class 1:

The Digital Library

and its (Dis)Contents

Stanford Continuing Studies, Fall 2008

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What happens when we change the shape of a book?
Pioneers

Vannevar Bush (1890–1974)
AS WE MAY THINK
A TOP U.S. SCIENTIST FORESEES A POSSIBLE FUTURE WORLD IN WHICH MAN-MADE MACHINES WILL START TO THINK!

by VANNEVAR BUSH
DIRECTOR OF THE OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
Condensed from the Atlantic Monthly, July 1945

This has not been a scientists' war; it has been a war in which all have had a part. The scientists, being their old professional competition in the demand of a common cause, have shared greatly and learned much. It has been exhilarating to work in effective partnership. What are the scientists to do next?

For the biologist, and particularly for the medical scientists, there can be little indecision, for their war work has hardly required them to leave the old paths. Many indeed have been able to carry on their war research in their familiar peacetime laboratories. Their objectives remain much the same.

It is the physicists who have been thrown most violently off stride, who have left academic pursuits for the making of strange destructive gadgets, who have had to devise new methods for dealing with unprecedented assignments. They have done their part on the devices that made it possible to turn back the enemy. They have worked in combined effort with the physicists of our allies. They have felt within themselves the stir of achievement. They have been part of a great team. Now one asks where they will find objectives worthy of their best.

... There is a growing mountain of research. But there is increased evidence that we are being bogged down today as specialization extends. The investigator is staggered by the findings and conclusions of thousands of other workers—conclusions which he cannot find time to grasp, much less to remember, as they appear. Yet specialization becomes increasingly necessary for progress, and the effort to bridge between disciplines is correspondingly suspect.

Professionally our methods of transmitting and reviewing the results of research are antiquated and by now are totally inadequate for their purpose. If this aggregate time spent in writing scholarly works and in reviewing them could be evaluated, the ratio between these amounts of time and what is published would be startling. Those who conscientiously attempt to keep abreast of current thought, even in restricted fields, by close and continuous reading may well shy away from an examination calculated to show how much of the previous month's efforts could be produced on call.

Mendel's concept of the laws of genetics was lost to the world for a generation because his publication did not reach the few who were capable of grasping and extending it. This sort of catastrophe is undoubtedly being repeated all about us as truly significant statements become lost in the shuffle of the inconsequential.

Publication has been extended far beyond our present ability to make use of the record. The summation of human experience is being expanded at an unprecedented rate, and the means we use for threading through the current maze to the momentarily important item is the same as was used in the days of square-rigged ships. But there are signs of a change as new and powerful instruments come into use. Photocells capable of seeing things in a physical sense, vacuum photography which can record what is seen even when it is at a distance, thermic tubes capable of controlling power...
Memex in the form of a desk would instantly bring files and material on any subject to the operator's fingertips. Slanting translucent viewing screens magnify supermicrofilm filed by code numbers. At left is a mechanism which automatically photographs longhand notes, pictures and letters, then files them in the desk for future reference (LIFE 19(11), p. 123).
Pioneers

Fr. Roberto Busa (1913- )

Digitus Dei est hic!
The finger of God is here!
Building Blocks
Data and Metadata
PHILOSOPHIAE
NATURALIS
PRINCIPIA
MATHEMATICA

Professore Lucasiano, & Societatis Regalis Sodali.

IMPRIMATUR
S. PEPYS, Reg. Soc. PRÆSES.
Julii 5. 1686.

LONDINI,
Jussu Societatis Regiae ac Typis Josephi Stewart. Prostet apud
publicam Bibliopolum. Anno MDCLXXXVII.
El mundo ríe: la caricatura universal en 1920
Francés, José, 1863-1964.

Author: Francés, José, 1863-1964.
Title: El mundo ríe: la caricatura universal en 1920.
Electronic version: [Link]
Imprint: Madrid: Renacimiento, 1921.
Physical Description: 258 p.: ill.; 25 cm.
Notes: Also available online in PDF file format, produced by Stanford University Libraries.
Subject (LC): Caricatures and cartoons.

Catkey: 1355975

Call Number, Location, and Availability
Stanford Auxiliary Library [SAL1 & 2] [Nearby items on shelf]
Copy Holds Status
NC1355 .F7 1 Request this item [with SUNet ID] or [without SUNet ID]

SUL
Copy Holds Location
INTERNET RESOURCE 1 INTERNET
Exeunt Claudius and Polonius

Hamlet
To be, or not to be; that is the question:
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune,
Or to take arms against a sea of troubles,
And, by opposing, end them. To die, to sleep --
No more, and by a sleep to say we end
The heartache and the thousand natural shocks
That flesh is heir to -- 'tis a consummation
Devoutly to be wished. To die, to sleep.
To sleep, perchance to dream. Ay, there's the rub,
<STAGE TYPE="EXIT"> Exeunt Claudius and Polonius </STAGE>

<SP WHO="HAM.18">

<SPEAKER> Hamlet </SPEAKER>

<L N="58"> To be, or not to be; that is the question: </L>
<L N="59"> Whether 'tis nobler in the mind to suffer</L>
<L N="60"> The slings and arrows of outrageous fortune,</L>
<L N="61"> Or to take arms against a sea of troubles,</L>
<L N="62"> And, by opposing, end them. To die, to sleep -- </L>
<L N="63"> No more, and by a sleep to say we end</L>
<L N="64"> The heartache and the thousand natural shocks</L>
<L N="65"> That flesh is heir to -- 'tis a consummation</L>
<L N="66"> Devoutly to be wished. To die, to sleep.</L>
<L N="67"> To sleep, perchance to dream. Ay, there's the rub, </L>

... 

data + metadata
Ham.
To be, or not to be— that is the question:
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune
[...]

data + metadata??
Markup and the MLs:

Standard Generalized Markup Language

HyperText Markup Language

eXtensible Markup Language
Accuracy
"In-vention more-artifici'Co}\n"trivance\n"and\n"of\n"more\n"sublime\n"Scile\n"than\n"that\n"of\n"Don\n"9uite\n"de\n"la\niManca.
the Multitude of his Epilodes. The Incidents are *numerus*, and vastly various. In some we see an *Imitation* of *Heliodorus*, and in others *Heliodorus* greatly improved; and in the rest a perfect Newness of Fancy shines forth in the most conspicuous Manner. The farther the Reader proceeds in this Work, the greater is his *Delight* in reading it. Briefly, this Performance is of a better Invention, more artificiul Con-trivance and of a more sublime Stile than that of *Don Quixote de la Mancha*.
New books?
New libraries?
New readers?
A whole new kind of reading?
new libraries, new readers: 1950s
new libraries, new readers: 1960s
new library,
new reader: 1968
new libraries, new reader: 2008
Philosophiae Naturalis Principia Mathematica

Professori Lucasiano, & Societatis Regalis Sodali.

Imprimatur
S. Pepys, Reg. Soc. Praeses
Julii 5, 1686.

Londini,
S. Juxta Societatis Regiae ac Typis Josephi Streater. Profar apud
plures Bibliopolas. Anno MDCLXXXVII.

book: 1687
hypertext novel on CD-ROM
(Figurski at Findhorn on Acid, by Rich Holeton)

book(?): 1997
collection: 1880
(books, drawings and toys of Leland Stanford, Jr.)

collection: 1910
(from the University Museum)

collection: 2008
(Stanford Historical Photograph Collection)
(digital!)
Futurists

Kevin Kelly (1952– )

et al.
Futurist?

Anthony Grafton (1950– )
Your SQL Query: SELECT * FROM TITLES WHERE TITLE LIKE 'ADVENTURES' ORDER BY YEAR, TITLE

Raw Count Results (Red Numbers are Raw Counts):

Numbers in Red are Raw Counts

Normalized Results: (Red Numbers are Rate per 100 Records—rounded)

future reading(?): 2006
future reading(?) : 2008
Краткая литературная энциклопедия

reader(?) : 1968
almanac

An annual table, or (more usually) a book of tables, containing a calendar of months and days, with astronomical data and calculations, ecclesiastical and other anniversaries, besides other useful information, and, in former days, astrological and astrometeorological forecasts.

(The ‘almanacs’ known to Roger Bacon and Chaucer were permanent tables of the apparent motions and positions of sun, moon, and (?) planets, whence the astronomical data for any year could be calculated. The calculations [of Regiomontanus, 1475] of the places of the sun and moon were the best that had been made in Europe...He speaks of them himself as “quas vulgo vocant almanach” (Hallam Lit. Eur. 1855 I. 160). In 15th c. almanacs or ephemerides began to be prepared for definite periods, as 30 or 10 years, and in 16th c. for the year, with which was combined the ecclesiastical calendar; astrological and weather predictions appear in 16-17th c.; the ‘useful statistics’ are a modern feature.)

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1569 1568 1697
1600 1693
1567 1652
1543 1683 1775 1883

| 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 |
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reading(?): 1905-2005
Image credits

slides 9, 10, 21-24, 26, 29, 34, 35:
Stanford Historical Photograph Collection
http://collections.stanford.edu/shpc/

slides 4, 5:
Life Magazine 19(11), 1945

slides 17-19:
Eighteenth-Century Collections Online (ECCO)
http://galenet.galegroup.com/servlet/ECCO

slide 27:
Dime Novels and Penny Dreadfuls
http://library.stanford.edu/depts/dp/pennies/

slide 33:
http://wordle.net/

slide 36:
Oxford English Dictionary
http://dictionary.oed.com/