Week 2: Being wary of technological determinism

Pacey, Arnold: "Technology: Practice and Culture":

- Different uses of snowmobile by people in different cultures
    - **Technology is culturally, morally, and politically neutral**
    - Technology can be used for good or ill

- Galbraith defines technology as: the systematic application of scientific or other organized knowledge to practical tasks (*…by ordered systems that involve people and organizations, living things and machines*)

Pacey, Arnold: "Beliefs about progress":

Measuring progress:
- How progress is evaluated depends on circumstances/whether there is a shortage of land or energy
- Output figures do not represent progress if they are taken out of context

- Improvement of machines (British) are associated with the **INDUSTRIAL REVOLUTION**: which was primarily a technological revolution
- The development of steam for the factory produced a new economic system: capitalism
    - Factories were no longer glorified workshops, they had machines powered by ppl.
    - Enforced pace of work and fixed hours, work was fragmented and deskilled
    - **DIVISION OF LABOUR** (complex tasks broken down into series of simple operations)
- Recent years: division of labour and deskilling of work have extended to many occupations, very often aided by the computer
- Effort to dissolve the labour process as a process conducted by the worker and reconstitute it as a process conducted by management

Determinist deductions:
- Two contrasting beliefs about progress:
    - Linear view: smooth, steady, upward development
        - Oversimplifies, false optimism
    - Context of innovation is more broadly considered (technological determinism):
        - Technical progress today is no longer conditioned by anything other than its own calculus of efficiency
        - Because technology carries its own culture with it, it also determines the ownership structure of industry
- **Technological determinism: presents technical advance as a process of steady development dragging human society along in its train**
    - "Machine mysticism": idea of technical advance as the leading edge of progress
- Radio and television evolved from an urbanized institutional background in which there was a growing need for communications of all kinds
    - Ex. television was **"an effect of particular social order"**
    - Two ways to describe tech. history:
        - How technical developments grew on one another, influencing social change
        - How organizational development led to new technology
    - British governor minister: View of progress

        - You either accept innovation completely, or you opt out
        - There is no stopping technology

Movements in progress:
- View of factors which interact in “mutually enhancing” ways at especially creative moments
- Invention is not a linear trend, it is peaks and troughs, with peaks occurring as linked developments in new technology systems
- When one subject is exhausted, we talk about something else
    - Habits may change innovation

Technological Determinism

Tokens --> caused the growth of --> farming villages

Cultural Determinism/ Social Shaping of Technology

Farming villages --> needed to keep track of things, leading to the development of --> tokens

or, more simply put,

Farming villages --> caused the development of --> tokens

Week 3: Civilization without writing, development of alphabets

Schmandt-Besserat, Denise: The earliest precursor of writing*:*

- Significance of **tokens** with respect to communication, social structures and cognitive skills

Symbols and signs:
- Symbols: things whose special meaning allows us to conceive, express and communicate ideas
    - Ex. cross = Christianity, colour black = death
- Signs: subcategory of symbols, convey meaning but they differ in carrying narrow, precise, and unambiguous (clear) information
    - Ex. sign I = 1
- Symbols: characteristic of human behaviour, as old as humankind itself
- Symbols: ephemeral (short-lived) and do not survive the societies that create them
    - The meanings they carry are arbitrary (subjective)
        - Ex. black might mean death somewhere, but life somewhere else

Upper Paleolithic and Mesolithic symbols:
- Use of ocher and notched bones still
- Some view notched bones as tallies to keep track
- Linear markings represent first attempt at storing and communicating concrete info
- This first step in “data processing” signified two remarkable contributions:
    - 1. Tallies departed from use of ritual symbols by dealing with concrete data
    - 2. Notched signs abstracted data in several ways
        - Translated concrete information into abstract meaning
        - Removed data from their context
        - Separated the knowledge from the knower

- **These graphic signs brought a new way of recording, handling and communicating data, and generated an unprecedented objectivity in dealing with information**
- No way to verify their meaning, many different interpretations
- People also used pebbles, twigs and grains for counting
    - Pebbles lack capacity to indicate what item is being counted
    - Because of nonspecific, pebbles, twig **AND NOTCHES ON BONES** did not allow one to keep track of more than a single category at a time

Neolithic symbols:
- **Clay tokens** molded in distinctive shapes, each representing a precise quantity of a product

A new form:
- Clay tokens were manmade
- Pebbles, twigs, grains: secondary use for counting
- Tallies: altering a bone, communicated meaning
- Tokens: artifacts created in specific shapes (ex. cones, spheres)
    - Each clay token (shape) was a distinct sign with a single, discrete significance
    - They were "concept signs", pictography
- They created a *system*, many interrelated types of tokens with meanings
    - Made is feasible to manipulate information of different categories of items, which was the first of complex data processing
    - Store unlimited information for infinity
- **Token system was the first code:** earliest system of signs used for transmitting information
    - The repertory of shapes was systematized
    - Tokens were used according to rudimentary syntax (hierarchy order)

- Tokens dealt with economic data, each stood for 1 precise amount of a commodity
- Unlike tallies (quantitative), tokens showed qualitative information
- Neolithic symbolic system of clay tokens > tallies because of advantages:
    - System was simple
    - Timely

A turning point in communication and data storage:
- 1) Tallies → 2) tokens → 3) pictographs
- Tokens laid groundwork for invention of pictograph writing
- Drawback of token system: its format
    - Volume of tokens
    - Large quantities needed
    - Not always permanent, could be separated
- Pictograph tables inherited from tokens the system of a code based on concept signs, a basic syntax, and an economic content
- But pictographs were better
    - Permanent
    - Accommodated more diversified information
    - Numerals were created
    - Became phonetic
- First traces of visible symbols: funerary offerings, body paintings (Neanderthals)
- First signs: tallies, rituals and concrete information

Innis, Harold: Media in ancient empires*:*

From stone to papyrus:
- Disturbances in **Egyptian** civilization involved shift from emphasis on stone as medium of communication to emphasis on papyrus

Papyrus technology: Unlike stone, papyrus was very light (it was made from a plant)

Thought gained lightness:
- Allowed for cursive writing, rapid writing
    - Stone was more difficult, upright position
- **By escaping from the heavy medium of stone, thought gained lightness**

Clay and cuneiform

Marcia Ascher and Robert Ascher: The Incas and the Quipu*:*

- Quipu: collection of cords with knots tied in them
    - Usually made of cotton, dyed one or more colours
    - Census results, output of gold mines, contents, were all put on quipus
- Several important properties:
    - *Can be assigned horizontal direction*
    - *Can be assigned vertical direction*
    - They have levels
- Cords can be associated with many different meanings depending on their levels, directions, positions along main cord, and more
- Colour coding (colour is an important part)
    - Meanings of colours and cord positions are used in combination with each other
- Cords with knots tied along them represent numbers
- **Contract** between Sumerian (stone scribes) and Egyptian (papyrus scribes) is that quipus use no instruments to record
- **Contrast** between Sumerian (no colour) and Egyptian (black and red) is that quipus use hundreds of colours
- **Contrast** between Sumerian (recorded on planar surface) and Egyptian (recorded on planar surface) is that quipus are recorded on no surface at all

Robinson, Andrew: Origins of writing*:*

Writing: greatest invention, made history possible

The function of writing:
- **Political leaders have used it for propaganda purposes**
- To predict the future (and later, what actually happened could be added)

The origin(s) of writing:
- **Writing began with accountancy**
- Needed better memory: recording transactions in dependable, permanent form was essential
- **Origin of writing was theory of pictograph origin**

The development of writing: Script borrowings/takings from culture to culture

We use semantic and phonetic writing

Modern “hieroglyphs”: Ex. →, phone symbol

Week 4: Orality, literacy, writing, and society

Havelock, Eric: The Greek legacy*:*

- Greek did not just invent alphabet, they invented literacy and the literal basis of modern thought
- Alphabet had to pass through localization before being standardized throughout Greece
- It democratized literacy, made democratization possible
- Acoustic efficiency of script was psychological: once learned it, didn’t have to think about it
- **Alphabet secondary use: prose (text) recorded and preserved in quantity**
    - **No need for memorization, prose will be remembered and repeated, rhythm**
- Alphabet made possible production of novel/ unexpected statement, unfamiliar/”unthought”

Readership before the printing press:
- **Written word carried the value of a commodity in limited supply**
- To overcome limitations, alphabet had to wait for invention of printing press

Logan, Robert: Writing and the Alphabet effect*:*

A new mode of information processing:
- Writing organizes/stores information differently than speech, its a different form of language
- **Alphabetic writing= information processing**

Ong, Walter: Orality, Literacy, and Modern media*:*

- Primary oral culture: no looking up information, nothing
- Sound exists only when it is going out of existence, it is evanescent, there is no way to stop sound and have sound (at same time)

You know what you can recall: mnemonics and formulas:
- **What people “know” today, has been made available to them in writing**
    - **Oral culture has nothing to recall if no writing?**
- **In oral culture, to think back, you have to do thinking in mnemonic patterns, shaped for ready oral recurrence**
    - Patterns, rhythms, breathing processes, formulas, rhymes
    - All expression and all thought is to a degree formulaic

The interiority of sound:
- Sound exists only when it is going out of existence
- Unique relationship of sound to interiority when sound is compared to rest of the senses
- Sounds all register the interior structures of whatever it is that produces them
- Sound comes from every direction at once, you can hear it all, you are at center of auditory world
- Sound is a unifying sense
- Interiority and harmony are characteristics off human consciousness’s

- Consciousness is entirely interiorized for a person, inaccessible to the outside

- Electronic technology has brought us into the age of **secondary orality**
  - It resembles the old, but, it is a more deliberate and self-conscious orality, based permanently on the use of writing and print

Plato: Phaedrus*:*

- Socrates says there is an issue with truth in general and claims that if we could discover by ourselves what is true about appropriateness in writing we would not need to rely on stories
- There is aptness and ineptness in connection with writing (appropriate and useless?)
- **Socrates says to Phaedrus** that writing shares feature with painting, if you question anything that has been said to learn more, it continues to signify same thing forever
  - Writing can not defend or support itself
- It is a discourse that is written down, with knowledge, in the soul of the listener, it can defend itself and it knows for whom it should speak to/remain silent
- Which speeches are written artfully and which are not?
  - Must know truth on everything you are writing about, define each thing
  - Must understand nature of the soul

Week 5: Printing Press:

Eisenstein, Elizabeth: Aspects of the printing revolution/Rise of the reading public:

- Shift from hand writing to printing= revolutionized all forms of learning
- Scribal culture:
  - Conditions of scribal culture (before printing came about) can only be observed through a veil of print
  - Difficult to understand existence of a distinctive literary culture based on hand copying
  - Scribal culture texture was so fluctuating, uneven and multiform that few long-range trends can be traced
  - Quantification is not suited to the conditions of scribal culture, untrustworthy

Postman, Neil: The printing press and the new adult:

- The invention of printing press with a movable type: created a new symbolic world that required a new conception of adulthood
  - New adulthood excluded children, other world for children to inhabit: childhood
- Printing links present with forever, like a time machine
- Innis said that machines change our habits and change our habits of mind
- Printed book made a tradition: the isolated reader and his private eye
  - Orality became muted
- Knowledge gap started childhood
  - Sharp division between those who could read and those who could not
- Literate Man & printing press had been created and he left behind the children
  - The young would have to *become* adults, to accomplish this they required education
  - Adulthood became a symbolic, not biological achievement

Carter, Thomas: Paper and block printing- from China to Europe:

- **China invented paper**, printing lies in use of paper
- Write on paper with bamboo (for longer messages/books) and wood (for shorter messages)
- The use of paper made rapid headway, but it was regarded as cheap substitute (to bamboo and silk writing material)
- **Earliest existing block prints: turn to Japan**

Graff, Harvey: Early modern literacies:

Print, reform, and reformation:
- Protestant Reformation: said to be one of the greatest positive forces toward spread of literacy and schooling
- Can be viewed as an educational reform movement, start with the young, teach in schools
- Luther's reform: made theses, spread handwritten copies
- 2 most significant developments of reformation:
    - Contributed to printing press
    - Use of the vernacular

Literacy in colonial North America:
- North American colonial settlers were not born modern or universally literate
- Literacy=social status (not economic)

Week 6: Age of Print into Age of Telegraph:

Thompson, John: The trade in news: (printing press)

- Development of printing transformed patterns of communication in early modern Europe: gave rise to periodical publications reporting events and information political/commercial
- 4 types of pre-print communication network:
    - Network of communication established and controlled by Catholic Church
    - Networks of communication established by political authorities
    - Network of communication linked to expansion of commercial activity
    - Information transmitted to towns/villages via networks of merchants, peddlers, travelling entertainers
- Regular journals of news → printed weeklies → newspapers →
- First newspaper: coverage of Thirty Years War, 1620
- Most newspaper covered foreign events/news, distant parts of Europe

Standage, Tom: Telegraphy: the Victoria Internet

- Telegraph: most rapid extension of influence ever, grew so fast, couldn't even keep track
- So important for business communication, powerful, useful, hundreds of messages send through mail lines, way better than regular mail delivery
- Pony express: a mail delivery system involving horse and rider relays
    - 10 days for pony to deliver, instantly for telegraph to deliver
- Most important commercial transactions were now made between correspondents several hundred miles apart
- French invented and named the telegraph
- Only rich could use, very expensive

- Experiments were done with sending messages along underwater telegraph cables had been going on since almost the beginning
    - **Coated a wire in rubber and encasing it in a lead pipe, sending messages along submerged cable**
  - Used **gutta-percha**: this insulated wires now
- **John Brett and Jacob Brett** created underwater with gutta-percha
  - Problem solved w/ early underwater telegraphy: matter of making sure cable properly insulated, strong not to break, heavy enough to sink, messages not sent too quickly

Carey, James: Time, space and the telegraph

- **The telegraph marked the decisive separation of "transportation" and "communication"**
  - Telegraph allowed symbols to move independently of geography, faster than transport
- **1) Reorganization of commodities market (commercial significance)**
  - Principal method of trading: **arbitrage: buying cheap and selling dear by moving goods around in space**
    - Arbitrage declined when telegraph came
  - **Effect of telegraph:** it evens out markets in space
    - Puts everyone in same place for purposes of trade, makes geography irrelevant
- **2) Commodity trading moved from trading between places to trading between times**
  - Telegraph invented the future as a new zone of uncertainty and a new region of practical action
  - **Time as a new region of experience, uncertainty, speculation, and exploration was opened up to the forces of commerce**
- **Growth of communication (by telegraphy) in 19th century had practical effect of diminishing space as a differentiating criterion in human affairs**
  - For purposes of trade, everyone was in the same place
  - Decontextualization of markets: prices no longer depended on local factors of supply and demand (arbitrary used these), but responded to national and international forces

Week 9: Thinking about the future: Prediction and blindness
Barlow, John Perry: The Future of Prediction*:*

- **The best way to invent the future is to predict it**, if you can get enough people to believe your prediction
- There is no substitute for being there and there never will be
- Prediction: the internet is going to do for jet fuel what the personal computer did for paper (personal computer did not eliminate use of paper)
- People predicted by 2000 that machines would be doing most work and people would be doing none
  - **Barlow believes this prediction has actually came true, and no one has noticed**
- We are in a transitional period between old industrial model and new information economy
  - We cling to the models of the past even though all of these practices are inimical to the real creativity that is the base resource of an information economy
  - We fail to recognize the value of leisure because we can't figure out a good way to pay people not to work in the conventional sense
- **We often give our predictions too little time to come true**
  - If we apply predictions to the *present*, they don't seem quite silly
- **Invention of telegraphy**: first ability to manifest oneself instantaneously over great distance
  - **Established a continuous chain of developments,** the internet is the most recent

- Every synapse on this planet will one day be wired directly and continuously to every other into every other synapse on this planet
- Internet: may be in such an early phase of development that we don't know what it is yet
- *** We have in our grasp tools that are not yet known to us, that we will use in ways that are entirely **unpredictable**
- When people talk about technology, they are almost referring to tools that were invented after they were 25
    - Not cars, not shoes, not language (which is technology)
    - Talking about technologies invented after their minds gelled, or calcified
- Most **dystopian** (where everything imagined is unpleasant or bad) views are produced by people who have forgotten how to dance with the future
    - Dancing with future allows people to live well in these confusing times
    - Requires humility and optimism
    - Patience to await their eventual fruition, ability to discard cherished visions
- Utopia: ?? When a new technology bursts forth on the scene, some will become immediately overexcited
    - Get so excited and think about how great everything is going to be
    - **Utopian**: imagination in which everything is perfect, idealistic
- **Macromyopia:** the first predictions about a socially transforming technology are usually inflated, while the long-term effects are usually deflated
    - Takes about 30 years for anything really new to arise from an invention
    - Exponential growth curves is basis for macromyopia
- **Moore's Law: trend we can certainly count on to have enormous effects on the foreseeable future**
    - **Predicted that processor speed would double every 18 months**
    - **It turned out to be true because we insist that it be so, an example of inventing the future by predicting it**
- The Net (internet): trend we can count on to have enormous effects on the foreseeable future
    - Growing in exponential growth curve fashion, rapidity
- As we attempt to divine the future, we are defining it on the basis of our extremely limited experiences and cultural fibers
    - We can see only what we are prepared to see
- People are personally threatened by optimism, especially in regard to the potential of the internet to promote positive change
- The internet is not a medium, **it is an environment**
- Barlow does not believe that internet will diminish the human spirit
    - Does not believe that individual human personalities will be subsumed into this vast organism
- The internet: ability to make something that is more than human, as we remain unchanged
- Final prediction: expect us to become, together, a God

Nye, David: Technological Prediction: A Promethean Problem*:*

- Technological prediction in 3 parts:
    - Prediction
    - Forecasting
    - Projection
    - We predict the unknown, forecast possibilities, and project probabilities
    - These terms are used to correspond to the division between the terms "*invention*" and "*innovation*" and "*diffusion*" of technologies

    - *Invention*: ideas or concepts for new products and processes
    - *Innovation*: reduction of an idea to the first use of sale
    - *Diffusion*: their widespread use in the market
- Prediction concerns inventions that are fundamentally new devices
- Invention vs. innovation:
    - Invention: electric light, telephone, and then computer, radio
    - Innovation: new kinds of filaments for lights, improvements in telephone operation
- Projection: concerns the future sales, profits, market share, and so forth of new models of established technologies
- Prediction vs. forecasting vs. projection (thought of as points on a continuum):
    - Prediction: long term or indefinite periods
    - Forecasting: immediate choices on getting a new device perfected, into production
    - Projection: shortest time frame, deal with new models of devices already competing
- On the TV: you hear forecasting and projection, not prediction
- Forecasting and predictions or technology are **little** narratives about the future
    - Not full narratives of utopia, but they are usually presented as stories about a better world to come
    - Present an innovation as not just desirable, but inevitable
    - Self-fulfilling stories
    - Inventors need to do this if they want venture capital and companies need to market scenarios to get a return on investment

Six propositions about predicting technological innovation:

1. **Prediction is difficult, even for experts**
    - Back in the day, technological predictions by any method were not accurate
    - Prediction = difficult, what about forecasting? Easier, it deals with already existing technologies and relies on existing trends
    - Social trends are difficult to anticipate, general forecasting is risky, failure is common
    - However, technological forecasting is a little better
    - Even a market that is stable (projection works well here) is always going to have competing products and expanding and contacting firms
    - Any trend that seems obvious and any pattern that seems persistent may prove unstable because of changes in economy, changes in technology, or a combination of social and technical factors
    - **The farther you predict, the less perspicacious!!!**

2. **New technologies are market-driven**
    - Why forecasts and predictions so hard to make? Because **CONSUMERS**, not scientists, often discover the next big thing
    - Just because something is technologically feasible, don't expect public to rush out and buy
    - Inventions are fundamental to contemporary society (ex. telegraph, telephone)
        - When these appear, creating demand is more difficult than creating supply
    - ***** 4 of the most important inventions: (initially understood as curiosities)**
        - The telegraph, telephone, phonograph and personal computer
        - Machines do not sell themselves, need to establish foundations
    - Electricity had to compete with other sources of light and power
    - Marketing a new technology: had to provide the electricity AND provide education and support service

3. **Innovations proliferate rapidly**
    - Most innovations plug into an existing system
    - The average **consumer** plays a **leading role** in the market for **innovations**
    - People spend far more money on things that use electricity than on the electricity itself

4. **The best design does not always win**
    - We can not be sure about what design will win a place in the market
    - Marketing is the crucial ingredient in selling, not technological excellence
    - If the technologies are shaped by the market, the market in turn is inflected by social and political values

5. **The uses of new products are hard to foresee**
    - Even if we predict which new technologies are possible and which will thrive in the market, we fail to foresee how they will be used
    - The public uses technologies for different uses than designed to, not anticipated
    - Computers used to change production process
        - Used to make a firm more transparent, less hierarchical and more democratic
        - Takes on unexpected functions
    - The **internet** was made for Cold **War** defense, but turned in to so much more
        - Can't control or monitor what internet is used for
    - **Technologies conceived for one clearly defined use acquires other unpredicted uses over time**

6. **A technology's symbolic meanings may determine its uses**
    - Not purely functional items, there is powerful symbolic meanings and associations
        - Ex. wealth
    - Technologies have symbolic meanings and nonutilitarian attractions

Predictions as narratives:
- They're social processes varying from one time period to another, from one culture to another
- Shaped by social context, an extension of human lives
- No technology is a thing in isolation, each is an open ended set of problems and possibilities
- The accuracy of technological prediction is unpredictable
- *American Technological Narratives:*
    - *Utopian:* (positive)
        - **Natural:** technologies are natural outgrowths of society
        - **Ameliorative:** new machines improve everyday life
        - **Transformative:** new machines reshape social reality
    - *Dystopian:* (negative)
        - **Hegemonic:** a minority uses technologies to gain/maintain control over others
        - **Apocalyptic:** new technologies are agents of doom
        - **Satiric:** new machines unexpectedly make life worse or lead to the re-verse of expected outcomes

Week 10: Reproducing sound and image: Photograph and phonograph

Ulrich, Keller: Early Photojournalism

- Prior to it being commercially feasible to reproduce photographs as photographs in large newspaper editions, continuous tones of the camera image had to be transcribed into line engraving which meant that there was little incentive for newspapers to employ photographers on a regular basis
    - Hiring photographers for news reporting/press was only prompted by major wars
        - **Brady's two-year campaign covering the Civil War was temporary effort of news gathering machinery**
            - Publicity, no profits
            - Galleries
    - Sketches were produced instead
        - Lower cost
        - More exciting
        - Images out of cameras arrived too late and couldn't record fast action
- Turn of the century:
    - Cameraman: took photographs that were reproduced *as* photographs on the magazine page, submitted these
    - Editor: had to think of effective layout strategy of all these pictures
        - Found intelligent, witty solution: photojournalism would be a matter of teamwork to add creative dimension
            - News photography has developed a captivating, dynamic style
    - "Birth" of photojournalism *predates* rather than *postdates* Roosevelt's presidency
    - WWI= photojournalism established itself technically and aesthetically as a professional career and social institution

The constitutive elements of photojournalism:

- **Three basic ingredients in the organizational infrastructure of early photojournalism:**
    - *** A new brand of newspapers using halftone illustrations based on photographs
        - Advent of the halftone printing block that prompted the transition from pictorial to photographic journalism (used to use woodblocks)
    - A new generation of photographers equipped with new, smaller, faster cameras
    - A new type of news agency distributing photographs rather than texts
- 1) Halftone pictures:
    - Development of ability to print large number of halftone pictures was significant and amounted to a radical redefinition of picture journalism
        - Phenomenon of *permanent, institutionalized supply of news pictures to mass audiences*
    - **Quantities and quality within this revolution**
        - Could print more, and higher quality photos than woodblock or others
        - Reality
- 2) Press photographers:
    - Aside from amazing halftone pictures, photography could now be used to cover practically the whole range of newsworthy subjects
        - This was made possible by gelatin emulsion
    - Large expansion in numbers of cameraman and press workers
    - Everything could take the form of a news photograph
    - A point is reached where no important event can take place without expensive photographic coverage
        - Photography provides witness of the event in progress
    - The fact remains that as a class, early photojournalists were still relatively unsophisticated in their use of aesthetic and discursive strategies

- 3) Photo agencies:
    - The emergence of agencies disseminating photographic news pictures
        - Not even the greatest photographers could cover every important news event
    - Mechanism was needed to supply newspaper with pictures of noteworthy occurrences beyond reach: picture agencies
        - They would secure photographs of worthwhile subjects for sale to subscribing newspapers
    - Photo agencies not only bought pictures from outside sources, they also employed their own staff photographers, some of whom generated unprecedented in-depth reportages of the political scene

Sontag, Susan: On Photography

- **The photograph is to appropriate the thing photographed**
- Photographic images: provide most of the knowledge people have about the look of the past and the reach of the present
- *** Writing is interpretation, like painting and drawings too
    - *** But photographed images are pieces of the world, not statements
- Photographs are reduced, blown up, cropped, retouched, doctored, tricked out
    - They age, are plagued, disappear, become valuable, get bought and cold, and are reproduced
- Photographs invite packaging (ex. photo albums, frames on walls, museums, etc.)
    - Book is most influential way of arranging photograph, results in longevity & immortality
    - But, the photograph in a book is reproduced ad loses essential quality
    - Photographs transcribed in a film is another way of packaging them
- **Photographs furnish evidence**
    - They prove anything we doubt when we are shown a photograph of it
    - Ex. was first used to record convicts
    - It is used to prove that something happened/exists
    - **Photographs are the most accurate representations of visual reality**
- Unlike paintings or prose, photographs can be treated as a narrowly selective transparency
- Pictures capture reality, not just interpret it
- Images which idealize (fashion, animal photography) are no less aggressive than work which makes a virtue of plainness (class pictures, mug shorts)
- There is an aggression implicit in every use of the camera
- Unlike painting, photography implied the capture of the largest possible number of subjects
- Camera technology promised to democratize all experiences by translating them into images
- First camera: made in France and England in the early 1840s
    - Only inventors and buffs operated them
    - No amateurs
- It was only with its industrialization that photography came into its own as art
    - Industrialization provided social uses for photography
- Photography is now a social rite, a defense against anxiety, a tool of power
- **Memorializing the achievements of individuals considered members of families is the earliest popular use of photography**
    - Wedding photography
    - **Cameras go with family life**
    - **Most households have cameras, households with children are twice as likely to have a camera**

    - **Each family constructs a portrait-chronicle of itself**
        - A portable kit of images that bears witness to its connectedness
    - **The nuclear family: photography came along to memorialize, to restate symbolically, the imperiled continuity and vanishing extendedness of family life**
- **Photography and tourism**
    - Useless to travel without a camera
    - Photographs offer evidence that a trip was made, fun was had, trip was carried out
    - A way of certifying experience
- Photography is also a way of refusing experience
    - By limiting experience to a search for the photogenic
    - Travel becomes a strategy for accumulating photographs
    - Taking photos is soothing, taking a picture gives shape to experience
- People robbed of their past seem to make the most passionate picture takers
- **Photography has become one of the principal devices for experiencing something, for giving an appearance of participation**
- ***** All peoples feelings and experienced are equalized by the camera**
- ***** Picture taking is an event itself**
- **Photography is essentially an act of non-intervention**
    - Person who intervenes can not record, person who is recording can not intervene
- ***** Using a camera is a form of participation**

Edison, Thomas: The Phonograph and Its Future

This is an attitude of phonograph at its birth:

- Phonograph commanded profound and earnest attention throughout the civilized world
- It is an invention that brings its possibilities within range of the speculative imaginations of all thinking people, as well as to the most universal applicability of the foundation principle
    - The gathering and retaining of sounds
- Public was confused and inaccurately informed of results and effects of the phonograph
- Possibilities of the phonograph are limitless and probabilities are so numerous
    - **Can't draw the dividing line**
        - It can extend almost indefinitely
- By the application of power for uniformity of movement, and by attention to many unimportant minor details
- *Letting-writing*: now being perfected in mechanical details will be the standard phonograph, may be used for all purposes
    - **The main utility of the phonograph is the for the purpose of letter writing and other forms of dictation**
- The phonograph letters may be dictated at home, or in the office, the *presence* of a stenographer *not being required*
- Dictation is rapid
- *Dictation*: all kinds and manner of dictation is permitted
    - Can speak, can use letters
- **The increased delicacy of the phonograph, will enlarge the field**
- *Books*: may be read aloud into the phonograph
- *Educational purposes*
- *Music*
- *ETC.*
- *Lastly, used to perfect the telephone and revolutionize present systems of telegraphy:*

- A very simple device can be used to do duty for both the telephone and the phonograph
    - Speaker can simultaneously transmit and record his message
    - A correspondent can hear it while it is being recorded (telephone)
- Carbon Telephone: perfected and invented by the writer

Sousa, John Phillip: The Menace of Mechanical Music

This is an attitude of phonograph after its adoption

- Phonograph:
    - Sweeping across the country so quickly, invaded every community
    - **Mechanical device that can sing us a song, play piano for us, in substitute for human skill, intelligence, and soul**
    - Marked deterioration of American music, owners and investors have developed and exploited these devices
    - Mathematical and mechanical being paramount of music has swayed away from the emotional and soulful
    - Twentieth century: these talking and playing machines reduce expression of music to a mathematical system
    - ***** Phonograph's mechanism seems inventive and genius because of improvements but, a performance by the phonograph could not inspire people to grasp human possibilities of the art**
- ***** There is a menace in machine made music**
- Mothers playing phonograph to put babies to sleep: will they not sing (if they sing at all) without soul or expression?
- "Music teaches all that is beautiful in this world, let it not hamper with the machine that tells the story without variation, without soul, no joy"
- He is clearly against Edison's beliefs that this was a revolutionary device, he is not for it
    - Has changed since its birth, attitudes have changed towards it being bad

Week 11: Sending sound: Telephone, Radio

Fisher, Claude: The telephone takes command

Founding the telephone industry:

- Alexander Graham Bell was trying to improve telegraph when he constructed the first telephone in 1876
    - Gave demonstrations around country of his "wonder", sometimes borrowing telegraph wires for long distance calls
- Making a business out of a novelty:
    - Backers of telegraph work was Bell's father-in-law and father of one of his speech students
    - In 1877, the 3 men reorganized as the Bell Telephone Company and began seriously marketing the device
    - The opening of the first telephone exchange, or switchboard, was a profound step (1878)
        - Now, any subscriber could be connected to one another

- Key financial decision: determination that the company would lease the instruments and license local providers of the telephone service
  - Bell thus controlled both the service and consumer's equipment
  - Provided the instruments and technical advice, and in turn collected rental fees
- Close supervision allowed company to covert a confederation of local franchisees into a "system" of local "Bell Operating Companies"
  - Set common nationwide policies
- Had many competitors such as Western Union (who they sued)

The Era of **Monopoly**: 1880-1893:

- The typical telephone system was a cumbersome affair
  - Instrument itself was a set of three boxes
- Bell responded to challenges/competition by rebuilding its hardware
- Theodore N. Vail is a mythical figure in the telephone industry and corporate history
  - Hubbard Vail
  - Established policies for high-quality service
- Common practice: charge customers a flat rate for telephone service, allowing unlimited calls
  - They tried to change this and charge per call but customers were angry
- Edward J. Hall: message-rate enthusiast (opposite of unlimited)
  - Established the first Buffalo telephone exchange
- First telephone subscribers:
  - Businessmen primarily
  - Physicians
  - Druggists

Kern, Stephen: Wireless world

Radio

- **Titanic** sinking was choreographed by magic of wireless telegraphy
- 10 ships that heard the call were too far away, a close ship that could save everyone was not in contact
- What eyes and ears of a man could not perceive, the wireless could receive over vast distances and through darkness and fog
- Wireless station in Newfoundland picked up wireless signal message too late
  - Shortly after, hundreds of wireless instruments along Atlantic began to transmit and airways became jumbled in confusion
- Titanic range of only 1500 miles
- The expanded range of experience was made possible by the wireless
- **Communication that made it possible to follow the rescue was praised**
  - Allowed people to stand together in sympathetic union
  - World was able to weep together over a common loss, it is easier
- Wireless was used to make so many people aware of the tragedy
- Ability to experience many distant events at the same time was made possible by the wireless and major change in the experience of the present
- Thinking on the subject was divided over two basic issues:
  - **Whether present is a sequence of single local events or a simultaneity of multiple distant events**
  - Whether the present is an infinitesimal slice of time between past and future or of more extended duration

- **Issue of sequence vs. simultaneity** was expressed by numerous artists, poets, and novelists and was concretely manifested in some new technology in addition to the wireless- the telephone, the high speed rotary press, and the cinema
- **Lord Salisbury commented on the simultaneity of experience made possible by the telegraph which had "combined together almost at one moment…the opinions of the whole intelligent world with respect to everything that is passing at that time upon the face of the globe"**
- Wireless was an essential part of international communication linking land stations and ships at sea in an instantaneous, worldwide network
- Telephone made it possible to be in two places at the same time
    - Communication between people great distances away
    - Business and personal exchanges
    - Even used for public broadcasts
    - Telephonic journalism
- Newspaper gives us a sense of the present in its totality
- **The headlines of one daily paper is "simultaneous poetry"**

Douglas, Susan J.: Early radio

- Teenagers led the way in a cultural revolution: the turn to listening in the 1920s
    - Connected themselves to headphones and black boxes powered by batteries- a radio
- It was exploratory listening
    - People listened for change, for many messages from all over the place
    - Listened to get a more immediate sense of their nation as it was living, breathing, and talking right then and there
- Listening was a new cognitive, emotional, and cultural experience
- What did it mean to go home and turn to listening?
    - People did not just easily buy radios, they had to assemble the device, **had to learn how to listen, how they wanted to listen,** and what they wanted to listen to at the same time that stations, and then networks, were deciding what was the best to broadcast
- Radio listening itself was constructed and contested (invented in 1920s) by programmers and by listeners
- Men and buys brought radio into the home
- By the late 1920s, **chain broadcasting** was centralizing radio programming in New York and standardizing the broadcast day so that listeners tuning between stations at night often heard the same chain program
- Listening in went through 3 stages:
    - 1) DXing: trying to tune in as many faraway stations as possible
        - Most DXers started with **crystal sets**
    - 2) Music listening
        - Occurred at same time as DXing
    - 3) Story listening
- Explosion of exploratory listening would not have occurred without fraternity called amateur operators, later known as ham operators
    - First radio audience
- **Amateur fraternity begun to take shape after discovery that certain crystals, like silicon or Carborudum, were excellent detectors of radio waves**
    - They were cheap, durable and reliable

    - Crystals rectified radio signals in the same way, no one knew how or why
    - **Discovery of crystal detector opened up radio to hobbyists, typically men**
- Number of amateurs increased
    - But then they were banned
- **Speed and difference seemed to define the culture that radio entered**
    - People perceived the rapidity with which radio listening redefined everyday life as unprecedented

Sterling and Kitross: The golden age of programming
This was radio's GOLDEN AGE

- Network programming: they got 50-70% of programming from network, but also increased the time devoted to local and live programming
    - 64% was live: half network half local
    - The rest was from electrical transcriptions and phonograph records
    - Music was staple of most radio schedules
- Recorded musical selections: material only averaged 10-15% of time on network-affiliated stations, and nonaffiliated local stations used it more (some for 80% of schedules)
- **The use of music increased locally**
    - Classical music declined, except for orchestra which was very popular in 1930s
        - Symphony of the Air
- Large dance bands increasingly heard on both national and local programs
    - 1930s were a "big band era"
    - First heard locally, then national
- Local stations presented a wide range of live music
- Local or national *amateur hour* broadcasts presented unknowns who would sing, dance, imitations for careers
    - Used as fillers
    - Amateur variety SHOWS: ex. Major Bowes and His Original Amateur Hour
        - Became most popular program on radio
        - Frank Sinatra made debut on this
        - It eventually went on television
    - Many other national and local programs were built around a single performer
        - Almost always a male singer or comic
- Before WW2: military slant to programs of the early 1940s
    - The Army Show, Wings over America
    - Participants were military professionals

Drama:
- Most important network dramatic programming: women's serial drama, or soap opera
    - Domestic life emphasized for its ups and mostly its downs
- "Prestige" dramas increased in 1930s
    - They were anthologies offering different stories with new casts each week
- Most famous radio show ever presented: Halloween Sunday evening October 30, 1938
- "Scare" programs were controversial
- Adventure programs: started in 1930s
    - More complicated programs with more cast and more complicated set
- Programs aimed at children as well: "children's hour"
- Radio's half-hour situation comedies

- Most network drama- anthology or serial- occurred in the evening
- Radio provided something new and fascinating, loyal audience

Political broadcasting:
- Radio as a political instrument: came into its own with first administration of Franklin Roosevelt
    - Began a series of "fireside chats" with American public about depression that hit
- In presidential election campaign, Republican party tried number of innovative uses for radio
    - Nominees did radio interviews
    - Stations carried the conventions/campaigns
    - Senator even presented a debate on the radio, speeches and promises
    - Political speakers had large audiences listening
    - Eventually, CBS went full-time to election results
    - Second Roosevelt administration showed increasing use of radio by federal agencies AS WELL
    - 11 educational networks
    - Forecasting services too

Week 12: Mass media development: Radio, Film, and TV

Fornatale and Mills: Radio in the television age

- Radio jokes abounded in 1950s, radio seemed like it died
    - Some networks were crippled, but independent radio thrived
- Television had given radio a chill and bad case and a bad case of the shakes
- Station owners, investors, manufactures, and all their employees had a vested interest in finding a new way to make radio work
    - Had to determine how to change and explain to their audiences how
- Several crucial components to local radio's success:
    - Widespread reliance on records, and on the disk jockey (or deejay), the announcer who played the records, read the advertisements, did promotion for the station, and read the news as well
        - Disk jockeys did not emerge until the playing of records on radio became widespread and that practice was frowned on for many years
    - **Conventional wisdom of radio industry was that it was demeaning for a station to play recordings**
    - In 1940: age of deejay won legal relief
        - Courts said that DJs could play records on air if they purchased
    - Appreciate bonanza that DJs proved to be for local stations
        - Required no actors, no orchestras, no live performances,
        - "Gypsy radio": it was cheap, easy
    - With DJs, station managers developed new strategy that became major component of radio: "format radio"/"formula radio"
        - Formula: playing top 40
        - Developed rules that would give each station a definable personality to its listeners
            - Ex. playing X amount of songs an hour, saying stations name X amount of times

        - Formula radio= consistency, which listeners loved
            - Actual formulas were used
        - Station would be recognized against its competitors
        - **The goal was to hold the audience**
    - Eventually stations started using stars as disk jockeys, experimenting
- **The local emphasis of which the DJ was only one facet, became the single most important element in radio's success during the television era**
    - Radio was free to offer different things to different people
    - Local radio could even provide news better than the networks
    - Public service announcements
    - Sports results
    - Advertisements, news about local merchants
    - Community activities
- On the heels of localization came **specialization*****: seeking out and catering to special interest audiences
- Radio was now able to fill the cracks and find the people not watching television or not served by television
- **Independent stations had begun to carve out specialized audiences because they couldn't compete with the networks' high-priced star system**
    - Suggested cultivation of minority groups for *expansion*
        - First group cultivated was the blacks
        - Television did not reach out to blacks, so radio did and designed shows just for black people
    - When TV came around, the motivation was *survival*
- Negro radio satisfied almost everybody
    - And programming spread that was directed at teenagers, farmers, ethnic groups, religions
- ***With TV accepting the central network burden derived from our centralized industrial organization, radio was free to diversify and be a service
- **People could be doing something else and still listen to radio**
    - Radio became liberated in the living room
    - Then kitchen, car, patio
    - **It offered a service, entertainment, companionship**
- **Radio's penetration into American life was enhanced by new technology; the discovery of the transistor, the development of more sophisticated car radios, invention and marketing of the clock radio**
    - **Transistor** had many advantages over the vacuum tube: used less power, created less heat, durable, had a longer life, less expensive, miniscule, made possible the miniaturization of electronic devices, and **became a major weapon in radio's struggle against television**

Spiegel, Lynn: Making room for TV

- In postwar years, the **television** set became the central figure in representations of family relationships
    - Transformed older modes of family interactions
    - Contradictions between **unity and division** were central representations of television during this period
        - Promised to bring the family together but,

        - It harmonized with separate gender roles and social functions of individual family members
        - This contradiction was not a matter of either/or, but rather both at once
        - Television was supposed to bring the family together but still allow for social and sexual divisions in the home

The family united:
- "Togetherness": aimed at the housewife
- Eventually, television set became integral part of the domestic environment depicted in magazines
- There was the question of the proper room for television
    - Started in basement and living room, but then moved all around the house (kitchen, TV room even)
- Television set moved into the center of family life
    - Magazines presented television set as the new family hearth through which love and affection might be rekindled
- **Television replaced the fireplace, AND the piano**
    - Replaced fireplace because it was the new focal point around which to arrange the seating in the room
    - Made piano entirely obsolete
    - People began to think of television as a replacement for the traditional fixtures of family life
- Television: center of family activity
- Seemed to become a natural part of domestic space, everyday commonplace objects
- **Television itself became *the* central figure in images of the American home, it became the cultural symbol par excellence of family life**
- **Television fit well with the more general postwar hopes for a return of family values**
    - *** It was seen as a kind of household cement that promised to reassemble the splintered lives of families who had been separated during the war
    - Term: family room
        - In postwar period, it was an example of the importance attached to organize household spaces around ideals of family togetherness
- Notion of domestic cohesion was integral to family room and the role of the television set
- Advertisements of families watching TV in semi-circle, all present
    - Advertisements suggested a democratic model of family life
- Advertisements: used to show happy family around TV in years following the war
    - Based on consumerism and family values
    - **Advertisements suggested that TV would serve as catalyst for return to a world of domestic love and affection**
    - Returning soldiers and their wives experienced an abrupt shift in social and cultural experiences after the war
    - TV and films showed these problems in shows and movies, realities of postwar life
- Swingers, heterosexual men, (women told to have babies/marriage after war, childbearing, housecleaning, sex life with husband)
- Oppressive aspects of family ideal for women
- All families were promised dream of domestic bliss through the purchase of a television set
    - Nuclear families= experience luxury with television
- Television was also seem as remedy for problem children
    - Prevent children from becoming antisocial and emotionally impaired

Carpenter, Edmund: The new languages

- **English is a mass medium:**
  - New mass media- film, radio, TV- are new languages their grammars as yet unknown
  - Each codifies reality differently, each conceals a unique metaphysis
  - Natural course is for culture to exploit its media biases
  - Media differences mean that its not simply a question of communicating a single idea in different ways but that a given idea or insight belongs primarily, though not exclusively, to one medium, and can be gained or communicated best through that medium
  - Each medium selects its ideas
  - Feeding the product of one medium through another medium creates a new product
- **Of the new languages, TV comes closest to drama and ritual**
  - It combines music and art, language and gesture, rhetoric and colour
  - Live TV remains this vital aspects of life
    - Books and movies only pretend uncertainty
  - Dramatic media/TV: combines language, music, art, dance
- Film and TV are aiding us in the recovery of gesture an facial awareness
  - Pictures couldn't do this
- **Each communication channel codifies reality differently and influences the content of the message communicated**
- **TV and film *****
  - In a movie theater only the screen is illuminated and only points of immediate relevance are portrayed, everything else is *eliminated*
  - Superiority of TV, TV had won (especially against print)

Czitrom, Daniel: Early motion pictures
Birth and early formation of film cultures

- Movement from photography
- Inventors (ex. Edison) were encouraged to try to construct devices capable of producing illusion of motion photography
- **Legend of Edison's preeminence was perpetuated and embellished in development of motion pictures**
- WKL Dickson: **true credit for the creation of the first motion picture camera (kineograph) and viewing machine (kinetoscope)**, Edison's employee
  - This set the stage for the modern film industry
  - **Kinetoscope** spread rapidly
    - It provided critical catalyst for further invention and investment
- Then the projector was discovered
- Latham loop: for longer films
- Animatograph projector for cinematograph films
  - ***Cinematograph: combination of camera, projector and developer all in one
- Edison vitascope: made by Thomas Armat, it was a projector
- Combination of new audience and growing class of profit-minded small entrepreneurs resulted in explosion of store theatres (nickelodeons)
- **Growth of audience**
- **Emergence of nickelodeon as their own form of entertainment**
  - This was dark entertainment

- Movies were represented as the most spectacular single feature of amusement situation in recent years
- **Motion pictures inhabited the physical and psychic space of the urban street life**
- *Recreation*
- *** Police and theatre regulations/requirements used to exclude vaudeville from movie houses
- Place of exhibition was proved to be the most vulnerable point of the industry

Week 12: Mass media development: Radio, Film, and TV

***Jenkins**, Henry: TV in the Net-Age

Zappers, casuals and loyals:
- Industry analysis overstressed significance of zappers
    - They flip the dial constantly
    - Thinks interactive television should and will be designed for zappers
- **Concept of appointment television:**
    - Networks construct new forms of programming that demand and reward immediate attention, build up viewer loyalty
- Loyals are much more valuable than zappers
- Loyals are twice as likely to pay attention to advertisements and 2-3 times more likely to remember product categories than regular viewers

Talk among yourselves:
- Marketing researchers speak about **brand communities**, trying to understand why some groups of consumers form bonds with the product, and through the product, with fellow consumers
- **Brand communities: carry out important functions on behalf of the brand, such as sharing information, perpetuating the history and culture of the brand, and providing assistance (to other users)**
    - Provide social structure to relationship between marketers and consumers
    - Communities exert pressure on members to remain loyal to the collective and to the brand
    - Highly committed consumers that pull together a large number of consumers
    - Brand communities have moved online
- People who watch in groups do not focus hard on watching programs, likely to access program-related web sites

How gossip fuels convergence:
- **Social functions of gossip held when dealing with television content**
- Reality television provides consumers with steady stream of dramas, reality shows (where decisions are made)
- Ex. American Idol: loyal viewers went onto the web in search of more information about the program, reality television is one of the primary drivers of traffic to network web sites
- ***Networks build upon synergies within the entertainment corporations to ensure that talk about their hit reality series continues throughout the week**
    - Contestants are featured prominently on morning and late-night talk shows and on network chat rooms
    - This publicity makes some viewers more apt to want to watch the episodes as they are aired so they can view outcomes live

Manovich, Lev: How Media Became New

- **(Modern mass media) Media frenzy begun with Louis Daguerre's daguerreotype apparatus**
    - Grew quick, technical improvements had been made and portrait galleries opened everywhere, everyone wanted to have their picture taken by the new media machine
- **(Computers) Device designed called "the Analytical Engine" (Charles Babbage)**
    - Contained most of the key features of modern digital computer
    - Punch cards used to hold information
    - Processing unit called "mill" performed operations and wrote results to memory
- While invention of daguerreotype (modern media tool for reproduction of reality) impacted society immediately, the impact of the computer was yet to be seen
- Connection between the Jacquard loom and analytical engine
- Development of modern media and computers began around the same time
    - Both machines were absolutely necessary for the functioning of modern mass societies
    - Mass media and data processing are complementary technologies; they appear together and develop side by side, making modern pass society possible
    - The same in some ways: film camera records data on film, film projector reads it off
- 1890s: modern media took another step forward as still photographs were put into motion
    - Movie studio, watched through kinetoscope
    - 2 years later: Lumiere brothers shows new camera/projection hybrid to public
    - This kept growing, more films being made
- Census 1880: began the punching of cards to tabulate information
    - Tabulating machines then began to grow
- Konrad Zuse: his computer was the first working digital computer
- Everything became computable (like graphics, moving images)
    - **Media become new media**
    - **Computer became media processor**

Bolter and Grusin: The World Wide Web

- **The web has passed through several stages which refashion some earlier media**
    - **Continues to borrow from and remediate almost any visual and verbal medium we can name**
    - What is changing constantly is ratio among the media that the web favours for it remediations

Text and graphic design:

- The internet remediates itself as a communications system and as a cultural symbol
    - Ex. Electrical internet lines covering the industrialized world= as the telegraph did
    - The telegraph transmitted messages and so does the internet
        - Although internet is quicker, it used to be just textual before like the telegraph
    - Web became an important remediator of all sorts of printed information
    - Web still refashions the personal letter, book, magazine
        - But now, immediacy and recontextualization
        - **But, old remediations were not abandoned**

The variety of remediations on the World Wide Web:

- Possible strategies for remediation are **respectful and radical**
- Respectful attitudes is most common in remediations of more vernerable media: printed book, static graphics, paintings and photographs
    - Remediate these without any changes, in a respectful manner
- Web and internet applications refashion media of radio, television and telephone more aggressively than print
    - Better quality, better control, immediacy, graphical user interface

Web cameras:

- **Web cameras take up the monitoring function of television and video**
    - Ex. security cameras, video streams, television monitors
    - Web cameras are better monitors than television
- The cultural expectation that the Web remediate all earlier media means that the web interface can never be completely transparent