Midterm

1. 40 % m/c (15 questions)
2. 30% short answer (choose 3 out of 5-6 questions) synopsis of main argument in articles by author
3. 30% key concept questions (choose 2 out of 4-5 questions)
   a. Dictionary definition (right out of an article)
   b. Provide example to illustrate meaning of concept (real world concrete example)
   c. Relate or contextualize to lecture or author
   d. Tell why the concept matters, what the political significance, how it might help or change about technology and politics

<u>Week 1: What is Technology? How is Technology part of our Culture? What is power?</u>

Culture

- refers to a "whole way of life" of a particular society
- A "whole way of life" includes the *artifacts, customs and norms, ideas and beliefs and practices and rituals* of a specific society, past down from generation to generation (by families, schools, industries, governments, legal systems, media and communication systems, religious institutions) that bind individuals together and differentiate this grouping from others

Artifacts

- We are *Homo faber* tool-makers and tool-users
- Technology respond to human needs
- In a pre-modern age, humans developed technology to meet their basic subsistence needs to ensure the species' survival. *'Invention was the mother of necessity.'*
- In the 21st century, *necessity is often not the mother of invention.* Our society continually constructs and defines a variety of wants as new needs
- Eg. I don't *need* my television set to survive; I do, however, *want* my television set. I do not die when I stop watching *The Simpsons*; I do die when I stop drinking water and eating food
- What needs does TV fulfill? – business need to advertise goods and services (cultivate demand for goods and services), information source, entertainment source (diversion, escapism)

~ TV is an electronic mass consumer good that increase profit in corporation; it is mass media communication that creates ad revenue and also an information source of news on weather, political system etc.

What We Make Says Something About Us

- The tools we make express/symbolize/communicate something about our whole way of life
- Technology expresses who we are, why we are, and what we stand for (values, priorities, interests)
- Technology is often a symbolic register of a whole way of life. Society is often judged by its technology

We Are What we Accept as Custom and Norms

- Customs and norms are the common rules that a group uses for judging appropriate and inappropriate values, attitudes and behaviors. Failure to stick to the customs and norms can result in punishments, including exclusion from the group.
- Technology and television is a norm
- Many people accept that that technology and technological innovation is part of our whole way of life. Very few people make the argument that we should stop inventing and using new tools, do away with washing machines, TV sets, computers, iPods, and telephones.

~ No one really argues about why there is TV and that it should be destroyed

Ideas – What We Think and Talk About

- In our society, we share different ideas or points of view about technology.
- Every day, different people talk about and think about technology: people have a range of different views and beliefs about TV.
- "If, as infants, we once wondered if television's three-inch tall characters could step outside of the box, we soon come to learn that they certainly can, in the words we speak, the things we argue over, the topics of friendly banter, and the things we think about while at work, pay or asleep"(Gray 2007: 2).

~ Just think about the things that are being said on TV, and you can relate to the things that their talking about

~ It also takes up mind space as we're thinking about it all the time.

~ TV is something we think and talk about all the time

Practices and Rituals – What We Do

- We are not just what we think and talk about, but *what we do*.
- Our daily practices and rituals are technological. We may have different beliefs and cultural identities, but *what we all share in common is our daily use of technology*.
- Kids watch TV before they learn how to speak. Elderly people watch TV when few friends remain for them to speak with.

- TV is a leisure-time ritual and relatively predictable practice: “wake up, turn on the television, get ready, leave for work/school, go home, turn on the television, sleep
- Time spent watching TV equals the same amount of time it takes to work a job (35-40 hours a week average in N.A.).

Artifacts - What we Make Implies Ways of Doing Things

- All technology presuppose ways of doing things; they are concrete ways of shaping our human conduct each day. Technology implies a story, an instruction, an incentive to do something that we might not have done without it.
- With no TV, you are likely going to find something else to do with your time. You might have a conversation, read a book or learn to play guitar. With a TV present, you are likely to do what everyone else does when in the presence of this device: plop down on the coach, pick up the channel changer, turn on the TV, and channel surf.
- When we are doing things with TV, it may be doing things with us. Think about what we see on TV and how it may influence you. TV shapes the way we understand ourselves (or identities), our communities (bigger group), and the wider world in which we live, think and act.

Artifacts – Agents of Influence

Socialization	- TV shows not only inform and entertain, but teach society about society and teach us how to fit in or conform. Television doesn’t reflect us, but rather, constructs the meaning of us, of a collective we, of who we are, what we are, and why we are.
Nation Building	- Television is a means of binding millions of different people that don’t know each other and are separated by vast geographical distances together as one single nation. ~ TV and radio was seen as a way of uniting a nation and also getting the attention of the nation. We still do this, for example the Vancouver Olympics

Neil Postman

- *Amusing Ourselves to Death* (1986)
- “Television turns everything it touches, even the most profound and serious matters, into entertainment [. . .] The problem is not that television presents us with entertaining subject matter, but that all subject matter is presented as entertaining.”(87).
~ TV has the power to shape a culture and change a culture.
~ Postman wrote that TV turns everything it touches into entertainment and because of this, all subjects is turned into entertainment.
~ Because of this, real important issues that turned into entertainment and people focus more on entertainment instead of the real issues at hand.
~ Reading is better than watching
~ Print is dying because of TV
~ TV has made use less logical less focused.
~ Advertising and issues in news are blended together.
~ Reading gets us to understand the hard facts
- TV destroys print and the habit of mind print required; new habits of mind emerge.
- Seriousness vs. entertainment
  - “ We have become so accustomed to its discontinuities that we are no longer struck dumb, as any sane person would be, by a newscaster who having just reported that a nuclear war is inevitable goes on to say that he will be right 5, back after this word from Burger King; who says, in other words, "Now . . . this." One can hardly overestimate the damage that such juxtapositions do to our sense of the world as a serious place.”
  - “ Or if the value of its news is determined by the number of laughs it provides.”
- Narrative continuity vs. radical discontinuity
- Hard facts and context vs. sound-bites and theatrical performance
  - “Perhaps if the President's lies could be demonstrated by pictures and accompanied by music the public would raise a curious eyebrow. If a movie, like All the President's Men, could be made from his misleading accounts of government policy, if there were a break-in of some sort or sinister characters laundering money, attention would quite likely be paid. We do well to remember that President Nixon did not begin to come undone until his lies were given a theatrical setting at the Watergate hearings. But we do not have anything like that here. Apparently, all President Reagan does is say things that are not entirely true. And there's nothing, entertaining in that.”
- Opinion (supported by reasoned evidence) vs. Emotion (supported by affect and irrational feeling)
  - “ Nonetheless, everyone had an opinion about this event, for in America everyone is entitled to an opinion, and it is certainly useful to have a few when a pollster shows up. But these are opinions of a quite different order from eighteenth- or nineteenth-century opinions. It is probably more accurate to call them emotions rather than opinions, which would account for the fact that they change from week to week, as the pollsters tell us. What is happening here is that television is

altering the meaning of "being informed" by creating a species of information that might properly be called disinformation."

- Image vs. actuality (image is everything – nothing behind them)
  - Indeed, we may go this far: The television commercial is not at all about the character of products to be consumed. It is about the character of the consumers of products. Images of movie stars and famous athletes, of serene lakes and macho fishing trips, of elegant dinners and romantic interludes, of happy families packing their station wagons for a picnic in the country- these tell nothing about the products being sold. But they tell everything about the fears, fancies and dreams of those who might buy them. What the advertiser needs to know is not what is right about the product but what is wrong about the buyer. And so, the balance of business expenditures shifts from product research to market research.
- Citizen-driven Democracy vs. Consumer-driven Entertainment (people only respond to information in entertainment formats; politics is resultantly something to stage managed and produced as entertainment)
- Public education must now compete with TV for student attention; education takes on the style of TV entertainment, degrading the experience.
  - "We now know that "Sesame Street" encourages children to love school only if school is like "Sesame Street." Which is to say, we now know that "Sesame Street" undermines what the traditional idea of schooling represents."
  - "Whereas attending school is a legal requirement, watching television is an act of choice. Whereas in school, one fails to attend to the teacher at the risk of punishment, no penalties exist for failing to attend to the television screen."
  - "As a television show, and a good one. "Sesame Street" does not encourage children to love school or anything about school. It encourages them to love television ."

~ Democracy has been turned into entertainment and now people have to compete against competition.

~ Postman is saying that you don't need to repress or censor anything because no one cares as its entertaining people.

Why study technology? It is 'invisible'

- Technology appears as the natural, the norm, the always-already.
- We rarely think analytically about technology and ask questions about individual and collective impact in society.
- Marshall McLuhan, the Canadian philosopher who coined the notion of the global village', wrote: "We risk a peculiar form of self-hypnosis, a syndrome whereby people remain as unaware of the psychic and social effects of their technologies as a fish of the water it swims in."
- "Precisely at the point where a technological and media-induced environment becomes all pervasive and changes our sensory balance, it becomes invisible" (McLuhan, 2001: 106)

~ Another reason we study technology is because we don't and we don't ask the hard questions as to why.

Why study technology? It is part of society

- Large-scale technological systems precede our birth.
- We are born into a world of technological systems (warfare, automobiles, computers, automation, etc).
- We live in world which our ancestors and our ancestor's ancestors made choices about technological systems; we inherit the history of technology; our present is shaped by the technological systems that come before us; but our technological future is yet to be determined. We have choices. Technological choices require us to understand technology.
- 'We have a chance to apprehend, predict, and influence technological forces shaping us' but 'if we continue in our technological trance, we will be their tools.' (McLuhan, 2001: 106).

Why study Technology? It connects with power

- Technology is an instrument of exercising and maintaining power; it can enhance the power of its users, enabling them to do things they could not otherwise have done while limiting the power of others.
  - Technology can be used to enhance the symbolic and material position of some groups in society over others
  - Technology can be used to order the social world in accordance with certain power interests and relations.

<u>Week 2: Philosophical Perspectives on Society and Technology: Technological Instrumentalism and Technological Determinism</u>

TECHNOLOGICAL INSTRUMENTALISM

1. Technology is a tool

- We have power over technology.
- Technology is an instrument that we develop and use
- We are rational users of technology.
- Technology is a 'tool' that serves the purpose of the person who uses it.
- Technology is a means to an end that we decide.
- We are "in control" of technology.

~ This is the most common sense way of thinking about humans relationship to technology.

~ Instrumentalist would say that we have power over the technology and it is a tool that we have power over.

~ Technological instrumentalism says that technology is a tool that we make and we control it. the tool is something that is created to service our needs and it is created to meet an end.
~ Comparing humans to animals, we think of different ways of using tools. The rock example.
  • Humans can look at the rock in a far different way compared to animals
~ It also says that humans are a rational actor in this theory and humans have different perspectives and needs and wants that must be meet
~ Because we are rational, we decide on what we can do with the tools. And because of this, we have control
- The computer is tool that humans developed for human use.
- Humans determined the many uses of personal computers and programmed computers to do a variety of functions
- We use word processing programs to type, correct, rearrange, or delete text in letters, memos, reports, and school assignments. We use spreadsheet programs to prepare tables, budgets and undertake mathematical calculations. We use computers for a variety of entertainment purposes.
- We are essentially in control of computers. It is a tool that we use.

2. Technology is Moral Neutral

- Technology is not inherently "good" or "bad." Technology is beyond moral categories because it is inanimate. Technology is 'neutral,' without moral content.
  ~ Technology shouldn't be subjected to a moral code of good or bad. The reason for this is because we are in control of the technology as the technology doesn't have emotional and its not alive compared to humans.
- Since humans are moral creatures and technology is not, technology's morality is in its human use.
- Technology is an instrument which we use for good or evil.

3. Technology is Morally Neutral, but our use of it is not

- While the computer is value-neutral hardware and software, the human uses of computers are not.
- Scientific research vs. porn research
- Child education vs. child mystification
- Virus vs. anti-virus
- Enlightenment vs. ignorance
- Cyber-bullying vs. cyber-therapy
- Pedophilia vs. policing

~ Instrumentalists says technology should not be judged for what it is, but what people do with it
~ While the computer is value neutral, the use of the computer is not neutral
~ Notice above that there are two sides to computer, the use is based on the used or the computer and not the computer itself

4. The Technological Fix

- A quick, cheap fix to a problem using inappropriate technology (Rosner, 2004)
- One does not wait around trying to change people's minds and ways. Instead, one engineers technology to deal with the social problem.
- Hardcore porn addiction –dysfunctional sexual relationships - soft porn
- Texting while driving – accidents and death – StartTalking
- This accepts bad behaviour.
- Individualized techno-market solutions to collective social problems.
- Not all problems are technological or have purely technological solutions (governance is sometimes a more effective means of fixing problems or inducing people to change their ways – i.e. democratic laws and regulations).
- A quick band-aid solution to manifest symptoms, not the root causes of problems.

~ It believes that all the problems in the world (environment, political, economic etc.) that we face have a technology solution instead of a political or a legal solution.
~ People will only change if it will better their life and better their way of life. The problem with this is that its hard because people don't like to change their patterns and change traditions.
~ Even if people are aware of a problem, people don't seem to like changing because they think about the short-term more so then the long-term as it doesn't really affect them now in the present.
~ Instrumentalists would say, don't try to convince people to change, instead engineer solutions by using technology to address problems.
~ Don't try to change people because their going to act the way they will always and because of this, give a technological quick fix solution instead of regulations and law
~ There is also a problem that the quick fix problem is biases towards people that don't have money as some consumers can't afford it and because of this, it is not a democratic way of doing things rather it focused on the marketplace and how wealthy you are.
~ The problem is that there are some problems that technology cannot solve as there are bigger problems that it can't use.
~ Technological quick fixes are only used as a band-aid affect and doesn't address the root problem.

4. a. Inappropriate Technological Fix

i. Social problem: war.
   - Technological Fix: globalize the Internet – greater trans-national understanding = world peace.
   - Assumptions: war is caused by misunderstanding (wrong); access to ICTs = interest in content relevant to cultural understanding and world peace (wrong); governments make foreign policy decisions based on the popular will of their citizens (wrong).

ii. Social problem: the abject poverty of millions of people within African nation-states.
   - Technological fix: globalize the Internet – plugging people in to global information economy = economic and social development of poor countries.
   - Barriers:
   - Lack of money (how to raise money to finance ICT acquisition when already in debt and population's basic needs aren't met?)
   - Acquisition of ICT (how to grow prosper as an information economy when you are buying all of your ICT hardware, software and services from U.S.-based firms and thereby enriching its competitive advantage?)
   - Education (how to develop educational institutions that equip people with computer literacy skills required to participate in info. economy?)

TECHNOLOGICAL DETERMINISM

1. Technology is the Causal Agent of All Change

- "Technological determinism" - the perspective that technology is 'the prime mover' or agent in social change.
- Social transformation has one causal factor: technology, which is external to us.
- Technology, not social relations between people, "determines" what happens in society.
- Human factors (i.e. people; government policies; the interests of corporations) are secondary causal factors of change.
- Technology is first; it is out of human control, beyond our intervention.
- "The Computer Revolution"

~ The determinist would say that technology has power, agency.
~ Its not just a tool, but it acts as a agent of change
~ Determinist would say that the computer has a will
~ A determinist would argue that the computer and the internet has changed everything, but the problem is that it doesn't account for the human equation.
~ You can look at it as a computer revolution, where you look at it as the computer had created a revolution with and social change in society.
~ Technology not human is the agent of social change

2. Technology Defines Society and Historical Periods

- Technological determinists often argue that the technological forces of a society shape all patterns of our existence, from economic models to politics to culture.
- History is broken up into different periods of development, each exhibiting specific technological competencies.
- The story of human civilization is linear "progress" through clearly defined technological periods: Stone Age, Bronze Age, Iron Age, Industrial Age, and now, the Information Age.

3. Technology Defines Human Existence

- The level of technological development exhibited a society corresponds with and establishes certain kinds of people.
- Technology, for some, constructs and defines the nature of human existence. As we've evolved, so have our tools. As our tools evolve, we do too.
- When we used only crude stone implements, we were one kind of primitive human being living a certain kind of existence. As we developed the wheel, writing technologies and industrial machines, what it meant to be human in society fundamentally changed.
- As we entered the information age, what it meant to be human changed.

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- As we entered the information age, what it meant to be human changed.
- Netizen (cyber citizen)

~ Technology can define human existents.

5. Technology's Effects are Universal and Irreversible

- Technology is assumed to be diffused everywhere and have the same impacts everywhere.
- "Technology has changed everything"
- Once a technology is invented, its effects cannot be reversed.
- Technological developments, once under way, are unstoppable: 'progress' seems to be inevitable and irreversible. We are powerless to stop technological change.

~ Technology always has a universally affect and it cannot be changed. There is no going backwards and because of this, humans are not able to change the past, rather they must forward on the present and the future.

Media Determinism

- Media determinism provides a somewhat simplistic causal explanation for numerous effects.
- Cause and effect relationships are reduced to a single factor (the media) and explained as such (the media).
- An influential media determinist is Marshall McLuhan (1911-1980)
- The medium is the message

~ The media call show us a simple version of these technological changes

~ McLuhan is saying that the overall affect or the big changes that have happened is the message of technological changes.

Computer Perception: The 'messages' of the computer-era

How Computers Change the Way We Think – Article by Sherry Turkle

- "**The tools we use to think change the ways in which we think.** The invention of written language brought about a radical shift in how we process, organize, store, and transmit representations of the world."
- "Although writing remains our primary information technology, today when we think about the impact of technology on our habits of mind, we think primarily of the computer.The computer as a carrier of a way of knowing, a way of seeing the world and our place in it"(Turkle 2004).

1. The End of Privacy

- Actions within the world of online blogging, instant messaging, and Web browsing leave electronic traces that are assembled into data selves.
- Privacy is dead.
- Unlike past generations, who grew up with the notion that the privacy of their mail was sacrosanct, people have become accustomed to electronic surveillance as normal and even pleasurable.
- High-school and college students willingly provide personal information online with no safeguards.

~ We do not value the individual privacy that we once used too because of social networking sites like twitter and Facebook.

~ Privacy is dead is not a be problem for people in 18 to 25 age range.

~ We don't want to know what others are doing also, but we also want people to know what we're doing.

2. Avatar or Self

- Chat rooms, role-playing games, and other technological venues offer us many different virtual contexts for presenting ourselves and experimenting with identity online.
- These contexts provide young people with a safe space for the personal experimentation that is so crucial for individual psychological development.
- Our dangerous world -- with crime, terrorism, drugs-- offers little in the way of safe spaces. Online worlds can provide valuable spaces for trying on different roles.
- However, some who express multiple selves online may find it harder to develop authentic, centered selves offline.
- Some children who write stories online may grow up with too little experience of how to share their real feelings with other people.
- For those who are lonely yet afraid of intimacy, computers have made it possible to have the illusion of companionship/affinity without the demands of friendship.
- The virtual relationship between anonymous pseudo-identities (expressed through texts and images) take precedence over physical face-to-face relationships between people.

2. a. Avatar or Multiplied Self

- **The web de-centers the unified** self (a fixed identity, a strong singular sense of self)
- I am 'I'/ replaced with I am 'Ii', 'Iii', Iiii', 'Ivi', 'Iv', etc.
- The self splinters into multiple personalities in numerous virtual contexts.
- Online, individuals can explore and project fantasy selves; an old person can pretend to be young; a white person can pretend to be black; a patient can pretend to be a doctor.
- While some may feel liberated from the limits of their physical bodies in cyberspace, people who assume such disguises without ever returning to their real world self may resemble patients with multiple personality disorders (MPA)

- But MPA is a problematic category, a social construction; perhaps there is no unified singular self. Perhaps we no unique identity that is identifiable from birth to death; there is no real "you" which remains constant throughout all of life; people change, from birth to death. This is what makes us modern.

3. From Powerful Ideas to Powerpoint

- PowerPoint carries its own way of thinking, its own aesthetic
- presentation becomes its own powerful idea, often at the expense of ideas (form vs. content)
- Colorful backgrounds, swooshing sounds, animated icons, and flashing texts and images that frame ideas often substitute for ideas.
- Powerpoint reflects a lowering of intellectual standards, inside and outside the classroom
- Children are raised in a culture of presentation, a corporate culture in which appearance is often more important than reality; kids are also raised in a political culture of spectacle where rhetoric and sound-bites stand in for genuine dialogue or argument.
- PowerPoint equates bulleting with clear thinking. It encourages presentation, not conversation.
- Teachers used to tell students that clear exposition depended on clear outlining, but presentation software has fetishized the outline at the expense of the content.
- The exposition of content, takes time. PowerPoint speeds up the pace of instruction.

4. Word Processing vs. Thinking

- Word processing has its own complex psychology.
- it can make dedicated students into better writers because it allows them to revise text, rearrange paragraphs, and experiment with the shape of an essay.
- Few professional writers would part with their computers; some claim that they simply cannot think without their hands on the keyboard.
- Yet the ability to quickly fill the page, to see it before you can think it, can make bad writers even worse. Word processing makes it possible to manipulate text on a computer screen and see how it looks faster than we can think about what the words mean.
- A seventh grader once told me that the typewriter she found in her mother's attic is "cool because you have to type each letter by itself. You have to know what you are doing in advance or it comes out a mess." The idea of thinking ahead has become exotic.

5. Taking Things at Interface Value

- We expect software to be easy to use, and we assume that we don't have to know how a computer works.
- In the early 1980s, most computer users spoke of transparency - you could "open the hood" and poke around.
- But only a few years later, Macintosh users began to use the term when they talked about seeing their documents and programs represented by attractive icons.
- We know how to make things work without needing to “open the hood” and understand how things work.
- The people who built the first generation of personal computers understood them down to the bits and bytes.
- Today we are accustomed to taking things at (inter) face value; we understand symbols, not the complex systems which underlie and support them.

6. Simulation Reality

- Computer simulations enable their users to think about and immerse themselves within complex phenomena as dynamic, evolving systems.
- But they also accustom us to manipulating systems whose core assumptions we may not understand and that may not be true (i.e. war games).
- In 10 years the degree to which simulations are embedded in every area of life will have increased exponentially.
- Who, what, when, where, why, and how? Who produced this simulation? what is their message? When was it designed? Why was it designed? How does the simulation connect with a real time and place, politically and socially?
- Children grow up in a culture of video game simulations that all rely on that familiar scenario of almost losing but then regaining total mastery: There is danger. It is mastered. A still-more-powerful monster appears. It is subdued. Scary. Safe. Yet in the real world, problems are not so easily solved our mastered.

7. Information Overload

- Persistent exposure to ever-increasing quantity of information flows—files, clips, sounds, messages—from multiple sources.
- Physically present but no presence when networked.
- Present-mindedness; loss of sense of duration and continuity (always in the ‘now’ of the information flow – no past, no future).
- Chronic fatigue syndrome –
- Feeling like you are working all the time but achieving/producing nothing tangible in the process of networking.
- Increased stress levels – choice fatigue – so much info. to consume, so little time. Inability to sort and store all of the information.

8. Sensory Overload

- Technology extends the senses
- Yet, our senses—sight and hearing particularly—may be overloaded by mediated stimuli.

- Multi-tasking – interactive thinking and doing several things at once (listening to music, doing homework, chatting on messenger, surfing the net, petting the cat; driving a car, watching a DVD, smoking a cigarette, talking on a cell phone, telling your kid to shut up, looking at a road map).
- Total interruption and distraction –
- Low concentration capacity - people 'become frustrated with long term projects, thrive on the stress of constant fixes of information and physically crave the bursts of stimulation from checking e-mail or voice mail or answering the phone'(Nye, 186).
- Attention deficit disorders and short attention spans: eyes on many screens, fingers on the keyboard, the mouse, the mobile phone and the TV changer - perception is everywhere.
- Multi-tasking becomes like an addiction: the sensations of constantly being wired may be compared to those of narcotics—a hit of pleasure, stimulation, escape and then depression.

'Technological Momentum'/Soft Determinism
- Between Hard Instrumentalism and Hard Determinism
- Society does make choices about what technologies to adopt.
- However, after a while people become enmeshed in a web of technological choices made for them by their ancestors.
- These choices make it hard for future generations to undo them.
- Technologies are designed by people; but after they are institutionalized, standardized, normalized, and widely diffused throughout society, they can exercise over time exercise a 'soft 'determinism' that shapes all of society.
~ It says that there is a an in between of the instrumentalist and the determinist theory.
~ You cannot make any changes of the past and can only change the present or the future
~ The past generations makes it change for the present generation to change some of the changes.
- Information and communication technologies—computers, mobile phones, iPods and blackberries—have developed a technological momentum to exert a soft determinism over North American society.
- They are a profitable sector of the world economy;
- Households, businesses, and government are necessarily networked with ICTs;
- People express themselves through and increasingly depend upon—for work and play—a variety of ICTs.
- Cyber-sex.
- Cyber-crime
- Cyber-shopping.
- There are very few spheres of life that ICTs do not interact with and shape.

<u>Week 3: Ideologies of Influence: Technological Optimism ('Progress' Toward Utopia) and Technological Pessimism (Devolution Toward Dystopia</u>

Dialectical Symbol
~ Technology is a dialectical symbol.
  - In a similar way of how the Nike swoosh is a symbol.
  - Technology is a symbol of how we exist in a social and cultural way of living.
  - Dialectical means being able to hold opposing positions at the same time. This means being in the middle of something and being able to argue both points at the same thing.
  - The same thing can mean two different things
~ With the titanic, the 1st point showed that the titanic was the most advanced ship of its time and it was a symbol of how far human engineering has come so far. It also shows hope and belief in human society.
~ When it comes to the 2nd picture, it shows destruction and horror and the source of pain and danger and death that technology has bought
~ This is the same as the A-bomb has it caused destruction and death.
~ Technology can not just be made as a way of human progress, but with the example of the a-bomb, technology can also lead to destruction and a form of regress in human civilization.

The Personal Computer
~ This pic shows that the apple computer is good for you as the apple symbolized nature where the apple computer will can be related to nature
~ The reason for this is because people were afraid of the computer as they didn't know what it was and how to use it

Ideology
- A set of attitudes, beliefs, assumptions and perceptions about the actual world in which we live.
- may or may not have a factual basis
- may or may be proven true or false.

- make sense of themselves and the world in which they live.
- a way to make meaningful, purposeful and coherent what may otherwise be an absolutely meaningless, purposeless and chaotic world.
- What goes without saying
~ We're making value judgements everyday in our everyday life
~ With technology we're making value judgements, but in a 21th century, we're more optimist about technology.
~ Americans are more optimist then Canadians when it comes to technology.
~ An ideology doesn't have a factual basis to where you don't have to make an argument based on facts and evidence. You can just base it on your beliefs and assumptions.
    - The problem with this is that it may not be true in other peoples minds.
~ Everyone have different ideology. Different ideology doesn't just limit to politics, it can be about race, religious and many other different issues.
~ Ideology isn't just a way we believe, but we also act on the basis of these assumptions. For example, the women's movement and affiliate action.

Technological Optimism
- Technophiles
- Technology = Progress
- Technology has made our present-day society better than those of the past and *will* progress us toward a future that is better than today.
- The end-goal of our progress is a "good life" (individual and collective *material betterment* [a life that is more abundant, comfortable, easy, and convenient] and individual and collective *moral betterment* [a society that is more humane, rational, just, enlightened, democratic and tolerant].
- 18th century Enlightenment (Francis Bacon, Immanuel Kant, etc.)
- Utopianism
- U.S. culture
~ Technophiles are people that love technology and they only focus on the good of technology. Because of this, they are optimist.
~ These people will always believe that technology is a force on progressive in cultural, society and so forth.
    - Progress mean's moving forward
~ In optimism, technology is moving forward into a progressive state.
~ It would also say that human kind is moving better and progressing.
~ This goes back that as technology can progress human society, then people will be more enlightened
~ Also means that technology can achieve a utopia.

Technological Pessimism
- Technophobes
- Technology is a force of material and moral regression; technology has made our present-day society worse off than past societies and is leading us to a future society that is worse than today.
- Technology + human irrationality/error is largely responsible for the problems we face. The more we try to control the world, we design more ways of destroying the world.
- The endpoint of progress: dystopia (tyranny, psychological misery poverty, oppression, domination, violence and war, and pollution and destruction of environment)
~ The person that is technological pessimism is someone that is afraid of technology and change
~ There people will only focus on the bad and the disadvantages of technology.
~ It says that we the advancement of technology is that these technology progressive can lead to despair and destruction of the human civilization in the future.
~ They say that technology is a form of regression and its leading us to a world that is worst. The reason for this is technological innovation.
~ Pessimism can lead to a instrumentalist or determist point of quick.
~ Pessimists can be extreme at times, but they are also the ones that will be the 1st to pose technological pessimism movements.
~ For them, the end-point for them is that dystopia where there will be chaos.

Dialectics of Technology
- Put each ideology in dialogue with the other
- Examine technology's advantages and disadvantages, weighing the pros and cons, the good and the bad, and the arguments for against each new technological innovation
- Neil Postman: "For every advantage technology offers us, there is always a disadvantage" or some kind of consequence.

- Edward Tenner technology has "revenge effects": "An unintended and negative consequence of some new or modified technology" (not anticipated or foreseen by the inventor).

Dialogue

Techno-optimist	Techno-pessimist	
- the Abundance of High-quality low-cost material goods is a sign of the good life (material improvement)	- "self-illusory hedonism": the objects we consume are not going to solve all of our emotional and psychological needs (moral betterment)	~ From an instrumentalist point of view, they would blame the people that control the markets and from a determinist point of view, they would blame the technology itself.
- the sheer quantity of stuff available to consumers is evidence of our society's progress toward a good life (quantitative increases – more and bigger is better).	- quantity is not the same thing as quality. Planned obsolescence: technological products are made to break down after a period of time so that people keep buying.	- Environmental costs/consequences of more and bigger things
- Cultural Homogenization (the techno-market is making a mass culture and destroying difference).	- Cultural Diversity (the techno-market reflects the diversity of the world) – automobile, telephone and television.	
- Technology represents convenience, comfort and ease. Technology helps us do more things with less physical stress.	- Convenience can be an inconvenience. All of the conveniences of the world have actual led to us becoming more easily controlled by and dependent upon the technological world.	- Techno-dependence = loss of agency.

Technology Ideology in practice
- Between 1978 and 1995, Theodore Kaczynski ("the Unabomber") mailed bombs to managers at universities and corporations, killing three people and injuring many more.
- "The Industrial Revolution and its consequences have been a disaster for the human race."
- Kaczynski said that the technological system cannot be reformed; it needs to be destroyed to bring humans back into consonance with the natural world.
- Kaczynski's violence achieved nothing and diminished the cause of reasonable criticism.

Progress for Whom?
The dialogue raises important questions:
- Do we all benefit by technological progress?
- How do we know?
- Are we all included in the future-oriented 'progress' the ideology of technological optimism promises?
- Are some excluded from progress or "left behind"? Why?

Progress Toward What?
- Assess the unexamined goals implied by progress.
- What are we really progressing toward? What is the endpoint, the destination of our journey?
- Who decides the future of technology and its goals?
- Is "everyone" in it together or do some push others to a future?
- The "future" is politics.
- How do we know the future of technology anyway?

Week 4: Philosophical Perspectives on Technology and Being Human: The Ethics of Cloning, Artificial Intelligence, Cyborgs and Robots

Technopoly
- Technopoly: a society that has absolutely no time for sustained public deliberation or debate about the design, use and consequences of technology.

- In the 18th century, we took the time to carefully debate and decide whether to accept or reject technology, carefully assessing each new possible innovation using an firm ethical framework. There was a balance between technology's needs and society's needs. Today, that balance is lost.
~ Postmen was worried that society would live in a technology where society will not have time to debate any of the ethical or moral debates about technology in society and that people wouldn't have to worry about these debates and that people wouldn't really care.
~ Because of this, there would be no democracy in these issues as people don't want to talk about this ethical or moral issues and as a result the government can abuse their power and people would accept anything that the government imposes when it comes to technology advancements.
~ A second reason for this is because people don't know better and they don't have enough knowledge about the issue at hand.
~ We don't talk about the big issues together or in a politically way.
~ Postmen says that in our society, we're able to produce any technological change that can solve our problems, but we don't talk about the reason why we should do this. The philosophical way.

The Technological Imperative

- "*If we can do it, we will do it. And when we do it, we will proceed with little concern for our innovations impact upon cultural tradition and with no democratic public discussion about the possible long-term consequences it may have*. *We want results. We want to push the boundary of the possible. We want to change the world*."
- The biggest reason that people don't want to take part in any of these debates is because of technological imperative.
- the technological imperative is doing the impossible and we can do it, and we must do it instead of we can do it, but should we do it.
- Because of this, scientists will always want to do something because they can do it and we will do it. Not because of we can do it, but should we do it.
- The reason people do this is because of competition for the marketplace and they need to do it 1st as they can make more money if they do it 1st compared to someone else. This means that people will discard their morals and ethics. No matter how many consequences will come in the future.

Techno-Market Populism

- Consumer demand drives the production and diffusion of new innovations. Demand results in supply. If a consumer group wants a particular technological innovation to be made, corporations will produce and sell it. The technological market gives consumers "what they want, when they want it."
- "Sovereign" consumers?
- "Democratizing"?
~ Another reason is because of the techno-market populism where the consumer demand will drive the production and the diffusion of new innovations. Because of this, technology is just a product where it is made to make a profit.
~ This is where the consumer will decide if there is a market for the technology can is being created. This means that it can be the most democratic way as people are given a choice to want to buy the product or not buy the product.
~ However, this theory assumes that the technology is a need which creates a sovereign customer, but the problems is that its is not a need but rather a want for the people. This is assumed that it must be expected, but it is not a need, but rather a want. Are these needs, my needs, but the needs of other people that are influencing me to buy the product.
~ Also, with democracy, there is a big difference if you have wealth and because of this, you are only in a democracy if you have the money to pay compared to not having the money to pay. If you don't have money, then you can't be part of the democracy.

Ethics of Technology

Focus: how we *ought* to live/what a 'good society' is.

1. The development and possible impact of a new innovation (is the very process of innovation part of an ethically right or wrong act?) (Before the innovation is introduced
2. The diffusion and present-day impacts of a new innovation (is it right or wrong to fix problems caused by the diffusion of a new innovation?) (After it is introduced)

~ They focus on is it right or wrong if they product this.
~ Is the person acting right or wrong?
~ Is it ethical if the product is produced that can destroy the environment or will it save the environment?
~ If the product created and increases unemployment is this right?
~ After the questions, people should be talking about the positive or negative impacts after the innovation has been introduced to the world

Four Ethical Perspectives

1. Cost benefit analysis (business)	~	The cost benefits analysis attempts to get people to think of the positive and negatives impacts that the new technological innovation is introduced. In theory it sounds good, but the problem is that we cannot predict the impact of the technology in the future. We will never know the future of the impact as its near impossible. It is also flawed because it does not view the cost and benefits equally and in the end it will reflect a new balanced of power.
2. Traditionalist analysis (religious or political ideology)	~	The traditionalist analysis is where people will judge it based on religious or political ideology. We judge based on the traditional principle and if it will be beneficial to the country/nation. Religious beliefs is most the last resort for the reason to not improve technology
3. Social Justice analysis (egalitarianism, redistributive justice, equality of choice + access)	~	The social justice analysis looks at it from a human rights perspective as they will look at new innovations as to how to get everyone involved so everyone can benefit from this innovation. This is also called redistribution theory. The problems with this theory is that there is the unequal balance of wealth in the world.
4. Environmentalist analysis (environmental impact)	~	The last analysis is based on a cost and benefits analysis of the environment.

Democratize Technology: Technological Citizenship

"Technological citizenship is a modern moral virtue. Being a good technological citizen implies an understanding of mutual rights and responsibilities between oneself and other citizens and between citizens and the government. Among our rights as citizens are the right to receive knowledge and information about technologies and how they might affect our lives, the right to express views and opinions about the development and use of technologies, and the right to participate in decisions concerning the development and deployment of technologies that our potentially harmful to us. To exercise any of these rights, however, citizens must first accept the responsibility to educate and inform themselves about the nature of the technologies that are changing their lives and to understand the ethical and public policy dimensions of the decisions in which they claim the right to participate"

Cloned Animals

- Reproductive cloning is a technology used to generate an animal that has the same nuclear DNA as another currently or previously existing animal.
- Cloned animals include: Tadpole, Carp, Mice, Sheep (Dolly), Monkey, Cattle, Cat, Dog, Mule, Horse, Water Buffalo, Camel, Goats, Pig, Cow.

Cloning

- "Therapeutic cloning"
- "Human cloning": a nucleus from any cell of a donor is implanted in an egg whose own nucleus has been removed. The egg is then implanted in a woman's womb and a cloned baby is born nine months later. Biologically, the cloned infant is a replica of the donor.

Cloning: Pro and Con

Con	**Pro**
1) risk of physical harm to the clone 2) risk of psychological harm to the clone 3) risk of harm to society 4) cloning diminishes our respect for human life 5) cloning violates religious traditions that believe God is the creator - "life begins at the moment of conception."	1) Cloning will allow humans who cannot have genetic offspring the opportunity to do so. 2) cloning will help us battle genetic diseases 3) cloning will help us create children with as much natural talent as possible, with the best genes, and with best chances of quality life. 4) Cloning will allow some individuals to clone dead loved ones or a person that had special meaning to them

Arguments Against Cloning (and counterpoints) – CON

1. risk of physical harm to the clone – Cloning has risk of physical harm to the clone has it can develop mental and abnormal issues. This has not proven to be a safe practice and because of this, there should be physical consent, but there isn't anyway to get a consent. Because cloning cannot produce a healthy baby, cloning should be banned. But the counter argument is that humans are born without consent anyways and also we might be born with defects also.

2. risk of psychological harm to the clone – Cloning could produce psychological identity and also have psychological breakdowns also but we as humans believe we have a unique identify, but there is no uniqueness. The counter-point is that the uniqueness of humans is not just based on genes, but based on the actions of the individual during life and how that person shapes it.
3. risk of harm to society – Cloning can also be a harm to society has it will disturb the norm and the core of the nuclear family. It can also disturb the family relations for example, am I the father of my mother or father of my daughter. The counterpoint is that what is this problem with the family structure, where in different times and ages, we have had a different family structures in the past, as it is based on trying to stick with the norm without changing it.
4. cloning diminishes our respect for human life – Cloning can diminish our respect for human life has we will not have any more respect for human life. Cloning will mean that we can be replaceable and we can be like a product. Cloning can meet the marketable, commercial of the embryo. The counterpoint is that in society we already do this as people ate just treated us as we are just products and a part of a machine as we are tools.
5. cloning violates religious traditions that believe God is the creator - "life begins at the moment of conception." – Cloning can violate that god is the only creator has this points out that humans can create god.

Arguments for Cloning (and counterpoints) – PRO

1. Cloning will allow humans who cannot have genetic offspring the opportunity to do so. – Cloning will allow humans who cannot have offspring's. The counterpoint is that, not being able to have offspring is not a major issue as there are many other different ways to get a baby.
2. Cloning will help us battle genetic diseases – Cloning can battle genetic diseases as cloning can save many people in the future. The counterpoint is that there is no hard evidence that solely generic genes do not play the biggest role in resulting diseases as there are other environmental issues.
3. Cloning will help us create children with as much natural talent as possible, with the best genes, and with best chances of quality life. – Cloning can also help us create children with more super people, because of this we can increase their quality life. The problem with this is that we're creating a human race. Another counterpoint is that health, genes and natural talent will be ignored. This can also bring about gene-based-racism in the future. They also worry that two types of humans will result with the superior and the interior race and as a result the interior race will eventually lose all their rights.
4. Cloning will allow some individuals to clone dead loved ones or a person that had special meaning to them – Cloning can allow people to clone loved ones. The counterpoint to this is that science has bigger issues and that the clone will be a different person in personality but with the same genes, even though they will look the same.

Artificial Intelligence (AI)

- Research and development + new innovation.
- The branch of computer science that tries to understand the nature of human intelligence and develop and design ways of simulating, duplicating or imitating human intelligence in computers or robots.
- The central property of human beings, intelligence—the sapience of Homo sapiens—can be simulated and then designed into a machine.
- How do we know if AI has been achieved?
    - *The Turing test*
    - Challenges of designing Artificial Intelligence

Ethics of A.I. Androids

- Labour-saving technology
- The Singularity
- Super-intelligence (The Frankenstein myth)
- Technological Fix - The Three Laws of Robotics
- Should androids have human rights?
- Sentience and Sapience = moral status.

<u>Week 5: The Social Shaping of Scientific Innovation: Funding Organizations, Scientific Fraud, Marketing Science, Spinning and Scientific Censorship</u>

Truths

"Not truth, but error has always been the chief factor in the evolution of nations...The masses have never thirsted after truth. They turn aside from evidence that is not to their taste, preferring to deify error, if error seduce them. Whoever can supply them with illusions is easily their master; whoever attempts to destroy their illusions is always their victim" –Gustave Le Bon

~ He talks about how the truth is so problematic now.
~ People are more willing to accept error/illusions then the truth and if someone were to challenge this illusion then then they will be destroyed.

~ Because of this people are less willing to change because they have a comfort zone that they want to maintain.

The Social Shaping of Science

- Scientific research, development, knowledge—and public perception—are socially shaped by the imperatives of a plurality of "interested" actors in society.
- Scientists
- Governments
- Corporations
- Mass-Media

~ Scientific research is shown as the basis for informing people to information.

~ The public relies on the scientific knowledge to made decisions as we believe this is absolute. The problem with this is that people can use this knowledge to manipulate their agenda and how they want it to look. For example, some government parties will screen out some knowledge and allow some to suit the needs of their parties. Because of this, we have only a small viewpoint of what is said and we as the people will believe this.

~ The core of science is to check out what is said so they must made should that what is said is creditable.

~ The way that scientists will do is using hypnoses to prove the truth. The dream is that science can be done without any constraints given that we believe them and that they are credible. The problem is that science is influenced from many external sources that can influence the truth.

~ Governments can shape the way that science will do things, same for corporations and mass media. They will shape it the way that they want to ask how it fits their own agenda.

~ Corporations are the biggest funders of science and because of this, they want results and if there is no results, then they will pull the plug on funding.

~ None of these actors have total influence on how to shape knowledge, but they all have some form of power to shape the truth.

Science in Society

- What role should science play in society?
- "Advances in science when put to practical use mean more jobs, higher wages, shorter hours, more abundant crops, more leisure for recreation, for study, for learning how to live without deadening drudgery which has been the burden of the common man for ages past. . . . But to achieve these objectives - to secure a high level of employment, to maintain a position of world leadership - the flow of new scientific knowledge must be both continuous and substantial." [. . .] "Science, by itself, provides no panacea for individual, social, and economic ills. . . . But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world."
- Dr. Vannevar Bush - "Science: The Endless Frontier," 1945

The Scientific Method: The Ideal

- Science - a systematic approach to gaining knowledge about the empirical world.
- "The scientific method"
- Scientists observe the material world, looking for patterns and make generalizations about such patterns.
- They are interested in understanding and explaining the way in which some aspect of the material world behaves.
- They propose a hypothesis—a tentative explanation suggesting why a particular pattern in the world exists.
- The hypothesis is then tested through the process of scientific experimentation.
- Science is the art of disproving, not proving. If a hypothesis withstands many attempts to disprove it, then it may be a good explanation of what is going on

Scientific Fraud

- Scientists may not try to disprove their hypothesis. Instead, they stubbornly design specific experiments to confirm the hypothesis
- Some scientists may willingly mislead, resulting in "scientific fraud": the intentional misrepresentation of the methods, procedures, or results of scientific research.

~ These are the worst case scenarios of science misleading us.

- Charles Dawson and the hoax of The "Piltdown Man."
- Elias Alsabti's plagiarized cancer research.
- Hwang Woo-Suk, dairy cow clones and the engineering of human embryonic stem cells by cloning.

"Voodoo Science"

Six warning signs that a scientific claim may well be fraudulent.

1) The discoverer pitches his claim directly to the media, without permitting peer review;
2) The discoverer says that a powerful establishment is trying to suppress his work;
3) evidence for the scientific discovery is only anecdotal;
4) the discoverer says a belief is credible because it has endured for centuries;
5) the discover has worked in isolation;
6) the discover must propose new laws of nature to explain an observation.

Robert L. Park *(2002) Voodoo Science: The Road from Foolishness to Fraud* (Oxford University Press),

Scientists Incorporated: Corporations and States

Individual scientists are shaped by the macro-pressures of the large-scale organizations which fund their scientific research and control the means of producing and directing scientific knowledge.

These include:

1) Corporations
2) Governments
3) Academic-Industry Relationships (AIRs)

~ Corporations and government institutions are the two primary sources of funding for science

Corporations and Commodity Science

- Corporations view science as a means of creating innovations to be patented and sold for profit.
- Commodity-oriented as opposed to public-oriented scientific R&D
- Innovations that will sell to the wealthiest consumers are those that will be privileged most.

~ Science is the meets to the need of creating innovations so it can patented and then be made for profit.

~ They are geared to the R&D. Because of this, it creates a competitive environment where they will compete for profits. Instead of it being product oriented, it is public oriented.

States and Science

- States and political parties that involve themselves in scientific R&D do so for political purposes.
- Political promotion of a candidate during an election (1960s – satellites; 1990s – Internet; 2000s – green tech)
- National Security – economic and geopolitical competition to be the strongest state (i.e. Cold War space Race between U.S. and Soviet Union)

~ Governments were the biggest funders of science in the 20th century, but now that has shifted to corporations in the 21th century.

~ States will invest in science because they are banking on the future, compared to corporations where they are risk averse and will only invest in something that will made profits not. Because of this, states will fund and then corporations will follow suit.

~ Some of the greatest innovations have come from state funded. For example, NASA, radio and the internet

~ Many politicians will also involve because they want to show the public that I'm moving towards the future and they have a presidential image that they have to maintain

~ National security is also another reason that states invest because they want to be ahead of other countries in the world. For example, the cold war with the arms race and the space race

Corporate-State Science: AIRs

- Academic-Industry Relationships (AIRs): public institutions (universities or colleges) partner up with private institutions (corporations) and money, resources and research is shared.
- 1861 - Massachusetts Institute of Technology (MIT)
- 1970s – 2010 - budget cuts – universities need money – administrators turn to private sector to jointly undertake scientific R&D.

~ We're now seeing a private and state sector interest between the too. There is a mutual benefit for the states and the private sector. Because of this, there are a lot of overlaps between the two. This is called a academic-industry relationship whenever the state offers up their service to the private sector and in exchange, both will made a profit.

~ The first case of an AIR is MIT.

~ Budget cuts in the 70s have lead to universities going to the private sector as there have been cut backs from the government and the university. Private sectors will use the services of the university/public sectors and they also made a profit from the founding's of the university.

AIRs –Conflict of Interest? (5 threats of conflict of interest)

1. Allowing company representatives on university governing boards (i.e. major decisions about the future of university research programs are shaped by companies not by students).
2. Giving industry sponsors first rights to intellectual property (i.e. public wealth that is combined with the sponsor to underwrite scientific R&D contributes to patents on new innovations which become the property of corporations; the benefits of the relationship are not shared).
3. Allowing industry sponsors to decide which research projects are funded and which are not (research that is funded will reflect their interests; research that doesn't, is not) This allows company censorship.
4. Permitting industry readers review of research before it is published in a public accessible source (i.e. industry readers can assess the knowledge produced by the public scientists they sponsor).
5. Allowing companies to delay or deny the publication of R&D results (i.e. if the industry reader determines the research is not in sync with their firm's goals or threatens the goals, the research will not be made public).

AIRs – Worries…

- Self-censorship
- Corporate censorship
- Examples: Betty Dong - Synthroid - the University of California, Dr. Nancy Olivieri – Apotex - University of Toronto Medical School and Hospital for Sick Children
- University as business - decline of academic freedom.

The Media-PR Spinning of Science

- The media chooses to interpret and frame scientific research projects in positive or negative ways, emphasizing its importance or lack thereof.
- Public relations of "doubt"
- "Smoke and CO2"

Exxon Mobil disinformation

- "In an effort to deceive the public about the reality of global warming, ExxonMobil has underwritten the most sophisticated and most successful disinformation campaign since the tobacco industry misled the public about the scientific evidence linking smoking to lung cancer and heart disease (Union of Concerned Scientists, 2007)
- ExxonMobil funneled about $16 million between 1998 and 2005 to a network of advocacy organizations that manufacture uncertainty about the claim that global warming is caused by carbon dioxide and other heat-trapping emissions.
- How?
- Manufactured uncertainty by raising doubts about validity of scientific evidence.
- Adopted a strategy of information laundering by using seemingly independent front organizations to publicly further its desired message and thereby confuse the public.
- Promoted scientific spokespeople who misrepresent peer-reviewed scientific findings or cherry-pick facts in their attempts to persuade the media and the public that there is still serious debate among scientists that burning fossil fuels has contributed to global warming and that human-caused warming will have serious consequences.
- Attempted to shift the focus away from meaningful action on global warming with misleading charges about the need for "sound science."
- Used its extraordinary access to the Bush administration to block federal policies and shape government communications on global warming. (Union of Concerned Scientists, 2007)

Democratize Science

- "The distortion of scientific knowledge for partisan economic and political ends must cease if the public is to be properly informed about issues central to its well-being and the nation is to benefit fully from its heavy investment in scientific research and education" (Nye, 2006)
- So, what's to be done?
  1) Forbid all censorship of scientific knowledge
  2) Require all scientists on scientific advisory panels to meet high professional standards;
  3) Ensure public access to government studies and the findings of scientific advisory panels;
  4) Create independent funding structures for science
  5) Create media watchdog groups to monitor junk science, lobbying and disinformation campaigns.

Week 6: The Political, Economic and Cultural Shaping of Technology: On the Social History of the Apple iPod

The Social Shaping of the iPod

Contexts for analyzing technology:

1) Capitalism (the broad macro-economic framework in which the iPod is produced as a commodity by Apple)
2) Government - patenting (the political process through which Apple acquired the monopoly rights to iPod design and trademark),
3) Development (the design of iPod by engineers and innovators within the Apple laboratory and the politics of design choices)
4) Designing iPod users (technology favours some kinds of identities, ideal user-types, over others)
5) Advertising-Communication-Marketing (messages about the iPods, which intend to cultivate demand for iPods by associating this technology with a number of cultural meanings/attributes),
6) Physical assemblage and destruction (the raw materials used to make the iPod, the assemblage of the iPod as a concrete technological artefact, and iPod's transformation into e-waste),
7) The uses of the iPod (the complex use and effects of the iPod in society)
8) Social reception to the iPod (political struggles and conflicts surrounding the iPod)
9) Negotiability of the iPod (the complex and contradictory uses and meanings of the iPod)

~ if you want to understand technology, we shouldn't be looking at the real world impacts that technology has in society.
~ You have to look at a big macro approach with you look at the political and the economical approach and then you have to look at the social point of view.
~ This approach will be used for the final paper.

iCapitalism

- Apple Inc. is a U.S.-based transnational corporation.
- The Apple iPod was developed to meet the economic goals of Apple: profit-maximization.
- The Apple iPod is a commodity. More than 200 million iPods have been sold; more than 8 billion songs have been download from Apple iTunes.
- Apple had 2008 worldwide sales of US $32.48 billion

~ Apple produces iPod commodities for sale on the global market using privately owned capital goods and a workforce of thousands of engineers, designers, and assemblers.
~ The apple iPod is a commodity; it's something that is made to be sold.
~ We can say that the iPod was made to make money as they are instrumental to the people that own the corporation.
~ Before 1979, portable music players did not come into existent.
~ Apple could only come into place if it wasn't set movement. For example, if napster didn't come into existent, then you probably wouldn't have gotten the iPod.

iPatent, iControl

- Before the iPod became a commodity, it was an idea. How did the idea become a commodity?
- States facilitate the transformation of a technological idea into a privately owned commodity through a legal system of patent granting.
- A patent is a set of exclusive rights granted by the government (or state) to the inventor for a fixed period of time (initially only 17 years, but this is changing); it grants the inventor the exclusive right to work under it, sell it in part or whole, or grant licenses for its exclusive or non-exclusively use.
- Patents provide economic incentives to invent by giving inventors the right to exclude others from making, using, and selling the invention.
- By the late 19th century and throughout the 20th century, industry leaders gained control of patents. The patent system increased the power of industry, often at the expense of individual inventors. As industry grew, "The inventor, the original focus of the patent system, tended to increasingly abandon his patent in exchange for corporate security; he either sold or licensed his patent rights to industrial corporations or assigned them to the company of which he became an employee, bartering his genius for a salary"(Noble 1997: 87)
- Corporations replaced inventors as patent holders (12% patents held by individuals; 88% of patents held by corporations)

~ The problem with the patent debate is that the patent doesn't recognize or protect the individual anymore compared to the last 200 years. Now corporations that hire these people o invent these products are the ones that are protected now. Because of this, the company is recognized as the person that created the product compared to the individual that is hired by the corporation.

iDesign

- Design choice
- Storage capacity
- Song software format

- Song usage
- **Planned obsolescence** – "the intentional practice by firms to build products in such a way as to expect them to become socially undesirable or non-functional, thereby compelling consumers to purchase another similar product after a certain period of time"
- Short Life spans
- Non-replaceable batteries
~ How does this design chose is made?
~ **Vendor lock-in** is when a customer is prone to only be depending on one seller and only that seller and cannot switch to another company without paying some kind of cost.
~ Apple is a planned obsolescence because of the short life span, lower battery player and the difficulty of replacing the batteries.

Marketing Design
- Advertising and marketing cultivate consumer demand
- Advertising is about difference; it uses imagery, text and sound to *differentiate* commodities produced by one firm from similar goods produced by others
- Use-value/sign-value
~ Advertising is used to differentiate the products even though the commodities are nearly one of the same.

"Emotional Design"
1. **Behavioural design** (the technology's use-value—how fast, efficiently and effectively the product can be used in relation to its intended purpose);
2. **Visceral design** (the aesthetic properties of the product—its look, shape, size, colour, materials, and feel—which appeal to its users sense of beauty;
3. **Reflective design** (the social status that the product confers upon its user and communicates to others in society).

~ Advertising and marketing considerations are factored into the design of a commodity.

iAdvertising
- by associating the iPod with a number of positive cultural meanings (energy, joy, urbanism, style, and youth) drawn from our society, the iPod advertisements attempt to persuade us to perceive the iPod player as something more unique than it actually is.
- advertising establishes an environment in which people loyally purchase iPod brand products, not always for what they *do*, but because of what they culturally *mean*.

iAdvertising – 'yes, it is me'
~ Psychological Status Obsolescence attempts to get the people to buy into the culture of getting the commodity as if your don't get the commodity and everyone else has one, then your now cool. Because of this, it creates a psychological affect more so then a behavioural or functional effect.

iUsers
- technologies are designed to favor some kinds of users over others. Technological design makes assumptions about the kinds of people that will be using technologies. Technological design, then, presumes specific kinds of ideal-type users, identities that have certain socio-economic characteristics, mental and physical qualities and/or skills.
- iPod is produced for high-income earning groups; it is a status commodity/lifestyle commodity. they till to target the high income youth because they don't have any debt or costs that they need to pay for.
- iPod uses us.
- How? iPod requires skills from users (knowledge about how to store and transfer music files, computer literacy); the consumption of ancillary products (docking stations, Nike + Pedometer, speakers, earphones, upgrades, etc.); credit cards (iTune bills); time shopping (computer surfing for songs); working (wages to spend on iPod goods).
- "iPod generation"

iAssembly
- Ipod is a globally produced commodity
- Apple is located in Silicon Valley, California but the iPod is not physically produced there. The iPod idea is developed in the U.S, but it is actually produced on a global market/international division of labour
- Minerals (tin, tantalum, tungsten) for iPod parts come from mines of Democratic Republic of Congo
- Hardware (Toshiba hard drive from Japan); display (Toshiba and Matshushita from Japan, outsourced to Philippines and China); video playback chip (U.S.-based Broadcom); four hundred parts come from various Asian states)
- $2 is the cost of physical assembly, done in China by female workers.

- 50% of iPod production costs go to retail, distribution and marketing in the West.

iPod impacts/changes
- What does the iPod change?
- Previous practices of music consumption and use
- How?
- More private/public music listening
- More control over audible environment
- Escape into private music bubble
- Music consumption more social
- Mix and match
- iTunes university

Other uses of the iPod
- iIslam
- iGod Ministry
- I learned about the iPod and environmentalist activism by downloading a lecture by Toby Miller from the University of California from iTunes and then listening to the lecture on my iPod touch while riding the TTC.

The Negotiable Politics of the iPod
- Youth, Deviance, Policing.
- Hearing Loss, Doctors.
- Environmental politics (Greenpeace struggles over the environmental footprint of iPod; Greenpeace applauded Steve Jobs' announcement that Apple's latest batch of revamped iPods - the iPod Touch, iPod Nano and iPod Classic - will now be free of both PVC and BFRs, along with an absence of mercury and the use of arsenic-free glass.
- Labour/Union politics (labor/union struggles over treatment, benefits, and wages of iPod workers in China and Taiwan; Apple undertook investigation of working conditions)
- Human rights politics (legislation over conflict minerals in the Congo; 'no blood for digital gadgets'; U.S. government)
- Copyright debates
- U.S. Foreign policy/War

iRaq - This series of guerilla posters popped up all over Los Angeles in 2004 — a perfect example of asymmetrical activism at its most subliminal.

<u>Week 7: Technology, Capitalism, and the Way we Work From The Industrial Revolution, to the Information Economy; Taylorism, Labour Saving Technologies and Automation</u>

Capitalism and Technological Innovation
- Capitalism is about profit maximization.
- What do corporations do with the profit accumulated?
- Keep it? Pay higher wages to workers? Lower commodity prices for consumers? Or, acquire more capital (technological innovation)
- To stay competitive, all firms must constantly upgrade, modify or enhance the technological forces of production.
- Technology that is useful to large-scale organizations that have money to spend (corporations) are privileged for development.
- What kind of technology do corporations demand? What is supplied?

Efficiency and Labour-Saving Technology
- Corporations want technology that makes operations more 'efficient"
- Efficiency means producing more commodities, more quickly, with less human input and effort.
- *Labour-saving technology*; firms seek out technology that has been designed to reduce, deskill or replace human labour.
- Technology can perform repetitive and complicated tasks more quickly than humans, eliminate the potential for human error, and reduce costs (by reducing the number of waged workers required to complete a task).
- Effects?

Deskilling
- Consequences of labour-saving technology.
- The skills of workers are transferred to machines.

- Labour-saving technology removes the subjective human skill needed to produce certain things, by making workers' routines dependent on machines and routinized machine-like functions.
- Deskilled workers are disempowered by tech: 1) take a lower wage than skilled workers; 2) are more easily controlled than skilled workers.

Automation
- Consequences of labour-saving technology.
- Automation is the process of having a machine or machines accomplish tasks hitherto performed wholly or partly by humans.
- By replacing humans with machines, management can exert total control over the production process, reducing uncertainty.
- Automation helps firms reduce the cost of production by eliminating the need to pay wages for labour related to the task.

Automation: Consumption Work
- Download previously paid work to consumer (and sometimes charge them for it).
- The automated teller machine (ATM);
- Automated check-outs at grocery stores;
- Self-serve gas stations;
- Online shopping at Amazon.com
- Self check-out ticket sales kiosk at cinemas.

19th century Resistance to Labour-Saving Technology: "Luddism"
- the beliefs of bands of early 19th-century English workmen that attempted to prevent the use of labor-saving machinery by destroying it
- Luddite: Any of a group of British workers who between 1811 and 1816 rioted and destroyed laborsaving textile machinery in the belief that such machinery would diminish employment; One who opposes technical or technological change

Managing "The Man Problem"
- The "**man problem**": worker resistance to work.
- Engineering the workplace: engineers try to understand and fix human problems in the workplace.
- Scientific Management
- Taylorism (Fredrick W. Taylor): "one best way" to do a job.
- Taylor broke down any given task into discrete actions, and then taught workers the most efficient sequences and the correct pace for each activity.

The Neo-Fordist Service Economy
- Fordist to neo-Fordist production (heavy and standard goods to intangible and customized goods)
- Rise of service industries: transport, retailing, recreation, health, media and communications, research.
- In 2008, there were 1, 790,000 retail jobs on average last year compared to 1,784,700 in manufacturing.

The Neo-Fordist Corporation
- Flexibility
- national to trans-national corporations – the global market
- in-house local to outsourced global production (contracting out of tasks to countries where labour laws are more lax and wages are lower: IBM "Java around the clock"; Dell "just-in-time" customization).
- Management centralization to de-centralization; management gurus promoted a "a work culture that embraced openness, cooperation and self-management" (Ross 2004: 9).
- Work is not just something you perform in exchange for a fair wage or life-long job security; it is now a "personal investment."

The Flexible Worker
- "No class in history has ever risen faster than the blue collar workers. And no class in history has ever fallen faster" (Drucker 1994: 56)
- Flex worker as contract worker.
- Here are some characteristics:
- adaptable and agile (the U.S. Department of Labour estimates today's students will have 10 to 14 different jobs by age 38)
- constant education and re-education
- individualistic and entrepreneurial
- self-motivated and self-reliant
- self-managing (do-it-yourself ethos)
- *Up in the Air*

- Empowering or disempowering?

Tele-work
- Tele-workers describe those workers who work at a distance from and for their employers, generally at home or from a remote site.
- ICTs enable people to work from anywhere, anytime .
- 10% of Canada's workforce is engaged in tele-work
- 42% of IBM's workforce is "mobile."
- Disappearing line between sphere of production and consumption, labour and leisure, the factory and civil society.
- ICTs "tether us" to our work 24/7
- At Best Buy's headquarters, more than 60% of the 4,000 employees can work from wherever they want, using ICTs.
- Margaret Hooshmand and the tele-presence system at Cisco

Virtual Work (and shopping)
- Second Life
- 1-800 Flowers sells virtual flowers to avatar consumers.
- Buying virtual Nike shoes and branded clothing.
- tele-salespeople in a virtual marketplace

Cultural Management
- Strategies employed to control the human element of production.
- Andrew Ross – "Jobs in Candyland"
- Management centralization to de-centralization; management gurus promoted a "a work culture that embraced openness, cooperation and self-management" (Ross 2004: 9).
- Self-actualization, self-expression and self-management
- Shift from just to 'humane' workplace (trade good jobs for recognition)
- Alt - "white collar sweatshop"

The Crisis Hypothesis
- Labour-saving technology makes the production of commodities more efficient and increases the supply of goods but paradoxically reduces the number of consumers available to buy them, reducing demand for commodities.
- Total automation would lead to an imbalance between supply of commodities and effective demand for them (over-production/under-consumption)
- Capitalism needs consumers with money to spend (and consumers are workers, which need good paying jobs).
- The endpoint of this contradictory process is a falling rate of profit (supply/demand dis-equilibrium).
- As wages fall or are completely eliminated as technology replaces workers, consumers are eliminated and effective demand is drastically reduced. Warehouses will remain full of surplus commodities. Production will slow. Profits will fall.

Structural Unemployment: Automating Everything?
- Old worries, new times.
- When agricultural production was mechanized, the farm workers went into factories.
- When factories introduced assembly lines and labour-saving machines, blue-collar workers and their children moved into office work and services.
- Today, all three of the traditional sectors of the economy—agriculture, manufacturing, and service—are employing labour saving technologies, forcing millions onto the unemployment rolls (Nye 2006 118-19).

What's to be done?
- *The compensation thesis.* When new technologies replaced workers in a given sector, new sectors always emerged. Job losses due to labour-saving machines are only a temporary displacement. New economic sectors emerge, producing new jobs, which eventually compensate those lost to machines. Problem: the number of workers required to make the new machines might be fewer than the number of workers displaced by labour-saving technology each year.
- *Retraining programs.* Equip workers with the skills they need to compete in the neo-Fordist economy. Problem: global capitalism and outsourcing of "white-collar" work and importing workers with visas.
- *Imagine an alternative.*

Speeding up: more work, no time

- Firms seek to speed up the 'turnover time' of a commodity, to reduce the amount of time it takes to produce, promote and then sell a good on the market. Firms that "can best intensify or speed up production are in the best position to survive" (Harvey 1989: 230)
- In 1972, a General Motor's Lordstown assembly plant in Ohio produced cars at a speed of 101.6 cars per hour—one vehicle produced every 36 seconds.
- AT&T telephone operators are expected to deal with one customer service call every 26 seconds as a condition of contract.
- Work as life ("workaholic")
- "Karoshi" (working yourself to death).

Speeding up: more work, less pay

- After decreasing from more than 60 hours a week in 1870 to about 40 in 1970, work-time has begun to increase.
- *People are working longer hours, more efficiently, but for less money.*
- Americans now work an average of 1,979 hours a year, about three-and-a-half weeks more than the Japanese, six-and-a-half weeks more than the British and about twelve-and-a-half weeks more than their German counterparts.
- Americans work a month longer each year than they did 20 years ago.
- MSNBC reports: "the American work force produced, at an annual rate, 6.4 percent more of the goods they made and services they provided in the second quarter of this year compared to a year ago. At the same time, "unit labour costs" — the amount employers paid for all that extra work — fell by 5.8 percent."
- Why?

1. Technology and Social Class Power

- "The big winners of [the neo-Fordist economy] are members of a very narrow elite: the top 1 percent or less of the population" (Krugman 2009: 136).
- Between 1970 and 1995, the richest 20 percent of Americans increased their slice of the economic pie from 40.9 to 46.9 percent, while the remaining 80 percent shared the loss
- CEOs have seen their income rise from about 30 times the average worker in 1970 to more than 300 times now.
- Among all the Fortune 1000 companies, nearly 400 CEOs got bonuses in 2009, taking home $402 million in annual bonus pay. The real wages of North American workers have declined by more than 13% since peaking in 1973.

2. Technology and Consumerism Triumphant?

- Culture-ideology of consumerism: mass consumerism as a way of life.
- Rather than working less to earn more, many people actually choose to earn more by working harder.
- We are willing to overwork ourselves to gain the means to accumulate more stuff. We may be the hardest working generation in history, but we also have the most stuff.
- The allure of commodities is irresistible; "I shop therefore I am" has replaced the Enlightenment dictum "I think therefore I am."

Dialectics of Techno-Capitalism

- In capitalism, the pace of social change appears to be quickened as industries competitively struggle to produce more potent and profitable means of production (new technologies); yet, the unequal social relations of production (the division of society into owners of the means of production and workers) remains a constant.
- Ultimately, technology is not the singular determination of social change; it is the social power relations that technology both limits and enables and the struggles over such technology that makes change.