Agenda

- A little from last time
- Assessing the print revolution in Europe
  - Before
  - During (quiz)
  - After
- Non-European cases
LAST TIME

- Early “writing”
- Pictographic writing
- Logographic writing
  - Examples: Math, Chinese
  - Advantage: you don’t have to know how to say something to read it
- Alphabetic writing
  - Examples: English, Hangul
  - Greeks invented consonants and vowels
  - Beware of Alphabetolatry
The literacy myth?

- Does widespread literacy “require” the alphabet?
- the societal consequences attributed to literacy
- economic, political, and religious institutions who have always exercised greatest influence on the actual uses of reading and writing
Orality overthrown?

- “Then, about 500 years ago, orality was overthrown by technology. Gutenberg’s invention of metallic movable type elevated writing into a central position in the culture. By the means of cheap and perfect copies, text became the engine of change and the foundation of stability. From printing came journalism, science and the mathematics of libraries and law.”

There have been three revolutions in the history of human thought. The first ... when language first emerged. ... The second cognitive revolution was the advent of writing ... The third ... the invention of a type and the printing press. ... the fourth cognitive revolution, which is just about to take place with the advent of "electronic skywriting".

Between writing and printing?

What was going on at the time of Gutenberg’s invention?
Last time:
Information in Medieval Europe

- Technologies
  - Form: scroll versus codex
  - Material

- Institutions
  - Church
  - bureaucracies
Material: Papyrus, parchment, paper

- parchment over papyrus?
- paper invented in 200 bc?
- diffusion:
  - 105 ad, China
  - 300 ad, Korea (Koguryo dynasty)
  - 5th century, 'domestic' uses,
  - India 610,
  - Japan 750,
  - 795, Baghdad
  - 9th century, Byzantium
Technology: Features of the scroll

- handy
- Pages
- random access
- doesn't crack
Technology: Features of the scroll

- handy
- Pages
- random
- doesn't

AN UNACKNOWLEDGED REVOLUTION

The effects produced by printing have aroused little controversy, not because views on the topic coincide, but because almost none has been set forth in an explicit and systematic form. Indeed, those who seem to agree that momentous changes were entailed always seem to
"The roll continued to serve for ... writing of the sort that goes into files or archives, but the codex took over in literature, scientific studies, technical manuals ... the sort that go onto library shelves".

- Casson, Libraries in the Ancient World, 2000

"the revolution between the second and fourth centuries that changed the very structure of the book by substituting the codex for the roll"

- Roger Chartier, Forms and Meaning 1995
Technology: affordances of the codex

- In Western Europe in 200 AD, codex gaining, scroll losing 500 AD, codex dominating

- **why? Codex gives...**
  - random access
  - one handed
  - two-sided
  - pagination
  - marginalia
  - footnotes
  - indexes
Technical superiority?
Institution: The church
"The late medieval book differs more from its early medieval predecessors than it does from the printed book."

Parkes, "Influence" 1976

"The expectation of readers was changed, and this was reflected in changes in the physical appearance of books."

Parkes, ibid
Technology: the codex

- Innovation in changing codex:
  - running titles
  - subdivisions: books, chapters
  - analytical tables of contents
  - chapter headings
  - cross references
  - alphabetical order
  - page numbers, indexes
In England “lay literacy grew out of bureaucracy, rather than from any abstract desire for education or literature…”

Clanchy, *From Memory to Written Record*, 1993, p19
Preparing the ground....

- **Innovations:**
  - Domesday
  - dates
  - names
  - spelling
  - written evidence
  - authenticity
  - Centralization

- Unintended consequences?
In Institution: the bureaucratic state

- In England “lay literacy grew out of bureaucracy, rather than from any abstract desire for education or literature...”
  - Clanchy, *From Memory to Written Record*, 1993, p19
The printing revolution?

- Assessing a revolution:
  - What happened?
    - Gutenberg
    - Eisenstein
  - What came before?
    - Manuscript culture
    - Non-European contexts
  - What came after?
Empowering ordinary people?

- “the net.... This is the most extraordinary invention for empowering ordinary people since the invention of the printing press in the 1400s. It really is. It has re-democratized America. There is an enormous shift in power. I thought the YouTube/CNN debate was sensational.”

- Howard Dean, Yearly Kos. Chicago, Aug 4, 2007; http://howardempowered.blogspot.com
Individual empowerment

“Not since Gutenberg invented the modern printing press more than 500 years ago, making books and scientific tomes affordable and widely available to the masses, has any new invention empowered individuals, and transformed access to information, as profoundly as Google.”

Gutenberg

Who is this guy?
What did he do?
Gutenberg’s life

“His story is shrouded in mystery”
-Stephen Fry

What documentation existed about him?
- Court records

http://commons.wikimedia.org/wiki/File:Gutenberg.jpg
What we know from records

Gutenberg’s bio:

- 1394-1404 – Born in Mainz as Johannes Gensfleisch(?) In Mainz
- 1418/9 - Johannes de Alta villa enrolls at University of Erfurt
- 1420 – father dies
- 1428?? Gutenberg exiled from Mainz
- 1430 – Gutenberg is allowed to return to Mainz, but does not.
- 1434 – Gutenberg shows up in Strasbourg
- In 1436-7, Ennelin zu der yserin Thüre claims Gutenberg promised to marry her
- 1436 – pays Hanns Dunne for “things to do with printing”
- 1438 – Drizhen dies, conflict over in heritance.

Src:
Gutenberg digital: http://www.gutenbergdigital.de
British Library Online: https://www.bl.uk/treasures/gutenberg/
Paul Duguid, lecture, “print culture”, February 10, 2009
Gutenberg’s bio:

- 1442 – incurred more debt in Strasbourg
- [Waldfoghel and Ferrose]
- 1448 – Back in Mainz – borrows money from Gelthus
1450 – Fust lends Gutenberg money
Gutenberg’s bio:

- 145x – Donatus’ Latin Grammar
- 1452? – indulgences printed
Luther’s letter to the archbishop of Mainz, 1517: “works of piety and love are infinitely better than indulgences, and yet these are not preached with such ceremony or such zeal”

http://www.fordham.edu/halsall/sbook.html
Why Catholic Indulgences Are Making a Comeback

By BONNIE ROCHMAN  Sunday, Feb. 22, 2009

Alinari’s *Meeting Between Dante and Beatrice in Purgatory*. Through the Catholic doctrine of indulgence, believers can minimize their time spent in purgatory

Alinari Archives / Corbis
Gutenberg's bio:

- 1455 – 42-line bible is printed

Image source: http://molcat1.bl.uk/treasures/gutenberg/search.asp
Paper and parchment copies of the 42-line bible

Image source: http://molcat1.bl.uk/treasures/gutenberg/search.asp
"The written word on parchment will last a thousand years. The printed word is on paper. How long will it last? The most you can expect of a book of paper to survive is two hundred years. Only time will tell."
- Trithemius, In Praise of Scribes.
1492
"For all his dislike of mechanical reproduction, 'Trithemius] proved particularly deft at exploiting the printing press. ... He had his book... published in Mainz by Peter von Friedberg, his favourite printer, and ... set the work not in Gothic type normally used in Germany, but in an innovative and attractive Roman font".

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<td></td>
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<td>Vol I, incomplete, paper</td>
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print and manuscript bibles
Printing spreads
So what was Gutenberg’s invention?

- Movable metal type: the punch and the matrix
- But wait: Blaise Aguera y Arcas and Paul Needham call this into question

Source: http://www.open2.net/historyandthearts/discover_science/gutenberg_conclusions.html
John Fust.

[From Maittaire.]
6 November 1955

Dispute was over Gutenberg’s “Work of the Books”

Account of Fust and Gutenberg’s business relationship as described by Fust
The notary

“Ulrich Helmasperger, cleric of the diocese of Bamberg, notary public and lay judge of the holy seat at Mainz by imperial authority... marking it with his usual sign.”

Src: http://www.gutenbergdigital.de
Gutenberg's bio:

- 1457 – Mainz Psalter printed by the capable technician Schoeffer
- 1465 – Gutenberg is made a nobleman
- 1468 – Gutenberg dies
PROJET DE STATUE
A ÉRIGER DANS LA COUR PRINCIPALE DE LA BIBLIOTHÈQUE ROYALE
A L'INVENTEUR DE L'IMPRIMERIE
“...the biggest technological revolution journalism has seen in years, "probably not since Gutenberg," in the words of Orville Schell, dean of the Graduate School of Journalism at UC Berkeley.”

Matthew B. Stannard, San Francisco Chronicle, April 9, 2006
"Whether the Germans first borrowed this Invention from the Chineses, or whether amongst the Germans (who undoubtedly lay best claim to it) Iohn Gutenberg the Knight of Mentz, or Iohn Fust a Moguntine, was the first Inventor thereof, it matters not."

Robert Heath, *Paradoxical Assertions, 1659*
Eisenstein

The features of print culture
Quiz time – in groups of 1-3

- Pick one feature of print culture that Eisenstein describes. How did the technology of printing press contribute to that feature of print culture?
- Other than the printing press itself, what people, practices, artifacts or institutions also explain this feature?
- What is the significance of this feature to ONE of the following:
  - Reformation
  - Renaissance
  - Scientific Revolution
- Summarize your response to EACH question in 3-4 sentences.
- Be thoughtful, concise, make an ARGUMENT, and use EVIDENCE
Eisenstein: increased output; altered input

- combinatorial reading
- spread of inaccurate knowledge
- increase in both religiosity and secularism
- libraries came quickly, but organizing them came later
Eisenstein: standardization

- errors were corrected with standard texts
- style of copyists ceases
- polarization of fonts (gothic and roman)
- made people aware of the roles in society by making something "typical" to the public
- printers had multiple roles beyond printing
rationalizing, codifying, cataloguing

- reorganize the thinking of readers with alphabetic ordering, indexes, etc.
- intellectual and commercial activities brought together in the print shop
- pagination with Arabic numerals
- you could print lists of statutes
from corrupted to improved

- quality of work improved in competition
- the "drift" of scribal culture is halted when new forms of feedback helped to correct errors which are a "prerequisite for modern scholarship and science" )p76)
fixity and cumulative change

- Preservation easier with more copies
- Preserving texts and reproducing them is a democratizing force
- Standard vernaculars
- National identity
- “Drive for fame” encouraged by print
- Authorship
Amplification and reinforcement

- Language and cultural customs can be spread
- Differences also become more apparent
The non-European context

- China
- Korea
- Six controversies
- Three similarities
Overview of adoption of printing-related technologies

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<th>Typography</th>
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<td>10th cent *</td>
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<td>4th cent ad</td>
<td>19th cent</td>
<td>8th cent</td>
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<td>7th cent ad</td>
<td>19th cent</td>
<td>9th cent</td>
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<td>India</td>
<td>5th cent ad</td>
<td>6th cent *</td>
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<td>Islam</td>
<td>8th cent ad</td>
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<td>15th cent</td>
<td>15th cent</td>
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Image src: Paul Duguid, “Print Culture” – Hofl09
Explaining the different order?

- Clearly different cultures adopted these technologies in radically different ways

- Why?
  - Religion?
  - Geography?
  - Political organization?
The role of Geography and Religion

- Papyrus in Alexandria
- Silk in China
- Palm in India
- Parchment in Europe
China
China – early printing

- 450 – stamp printing
- 175 AD - printing of Confucian classics from stone carvings
- 868 – the diamond sutra – oldest surviving book
- 972-83 - Tripitaka, 5,048 volumes, 130,000
China – 10\textsuperscript{th} and 11\textsuperscript{th}

- 10\textsuperscript{th} c. printed money and playing cards
- 1041 Pi Sheng - Early clay movable type
Korea
Korea

- 918-1392: Koryo Dynasty three methods of publishing
  - transcription: Royal library; practice
  - xylography: Buddhist temples
  - typography: civil service
- 1087: *Tripitaka Koreana* (xylography)
  - 160,000+ pages
Korea

- 1377 – Baekunhwasang Chorok Buljo Jikji Simche Yojol – or Jikji – First book with metal type
An unacknowledged unrevolution?

-Duguid, 2007
-RAND in 2000
Six perspectives on printing
Xylography v. movable type

- Xylography is advantageous:
  - Preservation: Can do a “run” at any time
  - Better for logographic writing (Chinese)
  - Better when there are multiple scripts (Japanese)
  - Wood easier to come by
  - No issues with “fixing the plate”

- Metal type is advantageous:
  - Once you have a set, you can print anything
  - Easier with a limited number of characters (42-line bible had 270)
Alphabets v. Ideographs

- In Korea: Chinese v. Hangul
  - Is this about printing popular text?
  - formal v. vernacular
- (in Europe, the problem was Latin v. Vernacular)

Gutenberg. But, according to his comment, the Korean invention had failed to take advantage of it to develop further, largely because Koreans could not turn book publishing into lucrative business. According to his interpretation, the Koreans’ failure was due to their limited use of the new technology in publishing Chinese classics, without printing the more widely circulatable novels for the grass-root people. In short Korean metal type printing had
Wine press v. wax tray

- Details about technology actually matter
- Issue of holding pieces in place while printing
Money v. Monarch

- Or, where does your funding come from?
  - Gutenberg’s research paid for by business ventures
  - Other places, by the state
- What are the implications for what gets printed and how it is distributed?
Clay/Wood v. Metal type

- Depends who is telling the story of printing
- Metal type is more durable for many runs
Chinese v. Korean

- Who has the oldest printing technology?
- Really about nationalism?

The history of printing told us that although woodblock, wooden-type and metal-type techniques were first developed in China, but the peoples of all other countries and areas made their own contributions to the further development of printing in the world, such contributions should be well recognized and written in the history. To study the history of printing from the angle of world history and comparison between the East and the West may be helpful to deepen the mutual understanding and the friendship among peoples in various countries.
“In China as in the West, discourses on written culture reveal three dominant obsessions.”

Roger Chartier, and Jill A. Friedman, trans. “Gutenberg Revisited from the East,” Late Imperial China 17.1 (1996) 1-9
Concern over Loss

- Multiplication of libraries and collections
- “preserve the written patrimony”
Corruption

- Two different concerns
  - Competition creates incentives for “values which are not those of learning”
    - E.g. Piracy: Martin Luther’s German Bible
  - The authority of official interpretation
Excess

- How to manage all this information?
  - Libraries
  - Indexes
  - Cataloging
Not new to printing

- Concern over Loss
  - Paper v. parchment

- Corruption
  - Notion of textual drift in manuscripts
  - Plato’s concerns about text: "your pupils will have the reputation for [wisdom] without the reality; they will receive a quantity of information without proper instruction."

- Excess
  - Cataloging, indexing -> not new to print
Next time:

Eisenstein wrap-up; conclusions about print culture

“the public”

Virtuosi
Coffeehouses
“the news”
Penny universities
science