

# technological determinism

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**history of information**

January 29, 2013



# admin

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## **waitlist**

cog sci, 5; history, 5; info, 4; mediast, 4

**signup** - we will start clearing list at the end of this week looking at attendance, assignments, Bancroft tour

## **Bancroft tour 2/5, 2/6, 2/7**

### **sign up**

<https://docs.google.com/spreadsheet/cc?key=0Ask5QVp5ON4SdGQ5dDhPRk9kUTRuLW1GS0IVZDk0SUE#gid=0>

## **slides**

<http://courses.ischool.berkeley.edu/i103/slides/3-Hofl3-determinism-PD.pdf>

# admin

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## discussion

 [McLuhan & Williams Readings](#) ( 1 message - 1 unread ) [New messages](#)

## assignments

submission --

argument, not summary:ATQ

cite, proofread

"the effects of the median"

"Richard Williams correctly critiques"

"unreasonable that there could be no causalities at all. And to"











# admin

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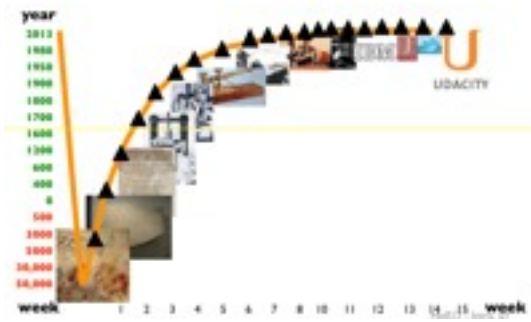
**above all** -- be nice to Bryan

*pasting* into bSpace preferable

if using attachment, put your name on it

-  Info+C103+Hw+2.doc
-  McLuhan+vs.+Williams.docx
-  mcluhan+vs+williams.docx
-  Mcluhanvswilliamsfinal.docx
-  assignment+1-1.docx
-  Assignment+1.docx
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-  Response1+hofi.docx
-  HOFI+January+27+Assignment+1.docx
-  reading1.docx

# overview



determined mistakes

wishing

attractions

taking sides

how to think  
about tech

determinism



# cover story

## technology's effects

"[Sarnoff] Firearms are in themselves neither good nor bad, its the way they are used"

"Often said ... television has altered our world ... sex and violence, political manipulation, cultural degradation."





## which side are you on?

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"a callous, corrupt and corrupting shadow industry that sells, and sows, violence against its own people... Bulletstorm, Grand Theft Auto, Mortal Kombat and Splatterhouse. And here's one: it's called Kindergarten Killers. ... Then there's the blood-soaked slasher films like "American Psycho" and "Natural Born Killers"

NRA News Conference, Dec 21, 2012





Marshall McLuhan  
1911-1980

# McLuhan - 1964

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"very large structural changes in human outlook ...

"totally new environment ...

"the new electric **Age of Information** ...

"Each new technology creates an environment ...

"abolishing both space and time ...

"final phase of the extensions of man...

a single consciousness ...

"Global Village"





# without resistance

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## **determinism at its clearest**

"The railway ... created totally new kinds of city ..... This happened whether the railway functioned in a tropical or a northern environment, and is quite independent of freight or content.

"The spiritual and cultural reservations that the oriental peoples may have toward our technology will avail them not at all. The effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance."

# antecedents

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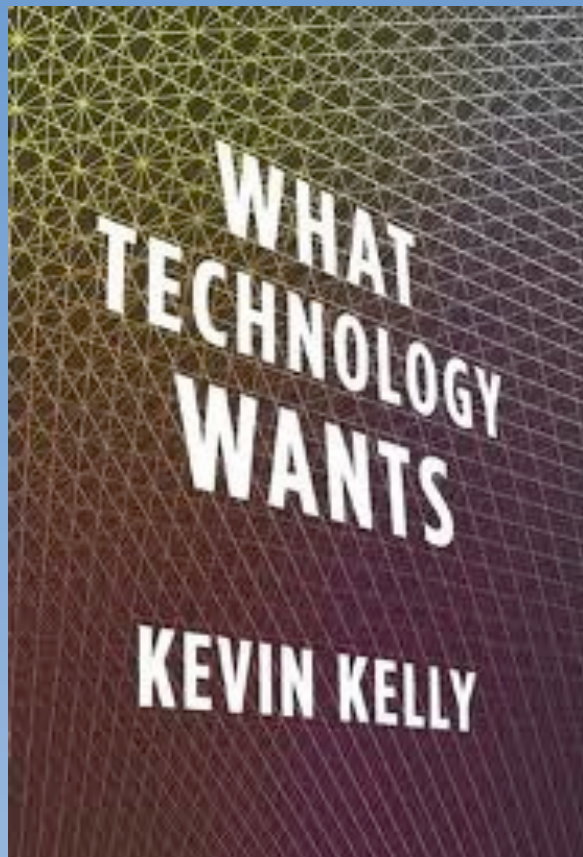
"Science explores,  
Technology executes,  
Man conforms"

Chicago World's Fair, 1933



# modern versions

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"When technology shifts, it bends the culture"

-- Kevin Kelly,

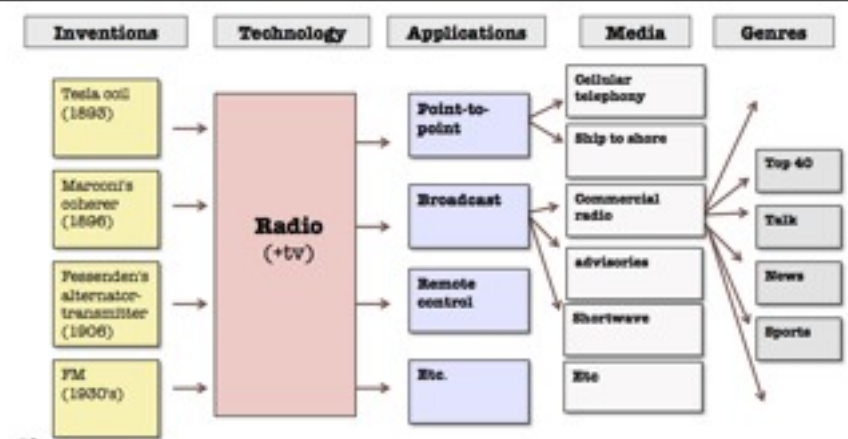
"Becoming Screen Literate,"

*New York Times* 2008



Raymond Williams  
1921–1988

**coming up:**  
telegraph ...  
photograph ...  
moving image ...  
broadcast ...



# Williams - 1973

## the invention of television

"The invention of television was no single event ... electricity ... telegraphy ... photography... moving images ... radio ... broadcast ...

"centralisation of political power

"mobile, diffused society ...

"military, commerce, the press ...

"periods of crisis ..."



# Williams

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## **what's wrong with determinism?**

"ratifies the society and culture we have now .... all other causes, all that men ordinarily see as history, are at once reduced to effects ....

"what are elsewhere seen as effects ... excluded as irrelevant

"welcomed by the 'media-men' ...

"gives the gloss of avant-garde theory to ... existing interests."

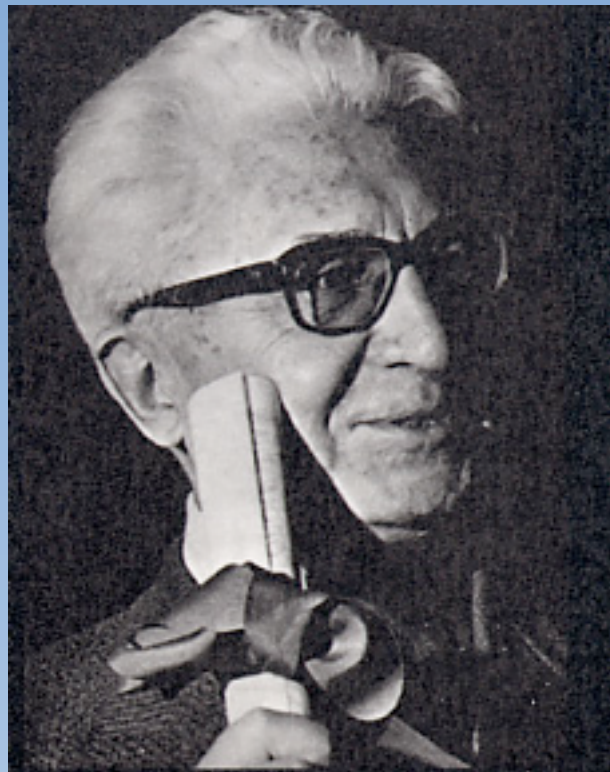




# not determining, not symptomatic

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Fernand Braudel  
1902-1985



"technology is not marginal but central"

"restore *intention* to the process of research and development ... the technology something looked for."

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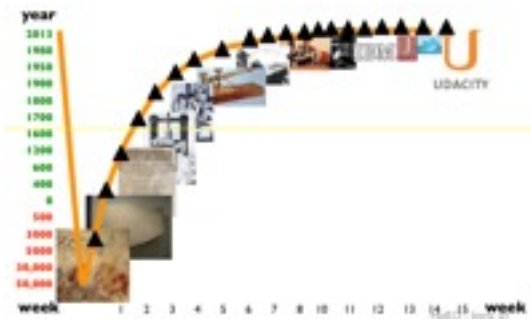
"The history of technology is that of humanity in all its diversity. That is why specialist historians of technology hardly ever manage to grasp it entirely in their hands'.

--Fernand Braudel, *Structures of Everyday Life*,

1967

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# taking sides

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**McLuhan -- the medium does it -- 40%**

**Williams -- no it's not -- 45%**



**maybe; maybe not: -- 15%**

# neither / nor

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**Zachary Hsi:** McLuhan is spot on in measuring human progress by the technologies of the time, but Williams correctly discerns the human influence that also plays a part.

**Diana Ognesyian:** I side more with McLuhan but see some of the points that Williams makes. So in some small scale, we also control the medium as it is an extension of ourselves.

**Avi Press:** If my studies in cognitive science have taught me anything, it is that if there are two rival theories that each have strong evidence in favor, the truth is likely elements of both.

**Sean Trott:** Thus, we conclude that, while technology certainly plays a causal role in social development, that same technology is itself the effect of previous social environments.

# neither / nor

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**Joseph Schadlick:** Technological and social progression seem more intertwined than either thinker argues, as social changes bring technology which alter social perception and pave the way for future technological and social progression.

**Steven Rivera** [citing Fisher, SCOT]: Williams, in some sense of the word, is more right than McLuhan, but McLuhan's idea that "it is the medium that shapes and controls the scale and form of human association and action" is also valid ... a medium's message also includes the intent as described by Raymond Williams, which includes both content and effect





## for McLuhan

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**Kenneth Patterson:** I think McLuhan's analysis is a more accurate account of the way by which technology is influencing our society. His example that the light bulb has created a completely new human environment is not only precise but clearly demonstrates the scope by which technology can effect our society.

**Warren McQuinn:** McLuhan points to the gradual creation of a new "human environment" [vi], as opposed to development upon existing human environments, as fair explanation for his hope that technological development, or, the creation of new media to disseminate and include, will eventually lead to a singularity in which all residents who participate in the "human environment" are equally able to fulfill historical deeds or desires. At least, this is the goal that can be extrapolated from his commitment to the "final phase of man-- the technological simulation of consciousness" [3] which he cannot denote as good nor bad -- but simply by admitting its finality he intends that all questions will indeed be answered, and are therefore unmasked.



## for McLuhan

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**Melanie Cebula:** Although unresolved issues remain independently of which technological age it is, the effects of new technology really can be something fundamentally new. As McLuhan states, if you live and participate in a society with certain technology, the effects of that technology are deeply rooted and impressed upon those who make up that society.

**Jeremy Chang:** McLuhan argues very convincingly that technology has definite influences in the ways we think and act, as technology “alters sense ratios or patterns of perception” [18] when introduced into society. Regardless of what type of change society may have been seeking when the television was inventing, the “implosion” (3) of the past, present, and future information and time period that television brings to the present is definitely something that has not been experienced before and will have very real effects. Studying what does and does not change in society because of the introduction of television into society is essential.



## for Williams

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**Kathryn Bender:** Whereas McLuhan says that the “money medium” in seventeenth-century Japan “had effects not unlike the operation of typography in the West,” (18), Williams would have analyzed the implementation of currency into Japanese culture differently; rather than looking at people as “abstract human nature which has psychic needs and which variable forms of technology... come to satisfy,” (129), Williams believes determinism is a social process in which factors such as “the distribution of power or of capital, social and physical inheritance, relations of scale and size between groups – set limits and control pressures [toward developing and implementing new technologies] but neither wholly control nor wholly predict the outcome” of the technologies (130).

**Megna Dholakia:** I disagree that technology adoption should always be seen as “inevitable”, that once developed its influence on society is impossible to stop. Adoption is dependent on the currently recognized needs. Without the city, there would be no need for the subway. I do not disagree that technology adoption has huge effects on societal structure, but I do believe that McLuhan’s theory oversimplifies the complicated interplay between technological development, adoption, and the current needs of a society brought about by political and social changes already in motion.

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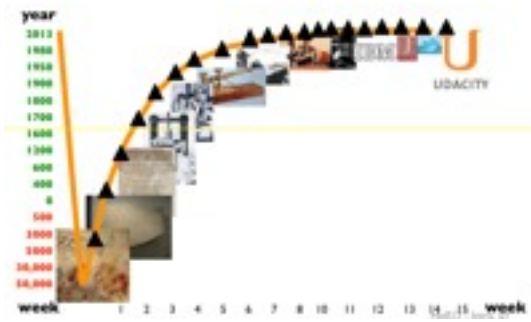
## for Williams

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**Forrest Riege:** Williams also fairly acknowledges the active role technology does play in societal development, as more than just a by-product of an independent social progression ("symptomatic technology"): It is human intent that prompts innovators to actively seek out and develop technologies that address prospective societal needs ... There is not, however, any single, self-contained force that pushes societal progression, as McLuhan would lead readers to believe.

**Devan Lai:** McLuhan's arguments in favor of technological determinism are ... ultimately self-contradictory. While he paints the majority of mankind as being equally oblivious to new technology (McLuhan 16), he draws upon Tocqueville to argue that the absence of true revolution in England is due to Parliament's resistance to the power of the new printed word (McLuhan 15). Whereas modern man and the Bedouin are both unable to fully comprehend the new electric world around them, McLuhan attempts to argue that English aristocrats are far more talented than their French counterparts in denying the transformative power of print media.

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# easy work

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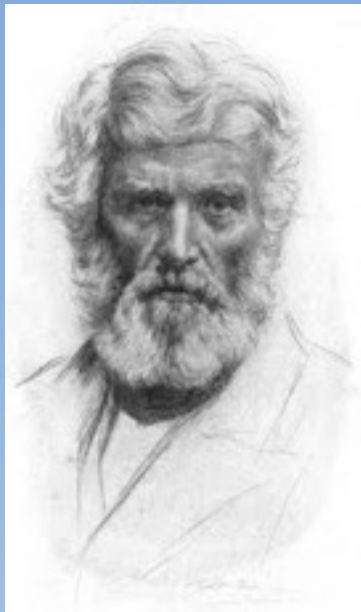
## **looking back**

just look at Cleopatra's nose





Francis Bacon  
1561-1626



Thomas Carlyle  
1795-1881

## easy history?

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"Printing, gunpowder and the compass ... whence have followed innumerable changes, in so much that no empire, no sect, no star seems to have exerted greater power and influence in human affairs than these mechanical discoveries."

-- Francis Bacon, *Novum Organum*, 1620

"He who first shortened the labor of copyists by device of movable types was disbanding hired armies, and cashiering most kings and senates, and creating a whole new democratic world: he had invented the art of printing."

--Thomas Carlyle, *Sartor Resartus*, 1833

# looking at ourselves

## the inevitable product of progress

"Westward the course of empire takes its way"

John Gast  
"American Progress"  
1872



# easy futurism

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## looking forward

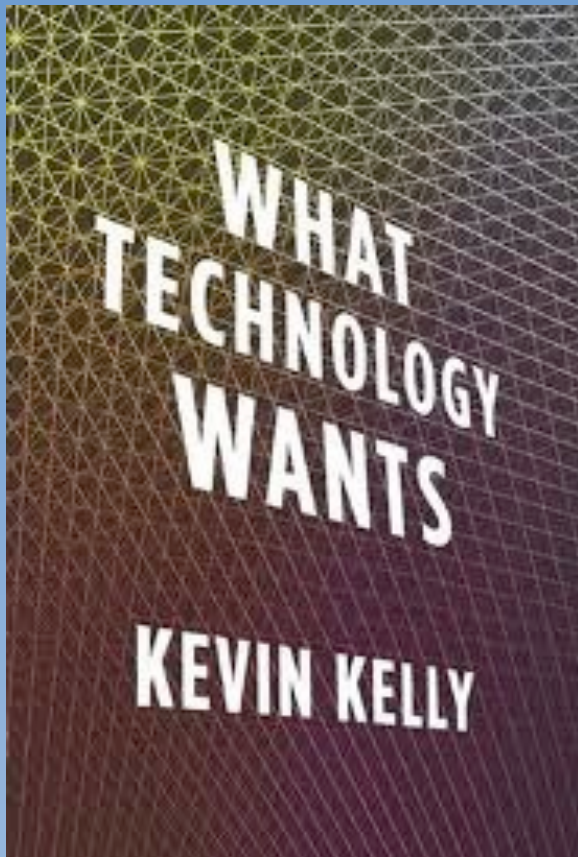
"these technologies are inevitable ...

Inevitability is not a flaw.

it ... makes predictions easier."

--Kevin Kelly,

*What Technology Wants*, 2010







# looking ahead

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**Le Monde**



## supersession

"ceci [the book] tuera cela [the church]."

-- Victor Hugo, *Notre-Dame de Paris*, 1831

"le journal [newspaper] tue le livre, comme  
le livre a tué l'architecture."

-- Théophile Gautier, *Mademoiselle Maupin*,  
1834

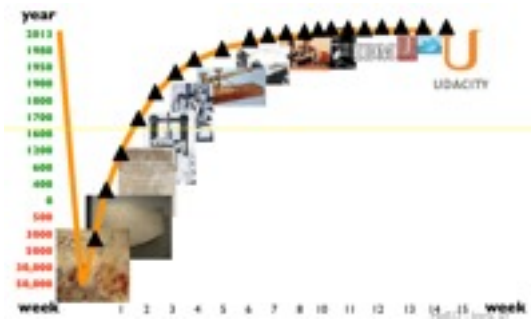
"Ceci tuera cela, le fer [les Halles] tuera  
la pierre [St. Eustache]."

--Emile Zola, *Le Ventre de Paris*, 1874

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"communication  
might be  
considered  
instantaneous."



Marshall McLuhan  
1911-1980

## electrical sublime

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"Electric circuitry has overthrown the regime of 'time' and 'space' and pours upon us instantly and continuously concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism. . . . Ours is a brand-new world of allatonceness. 'Time' has ceased, 'space' has vanished. We now live in a *global village* . . . a simultaneous happening."

-- Marshall McLuhan et al.,

*Medium is the Massage*, 1967

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# it makes a village

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"abolishing both space and time ...  
eliminate time and space factors in human  
association .. creating involvement in  
depth."

Marshall McLuhan



# wishful thinking?

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"Ye Gods, annihilate but space and time,  
And make two lovers happy."

Swift, Pope, Arbuthnot, 1728



"... no stock phrase in the entire lexicon  
of progress appears more often."

--Leo Marx, *The Machine in the Garden*,  
1964





# Chapitre 1<sup>er</sup>

## Exposition.

Parvenu à la suite de travaux longs et pénibles, trouver, enfin, un art nouveau regardé comme impossible beaucoup de Savans, une route nouvelle va fournir devant les efforts de l'homme, les distances vont disparaître et les extrémités du Monde se rapprocher.

Je crois devoir <sup>consigner</sup> le résultat de mes travaux aux archives, où l'industrie française, enregistrée par elle et ses découvertes, et publiées sous un moyen prenant un brevet d'invention pour authentifier mes ~~travaux~~ <sup>travaux</sup> et mes découvertes résultats.

Conduire les Ballons dans l'air a été proclamé - possible; (car on ne peut <sup>enlever</sup> considérer l'action d'air comme un moyen de progression suffisant); En effet, quelques-uns des Ballons sphériques ~~étaient~~ <sup>étaient</sup> impossibles, les efforts des Savans n'avaient pas encore tenté d'autres.

Duperron

Réaumur.



Brevets d'Invention,  
de perfectionnement et d'importation,

établis par les Lois des 7 janvier et 25 mars 1791.

Certificat de demande d'un Brevet d'Invention  
de cinq ans, délivré à M. Duperron (parisien),  
à Paris, département de la Seine.

Qu la Requête de M. Duperron (parisien) soumise à la Cour Royale, le 20 mars 1791, au N° 100, dans laquelle il expose que, devant pour des droits de propriété temporaire accordés et garantis aux auteurs et inventeurs des découvertes et perfectionnements en tout genre d'industrie, il demande un Brevet d'Invention

de cinq ans, pour les 20 mars 1791, les 20 mars 1791,

## getting together

"Parvenu à la suite de travaux longs et pénibles à trouver, enfin, un art nouveau regardé comme impossible par beaucoup des Savans, une route nouvelle va fournir devant les efforts de l'homme, les distances vont disparaître et les extrémités du Monde se rapprocher."



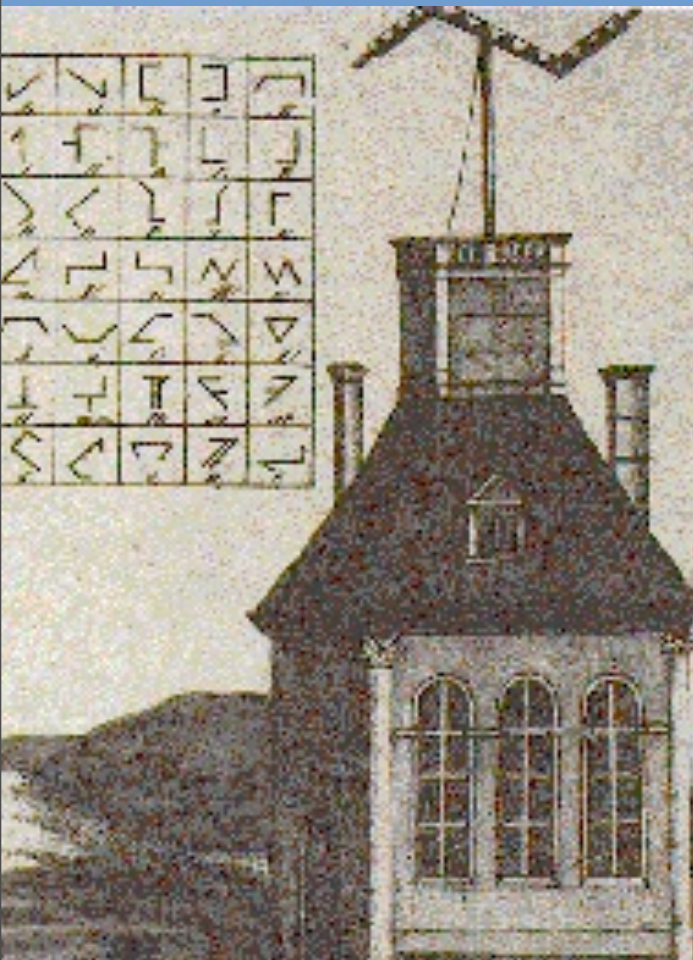
# wishing up a grand future

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## **what and when?**

"at bottom, this invention might suffice to make possible the establishment of democracy among a large population ... no reason why it would not be possible for all the citizens of France to communicate their will ... in such a way that this communication might be considered instantaneous."

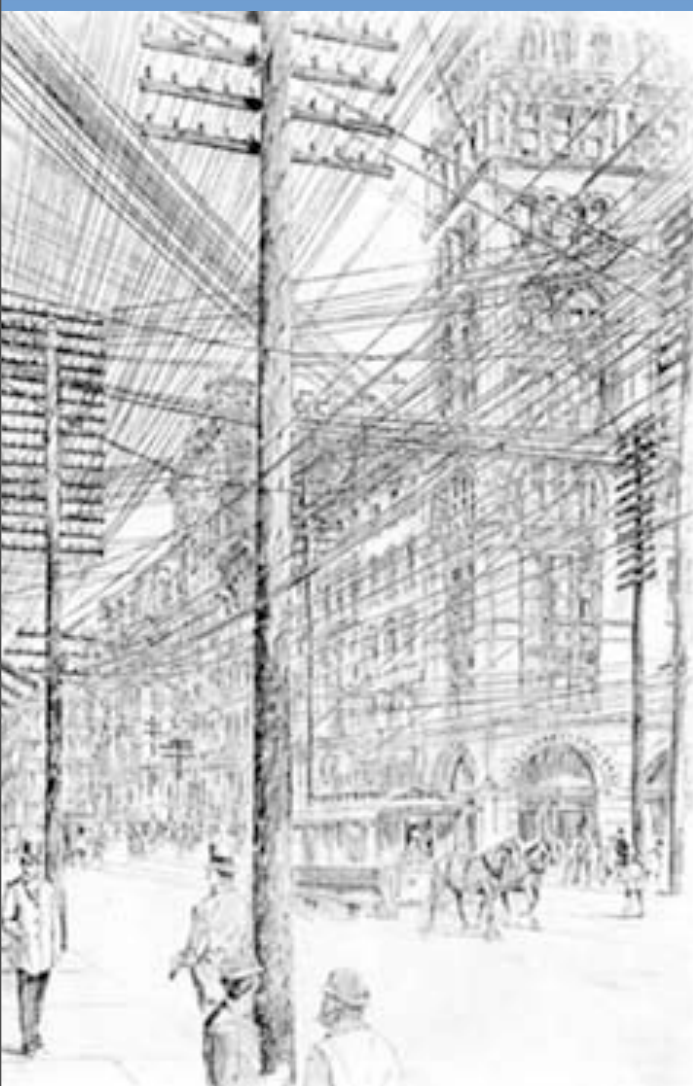
-- Alexandre Vandermond, 1795





# 60 years on

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"A line of telegraph ... from London to Kurrachee, and from thence to every part of India, ... intelligence and commands [can] be daily and hourly communicated with the speed of lightening ... in this virtual annihilation of time and space in the communications between England and her distant possessions will be more than realised"

--*Blackwood's Edinburgh Magazine*, 1857

# sea to shining sea

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## and tech to shining tech



"the almost complete annihilation of time and space between the distant antipodal points of the American continent ... produced by the construction of the Pacific Railroad"

-- John Wesley Clampitt,  
*Echoes from the Rocky Mountains*, 1888



## moving on

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### **too cheap to meter?**

"nuclear domestic power packs leading to a social revolution in our own time, a society without class, privilege, cities, nations or geographical boundaries ... a single, uniformly spread community, sharing as neighbors the whole surface of the earth."

-- R.M. Langer, 1940.







# shrinking search

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"While others cashed in by floating prematurely on the stock market, they kept a low profile and built something profound: a complex, accurate, essentially democratic search engine which helped shrink the world as dramatically as had the compass, the telegraph and the aeroplane."

*Guardian*, August 13, 2012



## and facebook?

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"only the dead have seen the end of war"

George Santayana, *Soliloquies in England*,

1922

# more wishing

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## **you should be so lucky**

"Children in the public schools will be taught practically everything by moving pictures. Certainly they will never be obliged to read history again."

-- D.W. Griffith, 1915



# educational promises

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"One can predict that in a few more years, millions of schoolchildren will have the personal services of a tutor as well-informed as Aristotle."

--Patrick Suppes,  
*Scientific American*, 1966

not Aristotle, but Plato (Programmed Language for Automated Teaching Operations),



**coming up:** social implications

# IBM's promise

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**Grandfather:**  
Well, I finally finished my  
doctoral thesis.

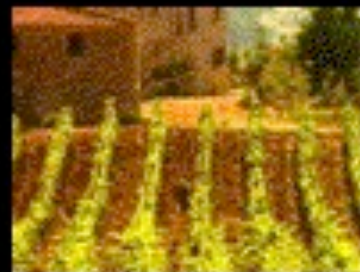


**Woman:**  
Way to go, Gramps.



**Grandfather:**  
Did my research at  
Indiana University.

**Woman:**  
Indiana?



**Grandfather:**  
Yup. IBM took the  
school's library...and  
digitized it. So I could  
access it over the Internet.

*She cocks her ear to take  
this all in.*



**Grandfather:**  
You know...It's a great time  
to be alive.



**Tag:**  
IBM. Solutions for  
a small planet.



# heard this before?

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"[A]s books are now multiplied, and men able to afford instruction dispersed all over the kingdom, it is evident that the principal cause of establishing universities in an age when both books and instructors were scarce, no longer subsists. Let them therefore be reformed, and rendered really useful to the community, or let them be deserted.

Vicesimus Knox, *Liberal Education*, 1781

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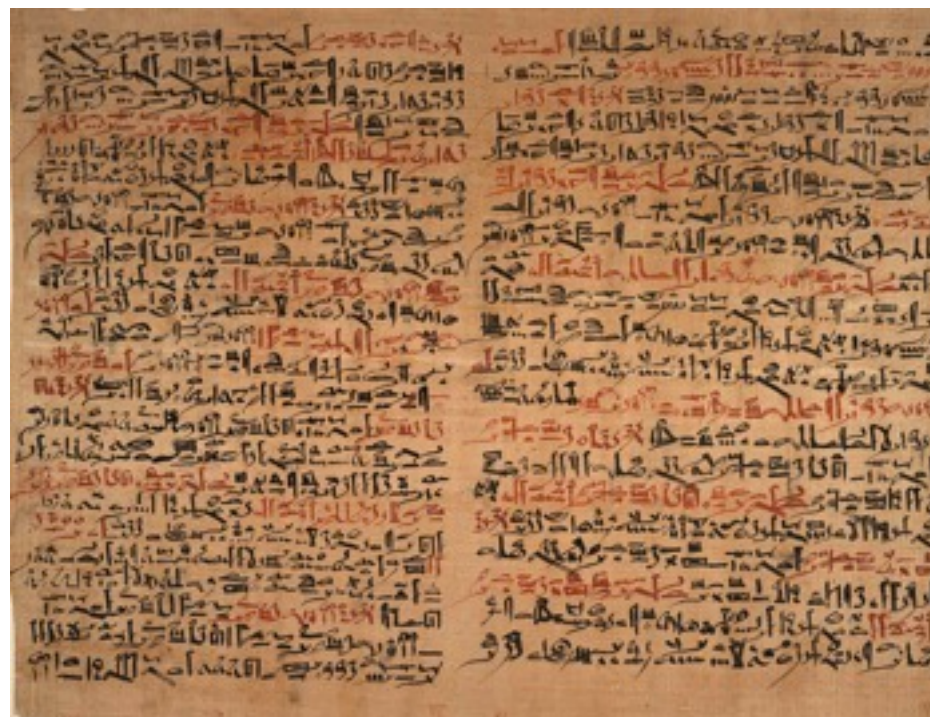
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# trivializing the past

**coming up:**  
manuscript culture



"Ceci tuera ..."

# bad predictions

**searching for  
the last ... ?**

There are persons who can write not illegibly in pencil, but are as enigmatical as Rufus Choate or Horace Greeley when they take up the pen. There are persons too lazy to resort to ink and pen who can conquer their besetting sin enough to make a few dabs with a pencil. Living must have been more laborious before the pencil age. Blue pencil, red pencil, what should we do without them? Yet writing with one's own hand seems to be disappearing, and the universal typewriter may swallow all. Librarians of a century or two hence may be searching for the last reference to pencils.

*New York Times*  
1938



**59.4% - Bicycle**





# constraint vs resource

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**coming up:** newspaper, telegraph





# category mistakes



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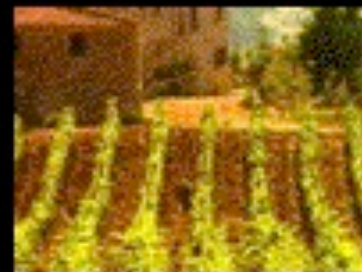


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# necessary or sufficient?

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HOME TECHNOLOGY SCIENCE ENTERTAINMENT BUSINESS UNBALANCE

## Arab Spring really was social media revolution

Posted on September 13, 2011 - 06:00 by **Kate Taylor**

After analyzing more than three million tweets, gigabytes of YouTube content and thousands of blog posts, a new study has concluded that the Arab Spring truly was fueled by social media.



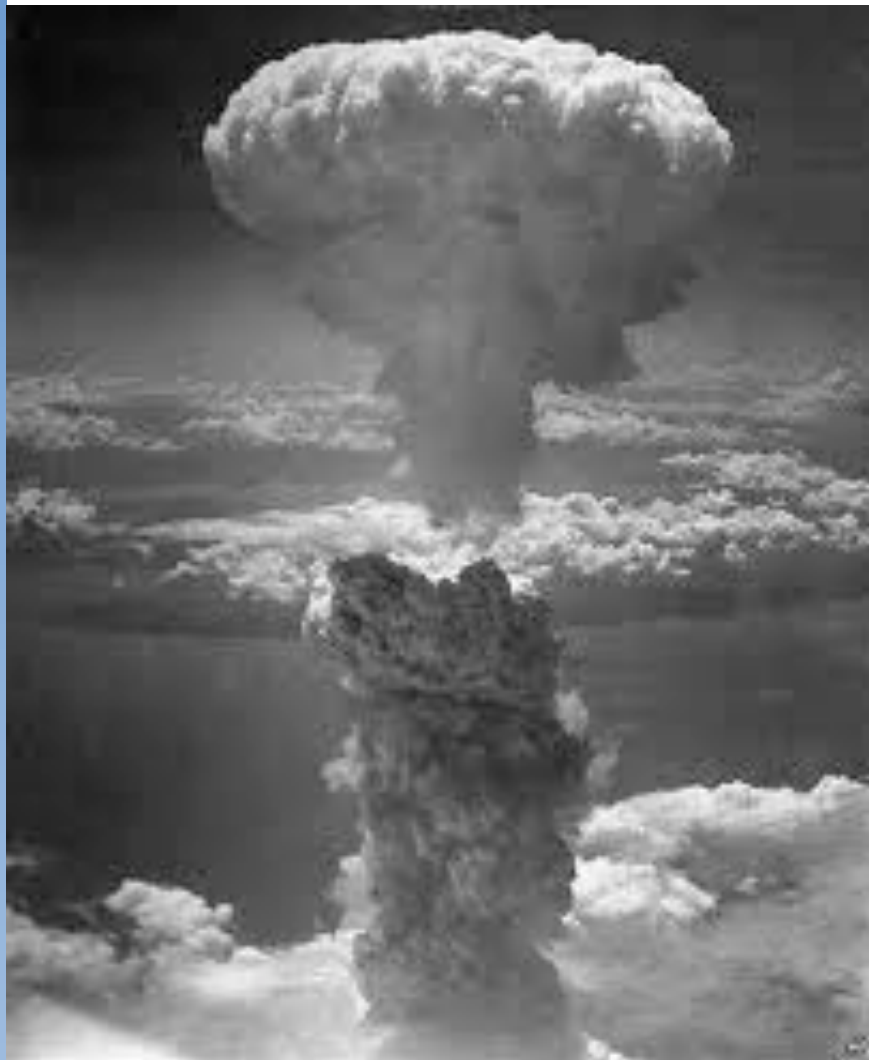
"Our evidence suggests that social media carried a cascade of messages about freedom and democracy across North Africa and the Middle East, and helped raise expectations for the success of political uprising," says Philip

Howard, an associate professor in communication at the University of Washington.



# backing the wrong horse

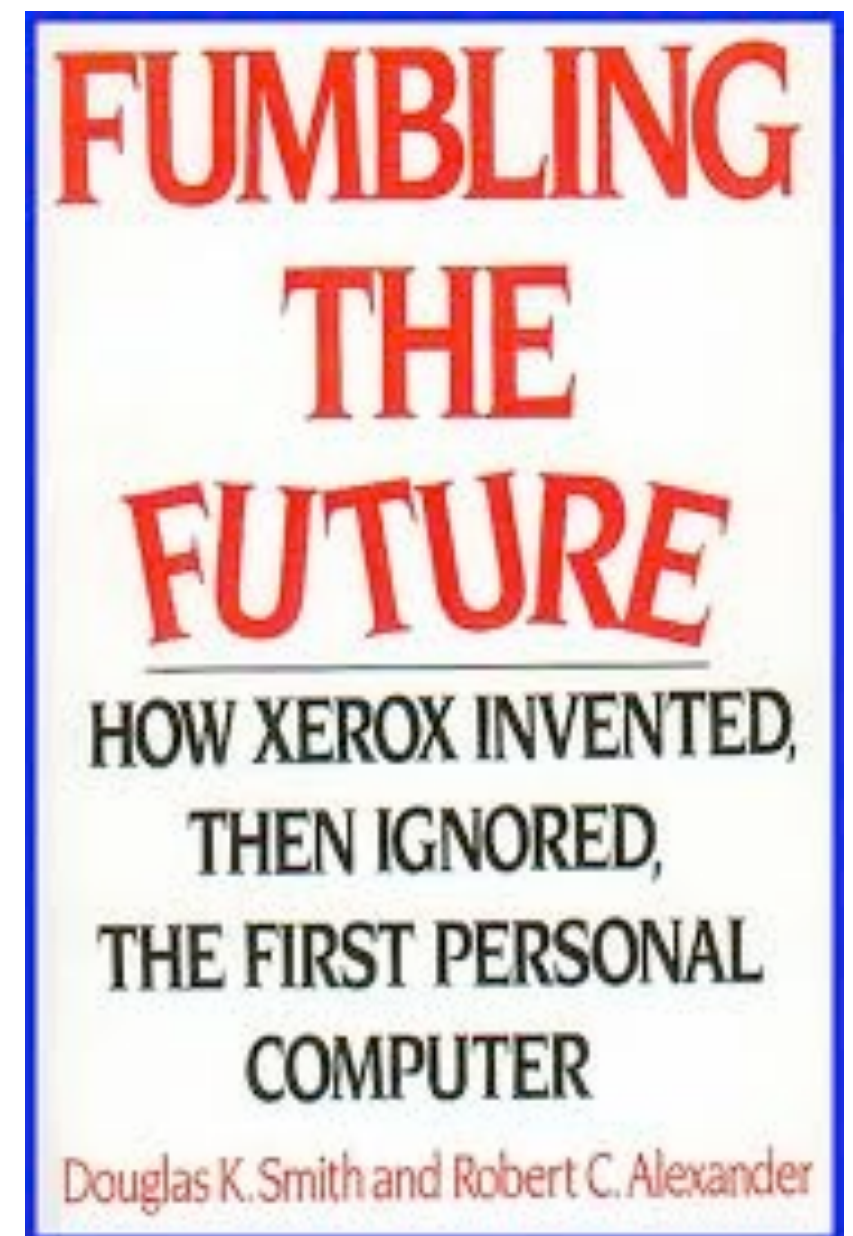
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# leaving it all to the horse

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"Westward the  
course of  
empire ..."

## techno-superiority

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H.G. Wells  
1866–1946

"And for the rest, those swarms of black, and brown, and dirty-white, and yellow people, who do not come into the new needs of efficiency? Well, the world is not a charitable institution, and I take it they will have to go. The whole tenor and meaning of the world, as I see it, is that they have to go."

-- H.G. Wells, *Anticipations*, 1901



# linear thinking

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## unintended consequences

Edward Tenner,

*Why Things Bite Back: Technology and the Revenge of Unintended Consequences*, 1997

## moral hazard



# in conclusion

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## **how to think about determinism**

what happened?

what was involved?

what did (or did not) come before?

what did (or did not) follow?

what did (or did not) contribute?

what happened elsewhere?

what's likely to be underestimated?

what was necessary, what sufficient?

# coming up

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## 31 Jan: First Technologies: Writing

### Required Readings

- Marshack, Alexander. 1999. "The Art and Symbols of Ice-Age Man," in David Crowley, ed. *Communication in History: Technology, Culture, Society*. Allyn & Bacon. Pp. 5-14.
- Robinson, Andrew. 1999. "The Origins of Writing." In David Crowley, ed. *Communication in History: Technology, Culture, Society*. Allyn & Bacon. Pp. 36-42.
- Drucker, Johanna, 1999, "The Alphabet," in David Crowley, ed. *Communication in History: Technology, Culture, Society*. Allyn & Bacon. Pp. 46-55.