

September 3, 2014

GRT 2100 – Psychosocial Aspects of Aging

Introduction Class – Professor Bio; Course Overview. Read “Professor Bio” and “Course Outline” on Blackboard Learn. Consider all judgments you make when getting to know a person. What does their personality, appearance, clothing, demeanor, etc. tell you about them?

September 5, 2014

Introduction to Psychosocial Aspects of Aging: Defining Psychosocial Aging, and Aging as a Social Process

Gerontology and Geriatrics

Gerontology	GOAL (of both)	Geriatrics
<ul style="list-style-type: none">• Multidisciplinary field which is concerned with the physical, psychological, and social aspects and processes of aging	<ul style="list-style-type: none">• To understand aging so that people can maximize their functioning and achieve a high quality of life	<ul style="list-style-type: none">• A medical specialty which concerns the study of health and disease in later life, and the health care and treatment of older persons.

Same goal, different focuses. Concerned about bodily changes as well as society’s impact on the aging population. Used to apply to policies and programs.

- How does this influence society as a whole?
- Who should fund this?

Avoid making generalizations about older people.

Social Gerontology is concerned with two aspects of aging:

1. Developing, evaluating, and critiquing social programs or policies for older people.
2. Describing and explaining aging processes and older persons’ status in society and nature of their behaviours.

“Old” age being “elderly” or becoming a “senior” are socially constructed and reinforced by cultural values, beliefs, stereotypes, and misconceptions.

Social Aging – TRUE/FALSE

- **Intellectual functioning decreases as we age** (TRUE, there is a bit of decrease)
- **Most seniors are women** (TRUE)
- **Older people who reduce their activity tend to be happier** (FALSE)
- **People become more difficult and resistant to change as they age, which makes it challenging to implement interventions** (TRUE or FALSE depending on the person – some individuals are more open to change than others)
- **Older people are less likely to experience clinical depression than younger people.** (FALSE)

Psychosocial Aspects of Aging

- **Psychosocial issues** encompass the psychological and social aspects of a person's life, which influence their thoughts, feelings, behaviours, health, functioning, well-being, and/or quality of life.
- **Psychological aspects** include cognition, emotions, personality, stress and coping, etc.
- **Social aspects** include socioeconomic status, religion, culture, education, social supports, job status, etc.

Psychosocial factors highly influence older persons' health and overall well-being.

Psychosocial Health & Well-being

- **Social Well-being** (e.g. social participation and integration; communication and technology; ability to travel, and use of transportation)
- **Psychological Well-being** (e.g. mental health; mood; emotions; coping with stress, cognition)
 - **Cognitive Well-being** (e.g. action of knowing; processing information; learning; problem-solving)
- **Spiritual Well-being** (e.g. sense of meaning, purpose and connectedness; self-determination, drive, and motivation)
- **Safety** (e.g. minimize risk or harm to self/others; prevent injury or accidents)

Growing Old

- **Optimal or Successful Aging:** “The way the aging process is slowed or altered because the individual has engaged in preventative and compensatory strategies

to avoid negative changes that would otherwise occur with normal or impaired aging.”

- **Video: BBC Documentary 2014 “Don’t Grow Old”**

- Some people live for a long time even though they aren’t necessarily healthy (e.g. they smoke)
- We have a lot of control over health and well-being
- We are all aging, but don’t necessarily know or understand what will happen to us in the future
- We often look to our own family as to what aging will mean to us as we get older
- You may not feel old; you feel the exact same, but people treat you differently, and your body feels different
- Aging is a very young field, so there is still a lot of competing theories as to why aging happens, and why people don’t know very much yet
- Key is how different pathways relate to each other
- Trying to find out more about aging – how can we slow down aging? CAN we slow down aging?

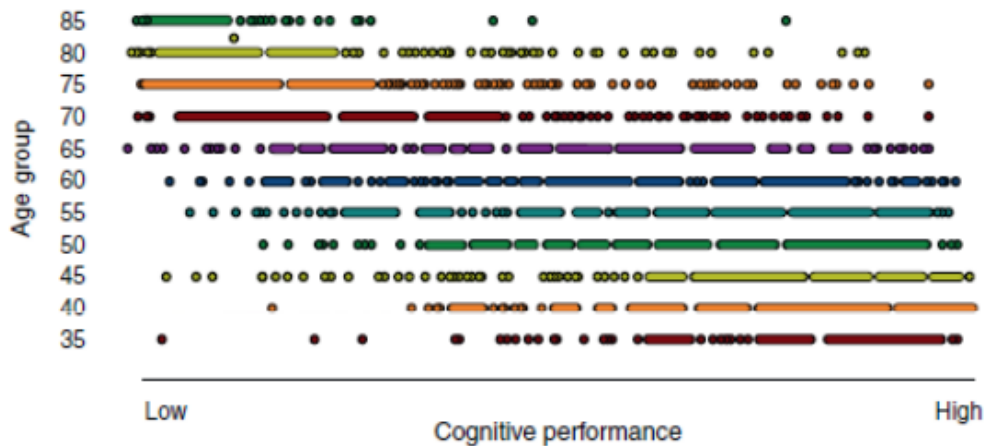
Can We Understand the Psychosocial Experiences of Older Individuals?

- Human beings have the ability to both sympathize and empathize with others
- **Empathy:** ability to understand and feel or approximate the feelings of others, and predict or understand the emotional responses they might experience in different situations; involves accurately sensing the other person’s feelings, as opposed to focusing on the feelings you had or might have had in similar situations.

Nature of Aging – examples

- **Impaired/Secondary Aging:** abnormal changes due to disease, which affect a segment of the older population.
- **Normal/Primary Aging:** changes within the organism, which progress at different rates among individuals but are still fairly universal, intrinsic, and progressive
- **Optimal/Successful Aging:** the way the aging process is slowed or altered because the individual has engaged in preventative and compensatory strategies to avoid negative changes that would otherwise occur.

Inter-Individual Differences/Variability



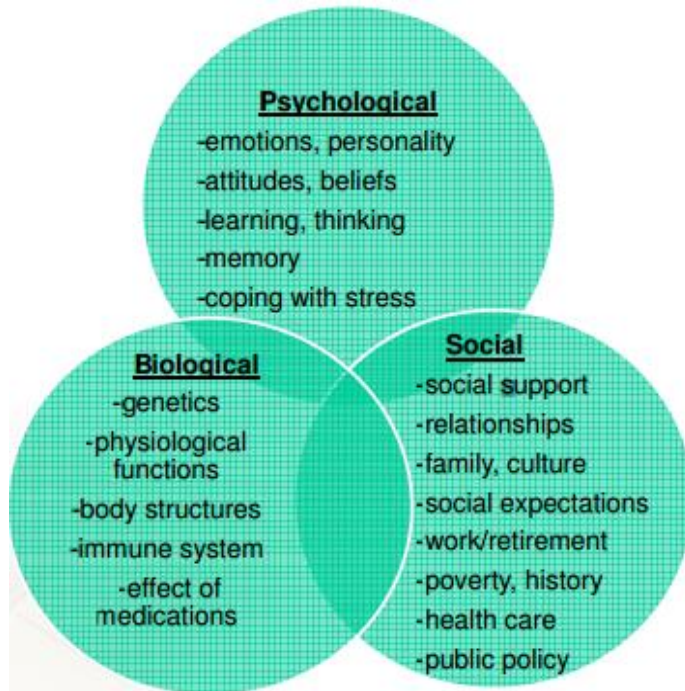
Cognitive abilities are all over the map in every stage of adulthood. There are high performers as well as low performers in each group, but there is a clear negative trend between age and cognitive ability.

Biopsychosocial Model of Aging

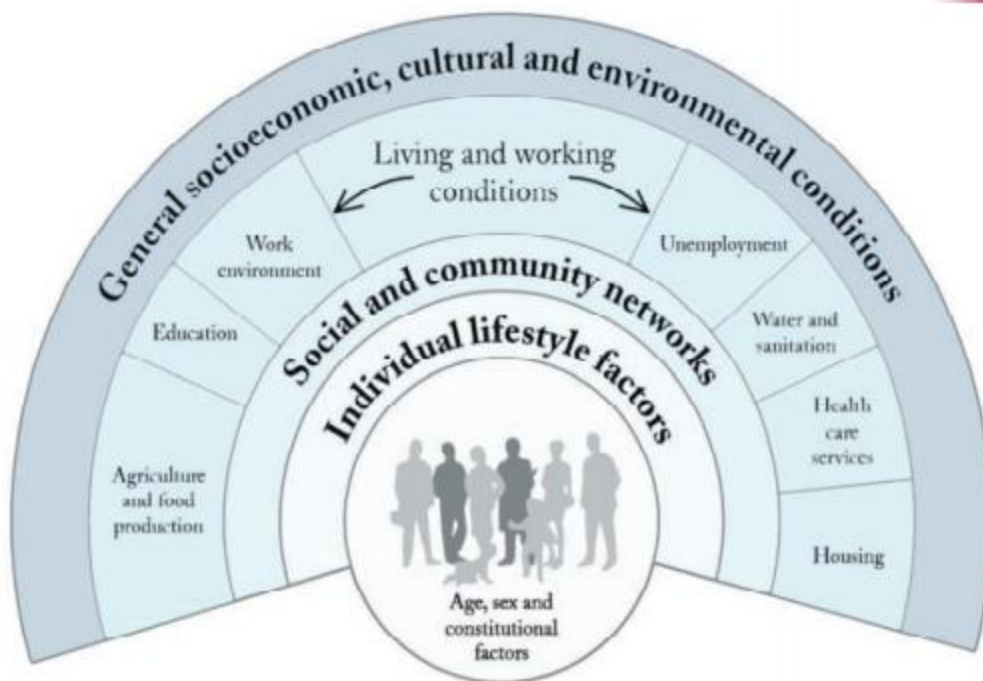
- **Biological**
 - Physiological Factors, Genetics
- **Psychological**
 - Cognition, Emotions, Personality, Attitude
- **Sociocultural**
 - Social Context, History, Culture

Illustration of the Biopsychosocial Aspects of Aging & Intra-Individual Differences

- These all influence each other, and the process of aging. Can be positive/negative.



Model of the Determinants of Health



- All of these impact health.
- Health is multifactorial and multi-dimensional
- There is a negative relationship between income/social economic status, and overall health, and this relationship continues into one's elderly years.

Social Determinants of Health & Aging

(key social determinants of health that are a concern for the aging population)

- Aboriginal Status
- Gender
- Disability
- Housing
- Early Life
- Income/Income Distribution
- Education
- Race
- Employment/Working Conditions
- Social Exclusion
- Food Insecurity
- Social Safety Net
- Health Services
- Unemployment and Job Security

“The primary factors that shape the health of Canadians are not medical treatments or lifestyle choices, but rather the living conditions they experience – these conditions have come to be known as the **social determinants of health.**”

Human Agency and Older Persons

- **Human Agency:** “A process in which individuals construct their life course by making choices and taking actions.”
 - People’s capacity and freedom to live a life they see as meaningful which requires:
 - A right to choose how to act (freedom) AND
 - A right to conditions which lead to effective action (sufficient material resources)
- Two important claims about agency and older persons:
 - Older persons have limited agency to inform their lives
 - Older persons have agency to improve their conditions

Principles of Adult Development & Aging

- Changes are continuous and gradual over the lifespan

- You don't feel as if you are aging, but other people may have reactions to you that show that you're older (e.g. a student hit on Prof. Gulati but then he got all awkward when she said she was a professor)
- Even people with health issues may say they don't "feel" sick, even when they have a condition
- Only survivors grow old ("survival of the fittest" considering special characteristics and conditions)
 - Healthier people live longer, generally, as they have made good choices in their life and overcome a lot of the risk of aging
 - May have abstained from risky activity, which allows them to live longer
- Normal/primary and optimal/successful aging is different from disease or impaired/secondary aging
 - Fairly significant health care issues/disabilities, etc. would fall under impaired/secondary aging.
 - Wrinkles, thinning skin; universal; hair turns gray
- Individuality of the person, personal experiences (normative vs. non-normative), personal assets and resources, and cultural and social influences
 - Normative Age Experiences: based on cultural and social and legal norms (e.g. we start school at around 4 years old)
 - Normative Historical Experiences: larger scale events that have occurred in someone's life, for most of the population. E.G. war, conflict, economic trends, etc.
 - Non-Normative Occurrences: random, personal events that happen over the course of one's life that have an impact on you (e.g. death of spouse/parent; divorce, etc.)

Homework – to be discussed next class!

(discuss what these terms mean/discuss what you know about them; judgments, pre-conceptions, etc.)

Seniors: legally those 65+, though socially, psychologically, etc., possibly debatable.

Centenarians: those who are 100+

Division of Age over 65 Years:

- **Chronological Age** (passage of calendar time from one birthday to the next)
- **Legal Age and Privileges** (chronological age defines "legal" age, ie. When we enter school, drive a car, vote, consume and purchase alcohol, and retirement)
- **Functional Age** (based on the fact that aging is a multi-faceted, diverse process in which individuals at a specific chronological age are either "older" or "younger" than age peers in terms of some relevant skill or ability)

- **Biological Age** (includes genetic and environmentally induced changes in the cellular, muscular, skeletal, reproductive, neural, cardiovascular, and sensory systems)
- **Psychological Age** (involves the interaction of individual cognitive and behavioural changes with social and environmental factors, such as the loss of a spouse or a change in housing that affects our psychological state)
- **Social Age** (varies within and across societies and across time, depending on the interactions between aging individuals and others in a particular family, society, or subculture at a specific period in history)

Biological, Psychological, and Social Aging

Subjective Age

Age Identity

September 10, 2014

Lecture 2: Canadian Demographics and Aging: Canadian Statistics and Trends in Aging, and Emerging Issues for Society to Consider

****Higher NUMBER of older individuals live in the DEVELOPING world. There are much more people there than the developed world.

****Higher PROPORTION of older individuals in the DEVELOPED world. There are many younger people in the developing world than older.

Quiz:

1. **Most Canadians aged 65 and older live in rural areas.** (FALSE. 79% of people over age 65 live in urban areas)
2. **Women tend to live longer than men in Canada.** (TRUE. Women tend to live longer than men in pretty much every country in the world)
3. **Considering all provinces, Ontario has the highest percentage of seniors aged 65 and older.** (FALSE – Nova Scotia – 60.5% of their population in 2011 was over 65 years of age)
4. **About 25% of Canadians aged 65 and older were born outside of Canada.** (TRUE – many came from Europe and Asia when they were very young. India and China are the most common origins of recent immigrants)

Canada's Senior Population

- By 2015-2017, for the first time in Canadian history, there will be more people aged 65 and older than people aged 15 and younger.
- **Video: Canada has higher proportion of seniors than ever before**
 - Lower fertility rate results in fewer children
 - We live longer
 - Baby Boomer generation reaching age 65
 - The largest jump was for the group in age 4 and below (largest jump in 50 years) **IMPORTANT**
 - Older workforce (over 45). Fewer people entering the workforce. Slowing.
 - More people are leaving the workforce than entering the workforce.
 - Many changes in the next decade.
 - There will be different products and services marketed as there will be a significant number of consumers over 65 years old
 - Alberta is young, with quickly-growing population and workforce
 - **VIDEOS ARE IMPORTANT. Study them carefully.**

Population Aging

- Proportion of older people in society increases as a result of:
 - Improvements in life expectancy (and lower mortality rates)
 - Declines in fertility rates
 - Noticeable increase in the median age of a country
 - **Median age:** half the population is older than this age, the other half is younger than this age.
 - When the median age increases, that means the population is aging
 - **Crude Birth/Death Rate:** the actual number of births that have occurred per 1000 of the population

Canada: Life Expectancy

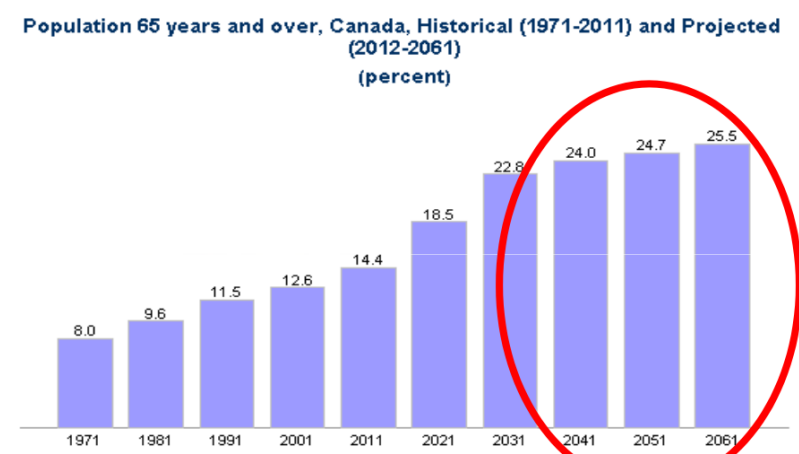
- Life expectancy at birth was 81.1 years in 2009
- Females: 83, Males: 79
- Disability-free life expectancy is about 69 years*
- Lower life expectancy among Aboriginal Canadians
 - Females: 78, Males: 73
- Women live longer than men in almost every country in the world and women's life expectancy has increased more than men's

- These numbers aren't that important without considering quality of life, that's why "disability-free" life expectancy is important to consider
- Average of 3 chronic conditions someone may have when they reach age 65
- Generally, older individuals overall report their quality of life to be very good, their health to be good, and that they are satisfied with the health care they're receiving.
 - Rating on a scale of 1-5 (poor-excellent)
 - Canadians in general rate their health at around a 4 (very good) or 5 (excellent), across ALL age groups

Canada: Trends in Aging

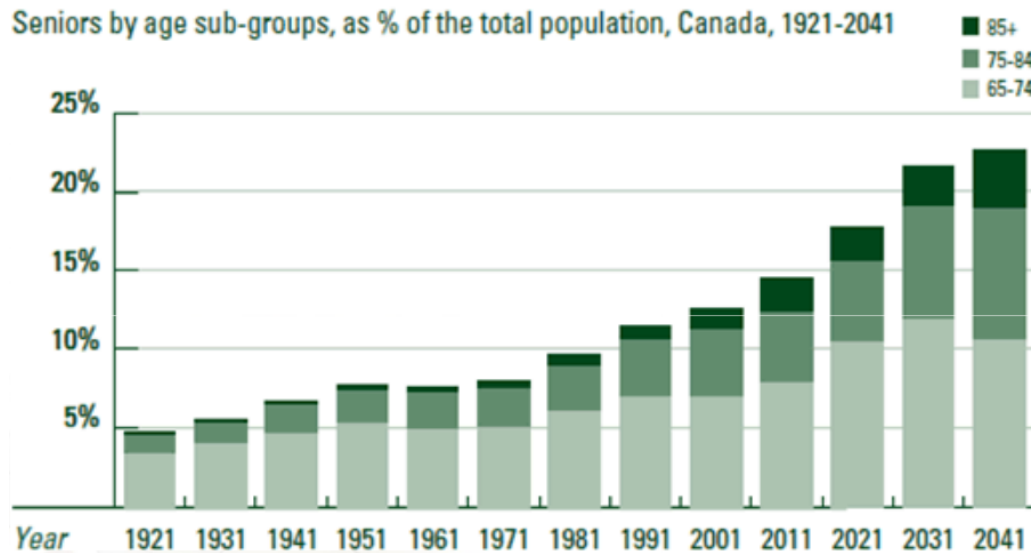
- Median Age: chronological age at which the population divides into equal numbers of younger and older people
 - 2011: 39.9 years
 - 1971: 26.2 years
- Canadians (seniors) 65 years of age and older:
 - 1981-2011: people aged 65 to 74 increased from 6% to 8%
 - 75 to 84 increased from 2.8% to 4.9%
 - 85+ increased from 0.8% to 2%
 - 2011: 5 million individuals (14.8% of the population. 1/7 people)
 - 2041: 9 million (1 in 4)
- Centenarians (100 years of age and older)
 - 2011: 5,825 individuals

Note: Graph is important. Note trends/messages of the graph. Exact numbers aren't important, but there most likely will be a question about this on the exam



- Years 2041, 2051, and 2061 have much higher projected numbers and proportions of older people.

- Projecting 1 in 4 people being over 65 years old
- Huge jump especially with people being over 85, but more people are in the age of 75-84



An increase in the aging population is due mainly to:

- Life Expectancy increases
 - Decline in mortality (for all ages)
 - Rates of morbidity have also declined
- Lower Fertility rates
 - Lower replacement fertility rate (ie. To have enough babies to have enough people for the next generation; “replacing” the previous generation)
- Baby Boomer population
- Improvements/Advances in Health Care
 - Advancements in Medical Technology
 - Advances in Public Health Measures
 - Improved Nutrition
- Improvements in Water Quality
- Improvements in Personal Hygiene
- Improvements in Immunizations/Antibiotics/Therapies/Soap
- Greater Education and Economic Development

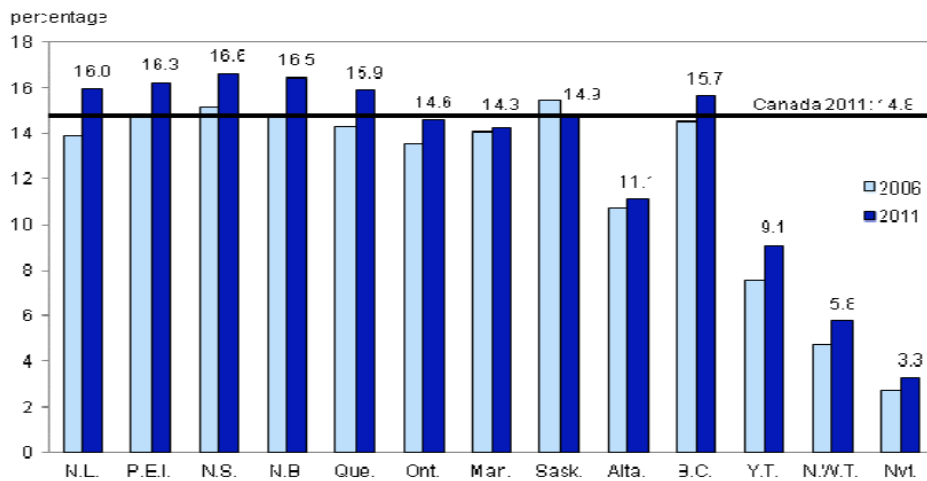
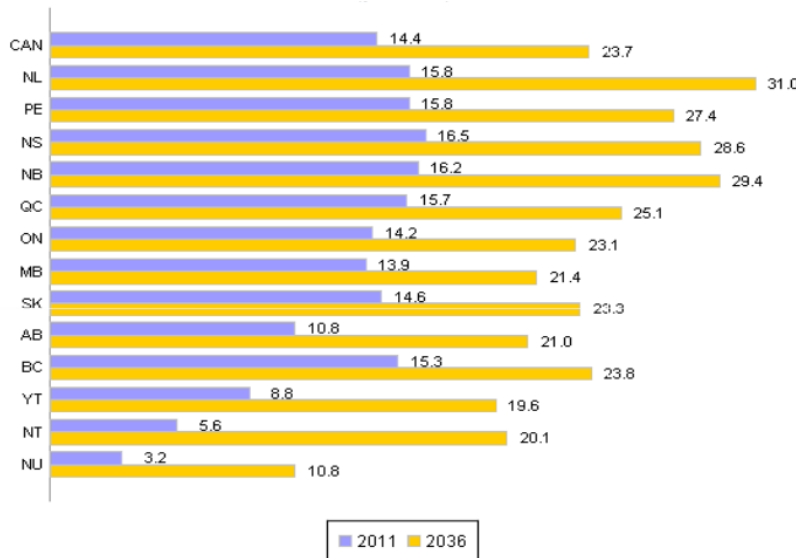
Demographic Transition and Epidemiological Transition

- As countries become more industrialized or developed, you see a shift from:
 - High Fertility and High Mortality to Low Fertility and High Mortality
 - Infectious Diseases (e.g. tuberculosis) to Degenerative, Chronic or Non-Communicable Diseases (e.g. cancer, cardiovascular diseases)

Canada: Urbanization and Seniors:

- 2011: 79% of Canadians aged 65 and older lived in urban areas
- Among the three largest metropolitan areas, the median age of the population was:
 - Montreal: 40 years
 - Vancouver: 40 years
 - Toronto: 39 years
 - High immigration rate, with more younger individuals

*3 Graphs



- Nova Scotia has highest percentage of seniors (oldest)
- Alberta has lowest (youngest)

- Pay attention to Aboriginal Statistics (only 5% over 65 and 1% over 75 - LOW)
- Fertility and Immigration Rates influence this as well as a variety of other factors (e.g. social assistance programs, workforce, economy, environment/climate, etc.)

Baby Boomer Generation

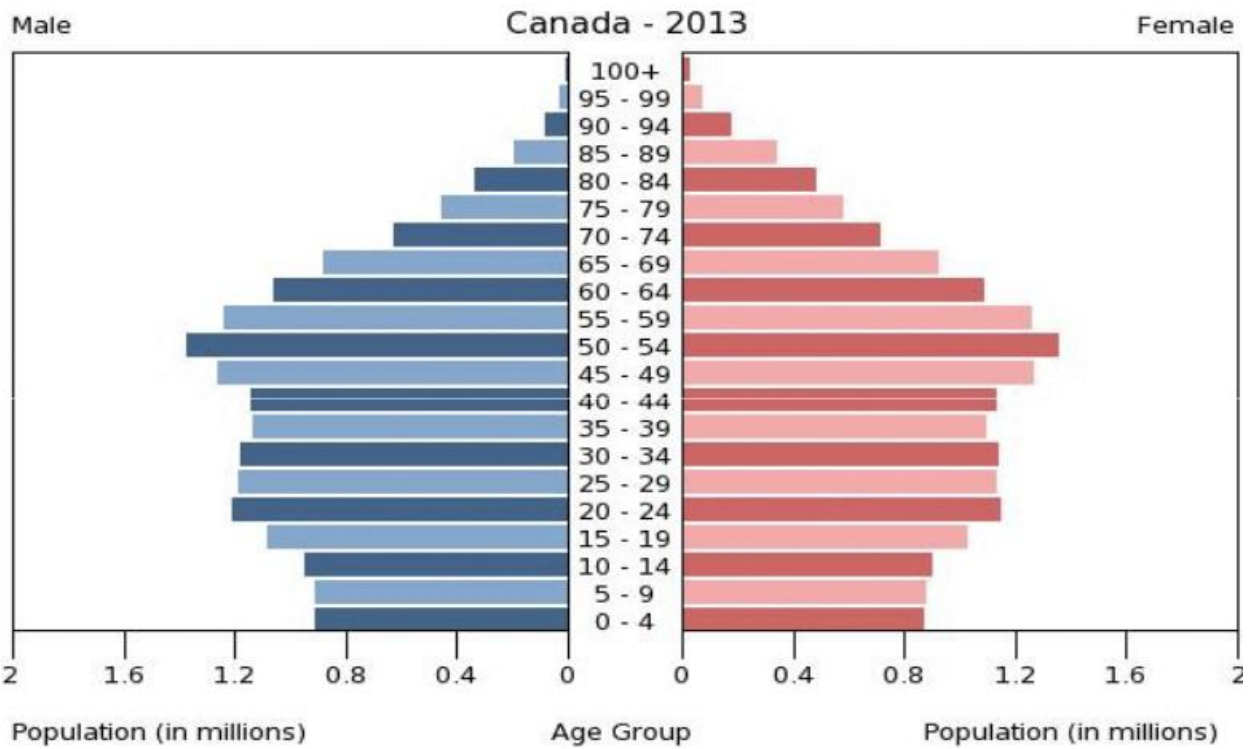
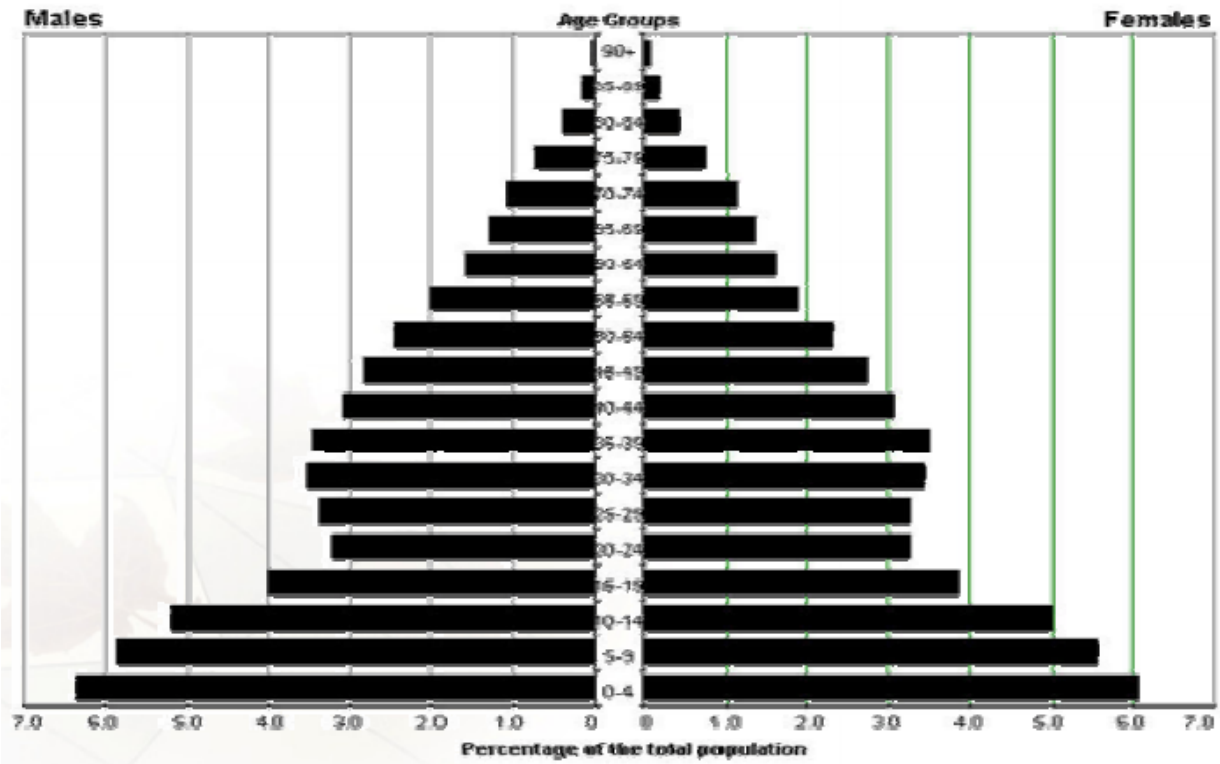
- Canada's Birth Rate
 - 1946: 26.9 infants per 1000 population (at start of baby boom)
 - 2012: 11 infants per 1000 population
- People born between 1946 and 1965, post WWII, there was a marked increase in the birth rate: "baby boom"
- Country's largest generation

Canada: Fertility Rate

- Total Fertility Rate: average number of children per women across a population
- Replacement Fertility Rate: level of fertility the population needs in order to replace itself from one generation to the next (in Canada, it is 2.1 per woman)
- Canada Fertility Rate (average total number of children born to each woman during her childbearing years from age 15 to early 40s)
 - 2021: 1.3 births per woman
 - 2011: 1.6 births per woman
 - 1979: 1.7 births per woman
 - 1959: 3.9 births per woman
- About 2-3 years between children
- Bonuses for having multiple children (baby bonuses, social assistance, maternity AND paternity leave benefits, etc.)
- Quebec and Alberta have highest fertility rates
- For the first time in Canadian history, women aged 30 to 34 had more babies than women aged 25 to 29
- 2272 stillbirths

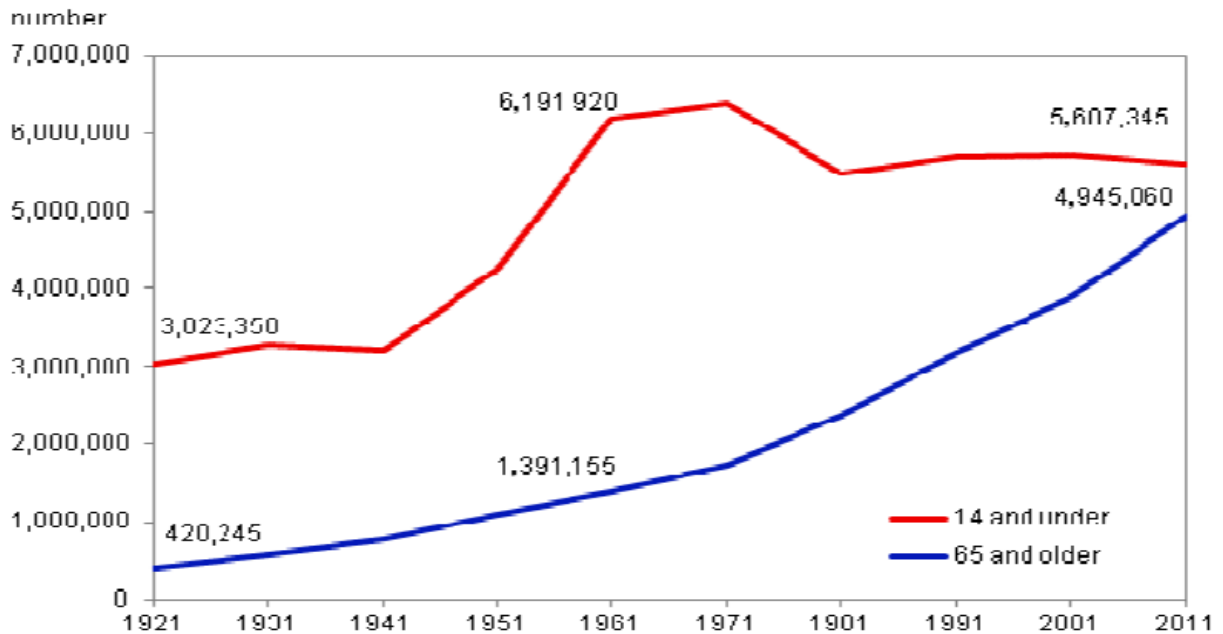
*Demographic Pyramid Graph – note trends (compare from 1961 to 2013)

Population Pyramid, 1961

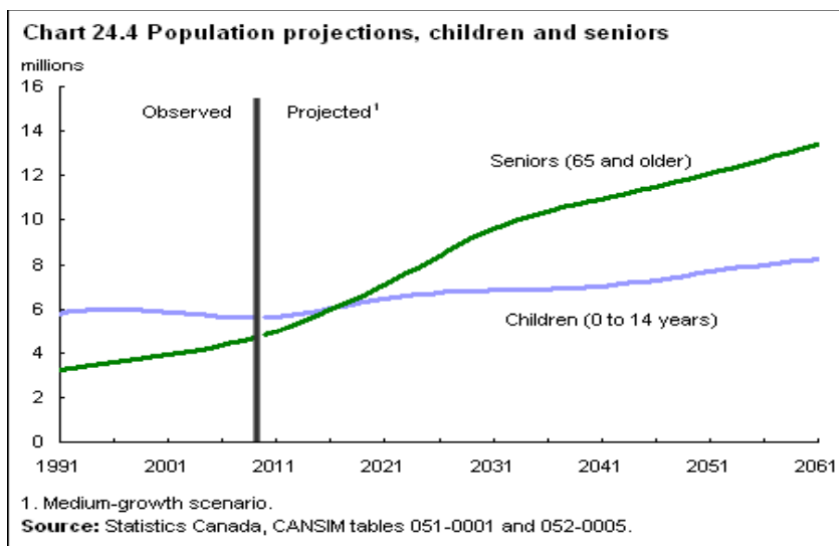


*Line Graph comparing Children <14 and Adults >65 1921 to 2011 – note trends

Canada: Number of children aged 14 and under and of people aged 65 and over, 1921 to 2011



*Population Projections of children and seniors – note trends



Canada: Sex and Aging

- Since women live longer, the majority of seniors are women, with the gender discrepancy increasing with age
- 2011: women made up 52% of seniors aged 65 to 74 years, 56% of seniors aged 75 to 84, and 68% aged 85 to older
- Women are not at as high an occupational risk as men; their bodies therefore don't wear out as much in old age
- Women are more likely to try to get health care if sick
- Women are more likely to attempt suicide, but men are more likely to succeed
- Women are genetically a stronger species; more miscarriages/stillbirths are male fetuses; more childhood illnesses occur in males
- Women are less likely to engage in risky behaviours
- There is a greater focus on women and children's health – this public health has increased lifespan
- Men's illnesses and disabilities lead to death a lot more quickly than women's

Older People in Contemporary Society

- Exaggeration and misinterpretation of population trends and statistics, and failing to recognize older persons as an untapped resource may lead people to have a pessimistic view of the impact the aging population will have on society
- Elders in contemporary society and in the future will generally be healthier, wealthier, and better educated, BUT future policies must strive to eliminate or reduce inequities in the provision of service, support, and assistance

Canada – Emerging Issues: Immigration

- 2011: Foreign-born population of about 6,775,800 people (20.6% of the total population)
 - About 25% of Canadians aged 65 years and older were born outside Canada
 - 2011: 5% of Canadians aged 65 years and older spoke neither English nor French
 - A higher fertility rate and higher levels of immigration could help to slow population aging but would not prevent it.
 - The effect of immigration on total population aging is modest because most immigrants arrive before they are 30 years old and age along with the rest of the population
 - Older immigrants are less likely to be economically disadvantaged
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September 12, 2014

Canada – Emerging Issues: Working Age Population (15-64)

- Note: when tested, you may be asked for specific numbers, but they will be reasonable and not too close
- 2011: 68.5% of the Canadian population
- Life expectancy of the working-age population of the WORLD: 70 years
- About 5 Canadians of working age for every senior
- 2056: Projected that there will be 50 seniors for every 100 people of working age

Labour Force

- 2011: More people aged 55 to 64 (when people leave the labour force) than aged 15 to 24 (when people enter it)
- Rates of older workers (age 55 and over) have increased by over 8% since 2000
- Reduced labour market participation and lower growth in the population aged 15 and older – this is expected to reduce future labour supply growth
- How to lower working force age: create more jobs; hire more youth
- Age when you can collect old age security is increasing
- Increase productivity; Improve Resources for left-out people (e.g. immigrants, people with disabilities, less skilled people, Aboriginal people)? Trying to make accommodations to workforce by using untapped resources
- 2030: decrease in number of working age individuals per seniors (2.5-3 working individuals to 1 senior)

Economic Implications

- Demographic changes will make it difficult to improve the income and standard of living through increases in the employment rate
- Unless productivity growth and labour market participation improve, population aging is expected to lead to lower growth in output and income and increase the possibility of labour shortages
- Want to avoid increasing taxes while still accommodating this
- Workforce participation is a challenge for a number of Canadians, including Aboriginals, recent immigrants, less-skilled persons, young people, and persons with disabilities
- To increase productivity, Canada will need to continue to invest in the key drivers of productivity: innovation, human capital, and business investment
- Build on Government actions: Budget 2012: Economic Action Plan 2012 – A Plan for Jobs, Growth, and Long-Term Prosperity

Retirement and Pension System

- Concerns about the increasing costs of public pensions
- Canadian retirement system is based on private pensions, personal savings, and the public pension system

Public Pension has 2 tiers:

- Old Age Security (OAS):
 - Monthly payment to all citizens aged 65 and older (not contingent on employment history and does not require the person to be retired); these will quadruple by 2036
 - Payment is around \$500/month for individuals over 65, but they don't have to be officially retired (and meet other criteria)
 - Expected by 2036
 - Thinking about raising it to 66, if you start claiming it earlier, then they will reduce it by 30-36 percent depending on how early you start claiming. If you wait until 70 to claim it, they are considering giving you a bonus and increasing the payments by about 42%.
 - Dependents may also be taken into consideration (e.g. if they are full-time grandparents, etc.)
- Canada Pension Plan (CPP)
 - Earnings related to and funded through employee (49.5%) and employer (49.5%) contributions, which usually begin at 65; however, you can apply to receive payments sooner but legislative changes will provide workers with incentives to delay retirement

Health Care Delivery

- 2011: Total spending on health care – \$200 billion (11.6% of Canada's GDP & 38% of provincial government spending)
- If current trends continue, Ontario's cost of health care will amount for 80% of its budget by 2030; the remaining 20% of the budget would be insufficient to fund the current public education system
 - Looking into other ways to fund the health care system
- In the U.S. and many developed countries, people aged 65 and over have the greatest frequency of doctor visits, hospital stays, and prescription medicine usage (most of which are privatized)
- Older adults account for about 45% of provincial health care expenditures

- What's increasing/driving health care costs?
 - Chronic conditions (more prevalent in older people) make people access health care systems more often
 - Proximity to death (more older people are likely to die)
 - Using a lot more advanced technology and medicine that cost the system a lot of money

Transforming Health Care Delivery

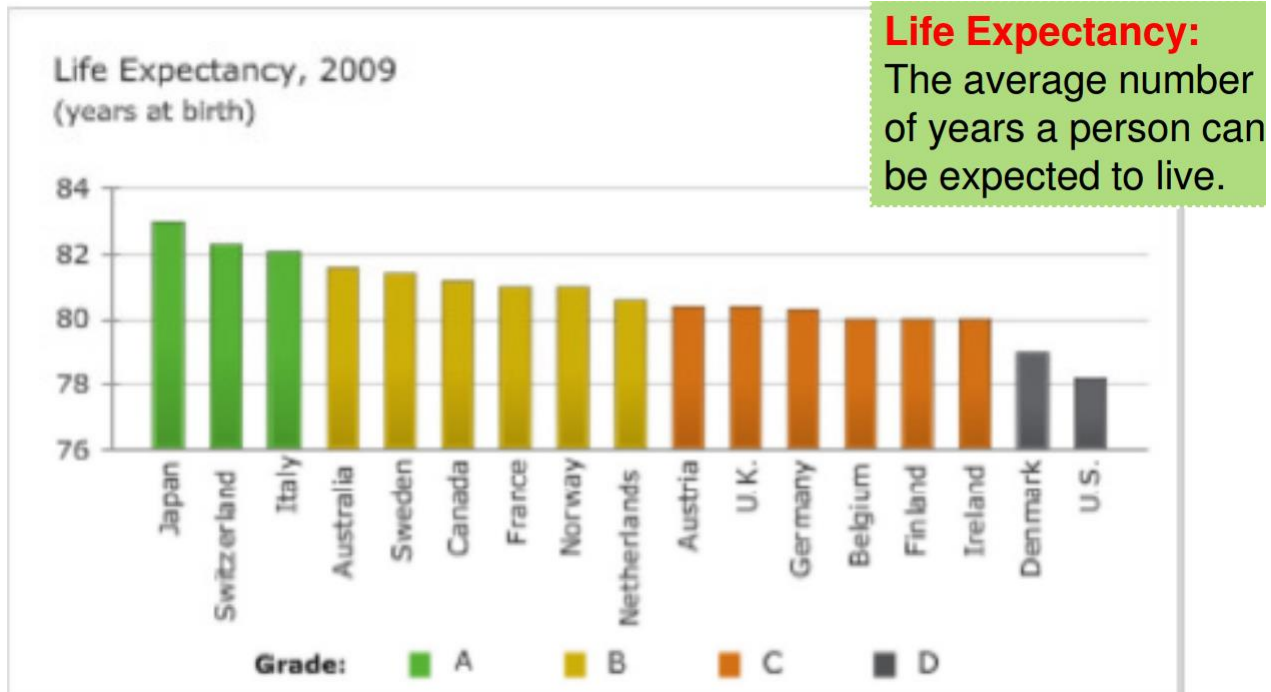
- Integration of health & social services
- Continuity of care, quality of care, safety and efficiency
 - (ie. How do hospitals/health care institutions network with each other to help a patient who may travel/go other places; without repeating procedures or leaving out important information)
 - Electronic health care records (some are using this)
- Timely access to primary care
 - Initial contact with health care provider
 - E.g. Largest Group of Primary Care Providers: Family Doctors, Dentists, Chiropractors.
- Health promotion, self-care management, and lifestyle modification
 - Lacking here – better with acute care
- Disease prevention
 - Ditto above
- Focus on complex/continuing care, long-term care, and rehabilitation
- Technologies to support care of older adults
 - How to monitor people at home
 - Medication management
 - Lifeline/Fall Detectors
- Supporting and training older adults and their family members
- Patient/Client centred approaches considering individuality, diversity, culture, social context, language, and health literacy
- Professional training and workforce development

Lecture 3: Aging in the Global Context

Aging around the World

- The population aged 85 and older is the fastest growing age group globally
- The child population is maintaining stability
- Worldwide trends: Japan lives the longest (83 years). U.S.A has lower life expectancy (78 years) compared to the other developed countries

- Why? Huge quality of life difference between rich and poor, especially with regards to access to health care. Wealth = health. This affects the health of the whole population.
- Even health tourism doesn't fix this problem? Why? Because the infrastructure may be flawed; climate change issues may be part of it as well; spread of diseases, crime, etc. affect people on a population level regardless of income. Smoking.
- **Video: How to live to be 100** (notes are in next lecture)



Aging around the World and the Social Determinants of Health

- Social inequality in a country is a significant predictor of the health of the population of the country
 - Countries with higher degrees of income inequality tend to have poorer health outcomes
 - Health of a population is better in many countries with less income disparity, and greater social equality/equity
- Greater Equality...means the absence of discrimination on the basis of social class, race, religion, culture, gender, age, sexual orientation, disability or health status, etc.
- Greater Equity...means fairness and justice in the distribution of benefits, power, resources, and responsibilities

Developed & Developing World

- While **developed** countries have a higher proportion of older people within their populations, the majority of older people in the world (64%) live in **developing** countries. Absolute number of people for every age group live in developing countries.
- 2012: 8% of the world's population (562 million individuals) was 65 years of age or older
 - More developed regions: 16.5% of population is 65+
 - Less developed regions: 6.2% of the population is 65+
- 2050: 16.7% of the world's population (1.53 billion persons) expected to be aged 65 years and older
 - 1 in 3 people in developed regions and 1 in 5 people in developing regions will be aged 60 years and older
- Median age of the world = 28.4 years
 - Median age in most developing nations is below 25 years
 - Median age in Canada was 41 years (2012)
- Life expectancy for males and females, respectively:
 - Developed countries: Japan 80, 86; Australia 79, 84
 - Developing countries: India 63, 65; Zambia 49, 49; Brazil 70, 77
 - Difference between male and female life expectancy rates are less pronounced in developing countries.
 - Mortality in childbirth "balances"; infectious diseases more prevalent than chronic diseases, which don't discriminate on gender

G8 Countries: Proportion (in percentage) of the population aged 65 and over, 2006 and 2011

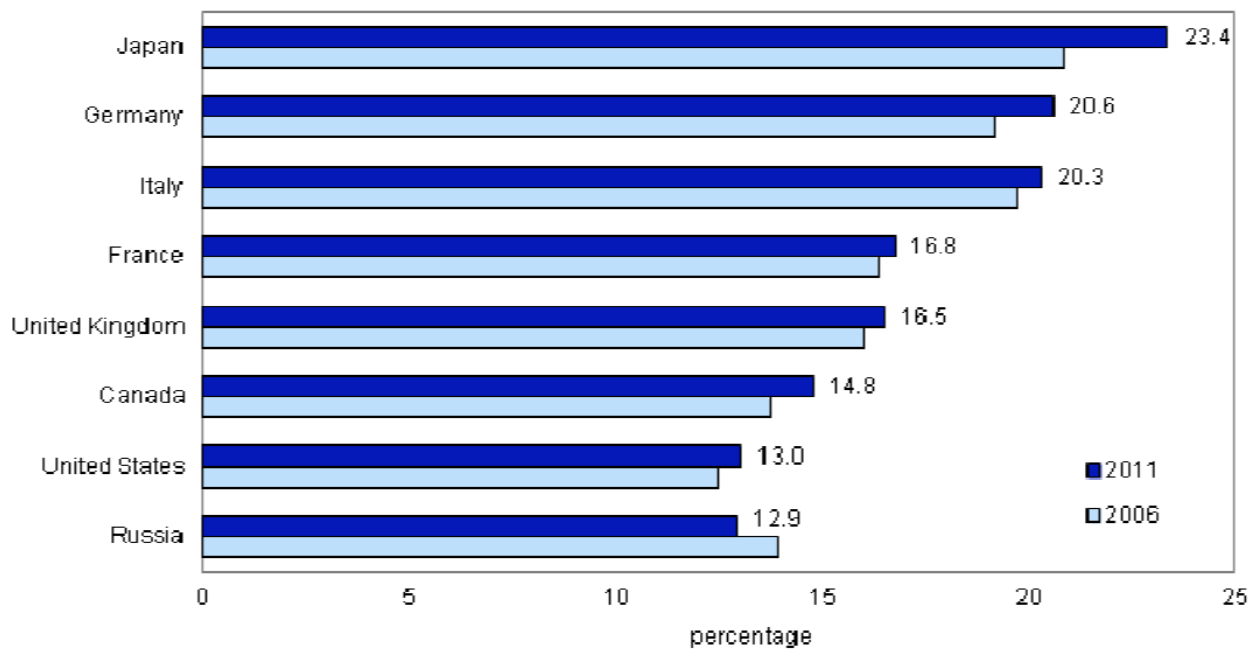


Table 4.2 Percentage Distribution of the Older Population by Region, 2012 and 2040

Region	2012		2040	
	65+	80+	65+	80+
World	8.0	1.6	14.7	3.6
<i>More developed regions</i>	16.5	4.5	25.0	8.6
<i>Less developed regions</i>	6.2	1.0	12.9	2.7
Northern Africa	5.2	0.8	11.7	2.6
Sub-Saharan Africa	3.1	0	4.4	0.7
Asia (excluding Near East)	7.5	1.3	16.4	3.6
Near East	4.7	0.8	10.4	2.1
Eastern Europe	15.0	3.6	25.9	8.5
Western Europe	18.5	5.3	27.0	8.9
Latin American/Caribbean	7.1	1.4	15.4	3.8
North America	13.8	3.8	20.9	7.2
Oceania	11.6	3.0	18.2	5.7

Source: US Census Bureau 2012.

China & Japan

- China has the largest number of older adults (122 million in 2012) projected to increase by 327 million by 2040
 - China may be inadequately prepared to cope with changes associated with an aging society because **they don't have a formal pension system in place (many developing countries don't). Health care system has criticism about not being very comprehensive. Population tends to be less educated in general, and also about age issues. Older adults tend to be emigrating out of the country rather than staying in it, since their adult children have left and they chose to follow. May live in rural locations or places where access to health care is very low. Proportion of older people in rural locations is higher in developing countries (it's the opposite in developed regions). Most of China's elderly will be women, specifically widows who are not well-educated.**
- Japan has the highest percentage of people aged 65 and older (20% of their population); by 2100, more than half of the Japanese population will be aged 60+
 - Day to day life is very physical – people are constantly moving, even older people

Sub-Saharan Africa

- The only major region in the world in which the population is still relatively young
- Fertility and mortality rates remain high by global standards
 - Women have 5.5 children on average (compared to 2.8 in North Africa and 2.4 in Asia)
 - Children are more likely to survive
 - Absolute number of older people will increase as a result, but the life expectancy won't increase much, if at all
 - Impact of HIV/AIDS on younger population – older individuals take over caregiving for children and grandchildren (concern about what will happen to older individuals in rural regions)
- Life expectancy of the region is approximately 50 years (13 years below average for all less developed countries)
- Proportion of older people in Africa is expected to increase only modestly in Africa, but the absolute number of older people will rise

Table 4.3 Percentage of the Population 65 Years and Older, by Country, 2012

Eight Highest		Eight Lowest	
Japan	23.9	Qatar	0.8
Germany	20.7	United Arab Emirates	0.9
Italy	20.5	Nauru	1.7
Sweden	20.2	Uganda	2.1
Greece	19.8	Kuwait	2.1
Bulgaria	18.6	South Sudan	2.2
Austria	18.5	Zambia	2.4
Belgium	18.4	Rwanda	2.4

Source: US Census Bureau 2012.

Global: Fertility Rate

- 2010: 2.56 births/woman
- 1960: 5 births/woman
- Fertility rates are below the replacement level in almost all OECD countries
- Crude Birth Rate: number of births that happen per year for 1000 of the population. 19.2 births per 1000 people worldwide.

Global Aging – Emerging Issues: Migration

- Migration of a young labour force to selected high-income countries leaves many older adults in low- and middle-income countries with fewer people to provide professional and personal care
 - Internationally, migration is at an all-time high
 - Estimated 2 to 4 million people per year leave their home country for another country
- Urbanization is a global phenomenon with about 50% of global population living in an urban area (projected to increase)
 - Rural areas have a higher proportion of older people, while urban areas have a higher absolute number of older people

Global Aging – Emerging Issues: A Boost in Economic Performance

- Reasons to be Optimistic:
 - Declining fertility rates has led to greater female labour force participation
 - Fewer children generally means healthier and better educated children

- Gains in healthy life expectancy appear to provide a boost in saving rates as people accumulate more capital and wealth in expectation of a longer future
- Longer work lives, increase in retirement age, and changes in pension policies to encourage longer work lives

Global Aging – Emerging Issues: Double Burden of Disease

- Despite issues of malnourishment, undernutrition, and hungry in developing countries, there is a rapid increase in overweight persons and obesity in many low- to middle-income countries
 - People are beginning to consume more “empty calorie and chemically processed foods”, resulting in an increased risk of non-communicable diseases as well (e.g. diabetes, cardiovascular disease, etc.)
- Therefore transitioning countries are seeing both communicable and non-communicable disease; as they get more developed, there will be more non-communicable diseases than communicable disease

Global Aging – Emerging Issues: Health Care Globally

- Consider the following arguments:
 - Elderly population will be a burden on health care systems
 - Aging population will inevitably render health care unaffordable
 - Long-term implications of providing health care to the aging population (ie. Inpatient, outpatient, community, home care, etc.)
 - Resulting increase in people surviving into old age will increase cost to the taxpayer
- Very negative, and not necessarily accurate
 - Proximity to death is the factor that drives up costs of health care – not necessarily age.
 - In fact, younger individuals tend to be treated more aggressively than older individuals (since they have more years left and the “fight” is “worth it”), resulting in more expense
 - Prevention generally will reduce the health care costs in the future. Developing better screening techniques to get diseases addressed and treated quickly.
 - Future view of health care may be more efficient; the Baby Boomers aging has caused us to take a look at our health care system – we will likely be able to make improvements to the health care system, be able to treat more patients more efficiently (e.g. utilize more preventative care and in-

home support to prevent people from being forced to leave their homes), which will be a positive thing

September 17, 2014

Aging in the Global Context, cont'd

VIDEO – how to live to be 100

- Only about 10% of one's lifespan is attributed to genetics. The rest is by lifestyle.
- There's a lot of controversy and confusion about what makes us live longer.
- Only 1/5000 people in the US live to be 100 (we are not programmed for longevity, rather, we are programmed for procreative success)
- To live to be 100, you have to have a very healthy lifestyle, AND have one the genetic lottery; many things can go wrong with our cells and cause damage/age
- The capacity of the human body is about 90 years, while life expectancy is 78 (ie. People are missing out on about 12 years due to poor lifestyle choices)
- 3 Demographically Determined Areas – Cross Cultural Distillation
 - Sardinia, Italy (men live much longer than other areas of the world)
 - Diet is largely plant-based, with lots of healthy omega-3s, healthy wine, and whole wheats/durum.
 - Sociologically, older people are celebrated
 - The Grandmother Effect – children experience lower mortality due to support, love, and help from grandparents
 - Okinawa, Japan
 - Longest disability-free life expectancy in the world
 - Fewer disease
 - Plant-based diet, tofu; while preventing from overeating (e.g. eating smaller plates, don't eat "family style" – have the food put away so once you're served, you're done); stop at 80% full
 - More social/friends, sociologically healthy; better support system
 - Older people don't retire or lose their "reason to get up in the morning" – they keep doing things; work; hobbies
 - Lorna Linda, California
 - Very religious
 - Adventists
 - Very little difference between life expectancy of women and men; both are very high compared to the rest of the country
 - Take their diet from the bible; plant-based; focus on God, social network, nature walks, etc.

- Older people have a lot of independence; continue doing things for themselves, working, activities, etc.
1. **Move Naturally** – not active exercise; set up their lives so they are nudged into activity every day (e.g. walking to places, getting up and down off the floor after mealtimes, etc.), and it's activity that they enjoy
 2. **Sense of Purpose** – keep your sense of purpose after you retire. Do things you enjoy, keep your support network up
 3. **Eat Wisely** – eat a lot of plants, don't overeat
 4. **Connect to Others** – put family first, have friends, belong to positive, healthy people around them (ie. People who make healthy habits a way of life)

How to Be Successful in this Class:

- *Do the readings, just not the ones that were not mentioned at all in class*
- *Be familiar with important numbers (life expectancies)*
- *Know trends from data/graphs; projections*
- *prepare for applied questions; not just simple definitions*
- *attendance is very important*

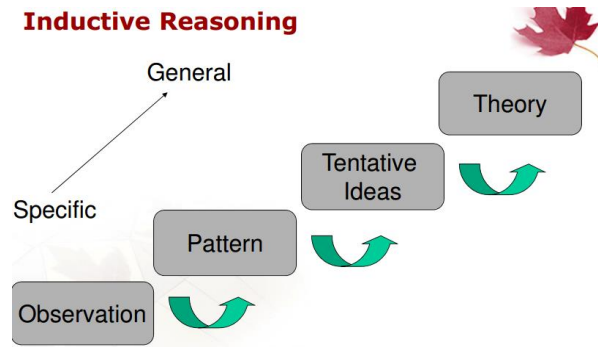
Theories and Models of Aging in Late Adulthood

What is a Theory?

- Aim to bind together – in a systematic fashion – knowledge about some particular aspect of the world or experience
- General statement(s) about logical relationships between variables to explain a class of phenomena
- Descriptive in nature and promotes understanding
- Function is to help make predictions
- Come from research (to find answers to questions; make sense of things; look for patterns; connect ideas; develop a logical statement)
- Examples:
 - Developmental Theories: Piaget's Theory of Cognitive Development
 - International Development Theories: Conflict Theory, Dependency Theory, Modernization Theory, Human Rights Theory, Anti-Racist Theory

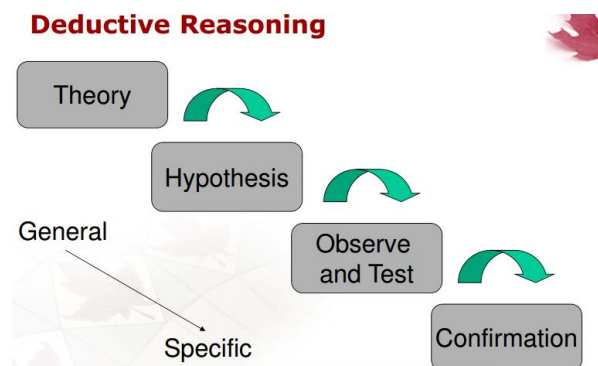
Inductive Reasoning

- Specific -> General
- Observation -> Pattern -> Tentative Ideas -> Theory
- Work your way UP to a theory, with an observation being the first step, and the theory becoming the final step



Deductive Reasoning

- General -> Specific
- Theory -> Hypothesis -> Observe and Test -> Confirmation
- Work your way DOWN from a theory to a smaller experiment that confirms/disconfirms the theory



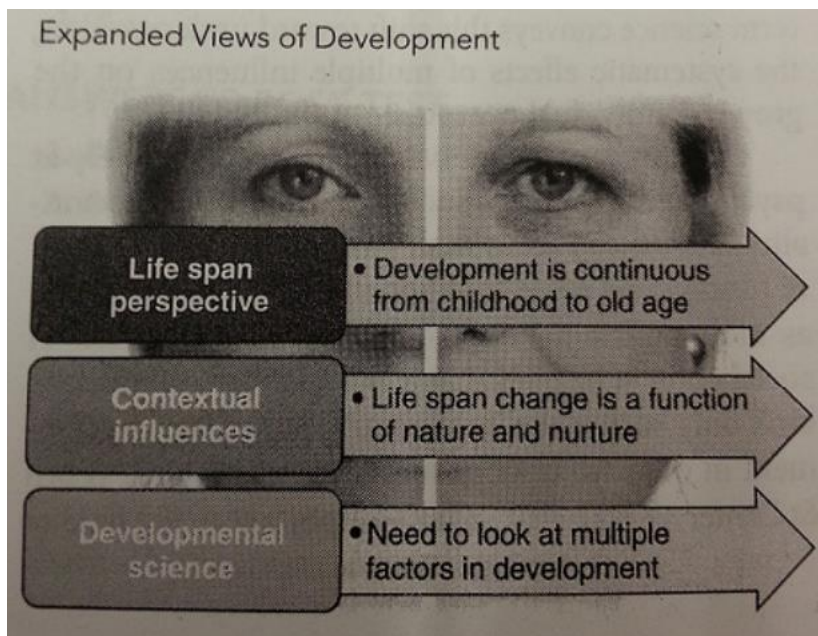
Relationship between Inductive and Deductive Thinking is cyclical – as you develop a project, you may switch between Inductive AND Deductive Thinking.

Development: Nature-Nurture Debate

- **Developmental Science**
 - Attempts to explain the underlying processes of development and aging (“why?” vs. simply describing things over time as people get old “what?”)
- **Nature-Nurture Debate**
 - People proceed through life stages based on genetics and inherited traits (NATURE) vs. based on life circumstances and how the environment

shapes the course of their lives (NURTURE) – e.g. social determinants of health

- Not much of a debate anymore – both are important, and some issues may have one aspect more important than the other
- Living during a time of conflict has a huge impact on how we age/develop, as does sexual abuse (more so than other aspects of abuse), torture, experiencing the death of a loved one (parent, sibling, especially), significant accidents (resulting in severe impairment/disability), etc.



Life Span Perspective – development is continuous from childhood to old age

Contextual Influences – life span change is a function of nature and nurture

Developmental Science – need to look at multiple factors in development

Individual-Environment Interaction

- **Organismic Model:** “nature” – drives development
 - Development occurs in discrete steps, not continuous
 - Concerned with physical/mental aspects of development are a function of the predisposed, genetic aspects of an organism
- **Mechanistic Model:** “nurture” – drives development
 - Individual exposures to experiences, conditions, and contexts
 - Provide learning experience
 - More fluid, continuous; no clear-cut stages
 - The Learning Theory is most consistent with this model

- **Reductionist vs. Holistic Views:** breaking down the person into small, fundamental parts for study and treatment (REDUCTIONIST) vs. recognizing the interdependence of various bodily systems, including the body, mind, and spirit (HOLISTIC)
- Interactionist Model: genetics, the environment, and individual participation in development interact in complex ways to inform development
 - Multi-directionality
 - The person themselves is important and can effect change in their own development
 - Multiple paths – not just one path to aging
 - Multi-dimensionality
 - Development proceeds in multiple domains in life (work, school, home, etc.)
 - Plasticity
 - NOT NEUROPLASTICITY – different concept
 - The idea that the course of development can be altered depending on specific interactions that occur
 - E.g. If Dr. Gulati stays single her whole life, her life and development would take a very different path than if she got married and had different experiences that come with marriage, etc.
 - How do people modify their experiences and development?
 - People who can effectively compensate to changes in their lives will be more likely to experience optimal aging

Structure of the Environment and Reciprocity in Development

- The environment includes those contexts and conditions which occur outside individuals and have the probability of influencing the individual and eliciting responses from them
- Environment is not static – it is continuously changing; you respond to it; therefore you are also continuously changing as you effectively respond to your environment
- The environment is a multilevel, multidimensional, hierarchical system which ranges from physical features to specific proximal transactions
- The environment operates not only in space (objective environment) and within the individual (subjective environment), but also across time (temporal environment)
- Adults both shape and are shaped by their environment

Aspects of One's Environment (and examples)

- **Physical** (architecture, natural environment, products and technology)

- **Social or Psychosocial** (family, peers)
- **Cultural** (norms, values, beliefs)
- **Institutional** (services, hospitals, community organizations)
- **Legal** (laws, regulations)
- **Political** (government, systems)
- **Economic** (assistance, policies)
- **Temporal** (time patterns and rhythms)

Transactional Approach: Environment-Performance Relationship and Aging

- **Transactional Approach** – assumes an interdependence of the person and the environment
 - Recognizes that a person’s context are continually shifting and as contexts change, the behaviours necessary to accomplish a goal also changes
- **Environmental Press** – the environment exerts a “press” – physical, interpersonal, or social force(s) or demand(s) – upon the person, which is either supportive (e.g. facilitating) or challenging (e.g. inhibiting)

Pictures

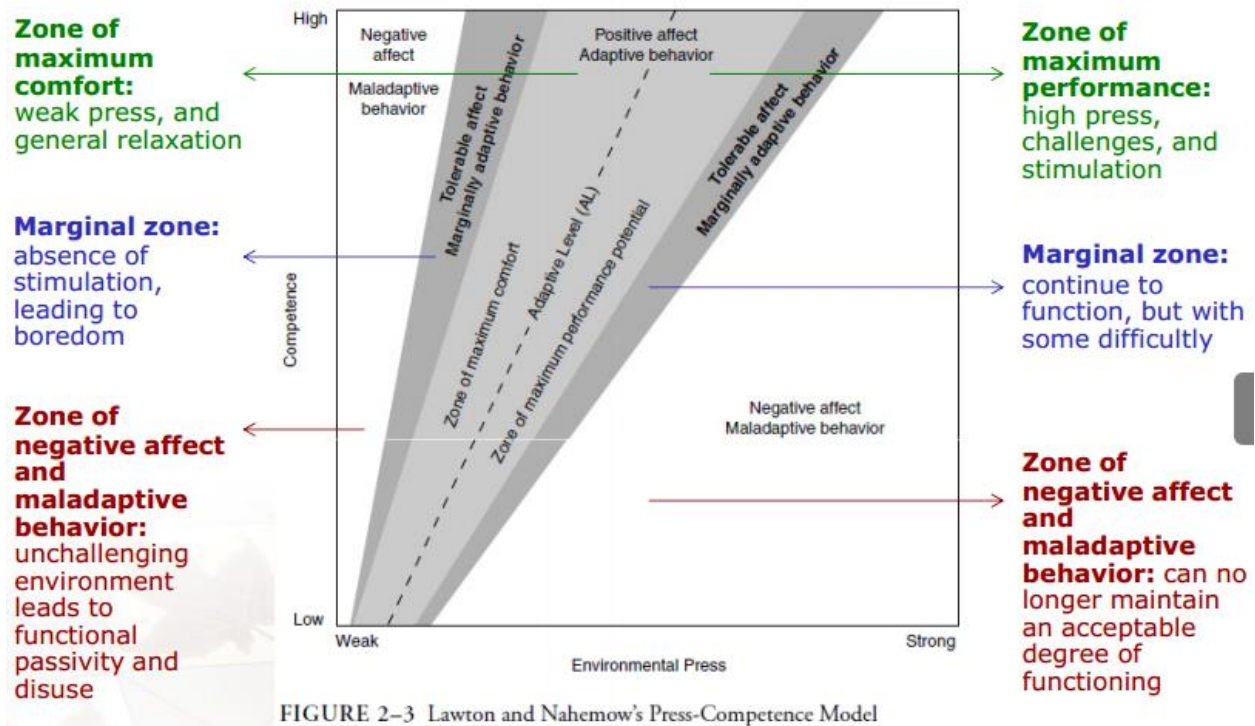


Physical demands of the environment are low in the first picture and high in the second picture. The second picture discourages walking.

Competency Aspects – physical and functional health, cognitive and affective functioning (emotional), sense of efficacy or mastery/confidence you feel in navigating your environment

Lawton and Nahemow's Press-Competence Model

Meeting Demands of the Environment



Zone of Maximum Performance – high press, challenges, and stimulation

Marginal Zone – continue to function, but with some difficulty

Zone of Negative Affect and Maladaptive Behaviour – can no longer maintain an acceptable degree of functioning (environmental demands are too difficult; may experience emotional dysfunction)

Zone of Maximum Comfort – weak press, and general relaxation

Marginal Zone – absence of stimulation, leading to boredom

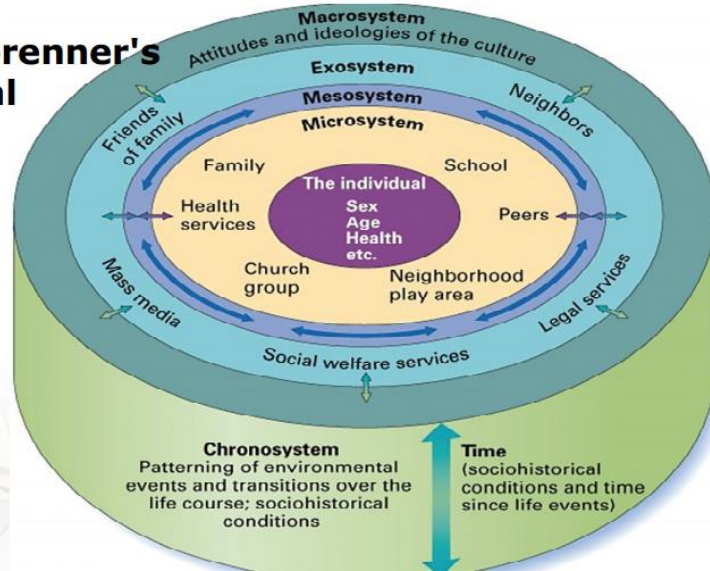
Zone of Negative Affect and Maladaptive Behaviour – unchallenging environment leads to functional passivity and disuse (you don't even want to use the environment anymore)

September 19, 2014

Bronfenbrenner's Ecological Systems Theory

How do different aspects of society impact the individual?

Bronfenbrenner's Ecological Systems Theory



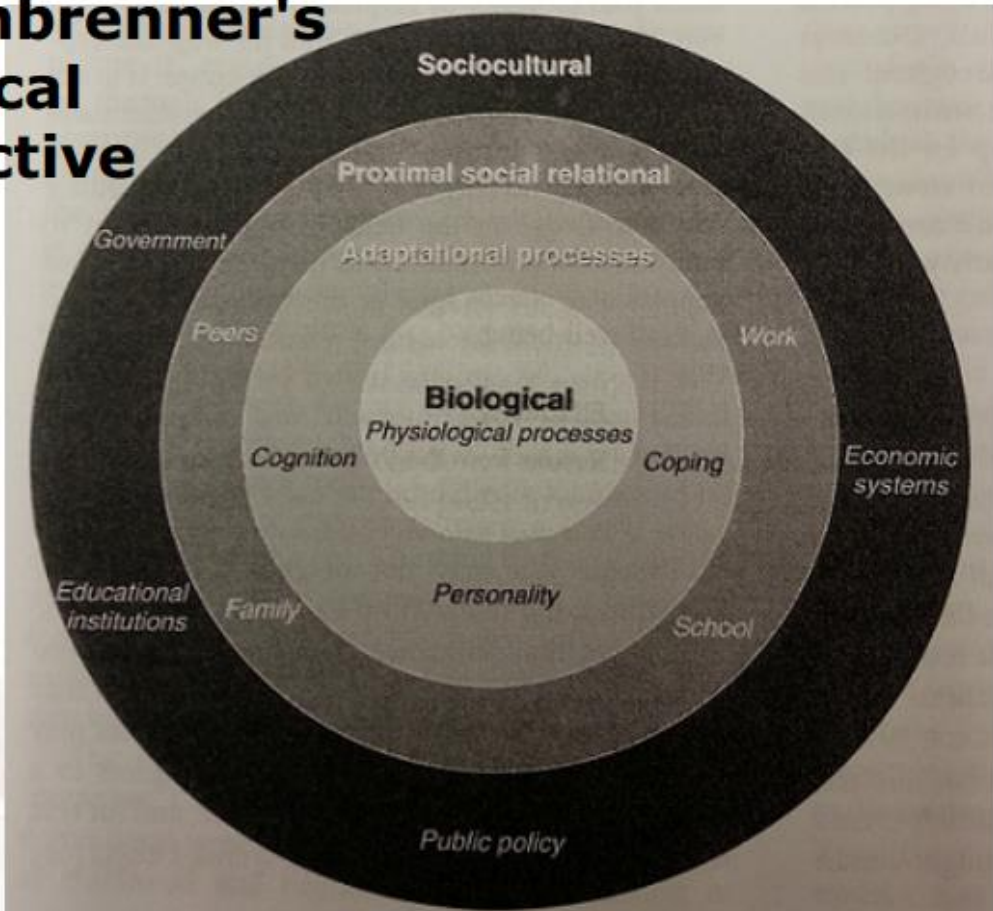
Definitions and Applications

- **Microsystem:** the immediate surroundings of the person (e.g. family, peers, school, neighbourhood) in which the most direct interactions with social agents occurs.
- **Mesosystem:** the connections between different microsystems or contexts (e.g. family and school)
- **Exosystem:** the connection between a social setting in which a person does not have an active role and the person's immediate context (e.g. child's interactions with a parent are affected by the parent's job or place of employment)
- **Macrosystem:** the culture and society in which individuals live (e.g. norms, laws, socioeconomic status)
- **Chronosystem:** the person's sociohistorical conditions, pattern of environmental events, and transitions over life (e.g. transition to adolescence, challenging life events, new job, etc.)

Bronfenbrenner's Ecological Perspective

- Inner circle represents biological changes that take place over time (psychological, too)
- Cognition, Coping, and Personality on the circle outside of that (Adaptation Processes)
- Social Factors: Proximal Social Relationships, Work, School, Family, Peers
- Sociocultural Factors: Economic Systems, Public Policy, etc.

Bronfenbrenner's Ecological Perspective



Cultural Environment: Multiculturalism and Aging

- May be significant variation in how mainstream and different ethnic populations define or address aging, the concerns regarding aging, and the solutions that are proposed
- Cultural beliefs and attitudes determine behaviours, guide decisions, and affect interactions with society
- People develop a mix of cultural roles, expectations, and ideologies that determine how its members view social networks, support systems, and communities

What is Culture?

- The set of values, beliefs, patterns of behaviour, language, etc. that form a pattern of lifestyle.
- Shared between individuals
- Passed from generation to generation

- **The learned and shared way of life, traditions, values, beliefs, norms, dress, language, artifacts, attitudes, behaviours and knowledge that create a describable pattern in the lives of groups of people or communities.**
- Culture deals with 1) Actions of people (cultural behaviour); 2) knowledge of people (cultural knowledge); 3) objects or resources people create and use (cultural artifacts)
- **Static Perspective of Culture:** Culture is considered a representative picture of an ethnic group (e.g. lifestyle, traditions, rituals); people are subjected to cultural traits and become passive recipients of such characteristics
- **Dynamic Perspective of Culture:** culture is viewed as learned patterns of behaviour or shared perceptions among people; people become active learners about their culture
- May lead to a lot of stereotypes of certain groups if not properly defined
- **In practice (when developing and implementing interventions), it may be best to:**
 - View culture as a series of “guiding mechanisms” (e.g. rules, norms, and strategies) that direct behaviour and thought, rather than complex and concrete patterns of behaviour (e.g. customs and traditions)
 - Investigate cultural processes and how particular groups associate and negotiate to respond to human problems (e.g. exclusion of aging persons, lack of resources for the elderly)
- **Multiculturalism** in Canada refers to the presence and persistence of diverse racial and ethnic minorities who define themselves as different and who wish to remain so. Ideologically, multiculturalism consists of a relatively coherent set of ideas and ideals pertaining to the celebration of Canada’s cultural mosaic. Multiculturalism at the policy level is structured around the management of diversity through formal initiatives in the federal, provincial, and municipal domains. Finally, multiculturalism is the process by which racial and ethnic minorities compete with central authorities for achievement of certain goals and aspirations.

Ecological Model and Aging Populations

- Ottawa Charter on Health Promotion uses socioecological framework as a foundation for its recommendations
- In the UN Convention on the Rights of Persons with Disabilities, “Disability is defined through an ecological model in which disability is seen as an evolving concept reflecting the interaction between the individual and social attitudes and the physical, economic, and political environment that hinders the full and equal participation of persons with disability in society.”

- Traffic Lights; Walk Signals/Timers
- The Green Bin
- Ramps/Accessibility/Universal Design
- Aims is to:
 - reduce risk of injury, disease, disability, and death
 - promote health
 - enhance chances or probability for health mobility and longevity
 - multilevel interventions that involve environmental modification and adaptation

Life Course Perspective

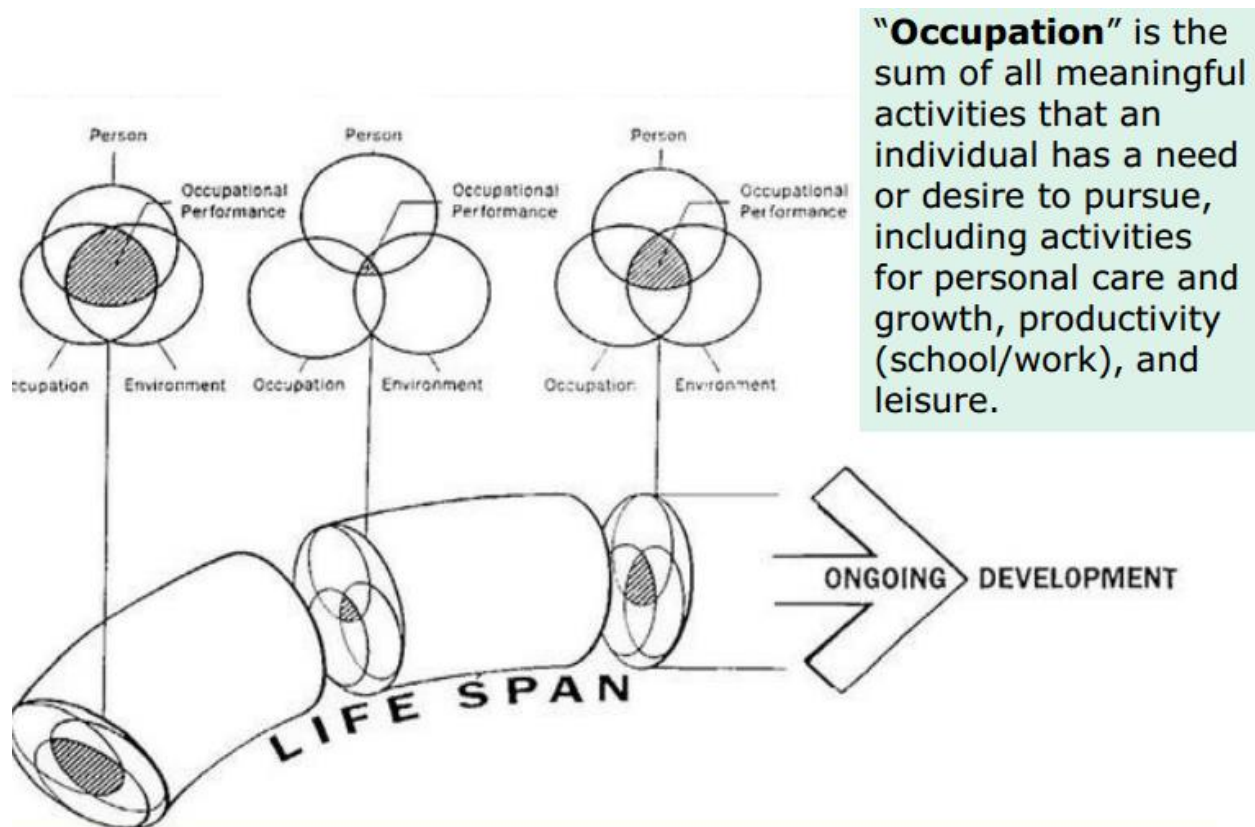
- Social scientists distinguish life “course” from life “span” in order to emphasize the non-biological factors that influence changes over time
- Attempt to link social factors to individual adaptation

Disengagement Theory & Activity Theory

- **Disengagement Theory:** claims that normal, natural, desirable, and inevitable evolution of life results in older adults’ desire to loosen their social ties; retirement and social isolation are circumstances that older adults wish for and benefit from
 - Criticized – some social scientists feel that this encourages negative stereotypes of aging populations, and that it provides the excuse to exclude them from certain aspects of society
 - But could be good – if a person is doing a physically difficult job, it may be beneficial for them to retire and give their aging body a rest
 - Can lead to lower adjustment in middle age; lower self-esteem in middle age
- **Activity Theory:** view that older adults would rather be involved and not forced out of productive social roles, and prefer to remain active
 - Opposite of the Disengagement Theory
- **Continuity Theory:** proposes that whether disengagement of activity is beneficial to the older adult depends on the individual’s personality; inclusion in or inclusion from social roles and activities should be consistent with one’s will and desire
 - Middle ground/bridge between the DT and AT
 - Disengagement/Activity depends on the person, their self-identity, their wants and needs, their disabilities, etc.
 - Adds more meaning to involvement of activities
 - Person-centred, Client-centred view

Occupation is the sum of all meaningful activities that an individual has a need or desire to pursue, including activities for personal care and growth, productivity (school/work), and leisure.

- If occupational performance is maximal, they are doing the most occupational activities they can do without overwhelming themselves or their abilities
- If minimal, they may not have any occupational activities in their lives, or they are poorly performing the ones they have



Person-Environment Fit: Enabling Environments for Performing Activities

- PE Theory offers a framework for assessing and predicting how characteristics of the person and environment together determine wellbeing
- "Fit" has been described as a usable environment that matches the person's abilities with appropriate supports
- Psychosocial factors impinge on the definition of "fit" (e.g. self-image, motivation, social pressure, and expectations)

- The objective of interventions may be to ensure societal participation through environmental design, modification, or adaptation, with the aim to improve the person-behaviour-environment “fit”
- Person-level factors that can impact “fit”:
 - biological/psychological needs and values, goals, abilities, personality
- Environmental factors that can impact “fit”:
 - Intrinsic or Extrinsic
 - Demands of a job or a role, cultural values, characteristics of other people in your environment (very relevant to elderly individuals)

Erikson's Psychosocial Theory

Stage	1	2	3	4	5	6	7	8
Later adulthood								Ego integrity vs. despair
Middle adulthood							Generativity vs. stagnation	
Young adulthood						Intimacy vs. isolation		
Adolescence					Identity achievement vs. identity diffusion			
Middle childhood				Industry vs. inferiority				
Early childhood			Initiative vs. guilt					
Toddlerhood		Autonomy vs. shame/doubt						
Early infancy	Basic trust vs. mistrust							

- Individuals pass through life stages in which they are especially vulnerable to a complex interaction of biological, psychological, and social forces
- Generally helps to explain how person-level adaptive abilities unfold over the course of one's life
- Each level is prevented as a crisis that needs to be solved

- Focuses on development of self/“ego”
- Even in later life stages, the individual may revert back to earlier stages depending on what is going on in their lives
- **Early Infancy Crisis:** trust vs. mistrust (are parents meeting your basic needs?)
 - if not, leads to frustration, suspicion, withdrawal, and lack of confidence
- **Toddlerhood Crisis:** autonomy vs. shame or doubt (is it OK to be myself?)
 - Explore your environment and the people in it; parents should encourage and support you to explore your environment as you play
 - Highly restrictive parents can discourage their child from exploring their environment, which may instil a sense of doubt or reluctance in the child
 - The child may want to withdraw
- **Early Childhood:** initiative vs. guilt (is it OK for me to act, and do things?)
 - Initiative will add to autonomy/independence on undertaking and planning/executing actual tasks
 - If you are discouraged during this stage, and you are discouraged against becoming independent in activities, you may develop a sense of guilt about your abilities, and possibly even confusion about your needs
- **Middle Childhood:** industry vs. inferiority (can I make it in the world that exists of people and things?)
 - Becoming more aware of yourself as an individual; critical in developing self-confidence
 - If ridiculed constantly or punished for their efforts when they try to do something, they may develop feelings of their inferiority or questioning their abilities
 - It is important to give positive feedback for trying, even if they don't succeed; children need a lot of cognitive reinforcement at this age; try to balance positive with negative feedback so as not to harm self-confidence, or ego
- **Adolescence:** Identity achievement vs. identity diffusion (what is your place in life?)
 - may have confusion/unclear sense of who you are or where you're going
 - may feel you have no purpose or you don't know what is going on
- **Young Adulthood:** intimacy vs. isolation (grappling with developing close relationships with other people)
 - Crisis may be that you will not achieve the close relationship with another person in a lifelong partnership sort of way
- **Middle Adulthood:** generativity vs. stagnation
 - Deciding whether or not to procreate
 - Productivity/ability to add skills to next generation
 - You can still contribute to the next generation even if you don't procreate (e.g. teach, mentor, supervise younger people; produce things that younger people can use and enjoy, etc.)
 - Stagnation: you only care about yourself and people in your age group

- **Later Adulthood:** ego integrity or despair
 - If you've established a sense of yourself in a positive, healthy way, you won't be afraid of death – it's just something that happens
 - Despair – will often question if there are ways to avoid death; may be concerned about how quickly death will come up; may feel despair when it comes to fixing things that they didn't do well – they want to make up what went wrong in the past
 - If feeling despair, you may disconnect with life, possibly prematurely, and may have trouble coming to terms with the thought of death

Erikson's Psychosocial Theory: Adulthood

- **Identity Achievement vs. Identity Diffusion:** clear identity and coherent sense of self, purpose, and direction VS. unclear sense of self, vagueness about life's purpose, and lack of direction
- **Intimacy vs. Isolation:** establishing a mutually satisfying close relationship (lifelong commitment) with another person VS. never achieving true mutuality with a life partner
- **Generativity vs. Stagnation:** focuses on psychosocial issues of procreation/parenthood, productivity, creativity, and concern for next generation VS. concern only for self and/or one's own age group
- **Ego Integrity vs. Despair:** those who establish a strong sense of self can look back at their experiences and inevitability of death with acceptance VS. realization that death is unavoidable and will come soon with little/no time to make previous wrongs right.

Consider this scenario...

Considering Erikson's Psychosocial Theory, describe the issues this woman is experiencing.

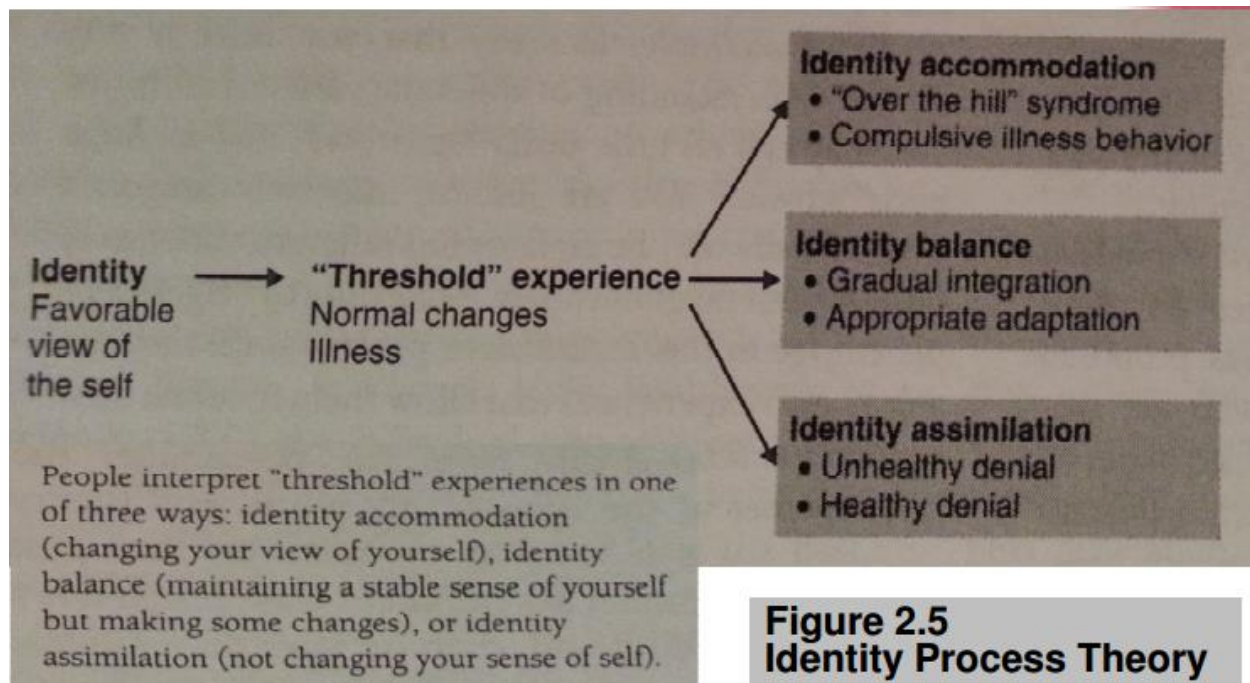
“An 80 year-old woman is mugged while walking on a city sidewalk, robbed of her purse, and left emotionally shaken. This incident traumatizes her for some time, and in the process, she becomes fearful of leaving her home. [...] The woman is also left feeling vulnerable that with her increasing age, declines in her physical functioning have made her a target.”

- Feeling like she can't trust people
 - (Early Infancy; Basic Trust vs. **Mistrust**)
- Like she can't safely explore her environment/act on her own
 - (Toddlerhood; Autonomy vs. **Shame/Doubt**)

Piaget's Cognitive-Developmental Theory

- Two ways in which people interact with their environment:
 - **Assimilation**
 - Have a set of mental structures, and you interpret/fit the new experiences in your pre-existing mental structures
 - **Accommodation**
 - Gain experiences that allow one to refine existing mental structures in order to better differentiate and categorize objects and experiences in the world
- Individuals become better able to adapt to the world through alternating between Assimilation and Accommodation

Identity Process Theory



- People tend to have a certain, biased view of themselves in a positive light
 - E.g. if you get rejected for a job, you have a tendency to criticise the person interviewing you rather than say that you weren't good enough
- You have a tendency to interpret new experiences relevant to your own self-view (Identity Assimilation) – usually view yourself as great/perfect
 - Downside: may lead to distorted interpretation of experiences; may challenge perfect picture you have of yourself; may have difficulty

evaluating yourself in a realistic light; may not address real problems because you are constantly blaming other people

- Overuse of thinking you're great or perfect in adulthood
 - May lead to denial about how you're actually doing
 - May fail to take advantage of preventative measures in order to attain optimal functioning (e.g. eat healthy and exercise)
 - Between Assimilation and Accommodation, usually achieved in adolescence (Identity Balance)
 - Most positive way to react to age-related changes
 - Don't adopt an attitude of defeat
 - You take steps to attain a healthy outlook and to remain healthy
 - Don't become preoccupied with health problems and illnesses; just attend
 - People change their identity/view of self that is not perfect, to include shortcomings that you have; may be very advantageous to you, as long as you don't rely TOO heavily on them – then you will become overly critical of yourself and overly sensitive (Identity Accommodation)
 - Overuse of accommodation in adulthood may cause people to completely redefine who they are in a very negative way
 - Usually related to age-related changes because people feel like they are losing control over their fate, etc.
-

September 24, 2014

Aging and Maturational Changes: The Aging Brain, Normal Aging, and Role Changes

VIDEO – “Fountain of Youth”

Focusing on a Japanese village (Uzurihara) where people routinely live to 90 and beyond without developing signs of secondary/impaired aging/non-communicable or chronic diseases.

- Wondering if you can get the same health benefits in a pill – need to find their secret to longevity
- Many more disability-free years than other places in the world, they don't even wrinkle
- 10% of their population is comprised over people over 85 (ten times our norm)
- Disease (cancer, diabetes, Alzheimer's, etc.) very rare despite engaging in other behaviours that might reduce longevity (e.g. smoking)
- Genes? Low-stress environment? Or more? They believe it's due to diet; they grow their own food and eat lots of vegetables (especially potatoes).

- Villagers have abundance of Hyaluronic Acid (HA); something we lose as we get older – allows cells to retain moisture/smoothness, and lubricates joints; HA appears in the starches and vegetables that they grow at home
- The food tastes “awful”
- HA is used in moisturizers and medicinal products (in a syringe)
- It’s being focused on right now as a possible key to aging
- Chicken combs have a lot of HA in them – they are purified and people eat them as snacks
- Through urbanization, there has been a bit of Western diet practices being adopted in some areas in Japan – and in those areas, incidence of heart disease has doubled (upside-down death pyramid – older individuals are outliving their children because the children did not stick to their parents’ healthy, traditional dietary practices)

The Aging Brain – Quiz

1. Intellectual functioning decreases as we age. FALSE
2. Older people can successfully learn new technologies. TRUE – biggest age group to learn computer technology – need to adapt strategies to effectively learn how to use technology
3. Developing dementia is a normal part of aging. FALSE.
4. Memory declines as one ages. TRUE – there is a modest decline in short-term memory with recent events, meaningful past events within the memory usually stays very stable, retrieval of information can be troublesome, memory loss is not a predictable agent in aging. (will discuss this in more detail later)
5. Older people usually take longer to learn something new. TRUE – processing speed does go down a little bit with age (factors that affect memory decline: lack of attention; fatigue; hearing loss)

Played Boggle.

Skills needed to play Boggle:

- Processing speed, degree of flexibility, ability to sustain focus, special recognition, short-term memory, problem-solving, and decision-making

Cognition

- Refers to mental processes involved in gaining knowledge or learning, thinking, understanding, remembering, judging, and problem-solving.
- **Cognitive Skills and Abilities:** mental functions required to carry out any task (most simplest to most complex task)

- The mechanisms of how we learn, remember, pay attention, problem-solve, etc.
- E.G. attention, memory, executive functioning, perception, language, visual and spatial processing, language, perception, etc.
- Every human action has something to do with cognition
- Sensation: we acquire information from our environment which is sent to our brain to interpret
- E.G. Through sensation and perception, we hear the phone ringing and make a decision to answer it. Have to pick it up (motor skills), be able to speak, talk, and understand/comprehend the language from the other person (language skills), while interpreting someone's tone of voice, and reacting to it in a manner you feel is appropriate (social skills).

Cognition and Aging

- Cognitive abilities such as memory and attention begin to decline as we get older.
 - However, such declines can be slowed or even reversed if cognitive abilities are exercised appropriately.
 - The ability to learn and remember new skills can be maintained well into a person's 70s, 80s, and beyond
 - You will see some declines in cognition depending on what aspects you are focusing on
 - This decline can be slowed down or reversed; physical exercise helps slow down the decline

Cognitive Skills and Abilities

- **Attention:** ability to sustain concentration on particular stimuli, object, action, or thought
 - **Sustained Attention:** ability to remain focused on a task or specific stimuli
 - Basic requirement for information processing
 - How long can you stay focused and attain information at the same time?
 - How do you inhibit distractions? (turn off your phone, turn off your wi-fi/internet, goal-oriented focus)
 - **Divided Attention:** ability to attend to more than two things simultaneously (multi-tasking)
 - E.G. Watching TV while studying
 - Some studies will show that when you divide your attention, you will perform poorly/not as well on one of those tasks; others say that you will not do well on any of the tasks.

- Reading, writing/typing, listening to music, tv on in the background, using smartphone/texting, browsing the internet, eating/drinking
- **Selective Attention:** ability to attend to stimuli/messages that are meaningful or address a need or desire, while ignoring other stimuli
 - E.G. writing exams. You're so into writing the exam, the professor stops the class to give instructions about the exam and you may not hear.

Practice: Focusing Your Attention:

"Yesterday, Lucy went all the way to Boston. **She wanted to buy new** shoes. **She had to go** in many shops before she found the shoes she wanted. She was happy to **stop** at a restaurant to have some tea and ~~cookies~~ **before** she **took** the ~~train~~ back home."

There are 7 Y's in that short text. The distractions include colour/inconsistency of colours, bolding, underlining, strikeouts, and italics.

Attention and the Aging Brain

- Goal-directed behaviour requires attentional control
- As we get older, we become more distractible
 - Older adults exhibit poorer performance than younger adults on tasks that require the inhibition of interference (e.g. on the Stroop Task, the test where you have a word written in the wrong colour, and vice versa):



- Stroop Task/Test:
 - We are generally better at processing words than colours
 - The Stroop Task/Test is used to examine age-related differences in selective attention and your ability to suppress distractions
 - You are asked to name the colour of the word rather than the actual word itself – it's easier to say the colour of a word if it actually matches the meaning of the word
 - Naming the actual colour of the word requires more attention than simply reading the text
 - People can read words much faster than they can name colours

- The speed at which we read makes it difficult to concentrate on the colour (often we read really fast in sort of a skimming manner, but this forces you to slow down and concentrate hard)
- Older adults selectively attend to positive stimuli and are more likely to retrieve positive (instead of negative) memories
 - Older adults may be less sensitive to interference in a task, which requires them to make an emotional judgment

VIDEO – Attention and Memory

- The brain has weaknesses that limit its ability to process:
 - Attention Limitations
 - Can't distribute attention everywhere at the same time
 - You have to make choices because your attention doesn't focus widely enough to get every single stimulus (most of the time)
 - Cocktail Effect – Covert Attention; you can divert your attention elsewhere without moving.
 - For example, you're at a cocktail party and you're listening to someone but you're kind of bored, so you stay there and "look" like you're listening while actually overhearing other more interesting conversations at the cocktail party.
 - Working Memory Limitations
 - Ability to hold information online in minds for short periods of time *in order to guide your behaviour* (e.g. remembering a phone number)
 - Capacity limitations depend on the information being remembered: 7 digits, 6 letters, 5 words, 3-4 objects, 2 faces
 - Processing Speed Limitations
 - Process information very rapidly, at the level of the neuron
 - With complex mental tasks, processing speed adds up for each
- Interference: something prevents you from storing or recalling a memory
 - Internal
 - Intrusions (mind wandering) – mind leaves because you are accidentally preoccupied with other thoughts and can't hold focus (accidental)
 - Diversions (multi-tasking) – focusing on something and thinking about something else at the same time (deliberate)
 - Difficult to measure as legitimate internal interference only occurs spontaneously/unexpectedly
 - External
 - Distractions (irrelevant stimuli) – external information that is irrelevant to your goals, that you try to shut out (unwanted)

- Interruptions (multi-tasking) – trying to attend the external information rather than shut it out (wanted)
 - Often people think they just “forgot” but really it’s because they were interrupted and that caused them to lose focus.
 - “Senior moments” are interference-based, most of the time; not about memory, but rather interference and attention
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September 26, 2014

Cognitive Skills and Abilities

- **Memory:** involves the storage and recall of information
 - **Short-term Memory:** info stored temporarily for a very short period; limited storage; 20-30 seconds or less
 - **Working Memory:** processes that are used to temporarily store, organize, and manipulate information. Sort of like short term memory, but you’re doing something with that information – you’re organizing it or storing it in some way. (e.g. remembering directions, a phone number until you have to dial it. P SHERMAN 42 WALLABY WAY SYDNEY)
 - **Long-term Memory:** info stored and retrievable over a long period of time (days, weeks, months, years); unlimited storage; personal experience, significant, meaningful things. Short-term memories can become long-term memories by association. Either permanent, or days, weeks, months or years.
 - **Remote Memory:** things that happened a REALLY long time ago (e.g. childhood memories)
 - Usually really good in older people, but it’s harder to recall NEWLY collected information
 - **Episodic Memory:** captures the “what”, “where”, and “when” of our daily lives, memory of experiences and specific events; connected to long-term memory
 - **Semantic Memory:** ability to recall concepts and general facts that are not related to specific experiences; understanding language; understanding what things are used for.
 - May actually improve in old age, not decline
 - **Procedural Memory:** remembering how to do things

Memory and the Aging Brain

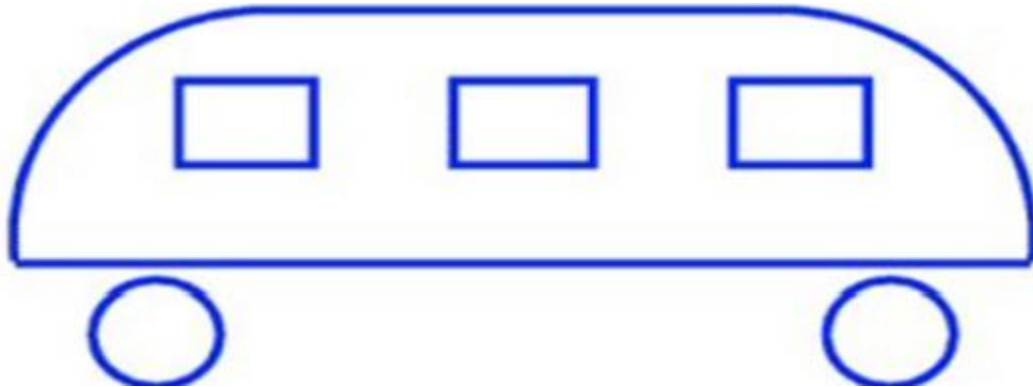
- **Some types of memory may improve or stay the same:** semantic memory continues to improve for many older adults, procedural memory tends to stay the same
- **Some types of memory may decline somewhat:** episodic and longer-term memory decline somewhat over time
- **The following common conditions may lead to memory problems:**
 - Anxiety, depression, dehydration, infections, medication side effects, poor nutrition, stress, substance abuse, thyroid imbalance
- Older people may get confused over time especially with episodic memory. They forget what they're doing, what they should be doing, what someone told them on a specific day, etc.
- Significant declines in memory are not normal and may indicate a more serious problem
- "Having a senior moment" = any instance of a memory lapse. Very common term. Usually has to do with forgetting an important/well-known piece of information (like if they get someone's name wrong, or forget an important phone or house number)

Cognitive Skills and Abilities

- **Executive Functioning:** ability to enable goal-oriented behaviour such as planning and executing a task
 - **Decision-making:** ability to make decisions based on incomplete information or problem-solving
 - **Flexibility:** ability to efficiently switch to an appropriate mental function and adopt multiple approaches
 - **Planning:** ability to organize steps for an activity and anticipate outcomes
 - **Emotional Self-Regulation:** ability to identify and manage one's emotions for successful or good performance
 - **Problem-Solving:** ability to define a problem correctly in order to generate solutions and select the right one
 - **Strategy:** ability to plan a series of maneuvers for obtaining a specific result
 - **Sequencing:** ability to break down actions into manageable units and prioritize them in the correct order

Executive Functioning in the Aging Brain

- Research indicates altered patterns of brain activity in older versus younger adults when performing executive functioning tasks
 - Functional imaging studies suggest increased recruitment of brain areas in older adults that may reflect a form of compensation
- “The most commonly reported age-related pattern of brain activity during executive function tasks (e.g. working memory, inhibition, and task-switching) is increased recruitment of lateral aspects of the prefrontal cortex bilaterally.”



The bus is going left, because you can't see the door. Preschoolers tend to get this right, but older adults (and evidently, university students) may get confused and get it wrong, since they may not take the bus every day and may not be nearly as excited as a preschooler would – the preschooler applies more associations to the bus, so is more likely to remember the details of it.

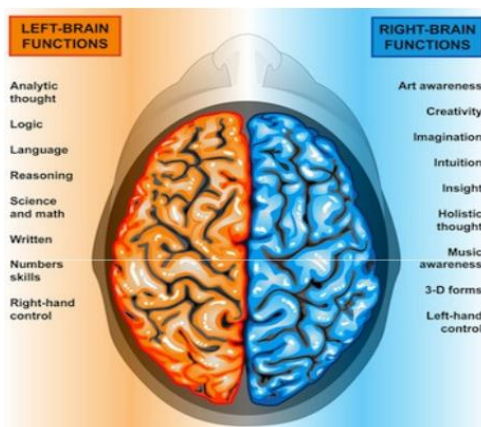
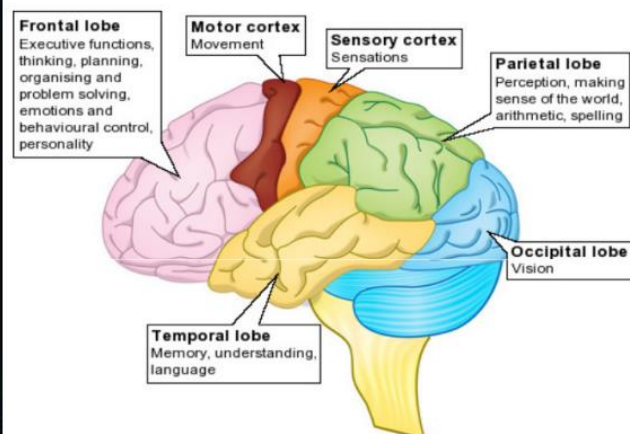
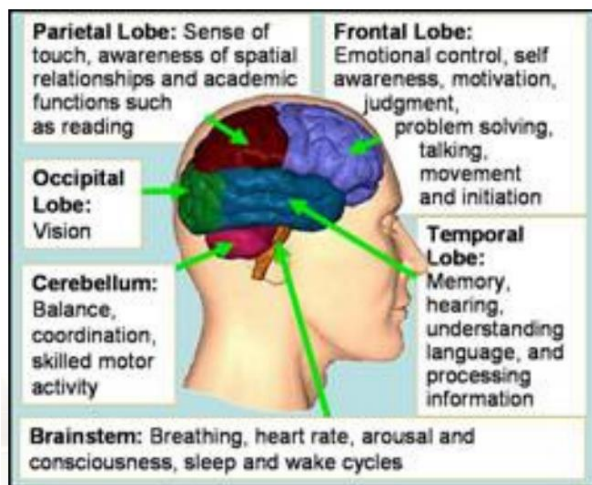
The Aging or “Changing” Brain in Healthy Aging

- **Changes in brain may include:**
 - Parts of brain may shrink (prefrontal cortex), communications between neurons; how messages are sent across the body, blood flow (especially to the brain), etc.
- **Neuroplasticity (Brain Plasticity):**
 - Brain's capacity to reorganize itself by forming new neural connections and pathways throughout life
 - Brain's ability to change can occur as a result of
 - Learning and experience
 - Damage to the brain by injury or disease (neurons compensate)
- Many studies tell us that the brain remains capable of relearning and reroute throughout the lifespan especially for individuals who get regular exercise and frequent intellectual stimulation

VIDEO: Neurologist Martin Samuels

- A bit of memory dysfunction is normal, but it's important to make sure you're not forgetting things you ought to remember and that it's not negatively impacting your life
- To keep better control of memory, people should pay attention to what they're doing, keep a list, get sleep, eat well, don't drink a lot of caffeine or alcohol (especially near bedtime), don't take stimulants, etc. Will give you better control over your cognitive abilities.
- There is a range of what is normal (some people maintain excellent cognitive abilities well into adulthood, and others decline a little bit while still being normal); try to slow the decline

MEMORIZE THE GRAPHIC(S) WITH THE PARTS OF THE BRAIN



Prefrontal Cortex and the Hippocampus are both areas that are important in learning, memory, planning, and other complex mental activities.

Homework: look up where the hippocampus is. (important to know)

- It is located in the medial temporal lobe of the brain; beside the amygdala, which is associated with emotions
- One in each hemisphere

The hippocampus is important for memory-forming, organizing, and storing information.

Lateral aspects = things that are further away from the midline (of the body). Medial (towards midline) vs. Lateral (away from midline).

Brain Lateralization

- Idea that the left and right parts of the brain execute different types of functions
- Left Brain
 - Language, math, logic, reasoning, analytic thought, science and math, writing, numbers and skills, etc.
 - Controls the right side of the body
- Right Brain
 - Art awareness, special ability, visual imagery, music, imagination, creativity, intuition, holistic thought, etc.
 - Controls the left side of the body

What Impact Does Aging Have on Mental Function in Healthy Older People?

- Modest decline in ability to learn new things and recall info, but remote, semantic, and procedural memory are okay
- May improve in other cognitive areas, such as vocabulary and other forms of verbal knowledge
- May perform worse on complex tasks of attention, learning, and memory, and may present with slower information processing speed
- Additional brain regions may be activated in older adults during cognitive tasks (e.g. memory tests)
- Researchers don't know why the brain is so plastic in older adults, but they are saying that parts of the brain tries hard to compensate for difficulty that other parts of the brain are experiencing. Because the brain can do that, you don't necessarily see major cognitive decline in older individuals. You only notice an issue when there is a serious decline, and often they are related to health conditions, disease, or injury.

- Growing evidence of the adaptive (plastic) capabilities of the older brain, and interacting factors, such as lifestyle, overall health, environment, and genetics also may play a role
- Cognitive reserve – brain's ability to operate effectively even when some function is disrupted OR amount of damage that the brain can sustain before changes in cognition are evident – may explain why some people remain cognitively healthy as they get older while others develop cognitive impairment
- Lifestyle does play a role – diet, physical exercise, sleep, intellectual exercise, other activities and hobbies

Dementia

- Group of symptoms affecting mental processes, thinking, reasoning, and social abilities severely enough to interfere with daily functioning; indicates problems with at least two brain functions (e.g. memory loss + impaired judgment or language, and inability to perform some daily activities)
- *graphic comparison of dementia brain vs. normal brain*
- Alzheimer's is one type of dementia – biggest risk factor is age.
- Chronic or persistent disorder of mental processes often caused by disease, stroke, or brain injury, usually marked by memory disorders, personality changes, and impaired reasoning.
- Getting lost while driving, not knowing how to pay your bills, etc.

Alzheimer's Disease

- The most common cause of dementia, progressive disease where the connections between brain cells and the brain cells themselves degenerate and die, causing a steady decline in and destruction of memory and mental function
 - Progressive disorder that results in cognitive difficulties resulting from neuritic plaques and neurofibrillary tangles
- Not a normal part of aging
 - Fewer than 1 in 5 people aged 65+ and less than half of those 85+ have the disease
- Supportive care is best – provide them assistance and keep them safe while still allowing them to live at home and be as independent as possible

To Preserve Healthy Brain Aging

- Controlling risk factors for chronic disease (e.g. a healthy weight)
- Engaging in regular exercise and physical activity
- Eating a healthy diet and getting enough sleep

- Participating in intellectually stimulating activities, and other meaningful activities
- Avoid distractions that divert your attention
- Maintaining close social ties, relationships, and interactions with family, friends, and community.
- Strategies to help your memory: to-do lists, don't rush through tasks, focus on doing the task well rather than quickly, use a calendar, establish a routine

Positive Aspects of Aging

- Accumulation of experiences and general knowledge
- Better judgment and perspective (outlook)
 - Better able to cope with bad news; problems, etc.
- Developing wisdom
- Higher level of occupational skill
 - While people might perform slower at their job, they tend to have better occupational skill, make fewer errors, are more reliable, etc.
- Greater ability to assimilate and organize knowledge
 - Categorize information; problem-solving/categorization
- Refined, holistic sense of identity and purpose
- Increase in personal freedom
- Profound awareness of the life cycle, change, and evolution

Roles, Role Changes, and Aging

- **Social Relationships:** recurrent patterns of interactions, which include:
 - Social support for assistance
 - Companionship for enjoyment
 - Negative interaction with positive consequences
 - Goal: to acquire knowledge, ability, motivation, and to understand social norms and expectations surrounding a role; encourage self-expression and promote desire for social interaction (very very important)
 - Unpleasant social encounters that might lead to a positive outcome
- **Role Set:** the entire array of related roles associated with a particular status (e.g. a teacher associates with students, parents, other teachers, principal, administration, etc.), which change over the lifespan, depending on what your roles are
 - In old age, roles are often lost but not necessarily replaced with new roles
 - New roles may be added as others are given up or discarded
 - Experience of and response to role loss (reflected in disengagement, activity, and continuity theories)

- Major role losses occur with retirement, widowhood, or becoming institutionalized
 - Giving up your major social roles is not necessarily considered natural or inevitable; according to the continuity theory: older persons are expected to find substitutes as they give up previous roles
 - **Role Ambiguity:** there are no clearly defined guidelines or expectations regarding the requirements of a given role
 - **Role Continuity:** learn new skills, norms and attitudes in order to prepare yourself to adjust to a new role (e.g. student -> employed; dating -> married)
 - **Role Discontinuity:** results from a lack of preparation for new roles
 - **Anticipatory Socialization:** preparing for a new role before assuming it (e.g. pre-retirement program, preparation, etc.)
 - **Resocialization:** the replacement of former norms and values with new ones (e.g. shifting from home to a long-term care facility)
-