantic Love

- Biological and social forces contribute to mate selection.
- Intimate partners generally meet in places where they find people of their own age, ethnicity, SES, religion.
- We usually select partners who resemble themselves in attitudes, personality, educational plans, intelligence.
 - The more similar partners are, the more satisfied they tend to be with their relationship.
- Differences in male and female criteria for choosing a partner reflect evolutionary theory
 - Women value intelligence, ambition, financial status, and moral character
 - ◇ help ensure children's survival and well-being
 - ◇ prefer slightly older mate
 - Men prefer a younger mate and place more emphasis on physical attractiveness and domestic skills

- ◇ Traits signaling youth, health, sexual pleasure, and ability to give birth to and care for offspring
- But neither men nor women put good looks, earning power, and mate's age relative to their own at the top of their wish list. They place a higher value on relationship satisfaction.

Close relationships: Friendships

- ⇒ Adult friends are usually similar in age, sex, and SES.
- ⇒ Women have more intimate same-sex friendships than men, and often prefer to just talk with friends, while male friends generally prefer to do an activity
- ⇒ Gay and lesbian romantic relationships often develop out of close same-sex friendships
 - Especially with lesbians
- ⇒ Good sibling relationships in adulthood are also important sources of psychological well-being

The family life cycle

- In early adulthood, people typically live on their own, then marry, then have children.
- In middle-age, their children leave home, parenting responsibilities diminish.
- Late adulthood brings retirement, growing old, death of spouse.

Leaving the parental home

- average age of moving out decreased in recent years as more young people enroll in higher education and live independently before marriage
 - but nearly half of young adults return home briefly
- Fewer North American and Western European young people leave home to marry than in previous generations; more do so just to express their adult status.
- When young adults are prepared for independence and feel secure, departure from the home is linked to more satisfying parent–child interaction and successful transition to adult roles.

Marital Satisfaction

- ♡ Key factors: family backgrounds, age at marriage, relationship to extended family, personality characteristics
- ♡ Quality of the marital relationship predicts mental health for men and women

♡ Research in industrialized nations reveals that equal power in the relationship and sharing of family responsibilities usually enhances both men's and women's satisfaction

Cohabitation, Gender, and Marital Commitment

- 197 couples, mean age = 27 years.
- **Couples who cohabited before marriage** and couples who did not live together until after engagement or marriage.
- Likert-style dedication scale to measures relationship commitment.
 - My relationship with my partner is clearly part of my future life plans.
 - I like to think of my partner and me more in terms of 'us' and 'we' than 'me' and 'him/her'.
- After 3 years of marriage, completed Marital Adjustment Test (MAT).
 - Gives an idea of agreement on major issues between spouses, happiness with the marriage
- Results
 - Men who cohabited before engagement or marriage were less dedicated to their wives than men who did not
 - Premarital cohabitation had no effect on women's dedication to their husbands
- Interpretation:
 - Women may be more likely than men to view cohabitation as a step toward marriage.
 - Some women may also view cohabitation as an opportunity to coax a reluctant partner into marriage.
- Recommendation:
 - If you are considering cohabitation, discuss your commitment and expectations about the relationship first!

The Decision to Have Children

- ✧ Key factors: financial circumstances, personal and religious values, health conditions
- ✧ Women with traditional gender identities usually decide to have children
- ✧ Women with high-status, demanding careers less often choose parenthood or tend to delay it
- ✧ Reasons given for having children:
 - warm, affectionate relationship
 - stimulation and fun

Transition to Parenthood

- ◆ In the early weeks after a baby's birth, gender roles of men and women usually become more traditional.
- ◆ A new baby does not typically cause significant marital strain, but troubled marriages usually become more troubled.
- ◆ In dual-earner marriages, larger differences in parents' caregiving responsibilities are associated with greater decline in marital satisfaction after childbirth, especially for women.
- ◆ Shared caregiving predicts greater parental happiness and sensitivity to the baby.

Single adults

- * Rates of never-married 30-34-yr-olds have risen sharply
 - about 1/3 of males and 1/4 of females
 - also divorced adults
- * More young adult men than women are single, but women are more likely to remain single for many years or a lifetime.
 - Advantages and disadvantages of singlehood
 - ◆ Freedom, mobility
 - ◆ Loneliness, dating, limited social life, insecurity
- * Many singles go through a stress period in their late twenties (when most of their friends have married)
 - May be due to negative stereotyping of singles

Divorce and remarriage

- ▶ Strongest predictors of divorce: infidelity, spending money foolishly, drinking/drugs
- ▶ Increased chances of divorce if
 - younger at marriage
 - had parents who divorced
 - low level of education
 - low SES
- ▶ On average, people remarry within four years of divorce, men somewhat faster than women.
- ▶ Remarriages especially vulnerable to breakup
 - negative patterns of interaction carried over from the first marriage
 - stress resulting from stepfamily situations
- ▶ Blended families generally take 3-5 years to develop the connectedness and comfort of intact biological families.

Changing patterns in family structure

- Family structure is changing (no longer 4 membered family)

Cognitive Development in Middle Adulthood

- Although we see changes in cognitive abilities with age, they're not all bad!

Cohort effects can be misleading

- ✧ Research with IQ tests has often indicated that intelligence inevitably declines in middle and late adulthood (from age 35 onwards)
 - Thought to be a sign of the brain deteriorating
- ✧ But much of this research is cross-sectional
 - Younger generations in the studies had better health care and better education than the older generations
 - Could explain apparent loss in skills with age
- ✧ Longitudinal research shows opposite pattern: increase in performance with age!

Exposing cohort effects

- Seattle Longitudinal Study (Shaie, Willis, & Caskie, 2006)
- Cross-sequential design
- 1956: tested people ages 22-70
- 7 testing cycles over next 42 years: retested them
- Results
 - ✧ No systematic worsening of overall cognitive abilities with age
 - ✧ So IQ tests aren't a great measure of ability (too broad)
 - ✧ Fluid skills tend to decline earlier for women
 - ✧ Crystallized skills decline earlier for men
- Different patterns of change for different components of intelligence

Types of Intelligence

Crystallized intelligence: skills that depend on accumulated knowledge and experience, good judgment, and mastery of social conventions

- Measured via tests of vocabulary, general information, verbal comprehension, logical reasoning

Fluid intelligence: ability to detect relationships among visual stimuli, speed of analyzing information, and capacity of working memory

- Measured via tests of spatial visualization, digit span, letter-number sequencing, symbol search

- ☆ Both quite good in middle adulthood
- ☆ Beyond age 60-65, fluid components of intelligence decline more than crystallized components

More Cohort Effects in Mental Test Performance (Zelinski & Kennison, 2007)

- ◇ 938 adults between ages 55 and 87
- ◇ Cohort 1: born between 1893 and 1923; tested between 1978 and 2000
- ◇ Cohort 2: born between 1908 and 1940; tested between 1994 and 2003
- ◇ Tests:
 - Fluid IQ:
 - Reasoning. Solve logical patterns (e.g., which # comes next in sequence).
 - Space. Speeded visualization task.
 - List recall. Remember words from a list.
 - Text recall. Remember themes from a short story.
 - Crystallized IQ:
 - Recognition vocabulary. Give definition for 50 words.

Results

- ◇ Cohort 2: 74-year-olds did as well on fluid abilities as 60-year-old Cohort 1 participants had done
- ◇ No cohort differences in crystallized skills (vocabulary)
- ◇ Interpretation:
 - older adults today are maintaining fluid abilities longer than older adults in previous generations
 - if adults in their 70s are currently performing like adults in their late 50s and 60s a generation ago, occupations requiring strong reasoning and memory skills may benefit from the abilities and life experience of older adults

Information processing

Many components that change with age:

1. Speed of processing
 - RT increases from age 20 onwards
 - Why? Some form of changes in the brain
 - Hypotheses:

→ neural network view

- as neurons die, breaks in neural networks occur
- the brain adapts by forming new synaptic connections (bypasses) that go around the breaks but are less efficient

→ information-loss view

- older adults experience more loss of information as it moves through the cognitive system, so the whole system has to slow down to process the information
- Processing speed is a key contributor to cognitive changes with age
- But it's not the only factor involved

2. Attention

- Multi-tasking (holding two items in mind at once) worsens with age
- Switching between tasks also becomes more difficult
- Part of attention is inhibiting responses to some stimuli
 - This also worsens with age
 - Can lead to appearance of highly distractible older adults
- Practice with attentional demands lessens age-related declines
 - Past experience (e.g., air traffic controllers)
 - Recent training

3. Memory

- Working memory capacity decreases from about age 20 onwards
- Why?
 - Could be due to decline in use of memory strategies (e.g., rehearsal, organization, elaboration)
- Slowing down pace of learning often helps older people compensate for age-related declines in working memory

4. Practical Problem Solving

- As we age, we gain expertise in areas with which we have much experience
- This aids middle-aged adults in terms of practical problem solving
 - Near peak in middle adulthood

5. Creativity

- Huge variability in age-related changes
 - But often peaks between age 35-45

Lecture 10: Death & Dying

December 8, 2013 09:04 PM

Attitudes toward death

- Many individual and cultural variations in death anxiety
 - Among Westerners, spirituality > religious commitment limits death anxiety
 - Death anxiety declines with age
- lowest in late adulthood
- Regardless of age, in both Eastern and Western cultures, women are more anxious about death than men
- Experiencing some anxiety about death is normal

Measuring death anxiety

- Collett-Lester Fear of Death Scale-Revised (CL-R)
- measures fear of one's own death and dying and fear of someone else's death and dying.
- Rate on a scale of 1-5:
 - How disturbed are you about:
 - The shortness of life?
 - The pain involved in dying?
 - The lack of control over the dying process?
 - The loss of someone close to you?
 - Watching someone suffer from pain?

Stages of dying: Kübler-Ross

- Denial**: On learning of the terminal illness, the person denies its seriousness to escape the prospect of death
- Anger**: about having to die without having had a chance to do all the person wanted to do
- Bargaining**: Realizing the inevitability of death, the person attempts to strike a deal with a higher power for extra time
- Depression**: When previous 3 stages fail to postpone the illness, the person becomes depressed about dying
- Acceptance**: A state of peace about upcoming death. Most people who reach this stage only do so only in the last weeks or days

Evaluation of Kübler-Ross's Theory

- Kübler-Ross cautioned that her five stages shouldn't be viewed as a fixed sequence or a universal pattern.

- Simplistic interpretation of her theory has sometimes hurt medical care approaches:
 - health professionals to try to push patients through the sequence
 - dismiss a dying patient’s legitimate complaints about treatment
- These five reactions can be viewed as coping strategies that anyone may call on in a situation of loss
 - But dying people react in many additional ways
- Main drawback: theory looks at dying patients’ thoughts and feelings without the contexts that grant them meaning in their lives

Contextual Influences on Adaptations to Dying

- Appropriate death: a death that makes sense in terms of the person’s pattern of living and values while preserving or restoring significant relationships. As free of suffering as possible.
- When asked about a “good death,” most patients mention such goals as clarifying the meaning of one’s life and death and achieving a sense of control over the remaining time.
- Nature of the disease
 - Course of the illness and its symptoms affect the dying person’s reactions
- Personality and coping style
 - Manner of coping with past stressful life events can explain how people will manage the dying process
- Family members’ and health professionals’ behavior
 - Having everyone acknowledge the terminal illness is best
 - But doctors who want to inform patients of their prognosis may encounter resistance; must honor the patient’s preference
- Spirituality, religion, and culture
 - strong sense of spirituality associated with reduced fear of death
 - cultural differences in attitudes about death shape peoples’ dying experiences

Music in Palliative Care

- 25 adults (ages 18-90) in inpatient hospice care for end-stage terminal disease.
- Randomly assigned to:
 - experimental group: received a single music therapy session by a trained musical therapist or,
 - control group: received a single session with a hospice volunteer who interacted with the patient but did not engage in any musical activities

- Assessed changes in anxiety level using standardized anxiety scale before and after the session.
- Results:
 - Greater decline in anxiety in experimental group
 - Less fatigue following session in experimental group
- Implications: music may have a stimulating/ uplifting effect on palliative care patients.
- Other work has shown that music can enhance the effects of pain medication.

The right to die

- Many countries/states have laws regarding honoring patients' wishes re withdrawal of treatment in cases of terminal illness or sometimes in cases of a persistent vegetative state
- But vast differences in right-to-die laws

Passive euthanasia: life-sustaining treatment is withheld or withdrawn and permits a patient to die naturally

–widely practiced as part of ordinary medical procedure

- Important to have guidelines documented while still able to advocate for self
- living will: specifies treatments person does/does not want in case of a terminal illness, coma, or other near-death situation
- power of attorney for health care: authorizes appointment of another person to make health care decisions on one's behalf

Voluntary Active Euthanasia: doctors or others act directly, at a patient's request, to end suffering before a natural end to life

–criminal offense in most countries

- but support for voluntary active euthanasia is growing
- In Western nations, 70-90% approval

Assisted Suicide: doctors prescribe drugs so that terminally ill patients can end their own lives

–illegal in Canada but legal in some Western European countries

–Some US states have laws explicitly allowing this

–Public opinion consistently favors voluntary active euthanasia over assisted suicide

- But some experts say legalizing assisted suicide would be better because it reduces the possibility of coercion

Coping with the death of a loved one

- Grief process as a set of tasks

1. accepting the reality of loss
2. working through the pain of grief
3. adjusting to a world without the loved one

1. Avoidance

- On hearing the news, survivor experiences shock, then disbelief, "emotional anesthesia"

2. Confrontation

- mourner begins to confront reality of the loss; grief most intense
- Wide range of emotional reactions
- Loss of sleep and appetite are common

3. Restoration: bereaved person learns to overcome loneliness, reorganize daily life without the loved one, and revise identity

- dual-process model of coping with loss states that effective coping requires people to alternate between dealing with the emotional consequences of loss and attending to life changes, which can have restorative healing effects
- restoration-oriented events (e.g., visiting friends, attending religious services), reduce the stress of grieving
- As grief subsides, emotional energies shift toward forging a symbolic bond with the deceased and moving on with life

Personal and Situational Variations

- Grieving affected by many factors

–Men express distress and depression less and seek social support less than women.

–The quality of the mourner's relationship with the deceased is important

- Sudden unanticipated vs. Prolonged expected deaths

–Avoidance especially pronounced after a sudden death

–Prolonged dying allows for anticipatory grieving

–Suicide, especially of a young person, is especially difficult to deal with

- Death of a child

–Particularly difficult

- Young people grieving

- Parent’s death: basic sense of security and being cared for is threatened
- Sibling’s death: deprives children of a close friend, makes clear their own vulnerability
- school-age children usually more willing to confide in parents than adolescents

Bereavement Overload

- Can occur when a person experiences several deaths in succession
- depletes the coping resources of even well-adjusted people, – emotionally overwhelmed, unable to resolve grief