

# History of Information



## storage & search



### History of Information

April 11, 2017

The debate over Google involves a European newspaper taking on an American technology leader. Are national differences driving the debate here? If so, how? If not, what are the main drivers?







# a long history

year

2017

1980

1950

1900

1800

1700

1600

1200

600

400

0

500

3000

5000

30,000

50,000



IBM



ake news

UDACITY

OB On Candide 1694  
PQ Voltaire, François Marie Arouet de, 1694-1778  
2082 Candide; ou, L'optimisme. Préface  
.C3 de Francisque Sarcey. Illustrations  
de Adrien Moreau. Paris, Editions  
Jules Tallandier, 19  
174p. 26cm. (Les chefs-d'oeuvre  
de l'esprit)

1

2

3



0

11

12

13

14

15

week



# Facebook to build third foreign data center in Denmark



A 3D printed Facebook logo is seen in front of a displayed cyber code in this illustration taken March 22, 2016. REUTERS/Dado Ruvic/Illustration



By Nikola Skydsgaard | COPENHAGEN

Facebook will build a new data center in the Danish city of Odense, the California-based tech company said at a press conference with local authorities, only the third such facility outside of the United States.

The new facility will be built on the outskirts of Denmark's third largest city, best known as the birthplace of fairy tale writer Hans Christian Andersen.

It will be powered exclusively by renewable energy, McEntegart said, adding that the cold climate could help to cool servers instead of relying on air conditioners.

## Amazon's 'dirty cloud' criticised in Greenpeace report

© 3 April 2014 Technology



Topic: [Less of What We Don't Need](#)

Last month, the social-media giant Facebook announced plans to build a new data center near Odense, Denmark. The expansion of server capacity was needed, the company said, to support "richer content" such as live-streaming and virtual reality.

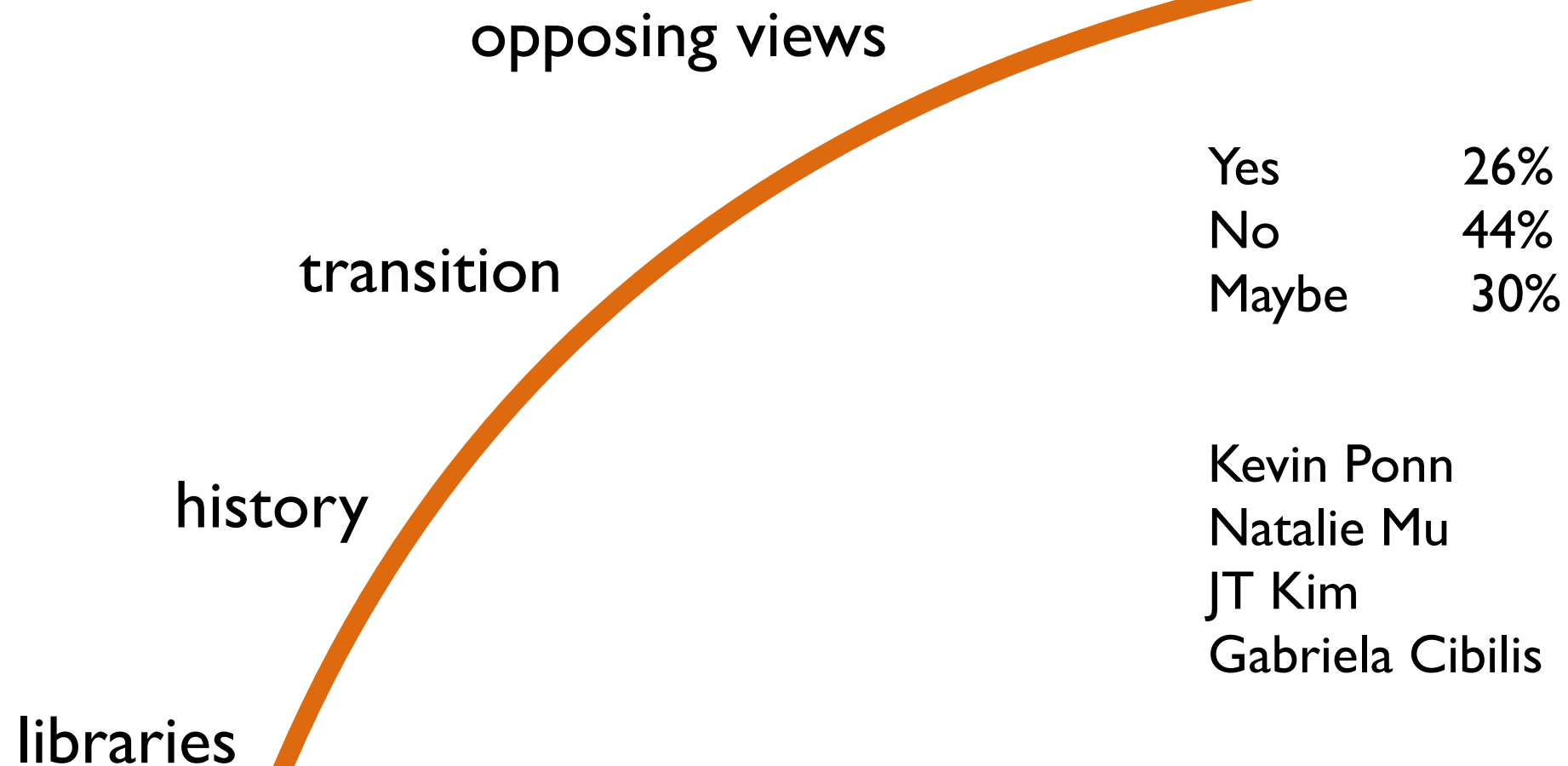
The Facebook executive who made a public announcement of the decision ([live-streamed](#)), of course, noted that the new facility would have the "smallest footprint possible" and be "powered by 100 percent clean and renewable energy." Well, not exactly.

Facebook and Apple are eager for their new data centers to share the bright green aura that surrounds Denmark's strong wind-energy commitment. But only [about half](#) of the country's electricity is supplied by renewable sources, so there's no spare green energy available to cover Silicon Valley's needs. The increase in national power consumption spurred by the new facilities will have to be generated from nonrenewable sources.

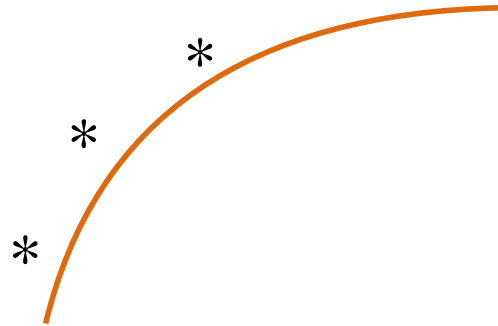
## Storage & Search

The national difference ... centering on views that the Internet should be treated as more of a library and that Google, as a media and "news" distribution site —Kevin

## road ahead







libraries



# the Net is ...

"a sort of mechanized private file and library" — Bush, 1945

"[T]he library of the future." — J.R. Licklider, 1965

"[T]he Internet...is a library." — Cairncross, *The Death of Distance*, 1997

"Library of libraries" — George Steiner, *Grammar of Creation*, 2001

"[T]he web is a global library produced by millions of people" — Yochai Benkler, *The Wealth of Networks*, 2006

"In the beginning, the Web was a library" — Abelson, &c., *Blown to Bits*, 2008

"Most of the world's information is not online. It's offline, in books, on shelves." — Google representative, 2009





# the right model?

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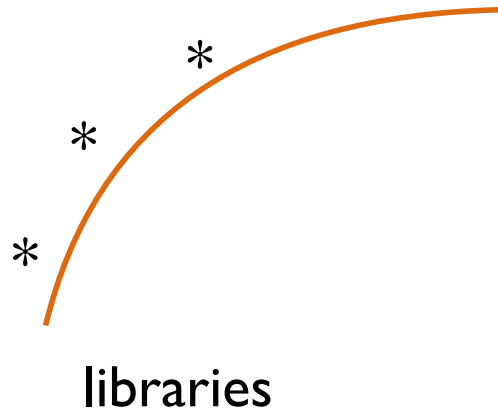


"The Internet is a library with all the books on the floor."

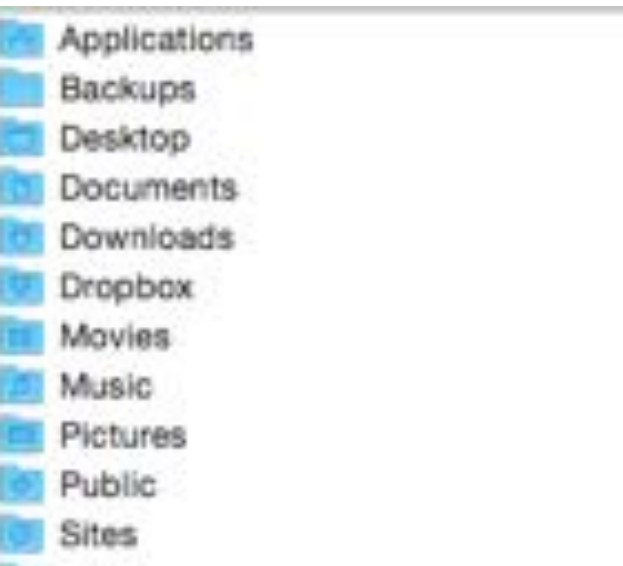
--*Librarian's Guide to Cyber Space*







# hidden assumptions



```
[Macintosh:~] pbd% ls
Applications
Backups
Desktop
Documents
Downloads
Dropbox
Library
Movies
Music
Pictures
```

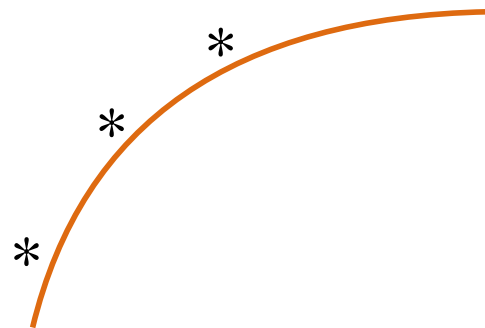
```
[Macintosh:~] pbd% ls library
Accounts
Acrobat User Data
Address Book Plug-Ins
Application Scripts
Application Support
Assistants
Audio
Autosave Information
Aviator
BBEdit
Caches
Calendars
Classic
ColorPickers
Colors
Containers
Contextual Menu Items
Cookies
Dictionaries
Documentation
Favorites
FileSync
FontCollections
Fonts
Fonts Disabled
GameKit
Google
Group Containers
Icons
IdentityServices
Indexes
Internet Plug-Ins
Internet Search Sites
Keyboard Layouts
Keychains
LanguageModeling
LaunchAgents
Lockdown
Logs
Mail
Mail Downloads
Mail.zip
Messages
Metadata
Mobile Documents
MobileDevice
Mozilla
NeoOffice3-1.1
Opera
PDF Services
Phoenix
Phones
Preferences
Printers
PubSub
QuickLook
Receipts
Recent Servers
Safari
Safe Preferences
Saved Application State
Saved Searches
Screen Savers
ScriptingAdditions
Scripts
Services
Sounds
Speech
Spelling
Spotlight
StickiesDatabase
Sync Services
SyncedPreferences
Syndication
Thunderbird
WebKit
Widgets
Workflows
com.apple.nourlsessiond
iApp
iMovie
iTunes
```



"We are very excited about contributions from the community," announced Alphabet's DeepMind, open sourcing a new library to make it easier to build complex TensorFlow neural networks. An anonymous reader writes:

"DeepMind foresees Sonnet to be used by the community as a research platform," reports Foxbytes. "Also, it would allow easy sharing of other models created by DeepMind with the community." Sonnet uses an object-oriented approach, a recent blog post explained, pointing to more details on GitHub. "The main principle of 'Sonnet' is to first construct Python objects which represent some part of a neural network, and then separately connect these objects into the TensorFlow computation graph."

DeepMind sees this as part of their broader commitment to open source AI research. "In recent months we've also open-sourced our flagship platform DeepMind Lab, and are currently working with Blizzard to develop an open source API that supports AI research in StarCraft II."



libraries



```
[Macintosh:~] pbd% ls
Applications
Backups
Desktop
Documents
Downloads
```

```
Dropbox
Library
Movies
Music
Pictures
```

```
Public
Sites
Synchronize! Volume ID
unrepressed
```

# do they come with obligations?



## acquisition

"record ..."

## organization

"index ... association"

## preservation

"stored ..."

## openness?

"access to and command over

*who?*

*how?*

*to what?*



```
OB 04 04000 10000
PQ Voltaire, François Marie Arouet de,
2082 1694-1778
.C3 Candide; ou, L'optimisme. Préface
de Francisque Sarcy. Illustrations
de Adrien Moreau. Paris, Editions
Jules Tallandier, 19
174p. 26cm. (Les chefs-d'oeuvre
de l'esprit)
```

```
[Macintosh:~] pbd% grep voltaire
```

```
search_results = Google.search("This is my query")
```

GoogleResult:

```
self.name # The title of the link
self.link # The link url
self.description # The description of the link
self.thumb # The link to a thumbnail of the website (not implemented y
self.cached # A link to the cached version of the page
self.page # What page this result was on (When searching more than one
self.index # What index on this page it was on
```

## authentication?





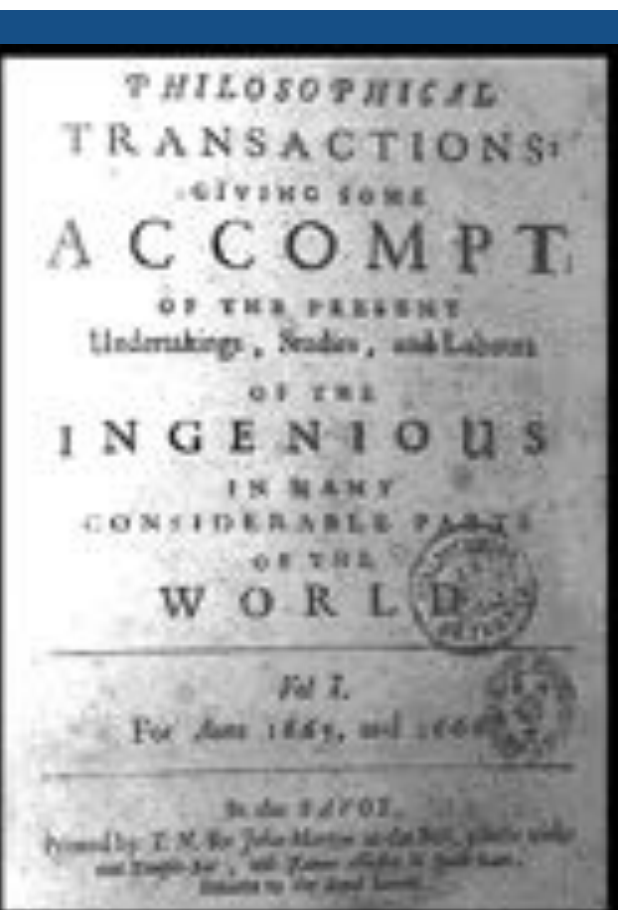
Vannevar Bush, 1890-1974  
*National Defense Research  
Manhattan Project  
National Science Foundation*

[Macintosh:~] pbd% ls  
Applications  
Backups  
Desktop  
Documents  
Downloads

Dropbox  
Library  
Movies  
Music  
Pictures

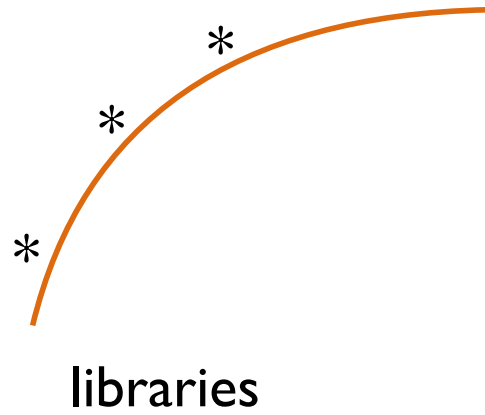


# acquisition



**“make faithful records ... ”**

“Science has provided the swiftest communication between individuals; it has provided a record of ideas and has enabled man to manipulate and to make extracts from that record so that knowledge evolves and endures throughout the life of a race rather than that of an individual.”



# recording artists



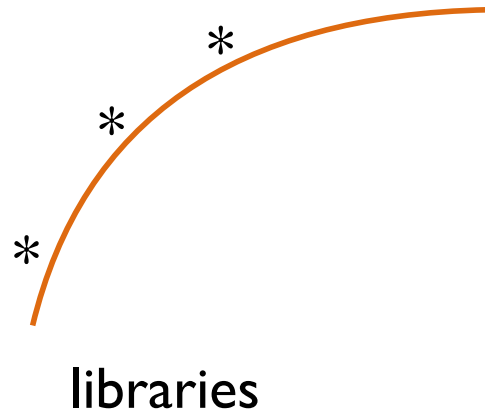
## **extending, storing, consulting, indexing**

"A record if it is to be useful to science must be continuously extended, .. stored .. consulted ... The camera hound ... wears on his forehead a lump little larger than a walnut ... every time [the scientist] looks at something worthy of the record, he trips the shutter"

--Vannevar Bush, "As We May Think," 1945







## Google Rejects 'Right To Be Forgotten' Order In France

Associated Press | Damon Beres | Posted 07.31.2015 | Technology

Read More: [Google](#), [Right to Be Forgotten](#), [Google France](#), [Online Privacy](#), [Technology News](#)

PARIS (AP) — Google is rejecting an order by the French data privacy agency to remove search results worldwide upon request, saying European law all...



# old tech tradeoffs



## Morse paradox

"The record of intelligence is made in a permanent manner ...

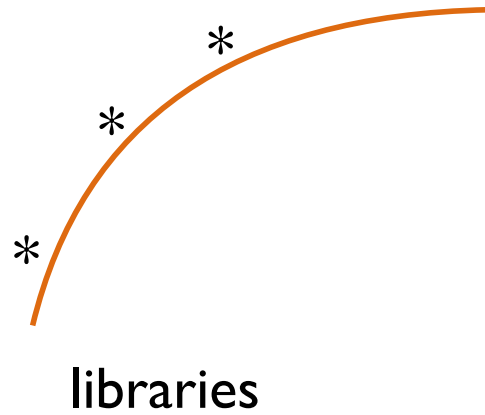
"Communications are secret to all but the persons for whom they are intended."

— Morse to Congress

## plus or minus?

"Presumably man's spirit should be elevated if he can better review his shady past and analyze more completely and objectively his present problems."

— Bush



# to record or not to record?

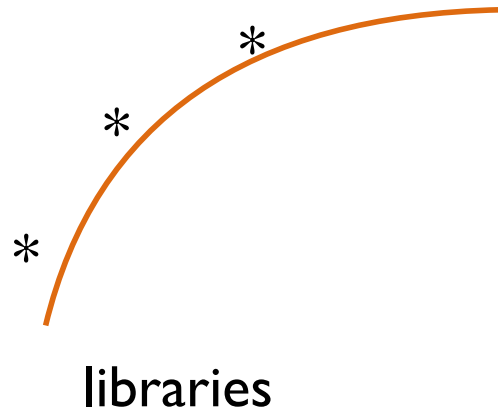


"For almost all of human history, most of what humans experienced was quickly forgotten.

Today, however, retention of digital data is (relatively) easy and cheap. As a consequence, and absent other considerations, we keep rather than delete it. ... I propose that we shift the default when storing personal information back to where it has been for millennia, from remembering forever to forgetting over time."

--Victor Mayer-Schönberger, "Useful Void," 2007





# who keeps what, and why?

## the “information master”

“At the upper-end is a fair Room, wherein the Papers of State are kept; particularly those of the Administration of Cardinal *Mazarin* and his own Accounts, when he was in Employment. These make up many hundred Folio’s. The Manuscript Library ... contains 6,610 Volumes.”

—Martin Lister, FRS, 1698



A un zèle également vif pour le progrès des Sciences & pour la gloire de son maître, M. Colbert joignoit une passion extraordinaire pour les livres; il commençoit alors à fonder cette célèbre bibliothèque jusqu'à ces derniers tems la rivale de la bibliothèque du Roi: mais l'attention qu'il eut aux intérêts de l'une, ne l'empêcha pas de veiller aux intérêts de l'autre. La bibliothèque du Roi est redevable à ce ministre des acquisitions les plus importantes. Nous n'entre-rons point ici dans le détail de ces diverses acqui-

143 references in  
Encyclopédie

Storage &  
Search

road ahead

opposing views

transition

history

libraries





Oracle Bones  
Anyang, c1100 bce

"as early as the second millennium BCE the Chinese had ... means of organizing and storing their written records."

--Helliwell, 1998

## record & store

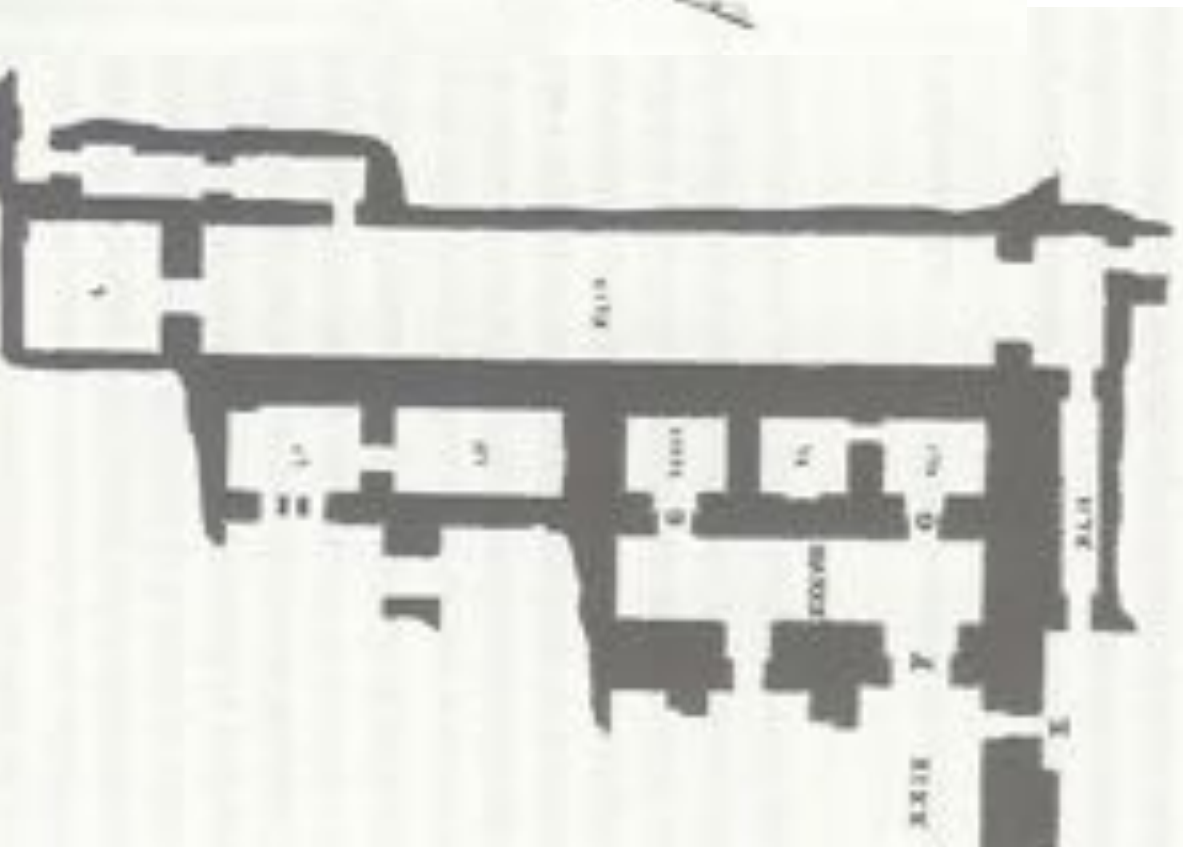
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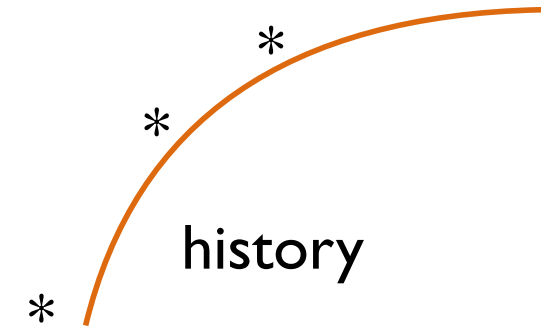


**Ebla** (Syria) c 2250 bce

**Babylon** (Iraq) c 1790 bce, 15,000 tablets  
Hammurabi

**Nineveh** (Iraq) c. 650 bce, 31,000 tablets  
Ashurbanipal; destroyed 612 bce





# what's stored

## a distinction of significance?

**Ebla:** accounts, lists, etc.

**Nineveh:** *Gilgamesh*

See the tablet-box of cedar,

Release its clasp of bronze!

Lift the lid of its secret,

Pick up the tablet of lapis lazuli and read out

The travails of Gilgamesh

— *The Epic of Gilgamesh*

(Penguin, 2003, trans. Andrew George)

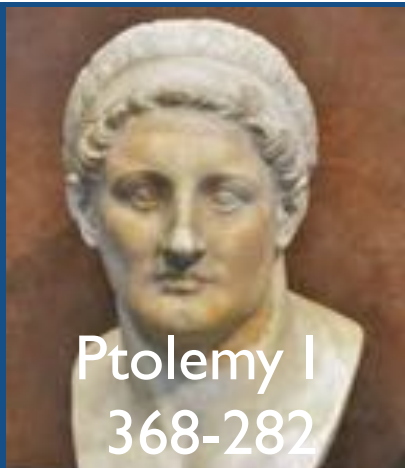






"From Scepsis came the Socratics Erastus and Koriskus and Neleus ... who received the library of Theophrastus, in which was the library of Aristotle ...; he was the first we know of to have collected books and he taught the kings in Egypt the arrangement of a library. And Theophrastus gave it to Neleus; and he carrying it away to Scpesis ... and when they saw the eagerness of the Attalid kings ... in seeking books for the equipping of the library in Pergamum, they hid them ... then after a long time ... sold the books of Aristotle and Theophrastus for much money." - Strabo, 64 bce - 23 ce

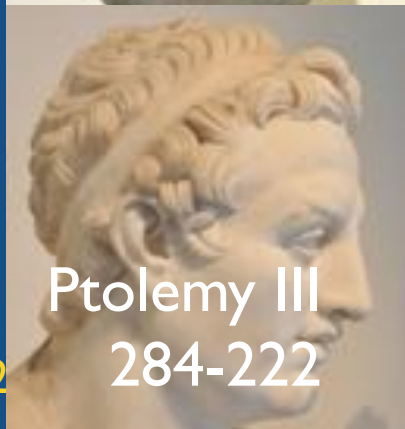
## a new generation



Ptolemy I  
368-282



Ptolemy II  
308-246



Ptolemy III  
284-222

**Lyceum [Greece]**  
(Aristotle)

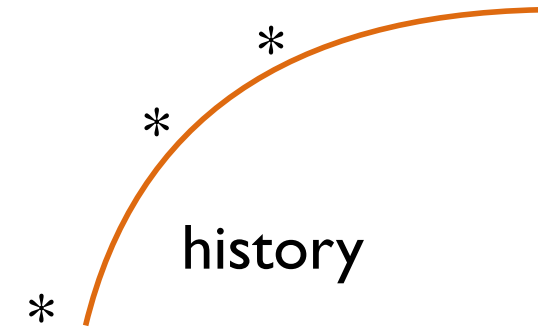
**Pergamum**  
[Turkey]  
(c 197 bce)  
200,000 scrolls

**Alexandria**

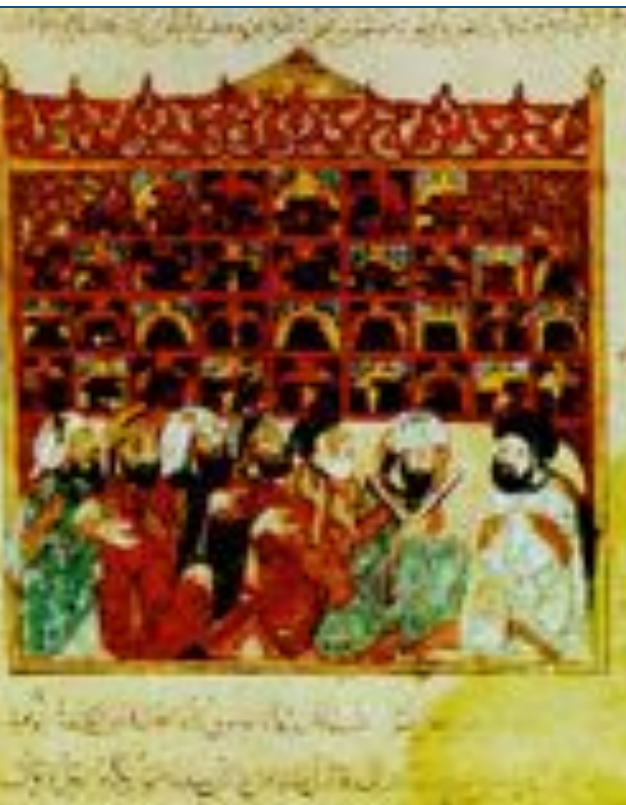
**490,000 vols. in main library ; 42,800 in "daughter"**

"Anthony gave the 200,000 books in the library of Pergamum ... as a gift."





# light in the “dark ages”



## **Bayt al-Hikma**, Baghdad, 9th century ("The House of Wisdom")

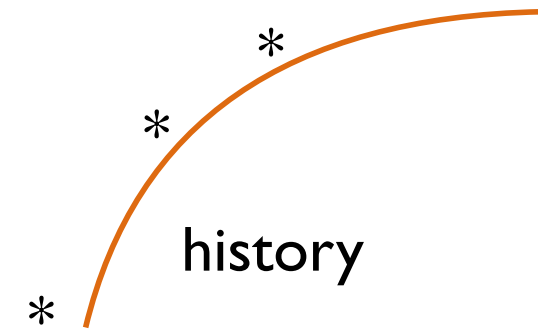
"Whoever wanted was at liberty to copy any book he wished to copy, or whoever required to read a certain book could do so."

--James Thompson, *The Medieval Library*, 1939

mathematics, astronomy, medicine, chemistry, zoology,  
geography

a mandate to translate





# inherited imperatives



## **monastic record**

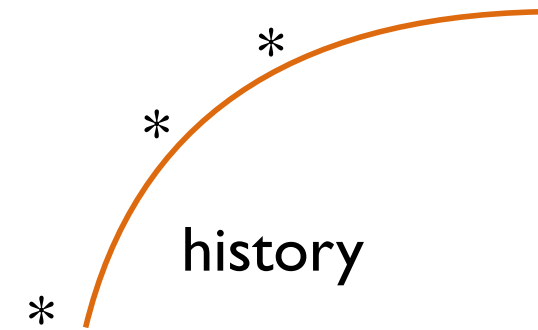
### **Humbert de Romanis (c1194-1277)**

dry, well ventilated, ample shelving,  
subject categories, catalogue, titles on  
spines; up to date, selling old and  
duplicates to buy new; regular hours;  
"reference" books chained, others portable;  
loans recorded



### **Trithemius (15 - 16th cent)**

### **Mazarin (17th cent)**



# going secular



**Paris** (Charles V, 1338-1380)

**Beijing** (Ming Dynasty, 15c)

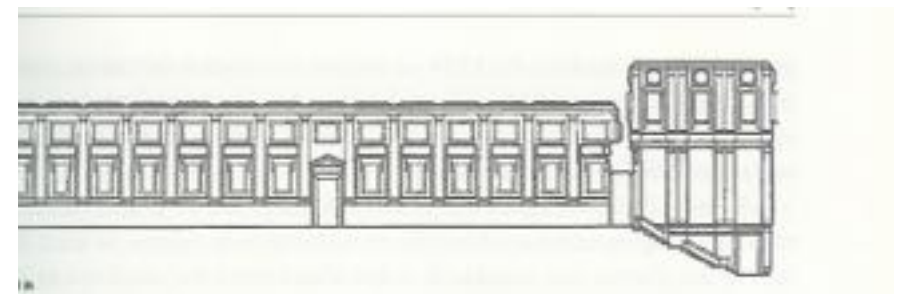


**Florence** (Cosimo de Medici, 1389-1464)

**Vatican** (15th century)

**Escorial** (16th century)

**British Museum**, 1753







# vulnerability

## ***national library***

"Libraries are the Memory of Mankind" —Goethe


"Reserves against a spiritual winter" —Yourcenar

Babylon, ... Pergamum, ... Alexandria, ... Syria,  
Tripoli, ... Sarajevo, ... Baghdad, ...Timbuktu ...Mosul

## **Alexandrian acquisition**

"[T]he Ptolomies "sought to make their capital the cultural center of the Greek world ... what they couldn't buy ... confiscated" — Lionel Casson

"More than 700 monasteries were dissolved under emperor Joseph II in the lands of the Habsburg monarchy between 1782 and 1787" — Buchmayr, *Lost Libraries*




# palace to museum to library to ...

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**British museum** (dept of printed books), 1753



**Old Royal Library** (Geo II, acquired 1757)



"the British Museum ... adding to each at the public expense, those articles that are wanting ... by purchasing all the books of character ... They might be classed in centuries, according to the dates of their publication, and catalogues printed of them and the manuscripts... a complete apparatus of a course of mathematics, mechanics, and experimental philosophy."

--Tobias Smollett, *Humphrey Clinker*, 1771

**King's Library** (Geo III, 65,000 vols acquired 1823)





LoC



**1800** - library, c. 3,000 books

**1814** - destruction

"I learn from the newspapers that the vandalism of our enemy has triumphed over science as well as the arts" —Jefferson

**1815** sale of Jefferson's library

6,487 books; \$23,950

**1851** fire destroys 35,000 books

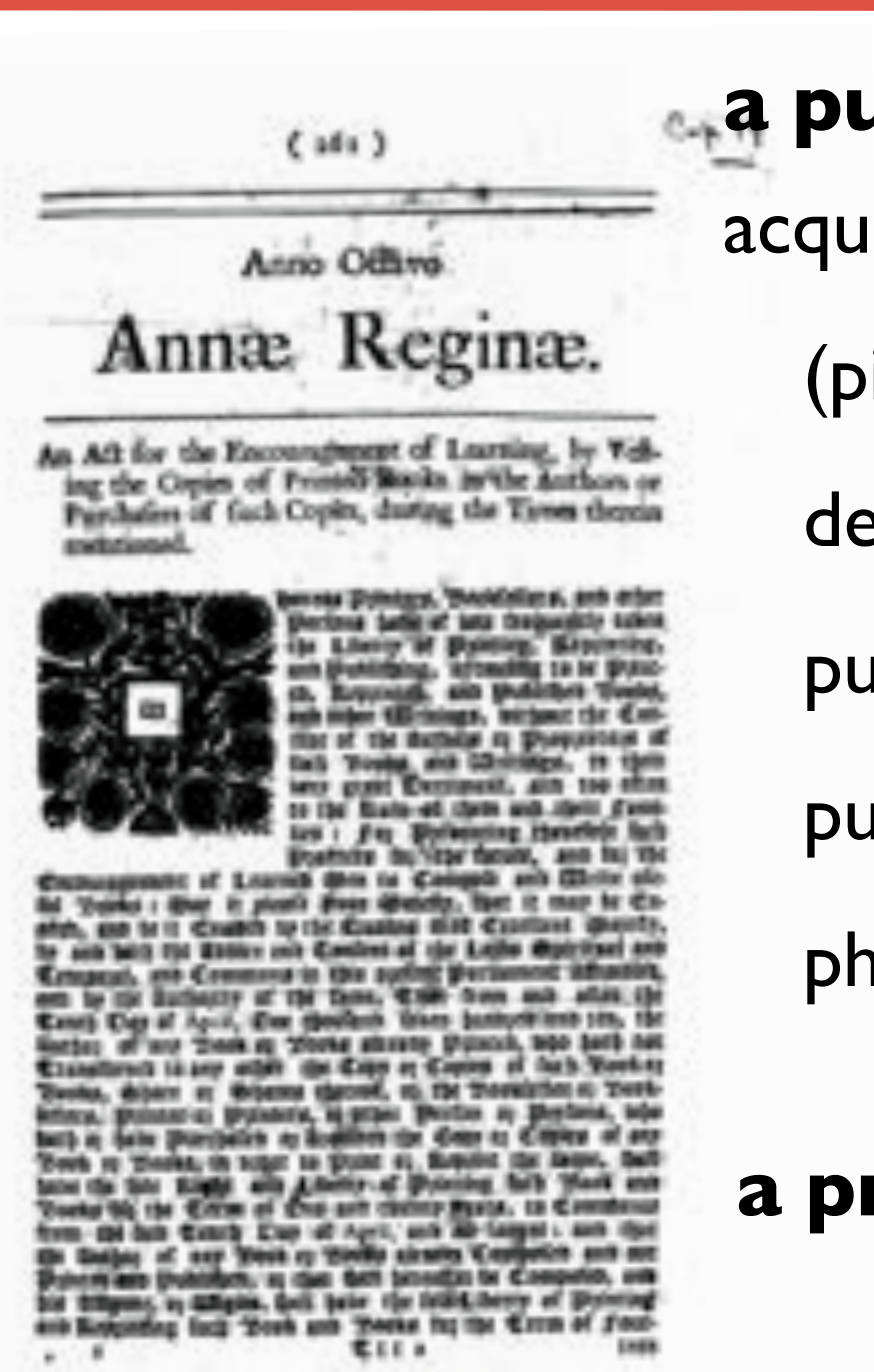
**1897** Thomas Jefferson building



Charles S. Greene Library, Oakland



public/private



a public good  
acquisition by ...

(pillage)

deposit

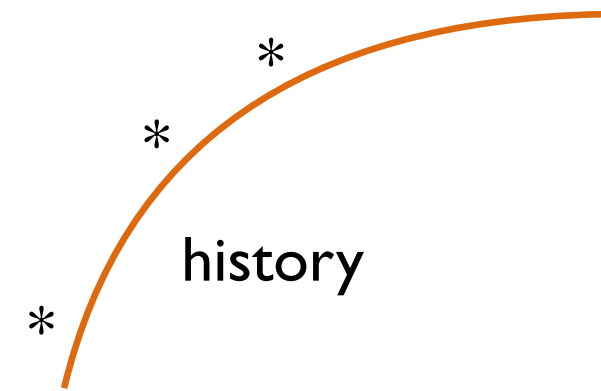
purchase

public funds -- public libraries act (UK 1850)

philanthropy -- (Carnegie libraries)

a private place





# openness



**for the public**

**Cheetham, England, 1653**  
(first public library)

**Cranston Library, Reigate 1701**  
(first public lending library)

**Coffee-House libraries,**  
18th century





# stacking up

Suppose you guess where people spend at least some of their time in the city.

For instance, what attractions draw the most visitors?

A. Major museums, like the Metropolitan Museum of Art, Museum of Modern Art, American Museum of Natural History, Brooklyn Museum or Museum of the City of New York.

21 million

B. Libraries, including the neighborhood branches and research centers.

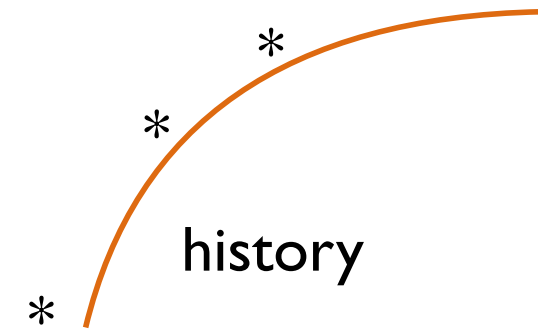
37 million

C. Performing arts, like those at Lincoln Center, Carnegie Hall, City Center and Snug Harbor.

D. Sports teams like the Yankees, Mets, Knicks, Nets, Rangers, Jets and Giants.

9 million





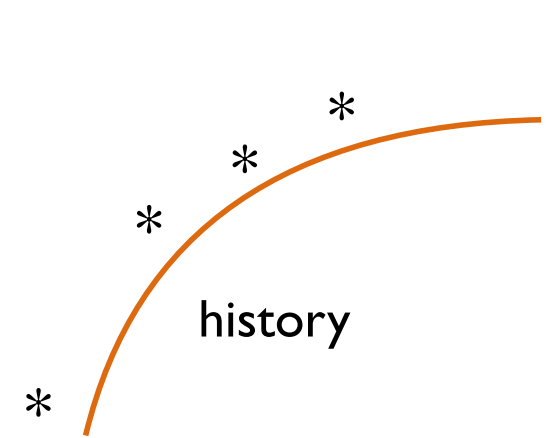
# preservation

## **enduring suspicion**

"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."

1145, Roger of Sicily ordered all charters on paper to be copied to parchment then destroyed

1248, paper accepted by the notaries of Languedoc



## fast forward



**Mechanic's  
Institute  
San Francisco**

Beijing libraries and bun shops  
Mudie's Select Library - 3 volume novels  
Mechanics subscription libraries  
Tabard Inn 5 ¢ Booklover's Library

### **bibliothekswesens**

1953, rental libraries: 600 million circulations  
(20 times the circulation of public libraries)

—Kunze et al, *Lexicon des Bibliothekswesens*



Tabard Inn  
bookcase





# information organization

## Alexandrian order

alphabetical — Zenodotus c248 bce

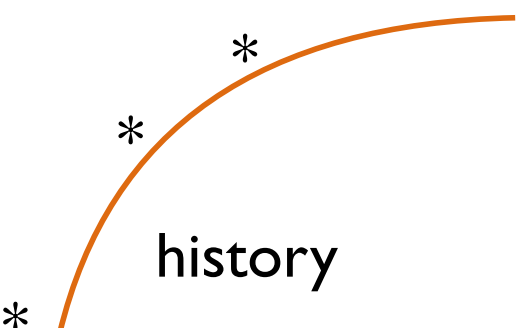
subject — Callimachus c240 bce

"μέγα βιβλίον μέγα κακόν"

## big catalogues

*Registrum Anglie de Libris Doctorum et Auctorum*  
(13th c.)

Conrad Gesner, *Bibliotheca Universalis ... omnium scriptorum in tribus linguis ...* 1545



The British Library  
General Catalogue  
of Printed Books  
to 1975

71  
COTTO-CRAAN

# material organization



**Edward Gibbon**  
1737–1794



## systems of classification

Library of Congress

Thomas Jefferson -- Denis Diderot -- Francis Bacon



**Melvil Dewey**  
1851–1931

## Dewey [Dui] Decimal

### Dewey Decimal System

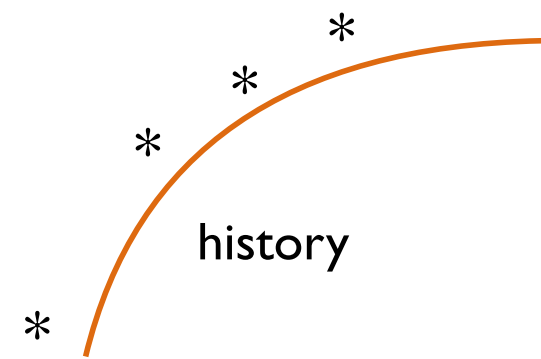
To learn more about what the parts of a book's

#### Overview

- 000 Generalities
- 100 Philosophy & psychology
- 200 Religion
- 300 Social sciences
- 400 Language
- 500 Natural sciences & mathematics
- 600 Technology (Applied sciences)
- 700 The arts
- 800 Literature & rhetoric
- 900 Geography & history

- 000 GENERALITIES - 97.000000 - 97.000000
- 100 PHILOSOPHY, PSYCHOLOGY, RELIGION - 97.100000 - 97.100000
- 200 RELIGION - 97.200000 - 97.200000
- 300 SOCIAL SCIENCES - 97.300000 - 97.300000
- 400 LANGUAGE - 97.400000 - 97.400000
- 500 NATURAL SCIENCES - 97.500000 - 97.500000
- 600 TECHNOLOGY (APPLIED SCIENCES) - 97.600000 - 97.600000
- 700 THE ARTS - 97.700000 - 97.700000
- 800 LITERATURE & RHETORIC - 97.800000 - 97.800000
- 900 GEOGRAPHY & HISTORY - 97.900000 - 97.900000





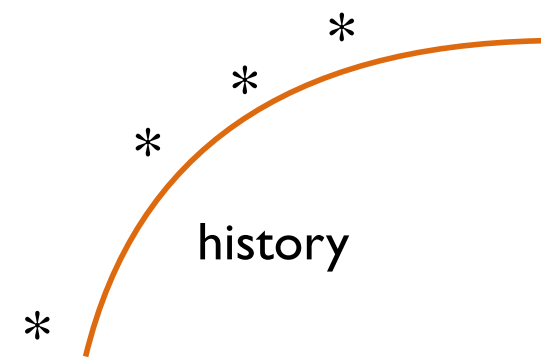
# all or nothing?

**libraries are**  
*collections?*

"the **collection** of data and observations, ...  
into the general body of the common record"

*or selections?*

"the prime action of use is **selection** ...  
and here we are halting indeed."

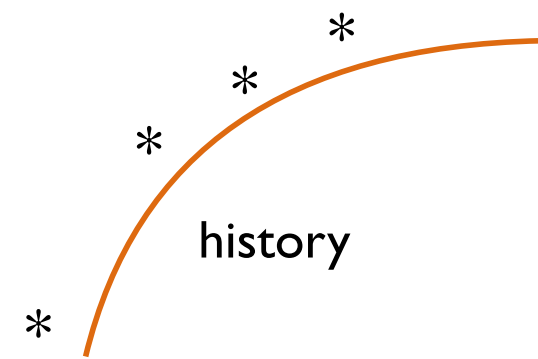


# enduring Alexandrian fantasy

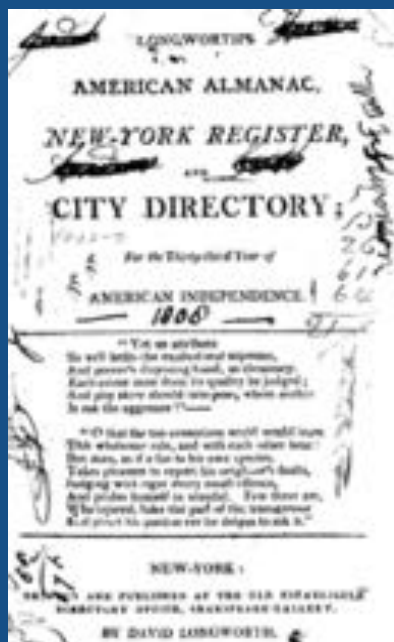
"These Libraries in a few years, will be full and compleat, being furnished, not only with all the valuable and usefull Old Books in any Art of Science, but also with all the valuable New Books, so soon as every they are heard of or seen in the World."

—James Kirkwood, *An Overture for Founding and Maintaining of Bibliotheks in Every Paroch Throughout this Kingdom*, 1699





# from books to bits?



## promises, promises

"Our next edition will be found to contain double the amount of information ever before inserted into it"

—Longworth's *American Almanac*, 1799

## an early count

"We have collected in 3 volumes 20,000 noteworthy facts."

— Pliny the Elder, *Natural History* c.77-79 CE

## a warehouse full

Domitius Piso: thesauros oportet esse, non libros ...





Lucius Annaeus Seneca  
c. 4 bce - 65 ad

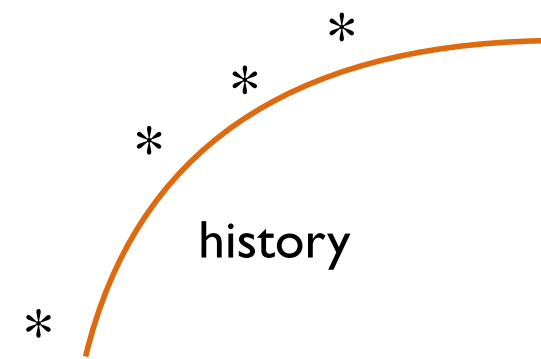
# countless

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"Even for studies, where expenditure is most honorable, [developing libraries] is justifiable only so long as it is kept within bounds. What is the use of having countless books, and libraries whose mere titles their owners can scarcely read through in a whole life time? The mass of them does not instruct but rather burdens the student; and it is much better to surrender yourself to a few authors than to wander through many. Forty thousand books were burned at Alexandria; let someone else praise this library ... as did Titus Livius, who says that it was the most distinguished achievement of the good taste and solicitude of kings. There was no "good taste" or "solicitude" about it, but only learned luxury--no, not even learned, since they had collected the books, not for the sake of learning, but to make a show, just as many who lack even a child's knowledge of letters use books, not as the tools of learning, but as decoration for the dining room."

—Seneca





# "useful information" establishing selective bounds

Smirke, British  
Museum Reading  
Room, 1851



Pelz/Casey Reading Room,  
LOC, ca 1898

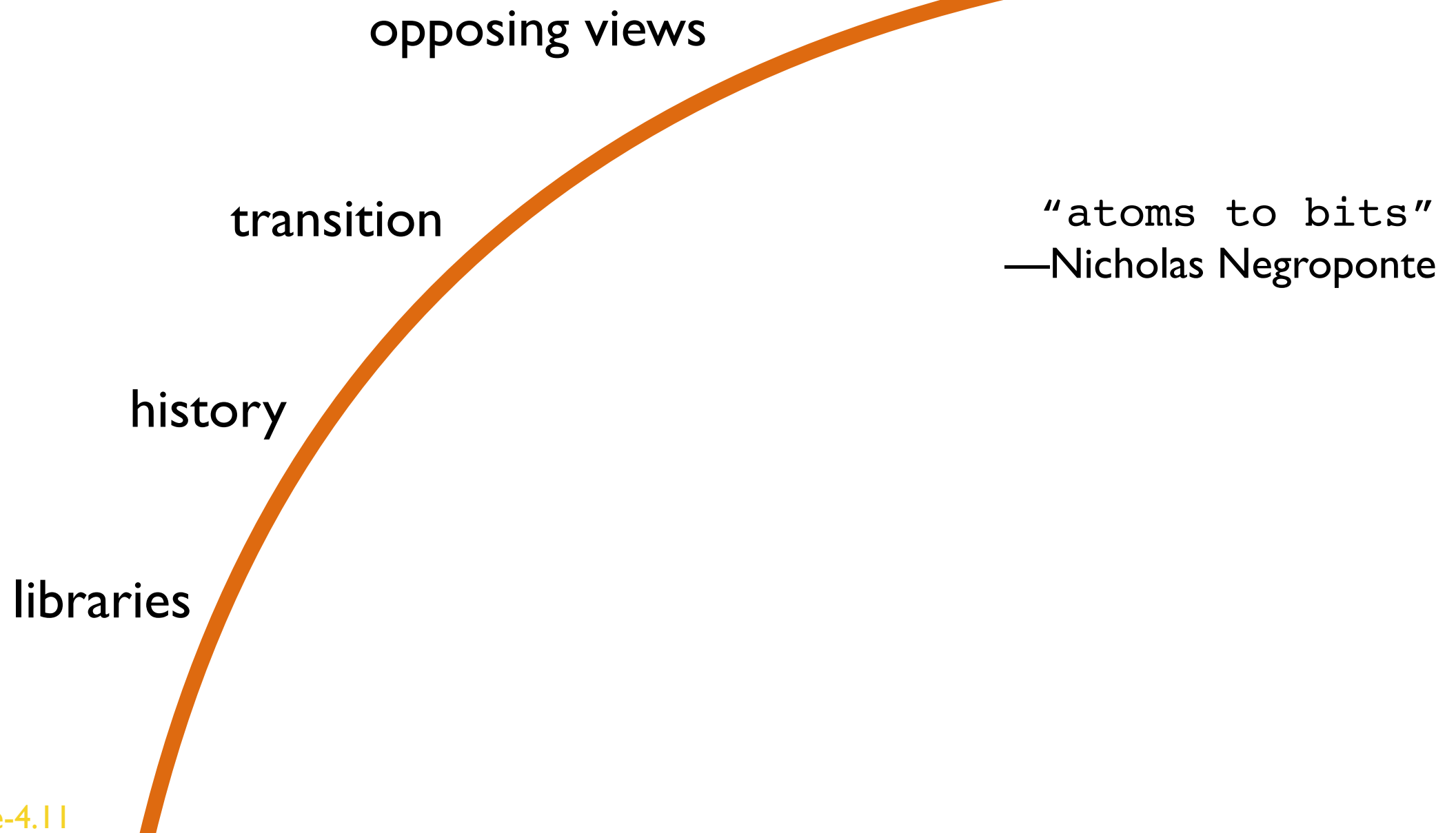


Labrouste, Bibliothèque  
Nationale 1868



Asplund, Stockholm City  
Library, 1928

# road ahead







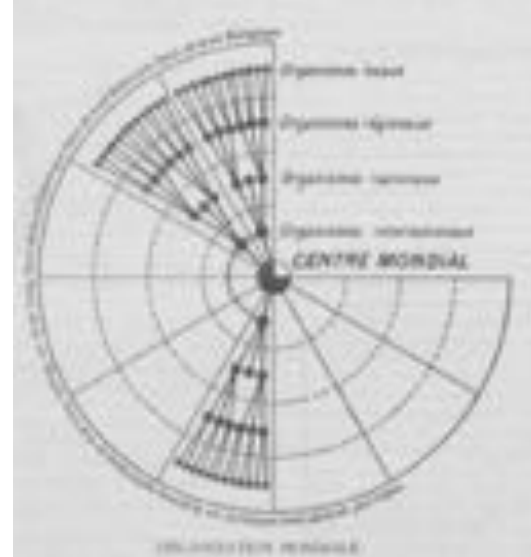
# new media

## Notes & Queries, 1854, 1855

*Photography applied to Catalogues of Books.*—May not photography be usefully applied to the making of catalogues of large libraries? It would seem no difficult matter to obtain any number of photographs, of any required size, of the title-page of any book. Suppose the plan adopted, that five photographs of each were taken; they may be arranged in five catalogues, as follows:—Era, subject, country, author, title. These being arranged alphabetically, would form five catalogues of a library probably sufficient to meet the wants of all. Any number of additional divisions may be added. By adopting a fixed breadth—say three inches—for the photographs, to be pasted in double columns in folio, interchanges may take place of those unerring slips, and thus librarians aid each other. I throw out this crude idea, in the hope that photographers and librarians may combine to carry it out. ALBERT BLON, LL.D.  
Dublin.

*Photographic Copies of Ancient Manuscripts.*—Might not photography be well employed in making facsimiles of valuable, rare, and especially of unique ancient manuscripts? If copies of such manuscripts could be multiplied at a moderate price, there are many proprietors of libraries would be glad to enrich them by what, for all purposes of reference, would answer equally well with the originals. A.

[This subject, which has already been touched upon in our columns, has not yet received the attention it deserves. We have now before us a photographic copy of a folio page of a MS. of the fourteenth or fifteenth century, on which are inscribed a number of charters; and, although the copy is reduced so as to be but about 2 inches high and 1½ broad, it is perfectly



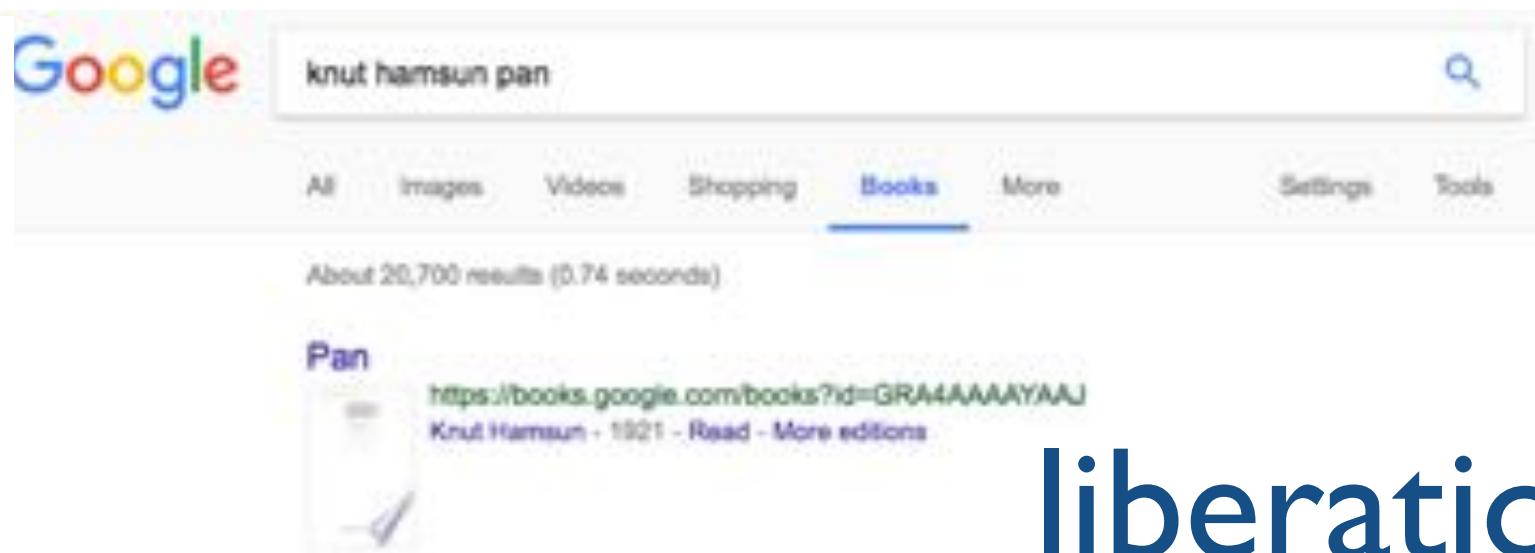
# going digital?

## collection or selection?

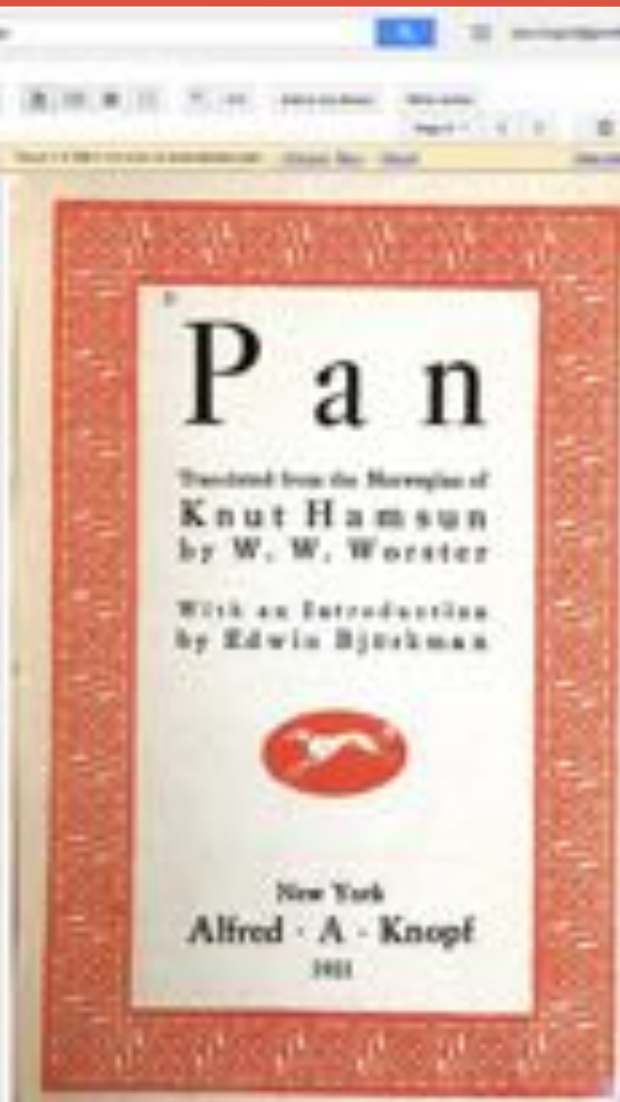
"The external make-up of a book, its format and the personality of its author are unimportant ... the ideal ... would be to strip each article or each chapter in a book of whatever is a matter of fine language or repetition or padding and to collect separately on cards whatever is new and adds to knowledge." — Paul Otlet, *Selected Essays*, 1990







liberation ...



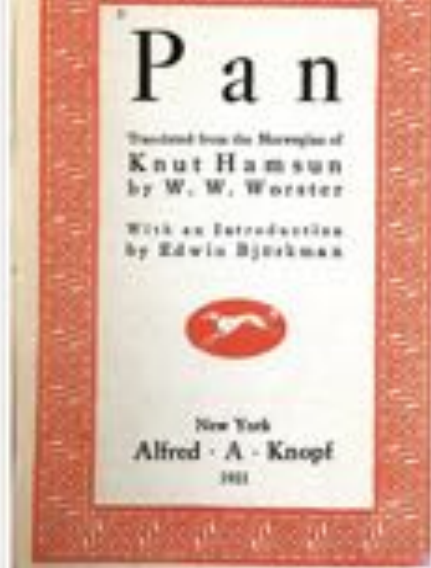
## Knut Hamsun's *Pan*

And when she comes, my heart knows all, and no longer beats like a heart, but rings as a bell. I lay my hand on her.

“Tie my shoe-string,” she says, with flushed cheeks. . . .”

The sun dips down into the sea and rises again, red and refreshed, as if it had been to drink. And the air is full of whisperings.





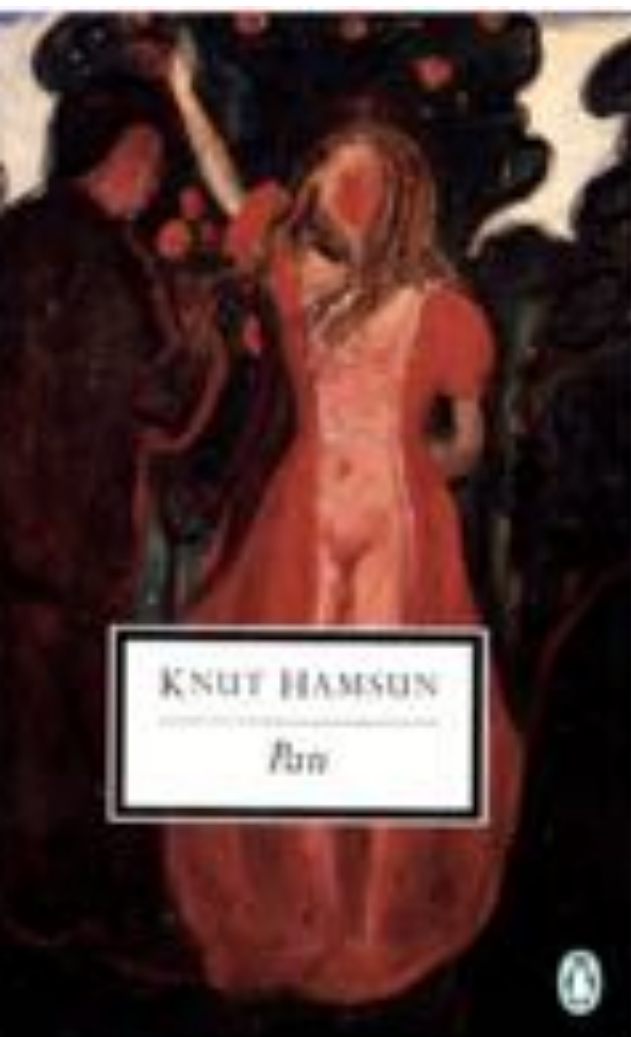
6. [Pan : from the papers of Lieutenant Thomas Glahn / Knut Hamsun ; translated with an introduction and](#)

Hamsun, Knut, 1859-1952  
New York, N.Y. : Penguin Books, 1998

No copies available

LOCATION	CALL NUMBER	STATUS
<a href="#">Central Library</a>	<a href="#">Fiction Hamsun, K</a>	Available Soon

...or continued suppression?



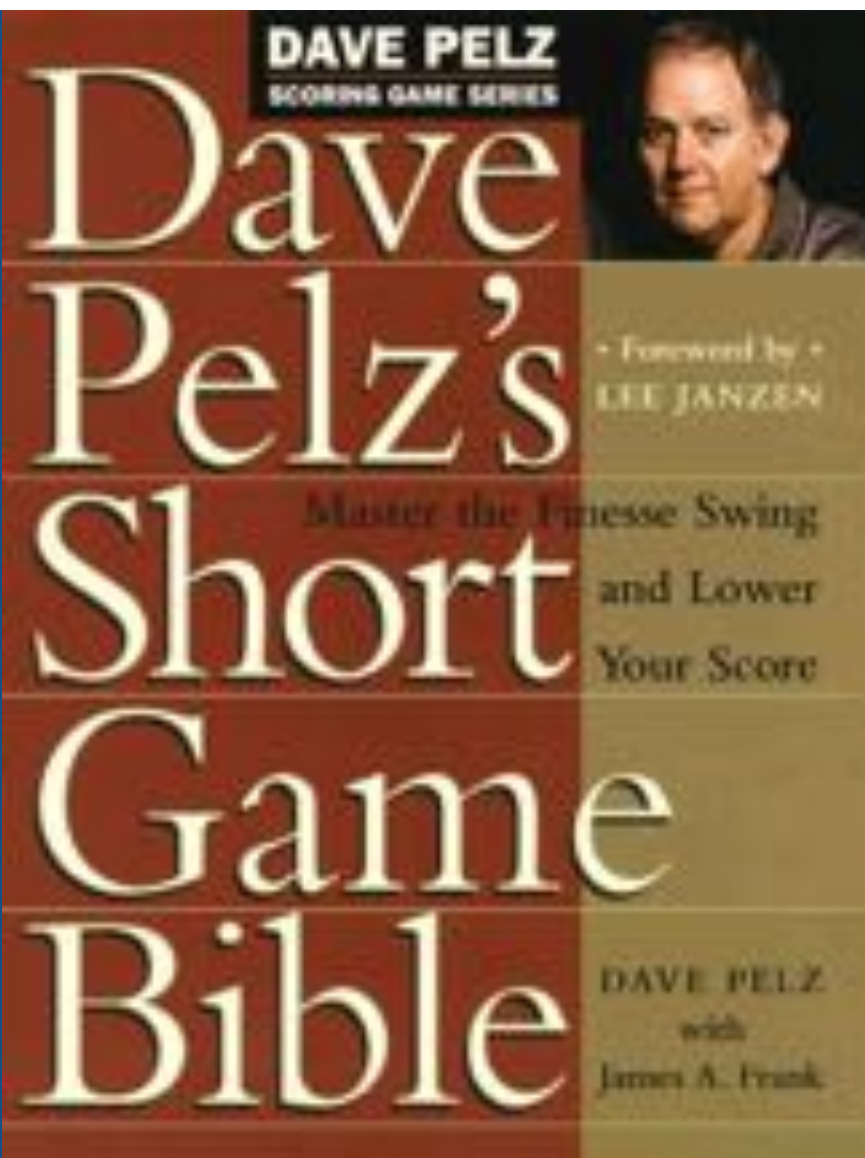
The hunter, that's me, and she will give me a sign with her eyes to make me understand. And when she comes my heart understands all, and it no longer beats, it peals. And she is naked under her dress' from head to foot, and I lay my hand upon her.

Tie my shoelace! she says with flaming cheeks. And a little later she whispers directly against my mouth, against my lips, Oh, you're not tying my shoelace, sweetheart, you're not tying . . . not tying my . . .

But the sun dips its disk into the sea and then rises again,



# it's all just information

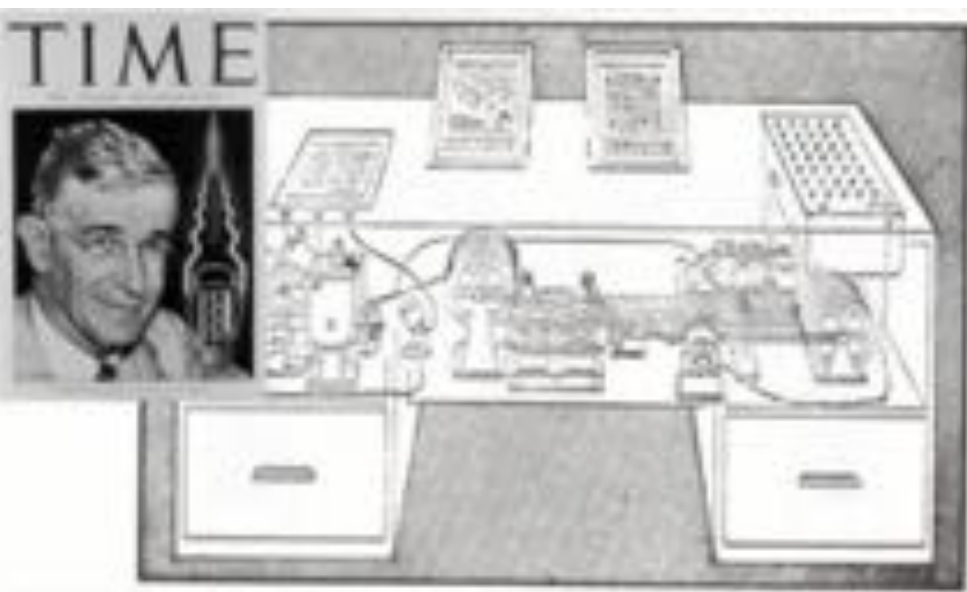


## ... the common denominator

"passionate about the topic ... how difficult it is to find information in scholarly journals and books ...

passionate about this ... to organize the world's information ... here's a book I was reading on the plane down ..."





Ted Nelson,  
"Hypertext"



# bush league?



## swords to plough shares

from “destructive gadgets” to postwar world

## revisionism

“inherited knowledge of the ages ... Leibniz, Babbage, Brady”

## “catastrophe”

“Mendel’s concept ... lost to the world for a generation”

## compression

“a million volumes ... one end of a desk ... a billion ... in a moving van”

## linking

“The human mind ... operates by association”





# from strip to string

LYCOS

**1973** — grep (Ken Thompson)

globally search a regular expression and print

**1988** — WAIS

**1990** — Archie

**1992** — Veronica (Gopher)

**1994** — Lycos

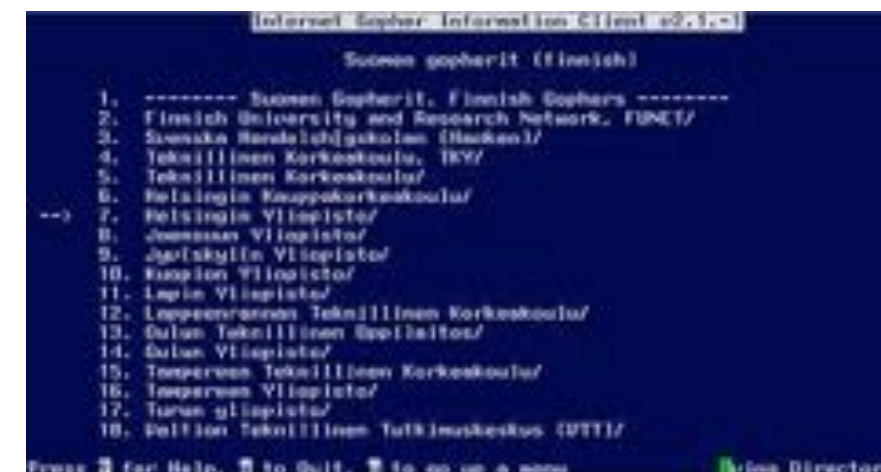
**1995** — Alta Vista, Yahoo

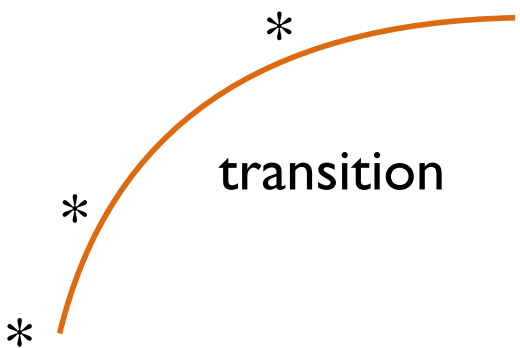
**1996** — Inktomi, Bomis

**1997** — Ask Jeeves

**1998** — Overture (aka GoTo.com)

altavista™





*real change?*

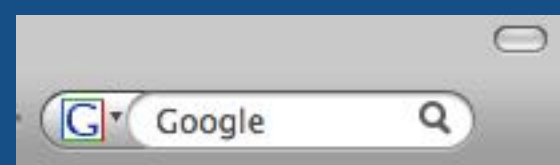


YAHOO!

yet another hierarchical officious oracle

Google™

to organize the world's information





US tech giants knew of NSA data collection, agency's top lawyer insists  
NSA general counsel (Rajesh De) says big tech companies like Yahoo and Google provided "full assistance" in legally mandated collection of data

Special Acknowledgment in Washington  
Reported on March 10, 2014 10:40 AM  
Join to comments (207)



The last communications centers and government agencies reported by the NSA

Leave Facebook if you don't want to be spied on, warns EU

European Commission admits Safe Harbour framework cannot ensure privacy of EU citizens' data when sent to the US by American internet firms



transition

history

libraries

# The Future of Internet Freedom

By ERIC E. SCHMIDT and JARED COHEN MARCH 11, 2014

## the logical next step

opposing views

Yes	26%
No	42%
Maybe	32%

Kevin Ponn  
Natalie Mu  
JT Kim  
Gabriela Cibilis

TECHNOLOGY

## Revelations of N.S.A. Spying Cost U.S. Tech Companies

By CLARE CAMERON MARCH 10, 2014

Google, once disdainful of lobbying, now a master of Washington influence







# expanding search: searching the searchers

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## and should we worry?

"You have zero privacy.... Get over it!"

—Scott McNealy, Sun Microsystems

"If you have something you don't want anyone to know, maybe you shouldn't be doing it in the first place."

—Eric Schmidt, Google

"If you have nothing to hide you have nothing to fear."

—Mark Zuckerberg, Facebook

trade secrets?





Frankfurter Allgemeine



debatable?



"heavy-handed regulation ... attack the entire Internet and its magic" — Schmidt

"it is simply not enough to state ... that you want to make the world a "better place." —Döpfner

"Six years ago I asked Eric Schmidt what corporate innovations Google was putting in place to ensure that its interests were aligned with its end users... Schmidt's answer was the quintessence of absolutism: "trust me; I know best." —Zuboff





opposing views

# uncomfortable vs uncaring

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The common European debate and criticism of Google has been going on for almost a decade.

Google's near monopoly on search engines on the Internet and their explosive growth into other data and tech sectors of the market seems to worry European politicians and citizens far more than it does for their American counterparts. European concerns revolve around the perceived threat of Google as a "harmful monopoly", seeing Google as more of an information handling company. **The national difference between European countries and the United States lies in several factors centering on views that the Internet should be treated as more of a library and that Google, as a media and "news" distribution site, is wrong to have such a monopoly in the tech sector.** They have levied several charges and requests for anti-trust laws to be put into action to break up Google because they feel uncomfortable with how powerful they have grown. They see the threat of big data and its encroachment on public and private safety while Americans appear to be unaware or uncaring about it. This might be because Europe as a region has taken a more aggressive stance in using their anti-trust laws while America has had periods where they see no need to enforce them at all. Americans seems to be more free and trusting of tech with their privacy than Europeans, on average.

— Kevin Ponn





opposing views

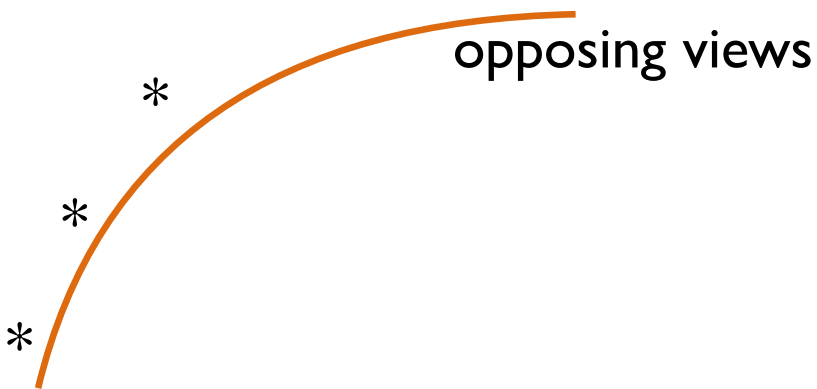
## other anxieties ...

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The national differences along with other anxieties of security between America and European nations shows the range of driving differences that occur within this debate. With the history of information regarding how Europe views America and vice versa, the technology territory becomes an issue of not only technology but also culture, pride, and information security driving factors.

With a vast array of online search engines in America, selection is wide and paves the way for other countries to adopt the search engines into their own nations, as a way of convenience. However there are fears from European countries that notice the heavy influence of taking on adoptions of American technology. Examples include France dreading the influences of American culture into their own, Germans being edged out in the industry and becoming less profitable and less efficient, and the overall European nation fearing of the Edward Snowden incident. It is a mix of national differences and pride of whose technology is best for each country. Since Google has dominated a majority of Europe's search engine sources, the fear of American controlling too much of the information data in technology brings unease of knowing too much of Europe's confidential matters with the access from Google, the American technology.

— Natalie Mu



# fundamental anxiety

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As Döpfner points out, “the close relationship between major American online companies and the American secret service” [5] has become general knowledge thanks to Edward Snowden. Although this raises obvious concerns about the inordinate power and intelligence that this gives to Google as a corporation and the United States, **the anxiety is more fundamental than the issue of international competition.** Zuboff describes our current situation as a “21<sup>st</sup> century Faustian pact” through which we perpetually sacrifice our privacy in exchange for the convenience of accessing information. It was only after using DuckDuckGo as my primary search engine for a week and noticing my growing desire to switch back to Google for a minimal improvement in efficiency that I recognized how imperceptible and automatic my pre-established preference for and reliance on Google was. While it’s hard to divorce the elements of national differences and corporate self-interest from Döpfner’s letter (given his position), I think that it’s even harder to dismiss his concerns about the protection of individual privacy and how limited our choices in accessing digital information may become in the future. That being said, I have switched back to using Google as of last week...

—JT Kim



opposing views

# national difference or power

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I'm not sure whether the main drivers of this debate are national differences or simply power interests. The NSA is not complaining, but is it because it is American or because it is also getting a share in that power? Google seems to be aligned with Bush's idea of a better way to record and retrieve human advances. Eric Schmidt hops onto this advantage and presents the internet as "the main motor of economic growth", mentioning that their storage gives companies the opportunity for a bigger market. The problem is that besides the growth that they are having, European companies know that Google is getting an even bigger growth. Since Google's power is therefore growing so much, as Dopfner puts it, such companies "have no alternative" but to stay in Google. I believe this is what drives the debate —they all talk about innovation and growth and people, but is that what truly motivates Google and European companies? I understand it as European companies getting a little desperate because their share in all this is smaller. Zuboff threatens that "it is this loss of trust that stands to kill innovation" but I have to ask: **if the European companies could to what Google is doing —would they stop doing it to save the people's innovation? I highly doubt it.**

—Gabriela Cibilis





# coming up

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## 13 Apr: Social Implications of the Internet (Part 1)

The internet, we are told, has made interconnection instantaneous, finally annihilating time and space. So in this class we shall consider the question, why on earth are we all here?

### Required Reading

Marshall, Alfred. 1920. "Industrial Organization, Continued: The Concentration of Industries in Particular Localities," book IV chapter X (section iv.x.1-15) in *Principles of Economics*. London: Macmillan & Co.

Source: econlib.com [[hyperlink](#) & ]

"The Revolution Begins at Last," *Economist* 1995, Sept 30.

Source: Course reader