History of Communications Media

Class 2

History of Communications Media

- Today's Class
  - Manuscript Cultures
  - The Impact of Printing

2

History of Communications Media

- Manuscript cultures
  - A high literate culture and a low village culture
  - Texts tended to be read aloud even to those who could read
  - Letters and documents were quasi-public
  - Writing served as input into the oral world
  - Manuscripts had incipits and chapter/verse designations rather than titles or page numbers

3

Reading aloud - It was common, even for people who could read, to have letters read aloud to them. Our modern practice of 'auditing' comes from this practice of hearing accounts read aloud to those concerned. It was this habit which explains why texts sometimes carried explicit warnings such as: 'Do not read this in the presence of others as it is secret.' This habit also explains why writing fell under the discipline of rhetoric in the schools -- writing was meant to be read aloud. {a habit which persists in the reading of wills}

Texts are Quasi-public - For the most part, medieval letters were quasi-public documents written to be collected and publicized in the future and intended to be read by more than one person. Hence, they often followed a common format. People became familiar with written materials by hearing others read or recite the material rather than reading it themselves. Listening to others read was customary in both the family and academia.

Writing as input – In the words of media historian Walter Ong, "*Writing served largely to recycle knowledge back into the oral world, as in medieval university disputations, in the reading of literary and other texts to groups, and in reading aloud even when reading to oneself*."

Incipits - For visual location of materials in a manuscript text, pictorial signs were often preferred to alphabetic indexes. Manuscripts lacked title pages and often titles -- they were normally cataloged by their 'incipit' -- the first words of the text. The referring to the Lord's Prayer as the 'Our Father' is a lingering use of the incipit as is the tendency to refer to papal encyclicals by their incipits rather than formal titles -- e.g. "Rerum Novarum," "Pacem in terris" It was also typical of manuscripts that items within were cited not by page number as were printed works written after the invention of printing but by chapter and verse as in the Bible or classical writings -- thus we cite Luke 4:5-6, not the Bible, p1173 nor Luke, p1173. One reason was that two handwritten copies of a single work, even if copied from the same source, almost never corresponded page for page, particularly if it was a long document and the handwritten copies were made by different people.

History of Communications Media

- Manuscript cultures – 2
  - Books are treasured items
  - The manuscript book had interesting corollaries
  - Word separation and punctuation of text did not become standard until the later Middle Ages
  - The sermon and public readings served as news dissemination media
  - What was ancient was venerated

4

Books as treasured items – Working 6 hours a day, it took a monk or later a scrivener 10 to 15 months to copy a Bible. Hence, books were extremely costly to produce. As a result, they were often chained to lecterns or library desks so that they would be available for consultation and also protected from theft.

Interesting corollaries – The need for books in the High Middle Age universities and cities led to cursive writing, the creation of small portable books, the use of quill pens, a growing use of abbreviations, and the mass copying of official texts and textbooks by numerous copyists and scribes – many of whom were poor students who copied texts as a means of economic support. Many a Medieval university student worked his way to his diploma by copying texts as a part-time job.

Word separation – In ancient Rome, there was no word separation in written texts and only capital letters were used. Around the turn of the 9th century, miniscule script (lower-case letters) were developed. In the 9th century, scribes began to make word divisions. By the 13th century, word separation had become standard for Latin texts, but not for those in the vernacular. Precisely because the vernacular was easier to under-stand than Latin, scribes were less pressed to aid the reader by inserting inter-word space for the demarcation of boundaries that were impercep-tible to the ear.

Sermon as news dissemination media – Sermons at one time were coupled with news about local and foreign affairs, real estate transactions, and local news. This was common since the church was the center of parish and community life. In medieval times and often later, the church served not only as a place of worship but also as a secular assembly hall, where meetings, conversations, games, and markets were held. Also, the local priest had

Printing

- Johann Gutenberg of Mainz was a German goldsmith and printer who was the first European to use movable type printing, in around 1439, and the global inventor of the mechanical printing press.
- After printing several books, he started printing his famous Gutenberg Bible in 1455
  - About 180 of these Bibles were printed
  - The Gutenberg Bible could best be described as a printed manuscript rather than a printed book

At its inception, the printed book was closely modeled on the manuscript; but as printers became more familiar with the new technique, the printed book gradually acquired a personality of its own. This process was completed some time between 1520 and 1540. As Marshall McLuhan noted, “As might be expected, the book was a long time in being recognized as anything but a typescript accessible and portable kind of manuscript. It is this kind of transitional awareness that in our own century is recorded in words and phrases such as ‘horseless carriage,’ ‘wireless,’ or ‘moving-pictures.’ “

Printing

- Gutenberg's printing press depended on 3 innovations which he combined
  - Movable type cast in metal
  - Oil-based ink
  - Wooden press

Among the specific contributions to printing that are attributed to Gutenberg are the invention of a process for mass-producing movable type, the use of oil-based ink, and the use of a wooden printing press similar to the screw olive and wine presses of the period. His truly epochal invention was the combination of these elements into a practical system

Movable type - Letters were cut on punches, which were hardened and driven into softer metal to provide a cast for the letter. For arrangement on a page each letter must be of the same height and the same length, though the sizes of letters and in turn breadths varied. An adjustable mould suited to varying breadths and in which various punched letters could be inserted at the bottom was basic to efficient production of type. In addition it became important to secure a metal which had a low melting-point and which did not contract and expand in response to temperature. An alloy including lead and antimony, of which one expanded and the other contracted with increased temperature, gave satisfactory results.

Ink & press - Engraved wooden blocks used indelible ink which was not suited to metal. Painters had developed oil as a base for paint and linseed oil and lamp-black were adapted to ink for metal type. Finally, arrangements for pressing parchment and paper firmly on the inked type and releasing them quickly were worked out on a screw press.

Printing

- Printing spread very rapidly
  - By 1480, 110 towns had printing presses
  - By 1500, 236 towns had print shops
- It greatly multiplied the number of books and titles
  - Before Gutenberg, there were an estimated 30,000 manuscript books in Europe
  - By 1500, there were more than 20 million books in 35,000 titles

Printing

- Some Notes about Printing - 1
  - Printing involved not only text but also images, maps, diagrams, and data tables
  - Economics of printing – high upfront costs combined with relatively small marginal costs for each additional item
    - This contrasted sharply with the economics of manuscript production where upfront costs were low but marginal costs were extremely high

Printing

- Some Notes about Printing – 2
  - Effects of printing took a long time to show their effects
  - Out of printing emerged not only the printed book, but also the:
    - Broadside
    - Pamphlet
    - Leaflet
    - Newspaper
    - Scholarly Journal
    - Poster
    - Magazine
    - Cartoon
    - Comic Strip

Printing affected the literate elite and the illiterate masses differently As more people became literate over time, printing began to have more and more significant consequences.

Printing

- The Printing Revolution had a host of effects, all stemming from the fact that Print:
  - Made possible the mass production of books and other printed material
  - Drastically lowered the cost of reproducing information
  - Produced typographical fixity

Mass production – Printing made it possible to publish hundreds of identical copies of a book or document. It also made it possible to produce literature and other printed material that was cheap enough both to reach the literate masses and to encourage illiterates to learn how to read.

Lower cost - Each copy of a hand-produced book or newsletter cost as much to make as the last, and took as long. The printing press reduced the unit cost, and pro-duced copies in bulk

Produced typographical fixity – As historian Elizabeth Eisenstein in *The Printing Revolution in Early Modern Europe* , noted "Typographical fixity is a basic prerequisite for the rapid advancement of learning. It helps to explain much else that seems to distinguish the history of the past five centuries from that of all prior eras."

Printing

- Some effects of lower costs:
  - Reduced books from a status symbol of wealth to a mere commodity
  - Made the monastic scriptoria and the university scriveners obsolete
    - Reduced the economic importance of the monasteries
  - Made it economically feasible to publish books in the vernacular languages as well as Latin

Reduced status – As book historian Alberto Manguel noted in his *History of Reading,* "Since these books were cheaper than manuscripts, especially illuminated ones, and since an identical replacement could be purchased if a copy was lost or damaged, they became, in the eyes of the new readers, for less symbols of wealth than of intellectual aristocracy, and essential tools for study. Booksellers and stationers had produced, both in the days of ancient Rome and in the early Middle Ages, books as merchandise to be !! traded but the cost and pace of their production weighed upon the readers with a sense of privilege in owning something unique. After[e] Gutenberg, for the first time in history, hundreds of readers possessed identical copies of the same book, and (until a reader gave a volume private markings and a personal history) the book read by someone in Madrid was the same book read by someone in Montpellier."

Rendered the scriveners obsolete - One consequence of printing was that it devalued the scriptoria where monks had hand-reproduced books and manuscripts since a printing press could do in hours what had monks many months. This made the religious orders less economically important. "Mass production of books ended the Church's monopoly on Scripture, as well as other forms of information." It also rendered the peccia system of the university-related scriveners obsolete as well, since it was much cheaper for students to buy textbooks than to hand-copy them.

Vernacular language publication - The printing press was a mass-production technology in which the cost of printing the first book was very expensive due to the labor intensive work of typesetting and proofreading (and correcting) the initial copy. Once this initial work was done, the cost of printing subsequent copies of the work was relatively minor. Few Europeans in 1500 were fluent in Latin. This meant that the audience for works in Latin was not a mass audience {mostly clerics and well-educated laymen}. There was a much larger market of potential readers in the native vernacular languages {including merchants, artisans, military officers, many sailors, and low-level government officials as well as those who could speak Latin}.

Printing

- Intellectual effects of the Print Revolution
  - Made Possible a vast expansion of knowledge. It did this in the following ways:
    - Re-arranging the arts and routines of book-making in a way that brought printers, intellectuals, merchants, and workers into contact with each other
    - Revealed the knowledge deficits and errors in ancient texts
    - Permitted scholars to improve and correct their works in subsequent editions
    - Created print shops that were meeting places and message centers for scholars

Changed book-making routines – According to historian Elizabeth Eisenstein in *The Printing Revolution in Modern Europe*, The advent of printing led to the creation of a new kind of shop structure; to a regrouping which entailed closer contacts among diversely skilled workers and encouraged new forms of cross-cultural interchange. "Thus it is not uncommon to find former priests among early printers or former abbots serving as editors and correctors. University professors also often served in similar capacities and thus came !! into closer contact with metal workers and mechanics. Other fruitful forms of collaboration brought together astronomers and engravers, physicians and painters, dissolving older divisions of intellectual labor and encouraging new ways of coordinating the work of brains, eyes, and hands. Problems of financing the publication of the large Latin volumes that were used by late medieval faculties of theology, law, and medicine also led to the formation of partner-ships that brought rich merchants and local scholars into closer contact. The new financial syndicates that were formed to provide master printers with needed labor and supplies brought together representatives of town and gown.
Revealing ancient knowledge deficits – By increasing the output of Aristotelian, Alexandrian, and Arabic texts, printers encouraged efforts to unscramble these data. Some medieval coastal maps had long been more accurate than many ancient ones, but few eyes had seen either. Much as maps from different regions and epochs were brought into contact in the course of preparing editions of atlases, so too were technical texts brought together in certain physicians' and astronomers' libraries. Contradictions became more visible, divergent traditions more difficult to reconcile. The transmission of received opinion could not proceed smoothly once Arabists were set against Galenists or Aristotelians against Ptolemaists. Thus it became clear that there were clearly things that the classical authorities had not

Printing

- Intellectual Effects of the Print Revolution – 2
  - By making possible a vast expansion of knowledge, printing changed the concept of knowledge
    - It changed knowledge from the notion of a closed body of knowledge passed down generation to generation to a concept of knowledge as the result of an open-ended investigatory process pressing against ever-advancing frontiers

Printing

- The Print Revolution – 1
  - Created a 'reading public'
  - Fostered privacy and isolation
    - Reading demands quiet and freedom from distraction
    - Print set the stage psychologically for solo reading
    - Replaced aural reading with silent reading
    - Printed books permitted people to escape from the outside world

Created a reading public - The relatively cheap popular books flooding from the presses created a new reading public (especially among the literate merchants and artisans who knew little or no Latin) that was sizably larger than that which existed prior to the printed book. Political and religious propaganda could be used to mobilize the new class. The circulation of broadsides and engravings carrying pictures of kings, princes, and public figures heightened royal visibility and began the notion of recognized public figures and celebrities. In the 18th and 19th centuries, this reading public expanded to embrace much larger proportions of the population and was characterized by the rise of the cheaper book, the emergence of public libraries, and the development of the newspaper and magazine.

Privacy & Isolation – According to historian Walter Ong in *Orality and Literacy*, "Print was also a major factor in the development of the sense of personal privacy that marks modern society. It produced books smaller and more portable than those common in a manuscript culture, setting the stage psychologically for solo reading in a quiet corner, and eventually for completely silent reading. In manuscript culture and hence in early print culture, reading had tended to be a social activity, one person reading to others in a group." In addition, private reading demands a home spacious enough to provide for individual isolation and quiet. (Teachers of children from poverty areas today are acutely aware that often the major reason for poor performance is that there is nowhere in a crowded house where a boy or girl can study effectively.)

Silent reading – In the words of Walter Ong, "By and large, printed texts are far easier to read than manuscript texts. The effects of the greater legibility of print are massive. The greater legibility makes for rapid, silent reading. Such

Printing

- The Print Revolution – 2
  - Made possible the creation of identical images, maps, diagrams, charts, and numerical tables
    - This fostered the development of science
    - It permitted copies of art works to be seen by people who would never visit the site where the original artwork was located
    - It led to the mass printing of playing cards and religious images

Identical images & maps – In the words of Elizabeth Eisenstein, "The fact that identical images, maps, and diagrams could be viewed simultaneously by scattered readers constituted a kind of communications revolution in itself." With the advent of woodcarving and engraving, it became possible to make precise reproductions of fine detail images, diagrams, and maps.

Science – As Walter Ong noted, "One consequence of the new exactly repeatable visual statement was modern science**. ...**" *What is distinctive of modern science is the conjunction of exact observation and exact verbalization: exactly worded descriptions of carefully observed complex objects and processes. The availability of carefully made, technical prints (first woodcuts and later even more exactly detailed metal engravings) implemented such exactly worded descriptions. Technical prints and technical verbalization reinforced and improved each other*." In addition, with illustrated books, it became possible to take the writings of ancient authors on science into the field to see if their descriptions of plants and animals or other natural phenomena corresponded with reality. The fact that they sometimes did not led to a change in the perception between newness and truth. *In an oral culture, the fact that something was old or ancient was prima facie an indication of truth. With print, what most recently became known was the truth because it was up-to-date*

Reproducible art - In pre-print cultures, few people had ever seen a physically accurate picture of anything. Even art works (such as paintings) required that one be where the painting was located in order to view it. Printing permitted copies of the art work to be seen by people who would never visit the city or palace where the original art work hung.

Religious images & playing cards - Woodcuts and block printing made

Printing

- The Print Revolution – 3
  - Made possible the creation of more accurate maps
    - Printing made possible an era of feedback from map users to mapmakers
    - It also prevented the degradation that results over successive generations of a map

More accurate maps - When it came to mapping, a sequence of hand-copied maps usually reveals degradation and decay. In an era of hand-copying, there were obstacles to systematic data collection that printing removed. People normally learn geography in school through maps, not through personal experience. If I sailed to a place where the mapmakers tell me it is and found nothing there but ocean, I would be very surprised. With printing came an era of feedback from the users of maps to the mapmaker. A mapmaker who puts out an inaccurate map will soon have this fact called to his attention by people who find it inconsistent with their personal experience. This process has, indeed, never ceased; increments of information are still being added to geodetic surveys and mapmakers (as Kenneth Boulding notes) are still being 'checked by the fact that it is possible to travel through space.' But this kind of checking could not occur until voyagers were provided with uniform maps and encouraged to exchange information with map publishers. Even then it took many centuries and cost many lives to achieve the absolute confidence a modern atlas conveys.

Maps prior to printing - While exceptional manuscript maps existed, "they were unavailable to scattered readers for guidance, for checking, and for feedback. The best maps were often carefully hidden from view – like the map made for a 14th century Florentine merchant which was placed in a warehouse 'secretly and well wrapped so that no man could see it.' To make multiple copies would not lead to improvement, but to corruption of data; all fresh increments of information when copied were subject to distortion and decay.!! ¶ The same point also applies to numbers and figures, words and names. Observational science throughout the age of scribes was perpetually enfeebled by the way words drifted apart from pictures, and labels became detached from things. Uncertainty as to which star, plant, or human organ was being designated by a given diagram or treatise – like the question of which coastline was being sighted from a vessel at sea – plagued investigators throughout the age of scribes.

Printing

- The Print Revolution – 4
  - Made possible the creation of illustrated books
    - This was a boon to science, technology, and engineering
  - The creation of illustrated books and other illustrated material
    - Made celebrities out of authors and people who were the subject of a book
    - Enabled rulers to impress their personal image on their subjects

Creation of illustrated books – Illustrated books allowed writers like Agricola and Vesalius to accurately depict and label the subjects they were discussing – a great benefit when it came to describing what something looked iike or how it worked.

Celebrities - As James Burke & Robert Ornstein in *The Axmaker's Gift. A double-edged history of human culture* noted, "The circulation of broadsides and engravings carrying pictures of kings, princes, and public figures heightened royal visibility and began the notion of recognized public figures and celebrities." One of the first public figures/celebrities made famous by print was Martin Luther.

Images of monarchs – As Elizabeth Eisenstein noted, "*The circulation of prints and engravings made it possible for rulers to impress a personal presence on their subjects by making their physical features known to them.* "The effects of duplicating images and portraits of rulers -- which were eventually framed and hung in peasant hovels throughout Catholic Europe, along with saints and icons -- has yet to be assessed by political scientists. While rulers had often stamped their own image on coins, coins did not convey a detailed image of the ruler nor place his image in any kind of context.

Printing

- The Print Revolution – 5
  - Created private ownership of knowledge
  - This led to:
    - The concept of the author
    - Resentment of plagiarism
    - Copyright laws
  - Copyright laws led to the practice of authors selling their manuscripts to publishers

Private ownership of knowledge – Print made important the idea of authorship. While individual authors were previously recognized, they were few in number. Manuscript writing was often anonymous and the result of the collective contribution of many scribes over long periods of time. The notion of authorship elevated the individual to a unique status, separating him or her from the collective voice of the community. With authorship comes the concept of owning the words one has written. With private ownership of words comes both a resentment of plagiarism and the idea of copyright. With copyright, communication among people becomes a commodity. The idea that one could own thoughts and words and that others would have to pay to hear them marked a seminal turning point in the history of human relations. Before print, people shared their thoughts together orally, in face-to-face dialogue and exchange. Even manuscripts were read aloud and were meant to be heard rather than seen.

A note about copyright – With printing, the cost of duplication was lower than the cost of appropriation. It was now cheaper to print thousands of exact copies of a manuscript than to alter it by hand. Copy makers could now profit more than creators. This imbalance led to copyright which bestowed on the creator of a work a temporary monopoly over any copies of the work. The idea of copyright was to encourage authors and artists to produce more works.

Selling manuscripts to publishers – With copyright laws (which began to be introduced in the mid-17th century), a distinction arose between ownership of a physical copy of the book and ownership of the copyright. This encouraged publishers to buy manuscripts from their authors since this would resolve any legal issues involved in publishing an author's work.

Printing

- The Print Revolution – 6
  - Extended the power of monarchs and bureaucrats
    - As noted before, prints and engravers made it possible for rulers to make his facial image and physical features known to his subjects
    - Monarchs were quick to use print to convey information to their subjects and to affect the attitudes of their subjects

Rulers' images – Often rulers would seek to impress their subjects with his authority by having engravings and portraits of him in royal regalia – i.e. wearing his crown and ermine robes.

Monarchs' use of print – As Elizabeth Eisenstein noted in *The Printing Revolution in Modern Europe*, "'Princes who had employed the cumbersome methods of manuscript to communicate with their subjects switched quickly to print to announce declarations of war, publish battle accounts, promulgate treaties or argue disputed points in pamphlet form. Theirs was an effort . . . "to win the psychological war which prepared and !! accompanied the military operations" of rulers … The English crown under Henry VIII and Thomas Cromwell made systematic use of both Parliament and press to win public support for the Reformation … ¶ In France, the regency of Louis XIII saw the last meeting of the Estates General before 1789; it also saw the founding of the first royally sponsored newspaper in Europe."

Printing

- The Print Revolution – 7
  - Led to the institution of censorship
    - Political & religious leaders were quick to see the power of print. This led them to:
      - Require printers to be licensed
      - Restricting the number of printers in the realm
      - Censorship
        - » Banning of radical, heretical, pornographic, and libelous books
      - Censorship in turn led to attempts at evasion, such as smuggling of banned books into countries that banned them

Censorship - Political and religious elites were quick to ban works that promoted political radicalism or religious heresy, were pornographic, or which libeled public officials. As early as 1475 the University of Cologne received a licence from the pope to censor printers, publishers and even readers of condemned books.[124] Many bishops tried to exercise the same power. In 1501 Pope Alexander VI published his bull *Inter multiplices,* which forbade the printing of any book in Germany without the permission of the ecclesiastical powers. At the Lateran Council of 1515 this power was extended to all Christendom and came under the Holy Office and the Inquisitor General. Censorship, of course, only makes the censored books *more* attractive, at least to some people, and in the course of the sixteenth century there was a rapid increase in the number of banned books and it became necessary to institute the *Index Librorum Prohibitorum,* which had to be continually updated. It might be added that in comparison with non-Western cultures, the attitude of the Catholic Church and the European monarchs was relatively enlightened. The Ottoman Empire and other Islamic realms banned the printing of anything in either Arabic, Turkish, or Persian, even though Greek and Jewish minorities (many of whom brought printing with them when they fled from Spain) were allowed to print in Greek or Hebrew. It was not until the 8th century that the ban on printing was modified. As Bernard Lewis noted in his *The Middle East. A history of the last 2,000 years, "*Islamic society proved very resistant to printing." A decree of Sultan Bayezid II in 1485 forbade printing, probably in response to the powerful vested interest of the scribes and calligraphers. In the early 16th Century, Jewish refugees from Spain had set up printing presses in Istanbul and Salonika, but they were not allowed to print in either Turkish or Arabic. In 1567 and 1627, first an Armenian and then a Greek press were established in Istanbul, subject to the same restrictions. It

Printing

- Language Effects of the Print Revolution - 1
  - Affected both Latin and the vernacular languages of Europe
    - As noted earlier, printing made it profitable to publish books in vernacular languages as well as in Latin
      - This raised the status of vernacular languages such as English, French, and German by giving them a literary status equal to that of Latin
      - This contributed to the slow decline of Latin as a European elite lingua franca

Slow decline of Latin - Of the books published prior to 1500, 77 per cent, are in Latin. But a larger market existed for the printed book within the bounds of a national speech than the international, elite of Latin readers could ever muster. Book production was a !! heavy capital venture and needed the widest markets to survive. In the 16th century, Latin began to lose ground. From 1530 certainly this trend is clear. The reading public . . . becomes therefore more and more a lay public — often of women and the middle class among whom many were not familiar with Latin. By 1740, only 27.7% of the titles at the book fairs were in Latin. By 1800, only 3.97% were in Latin.

Printing

- Language Effects of the Print Revolution -2
  - Whether or not there was a printed Bible in the language determined whether the language became permanent or became a mere provincial dialect
  - Printing contributed to the homogenization of many regional dialects into a few national languages

Bible languages - "Translation of the Bible into the vernacular languages," writes Hans Kohn, "lent them a new dignity and frequently became the starting point for the development of national languages and literatures." The printed Bible "gave permanence to the language in which they were printed," and in doing so, strengthened the unity of each language community and the power of their rulers. Between 1478-1571, in spite of the fact that Latvia, Lithuania, Estonia, Wales, Ireland, the Basque country, Catalonia, and Finland were all within the economic and political sphere of another more powerful language group, these countries preserved and strengthened a sense of separate national identity because they had a Bible printed in their own language. Languages in which Bibles were not printed either disappeared or became provincial dialects, subordinate to the politically or economically dominant language group of the area. Thus, the language and political identity of Sicily was subsumed into Italy; Provence and Brittany into France; Frisia into the Netherlands; Rhaetia into Austria; Cornwall into England; and Prussia into Germany.

From regional dialects to national languages - With printing, the rulers of the new nation-states of Western Europe found it convenient for political, social, and economic reasons to use a single language. Printing led to standardized grammar, vocabulary, and the spread of the dialect of the political-economic-intellectual center throughout the nation. Thus, the London dialect became national or the 'King's' English; Tuscan dialect the national Italian; and Parisien dialect the national French.

Printing

- Language effects of the Print Revolution - 3
  - Printing led to standardized grammar and spelling
    - This in turn led to notions of 'correctness' in language
    - The idea of using correct language in turn led to mass publication of dictionaries
  - Printing replaced poetry with prose

Standardized spelling – With printing, spelling now became fixed, corresponding less and less to pronunciation.
Dictionaries - Dictionaries took as their norm the language usage of esteemed writers and taught dictionary readers, taught their readers proper pronunciation of a word, and also taught readers proper word usage, carefully delineating what words were acceptable or standard, what words were slang or argot, and what were mere dialect.
Poetry & Prose – Putting words into poetry and rhyme is universal in non-literate cultures since poetry and rhyme facilitate memorization and recall of large bodies of material such as epic poems. Poetry and rhyme are also very common in manuscript cultures since these cultures are still largely oral. With print, prose begins to replace poetry.

Printing

- What Print does that the Manuscript does not
  - Print permitted externalization of our memories
  - Print made the Bible a single book rather than a collection of discrete mss known as the Scriptures
  - Print fostered a linear, rational, sequential way of thinking

Externalization of memory - Oral or non-literate and Manuscript (largely illiterate) cultures make it necessary that people memorize large amounts of material. In contrast, we have books and other media to store and jog our memories. Instead of memorizing the Bible or the Declaration of Independence, we focus merely on remembering where we can retrieve biblical passages or the Declaration whenever we want or need to. With the computer plus audio and video recording, our external aids to memory are becoming ever more powerful.

Bible vs Scripture – Prior to the invention of the Codex, the individual books of the Bible existed as separate papyrus scrolls. With the invention of the codex, putting all of the books of the Bible into a single codex was possible but rarely done, if only for the reason that some books of the Bible were seen as more theologically and liturgically relevant than others. Thus Jewish scholars probably produced more manuscript copies of the Torah than of any of the other books. Christian monks in turn produced more copies of the New Testament than of the Old, and probably more copies of the Psalms and Isaiah than of Leviticus or Judges.

Linear thinking - Jeremy Rifkin in *The Age of Access* noted that print organizes phenomena in an orderly , rational, and objective way, and in so doing, encourages linear, sequential, and causal ways of thinking. The very notion of 'composing one's thoughts' conjures up the idea of a well-thought-out linear progression of ideas, one following from the other in a logical sequence. This is a mode of thought very different from that in an oral culture where redundancy, dialogic feedback, and discontinuity in conversation are the rule. Marshall McLuhan in *Understanding Media* notes, In Western literate society it is still plausible and acceptable to say that something

Printing

- What Print does that the Manuscript does not - 2
  - Print permitted pagination; Mss were organized by chapter and verse
  - Pagination led to page numbers, indexes, cross-references, and table of contents – all lacking in manuscripts
  - Print led to title pages; Mss were labeled by their incipits

Pagination – Scribally- or scrivener-produced manuscripts were unique in that the pagination of even different copies of the same text would differ due to the difference in individual handwriting. The printed book allowed two readers to discuss a passage in a work they were both reading by referring to the precise page on which it occurred. Previously, passages were identified by chapter and verse as with the case of the Bible.

Page numbers – The desire of printers to keep pages of books in proper sequence (especially since they were printed either separately or in groups of 4) led them to pagination with Arabic numerals. Pagination in turn led to indexing, cross-referencing, and table of contents.

Title pages – With print, two different copies of the same edition of a work were duplicates of one another as objects. This situation invited the use of labels, and the printed book, being an object, naturally took a label – the title page.

Printing

- What Print does that the Manuscript does not – 3
  - – Print led to the concept of the book as a logical unit
  - – Print changed the document focus from that of the producer/copyist to that of the reader
  - – Print encouraged a sense of closure and finality – the idea that the represents the author's words in a definitive or final form

Book as logical unit – Since the book was a physical unit, it was natural to think that the book should therefore be a logical unit. No publisher would accept a book that containe two or more unrelated subject matters – such as Colonial American History and Nuclear Physics. Yet individual medieval manuscripts often contained two or more unrelated works, such as a commentary on Aristotle's Politics, a treatise on the theology of Peter Lombard, and a history of the local monastery.

Change of focus – Manuscript culture was producer-oriented since every individual copy of a work represented a great expenditure of an individual copyist's time. Print is reader-oriented since a few hours spent producing a more readable text will immediately improve thousands of copies. Thus writing for print often called for painstaking revisions by the author of an order of magnitude virtually unknown in manuscript culture. Typically, a printed book underwent many revisions by the author or editor before it finally came to press. This was not true of manuscripts.

Closure – Once a letterpress forme is closed, locked up, or a photolithographic plate is made, and the sheet printed, the text does not accommodate changes (erasures, insertions) so readily as do written texts. By contrast, manuscripts with their glosses or marginal comments (which often got worked into the text in subsequent copies) were in dialogue with the world outside their own borders. They remained closer to the give-and-take of oral expression. Another aspect is that while any handwritten insertions into a printed text are immediately obvious, the same handwritten insertions into a manuscript are not so obvious. If the handwriting in the insertion is

Printing

- Significant Social and Historical Effects
  - Print was a major factor in the development of the following:
    - Capitalism
    - The Protestant Reformation
    - Nationalism
    - Intellectual Liberalism
    - The creation of childhood as a distinct social category
- I will discuss each in turn

Printing

- Printing and the Development of Capitalism
  - Printing shops were the first major urban capitalist enterprises
    - Print shop economics – large up-front costs combined with later revenues
    - The print shop's demand for paper stimulated the growth of the paper manufacturing industry which led it to rationalize the collection of rags
    - Printing press technology anticipated many features of industrial production

Print shop economics - Printing required a large initial capital investment for a press, movable type, large quantities of paper, and a building to house the above-- preferably in an urban setting near potential customers (educated people, teachers, clergy, officials) -- while income came much later in drips and drabs as individual books were sold. Hence, print shops required access to credit and a Capitalist approach to business -- i.e. they were the first major urban capitalist enterprises.

Paper – According to Lisa Jardine *Worldly Goods. A new history of the renaissance*, the major expense in printing was the paper on which the book was printed, representing 2/3rd of the cost of a book's publication. {The other 1/3rd consisting of the price of acquiring the text, the amortized cost of purchasing and installing the printing press and associated technology, and related labor costs}. The press was a huge consumer of paper, using three reams (1500 sheets) per press per day.

Anticipation of industrial production - Printing press technology anticipated many features of industrial production -- the assembly of individual lettered units into a linear whole that can stamp out identical words and sentences on page after page. The printing press allowed words to be privatized and commercialized for the first time in history. In an oral world, words, stories, poems, and tales were all collectively shared. They existed in common. The thought that someone could own a sentence or sell and profit from it would have seemed quite strange in Medieval Europe or other pre-print cultures.

Printing

- Printing and the Protestant Reformation
  - When Luther nailed his Ninety-Five Theses to the church door, he saw it as merely an invitation to an academic disputation
  - Protestantism was the first religious movement to fully exploit printing's potential as a mass medium
    - Luther described printing as "God's highest and extremist act of grace, whereby the business of the gospel is driven forward."

Ninety-Five Theses - When Luther proposed debate over his Ninety-five Theses his action was not in and of itself revolutionary. It was entirely conventional for professors of theology to hold disputations over an issue such as indulgences and "church doors were the customary place for medieval publicity." But these particular theses did not stay tacked to the church door (if indeed they were ever really placed there). To a sixteenth-century Lutheran chronicler, "it almost appeared as if the angels themselves had been their messengers and brought them before the eyes of all the people." Luther himself expressed puzzlement, when addressing Pope Leo X six months after the initial event: "'It is a mystery to me how my theses, more so than my other writings, indeed, those of other professors were spread to so many places. They were meant exclusively for our academic circle here . . . They were written in such a language that the common people could hardly understand them."

Printing's revolutionary potential - Protestantism was also the first movement of any kind, religious or secular, to use the new presses for overt propaganda and agitation against an established institution. By pamphleteering directed at arousing popular support and aimed at readers who were unversed in Latin, the reformers unwittingly pioneered as revolutionaries and rabble rousers. They also left 'ineradicable impressions' in the form of broadsides and caricatures.

Printing & Protestantism - the reformers were aware that the printing press useful to their cause and they acknowledged its importance in their writings. From Luther on, the sense of a special blessing conferred on the German nation was associated with Gutenberg's invention, which in their eyes emancipated the Germans from bondage to Rome and brought the light of true religion to a God-fearing people. The mid-century German historian, Johann Sleidan, developed this theme in an *Address to the Estates of the Empire* of 1542: "'As if to offer proof that God has chosen us to accomplish a special mission, there was invented in our land a marvelous new and subtle art, the art of printing. This opened German eyes even as it is now bringing enlightenment to other countries. Each man became eager for knowledge, not without feeling a sense of amazement at his former blindness." Variations on the German theme were played in Elizabethan England in a manner that has continued to resonate down to the present day. By associating printing

Printing

- Printing and the Protestant Reformation - 2
  - Printing brought into focus many troublesome issues that had been easily glossed over before
    - One issue was the relation of Scripture and Tradition
    - Another was the relationship of faith and works
  - Printing with its focus on the word of God led to simpler forms of church architecture
    - Art was banished from the churches – compare the Gothic cathedral with the Old South Church

Scripture & Tradition - Oral testimony, for example, could be distinguished much more clearly from written testimony when poets no longer composed their works in the course of chanting !! or reciting them and when giving dictation or reading out loud became detached from the publication of a given work. Accordingly, questions were more likely to arise about the transmission of teaching that came from the lips of Christ or from the dictation of the Holy Spirit to the Apostles. Was all of the Christian heritage down in written form and contained solely in Scripture? Was not some of it also preserved "in the unwritten traditions which the Apostles received from Christ's lips or which, under the inspiration of the Holy Spirit, were by them, as it were, passed down to us from hand to hand"? Was it meant to be made directly available to all men in accordance with the mission to spread glad tidings? Or was it rather to be expounded to the laity only after passing through the hands of priests, as had become customary over the course of centuries? But how could the traditional mediating role of the priesthood be maintained without a struggle when lay grammarians and philologists had been summoned by scholar-printers to help with the task of editing old texts? The priest might claim the sacred office of mediating between God and man, but when it came to scriptural exegesis many editors and publishers felt that Greek and Hebrew scholars were better equipped for the task.

Faith and works – Luther and Calvin had based their theology on Pauline concept of justification by faith – Man was saved by faith in Jesus Christ and not by practicing the works of the Mosaic Law. But the Epistle of James argued “For just as a body without a spirit is dead, so also faith without works is dead. (James 2:26). Thus, one effect of printing and the Reformation was to

Printing

- Printing and the Protestant Reformation - 3
  - Popular editions of the Bible (such as the Luther & King James versions) had some interesting results:
    - They led people to draw an inevitable contrast between the idealized origin Church depicted in Acts and its current reality
      - Led many to see the present as a corruption and a decline from the past
    - Contrary to the intentions of the Reformers, it led to the fracturing of Protestantism

Origins vs present - The contrast between the ideal Church depicted in the early chapters of the Book of Acts and the sometimes sordid realities of a Church that seemed in need of moral reform led to reform efforts – some by Protestants who felt that fundamental overhaul was required and some by Catholics who felt that the problems, while real, were not inherent in the Church and could be corrected. Another contrast was between the teachings described in Scripture and the doctrines of the 16th century Church. Catholic theologians could argue, with justification, that current dogmas were simply the explicit logical outcome and development of teachings that were implied in Scripture. But if one were a literate individual who was not conversant with the detailed history of the Church and of Catholic theology, it would often be hard to see how a current dogma was anything but either a distortion of Christianity or an addition to it. Examples are the Doctrine of Transubstantiation in the Eucharist and the role of the saints, and especially Mary, as intercessors with God. Martin Luther and John Calvin dismissed indulgences, purgatory, saints, canon law, obedience to the pope, and all but two sacraments -- baptism & holy communion -- because these had not been explicitly mentioned in Scripture. (p327) [Shlain]

Fracturing of Protestantism - The Protestant reformers believed that when large numbers of lay people read the Scriptures for themselves, they would be transformed *{and would have the same understanding of the Scriptures that the initial reformers had}* (p326) [Shlain]

Printing

- The Book of Scripture or the Book of Nature – both were seen as the handiwork of God
  - Printing had a differential impact on the study of both:
    - Biblical scholarship could not get back to the pure original words of God before they had been corrupted by copyists over time
    - The study of nature, however, could progress as corrupted scientific data could be compared with, and corrected by, current observations and experiments

In the words of Elizabeth Eisenstein, "Confronted with conflicting astronomical tables based on corrupted scribal data, an astronomer like Tycho Brahe could check both versions against fresh observations of the sky. But dissatisfaction with the corrupted copies of St Jerome's Latin translation could not be overcome in the same way. Instead it led to multilingual confusion and a thickening special literature devoted to variants and alternative theories of composition. … Thus the effect of printing on Bible study was in marked contrast with its effect on nature study."

Printing

- But if the Book of Nature (what science revealed) seemed to contradict the Book of Scripture (what God revealed), then what:
  - For intellectuals and members of the educated elite, the logical conclusion was that the Book revealed by science was true and that the Bible was simply a collection of legends
  - For common believers, the logical conclusion was that Scripture was an infallible source of scientific knowledge

Science as true - This led to the Enlightenment, religious Modernism, and the alienation of Western intellectuals from religion. Their alienation from religion in turn led many to their infatuation with secular ideologies, such as Communism, Fascism, and militant Atheism.
Bible as true - This led to Biblical Fundamentalism, and such corollaries as Scientific Creationism, rejection of Darwinism, and Intelligent Design.

Printing

- Printing and the Rise of Nationalism
  - Printing fostered the idea of being part of large-scale collective groups
  - Printing, as noted earlier, elevated the status of the vernacular language, thus fostering a sense of ethnic-linguistic nationalism
  - Printing created walls between different language groups while homogenizing differences within
  - Print media proved very useful in arousing nationalist feelings and hatreds

Supra-local identification - With printing, people began to read about what went on beyond their local village and achieve both vicarious participation in more distant events and links to larger collective units. Printed materials encouraged silent adherence to causes whose advocates could not be found in any one parish and who addressed an invisible public from afar. Being able to read books and later newspapers from the capital led local provincials to see themselves as part of a national state.

Vernacular language –The vernacular languages which most people spoke acquired an importance once a mass market arose for printed material in those languages. This made it commercially profitable to produce books in the vernacular, which in turn gradually raised the literary status of these languages. This helped foster a sense of identity with those who also spoke the language. Two of these vernacular languages, French and early English, had become competitors of Latin as "languages of power" by the sixteenth century. In England early English had become the legal language in 1362, in France in 1539 "In 1562 the *Book of Homilies* was issued for universal public reading from every pulpit. Their content is not our concern, but rather their being uniformly imposed on the entire public. By making the vernacular a mass medium, print created a new instrument of political centralism previously unavailable.

Walls & homogeneity – Printing standardized idioms for millions of writers and readers, assigning a new peripheral role to provincial dialects. The preservation of a given literary language often depended on whether or not a few vernacular primers, catechisms or Bibles happened to get printed (under foreign as well as domestic auspices) in the sixteenth century. When this was the case, the subsequent expansion of a separate "national" literary culture ensued. The spread

Printing

- Printing and Intellectual Liberalism
  - Printers disliked censorship
    - They were natural libertarians who generally wanted the freedom to print whatever they wanted and whatever they thought would sell
  - Printers had to deal with scholars and intellectuals
    - This in itself contributed to liberal attitudes since intellectual pursuits brought together people from very diverse backgrounds and from different religions

Dislike of censorship - The printing industry was the principal natural ally of libertarian, heterodox, and ecumenical philosophers. Eager to expand markets and diversify production, the enterprising publisher was the natural enemy of narrow minds

Dealing with scholars & intellectuals – A merchant-publisher had to know as much about books and intellectual trends as a cloth merchant had to know about dry goods and dress fashions. The very nature of his business provided him with a broadly-based liberal education. He had to have a wide circle of acquaintances from various fields of endeavor and often wide contacts with foreigners. Foreign experts were often needed as editors, translators, and type designers. One result of all of this was exposure to people with different theologies and different points of view – all of which encouraged ecumenical and tolerant attitudes. Thus Christopher Plantin of Antwerp could be the official printer of Phillip II in the Low Countries but at the same time willingly serve Calvinists and have close friends who espoused some very unorthodox opinions that both Catholics and Calvinists considered beyond the pale.

Printing

- Printing and Childhood
  - Printing created childhood as a distinct social category
    - In the centuries after the invention of printing, Adulthood was redefined – one became an adult by learning how to read
    - Before the printing press, children became adults by learning to speak – a behavior for which all humans are hardwired and which they generally master by age 7
      - Thus the Catholic Church and the Law both defined age 7 as the age of reason and the age at which they became morally and legally responsible for their actions

Printing

- Printing and Childhood – 2
  - After printing, children had to earn adulthood by becoming literate, for which people are not hardwired
    - This meant children had to go to school
    - With the establishment of schools, children came to be viewed as a special class of people different from adults
  - People began to see human development as a series of stages, with childhood being a bridge between infancy and adulthood
    - Before print, children were seen as little adults and seen as part of the adult world

Children as a special class – Once children were seen as a special class, special institutions were developed for their nurturing. These include kindergartens, little leagues, Boy Scouts, Cub Scouts, Girl Scouts, Brownies, day care centers, Boys' Clubs, orphanages, summer camps, Juvenile courts, etc. We also conferred on children a special status, reflected in the distinctive ways we expect them to think, talk, dress, play, and learn.

Childhood, then adolescence - Later as schooling began to extend beyond literacy and primary or elementary school to high school, adolescence was added as a new stage between childhood and adulthood.

Printing

- As noted before, printing led to new formats and genres of literature:
  - Early genres included the book, broadside, and pamphlet
  - The mid-17th century saw the newspaper
  - The late-17th –early-18th centuries saw the scholarly journal
  - The 19th century saw the daily newspaper and the magazine