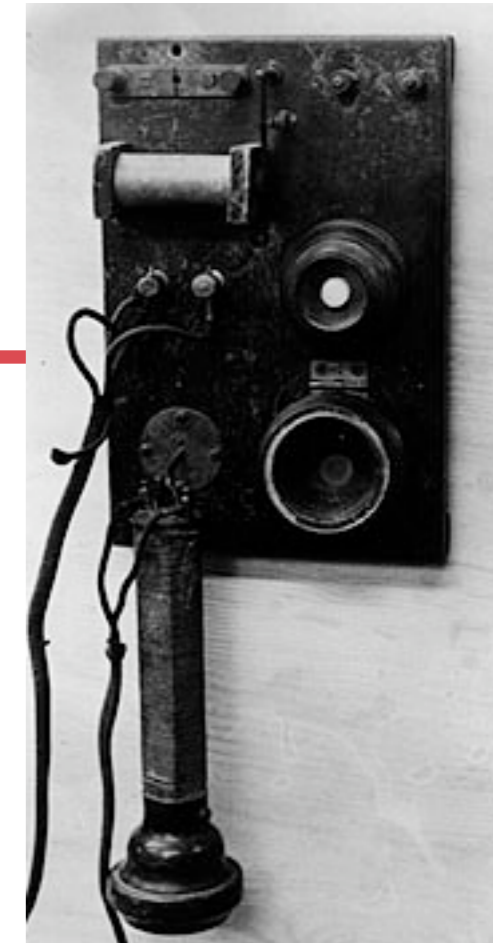


# point to point

## telephone & telegraph



History of  
Information

October 22



RECEIVED FORE-CONTINENTAL TELEGRAM  
 OFFICE AND SUBMARINE TELEGRAPHS  
 LONDON OFFICE - 58, THREADNEEDLE STREET, E.C.

PREMIER No. 7967

The Submarine Telegraph Company Received the following Telegram

Origin No. At 10/10/1871

Number of Words Dated from 1871 10/30

REMARKS Addressed to

Operator's Initials

ADRES FR LYON 388 18 28 10 30 M .+ ALPHANDERY LONDRES = POUVEZ P  
 CULAIRE EN QUESTION AINSI QUE CELLE DU MYRRHA NE PERDEZ PAS DE  
 = BLOCH

Arthur Levy Esq  
 5 Carpenter Row  
 Mount St  
 SA





# overview

---

**point to point**

**differing interests**

**techno-enthusiasms**

**unintended consequences**

**~graph to ~phone**





# distinguish by use

---



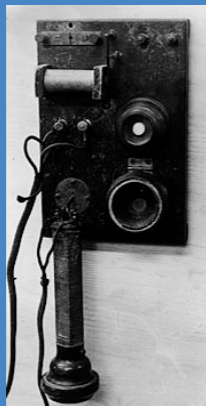
## **point to point vs broadcast**

post office

telegraph

telephone

radio



## **use vs intention**

## **national variation**





# which way around?

---

"Science Explores, Technology Executes,  
Man Conforms".  
New York World's Fair, 1933

"It was the demand for rapid  
communications that created the  
telecommunications systems,  
not the other way around"

Daniel Headrick





# long-distance interests

---

Newman & Co, 1660ff

Dartmouth

Bournemouth

London

Vianna

Porto

Bilbao

Newfoundland

Concepcion

Zanzibar

Madagascar

**politics & business**

**common interests**

**conflicting interests**



# common dilemma

Packet boats from  
England, 1720

France, 3

Spain, 2

Flanders, 2

Holland, 2

Ireland, 2

**too much time, too little news**

**communication needs**

speed

frequency

**messages by sea**

irregular: merchant ships

regular: packet boats

**TRADE BETWEEN LONDON AND  
BOSTON, U.S.A., 1765-71 (clxxi. 158).**—

In 1775 the postal communication with the British Dominions in America was by five packet-boats between Falmouth and New York, sailing from the former the first Saturday, from the latter the second Saturday in every month, they were,

Halifax, Capt. John Bolderson.

Duke of Cumberland, Capt. John Mitchell.

Lord Hyde, Capt. Norris Goddard.

Harriot, Capt. Geo. Oake.

Mercury, Capt. Rob. Dillon.

The postage between London, and any port within the British Dominions in America, of a single letter (i.e., one sheet of paper) was 12d., which covered inland conveyance in the Dominions up to 60 English miles; from 60 to 100 miles, 6d.; 100 to 200 miles, 8d., not passing through a chief office; and so in proportion increasing two-pence for any distance above every 100 miles. All double, treble,





# message methods

---

## **carry**

foot

horse

carriage

sail

train

## **send**

smoke

flag

light

pigeon

telegraph

telephone

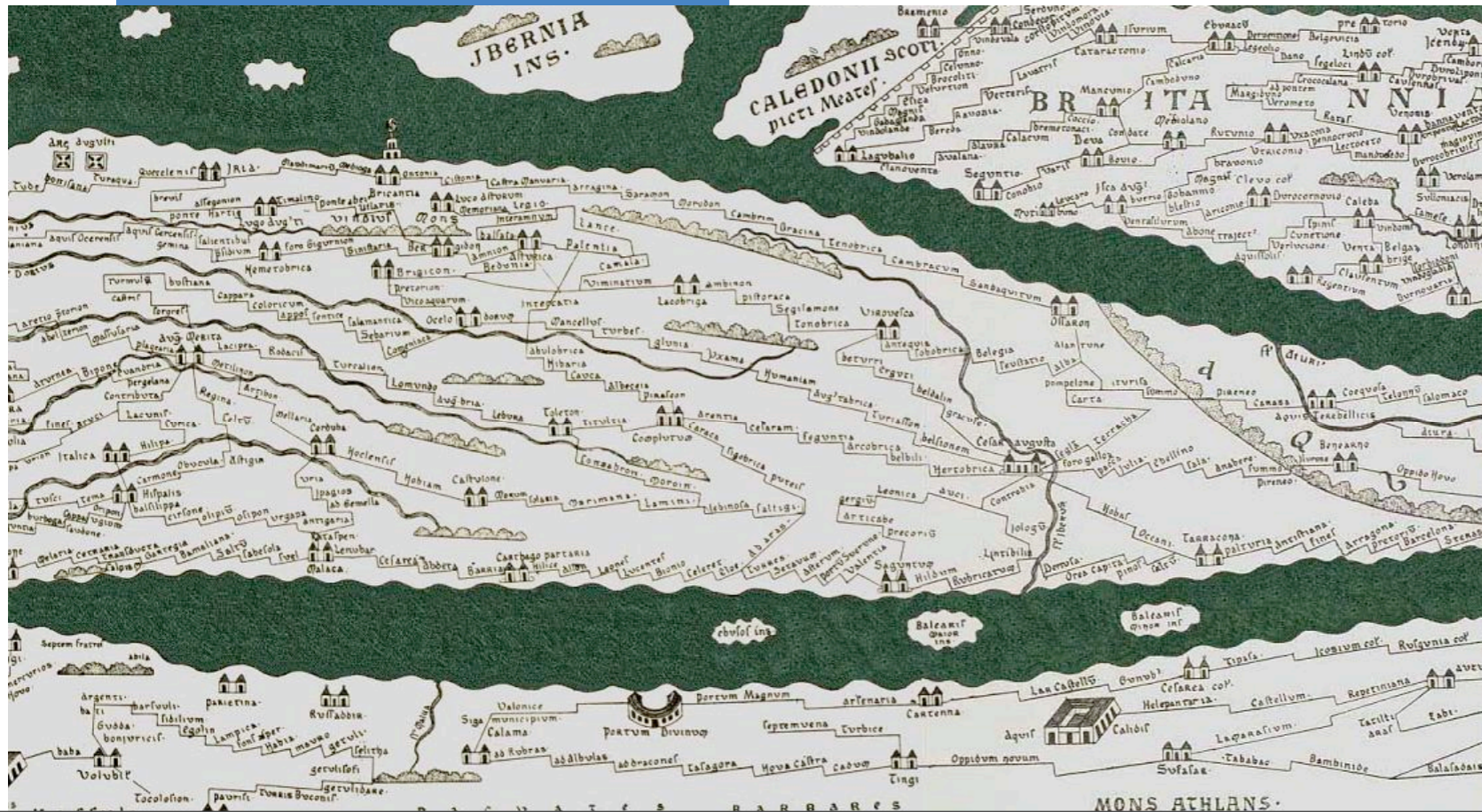




carry

## Rome to Holy Roman Empire

"it took twenty-six days for Caesar to send a letter from Britain to his dear friend Cicero in Rome"



Franz von Tassis, 1489







MAIL-COACH BUILT BY WAUDE, 1830.

carry



**mail coach**  
speed, roughly 8 mph

**train**

"the Average speed of the early railways in England is 20 to 30 miles an hour, which is roughly three times the speed previously achieved by by stagecoaches"

Wolfgang Schivelbusch, "Railroad Space and Railroad Time"



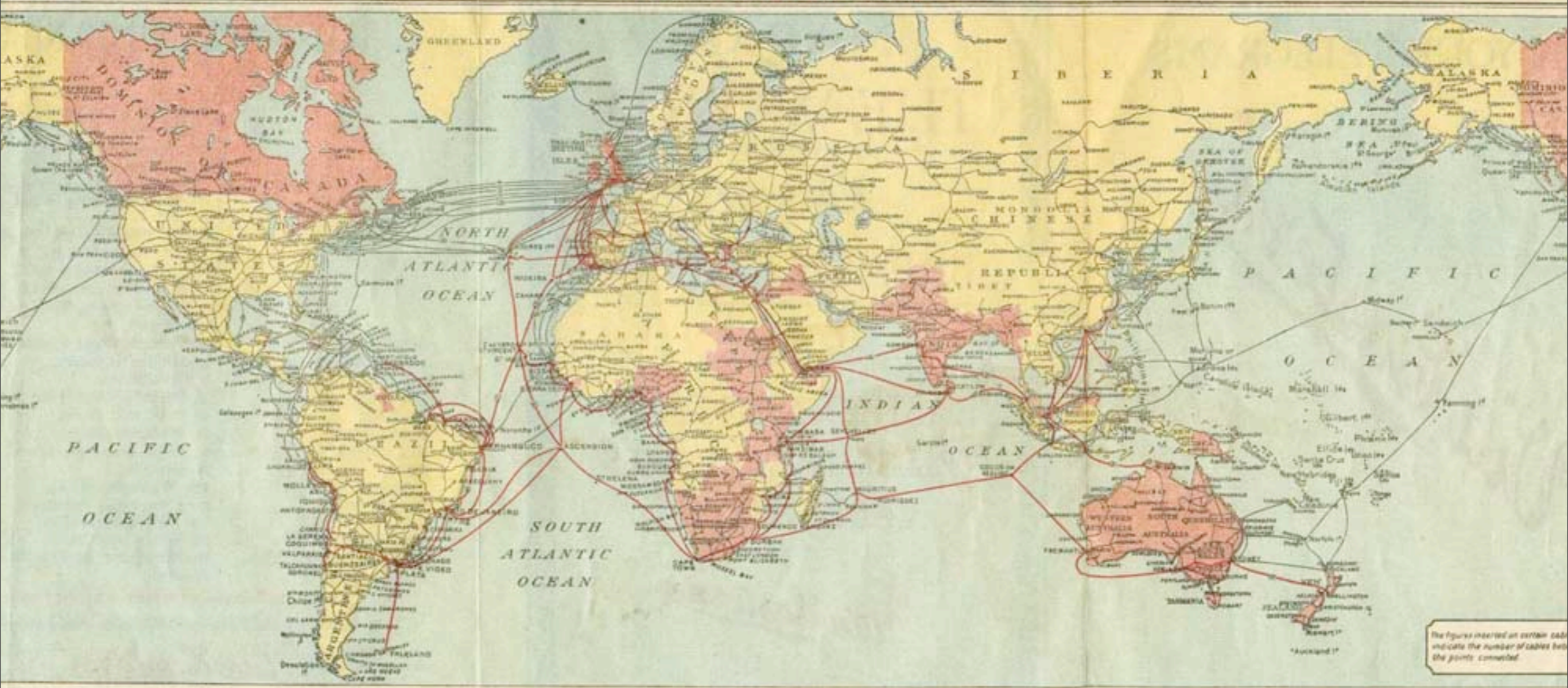
Bury, 'View of Railway across Chat Moss', 1831  
Turner, 'Rain, Steam, Speed', 1844





send

*Via Eastern* THE EASTERN ASSOCIATED TELEGRAPH COMPANIES' CABLE SYSTEM. *Via Eastern*  
(INDICATED IN RED.)

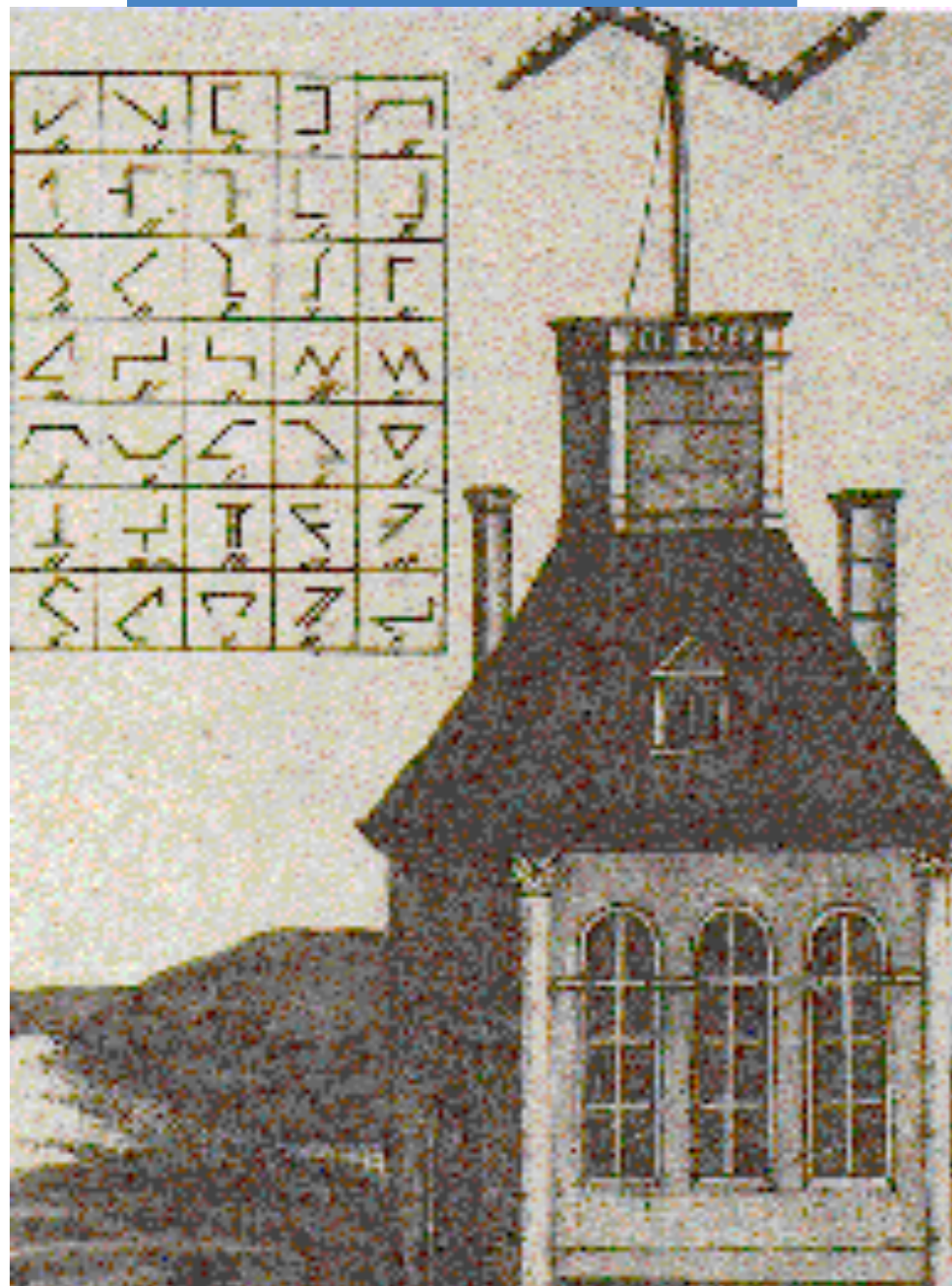






# telegraphic history

**Claude Chappe (1763-1805)**



## La Ligne Paris-Lille 1794

*Telegraphie*

*Bulletin du 13 fructidor 10<sup>e</sup> feuille*  
*30 Aout 1794.*

*Com. M.*

*Arrière fusils huit minutes*  
*Purgée et venue de Lille*  
*avec les signaux suivants.*  
*Le coup de secle vocabulaire*  
*ingénieur.*

┌ ─ ─ ─ ─	Conde'
└ ─ ─ ─ ─	Arre
┌ ─ ─ ─ ─	Restituer
└ ─ ─ ─ ─	à
┌ ─ ─ ─ ─	Republique
└ ─ ─ ─ ─	Reddition
┌ ─ ─ ─ ─	avoir eu lieu
└ ─ ─ ─ ─	à
┌ ─ ─ ─ ─	ministre
└ ─ ─ ─ ─	à
┌ ─ ─ ─ ─	Sur
└ ─ ─ ─ ─	Sur

*M. de Trévise, après*  
*avoir vu passer les*  
*deuxième feuille quand*  
*elle sera terminée.*

*Joseph Soumault*  
*Chapelle*

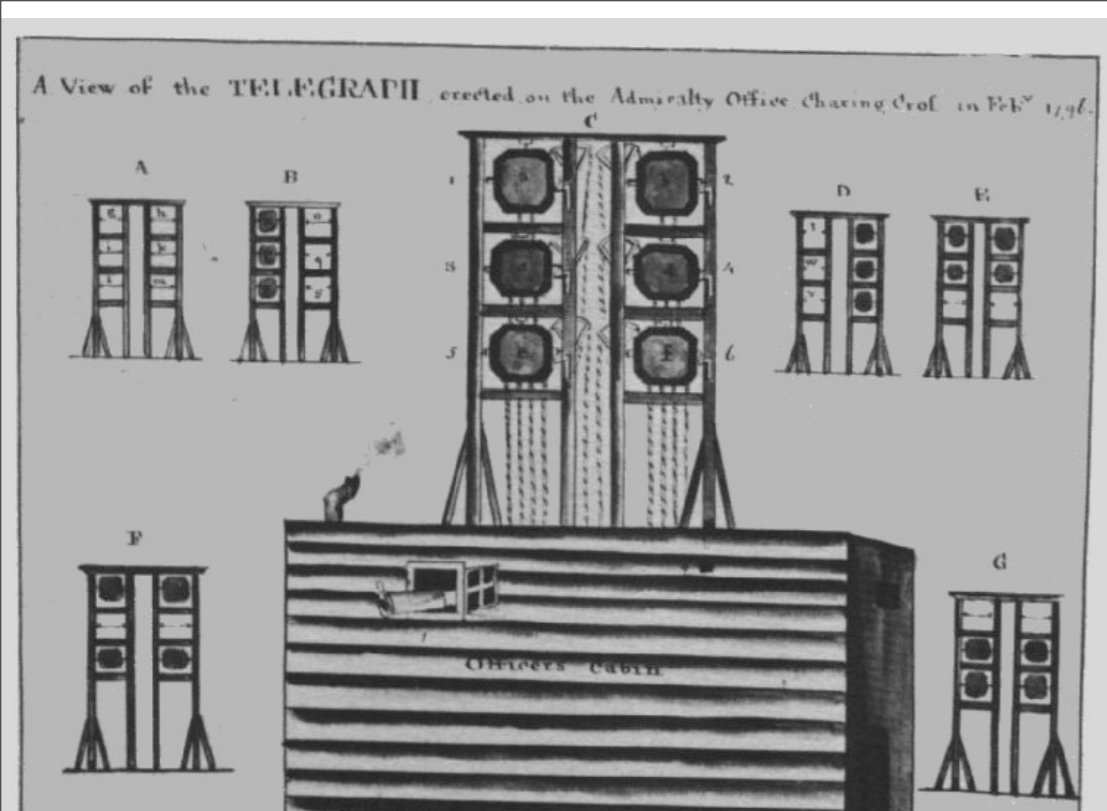


# national aspiration

---

**1793:** "The establishment of the telegraph is ... the best response to the publicists who think that France is too large to form a Republic. The telegraph shortens distances and, in a way, brings an immense population together at a single point"  
Claude Chappe, 1793





# military aspiration

**on land**

the Admiralty "six-shutter" telegraph  
Portsmouth, Deal, 1796

Great Yarmouth, Plymouth, 1806

from three days to fifteen minutes from Portsmouth to London

abandoned, 1814

rebuilt as a Chappe "semaphor"  
telegraph, 1815

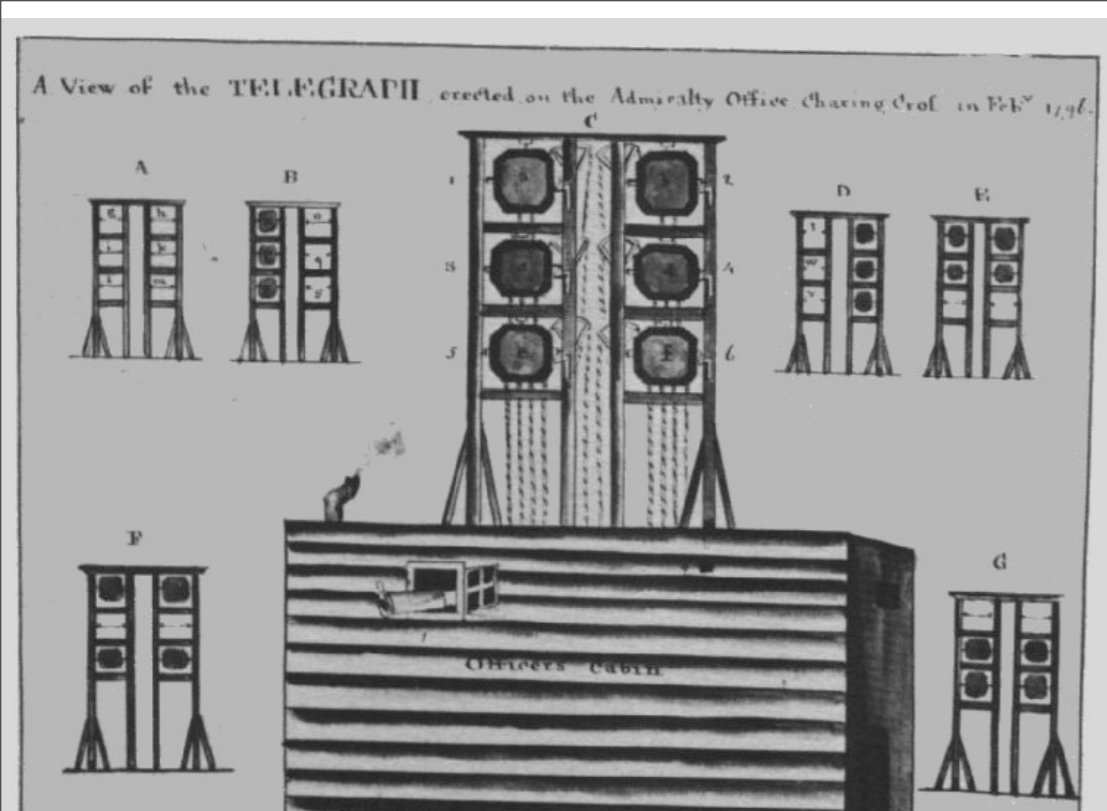
"[B]y the telegraph [man] renders  
himself as it were present in the same  
moment at distant places

*Monthly Review*

Hofl P2P - 13







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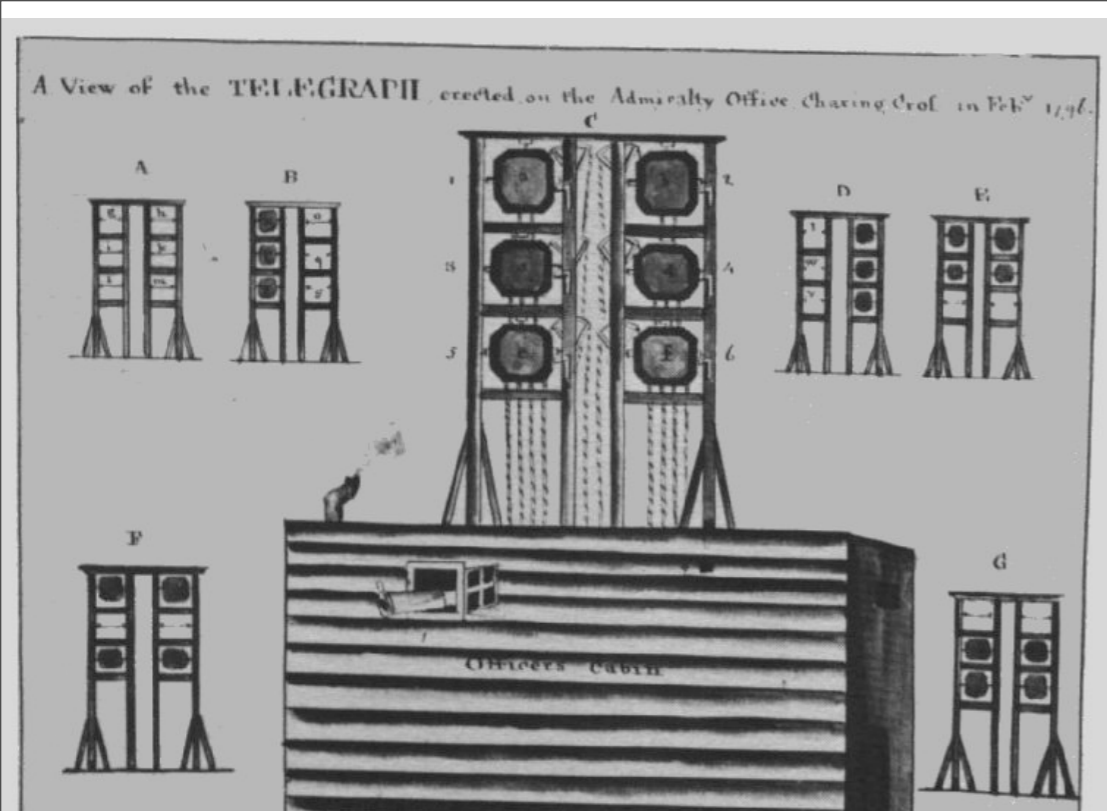
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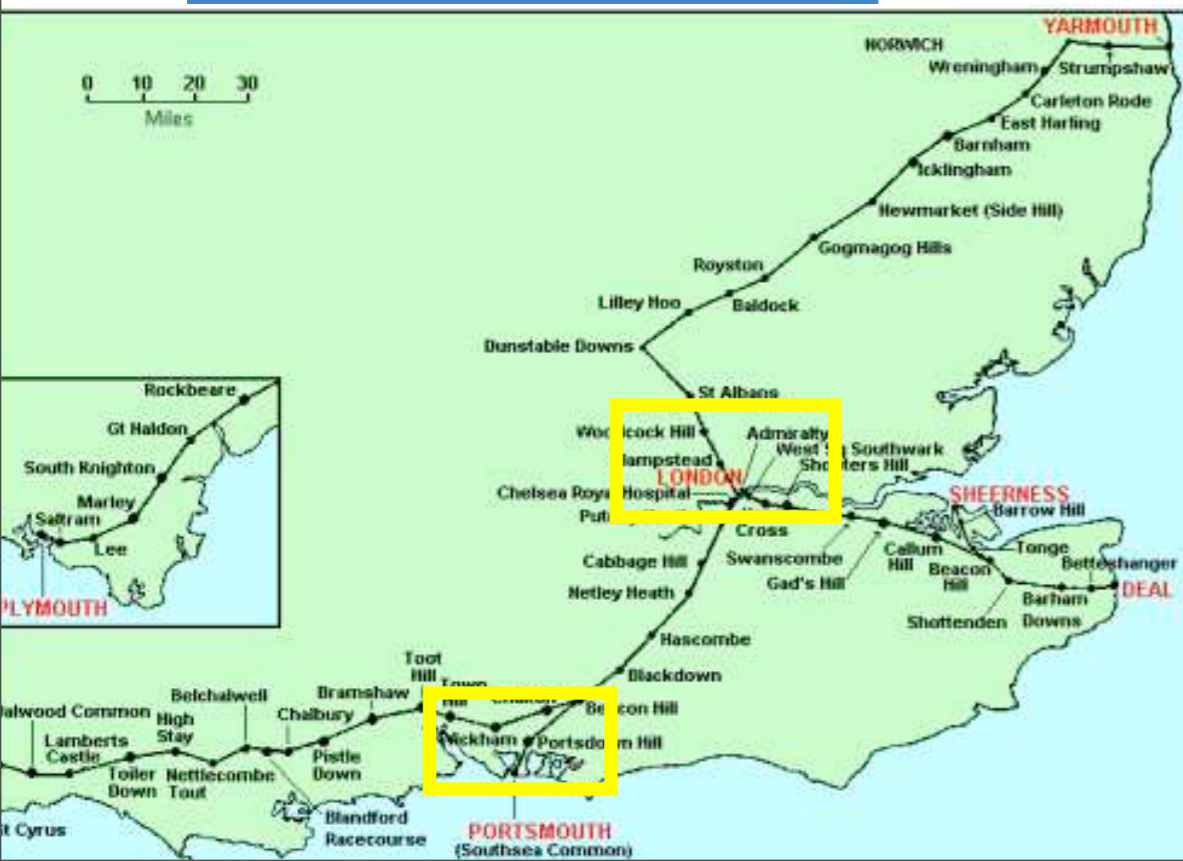
abandoned, 1814

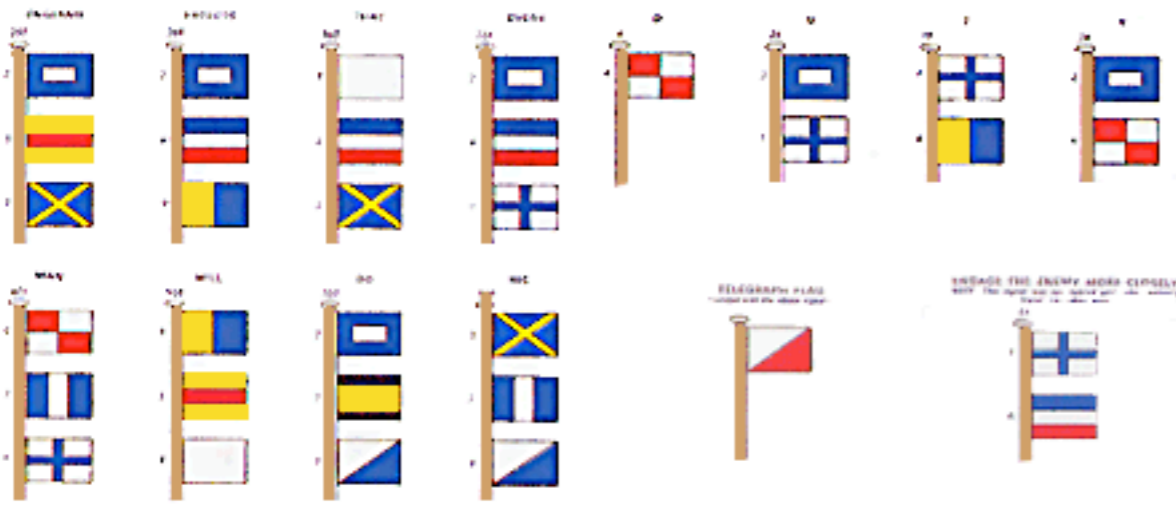
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"[B]y the telegraph [man] renders  
himself as it were present in the same  
moment at distant places

*Monthly Review*

Hofl P2P - 13





# military aspiration

**at sea**



**1805:** "Trafalgar, a "revolutionary battle in its effects, owed its nature to revolutionary tactics; but those tactics ... were chiefly the product of a revolution in control, brought about by the innovation of Home Popham's telegraphic signalling system. ... Nelson had at his disposal the means to direct his ships wherever he wanted them to go".

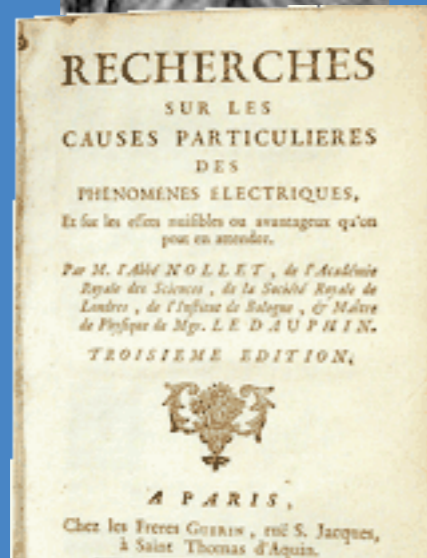
William Keegan

**Home Popham (1762-1820)**





# electrical signals



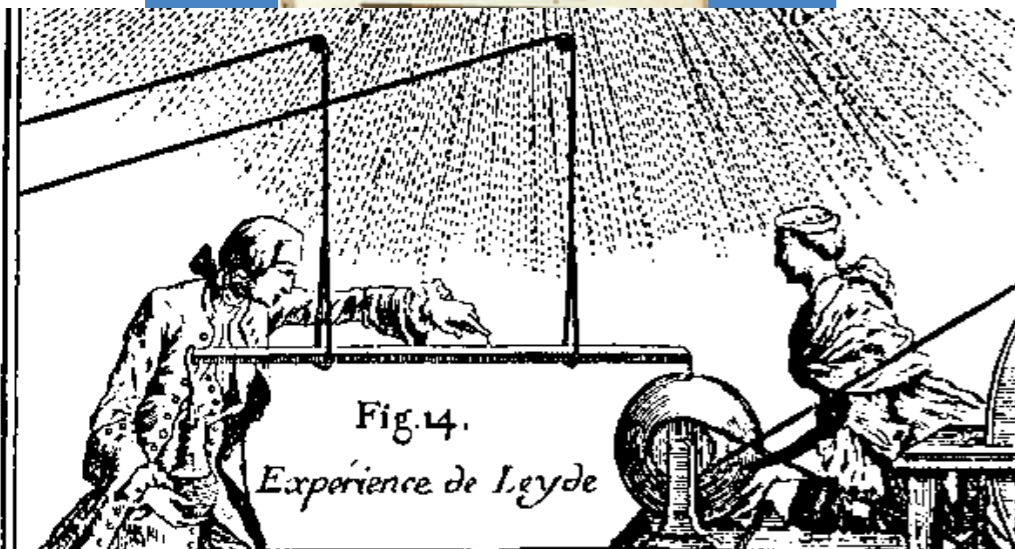
**Abbé Nollet, 1700-1770**

180 Royal Guards

1 km Carthusian monks

"when a Leyden jar was discharged, the white-robed monks reportedly leapt simultaneously into the air"

**Benjamin Franklin**





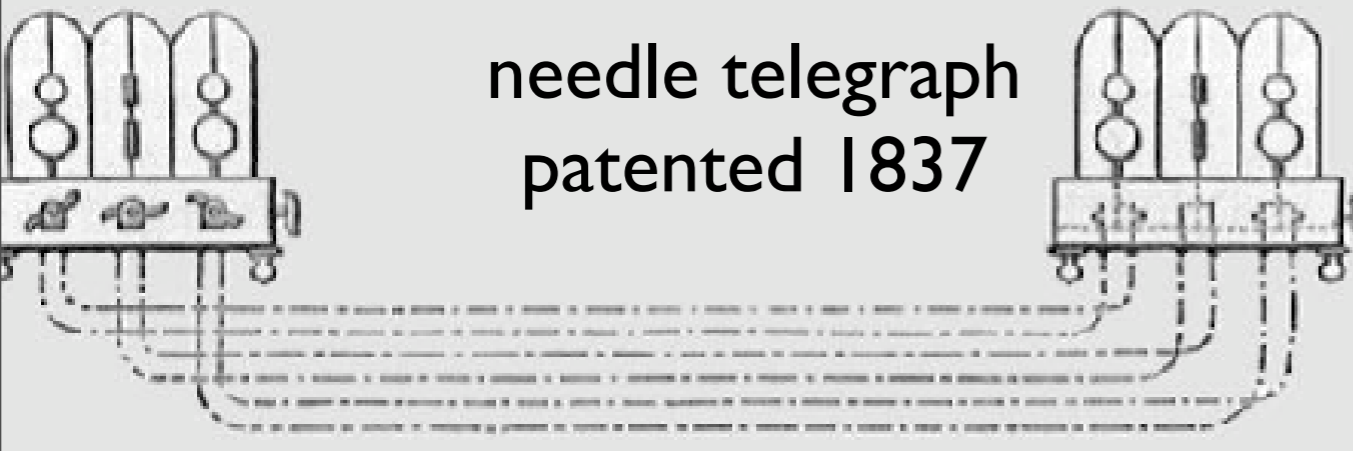


# electric telegraph

## Samuel Morse (1791-1872)

"If the presence of electricity can be made visible in any desired part of the circuit, I see no reason why intelligence may not be instantaneously transmitted by electricity to any distance."





needle telegraph  
patented 1837

# transatlantic race



**Pavel Lvovitch Schilling** (1780-1836)

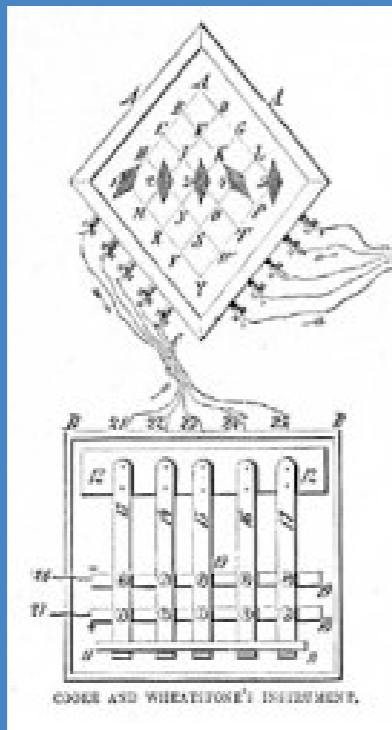
**William Cooke** (1806-1879)

**Charles Wheatstone** (1802-1875)

Faraday

Roget

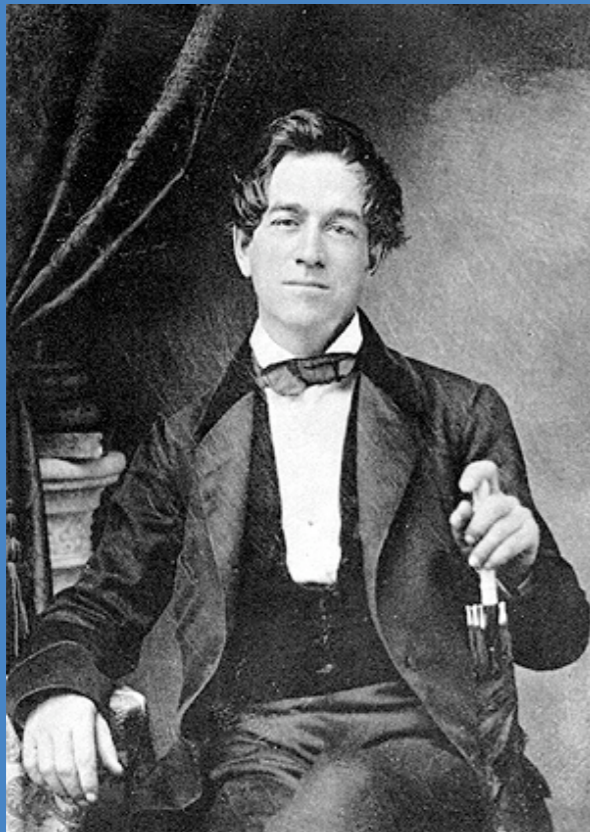
Thomson



**GWR telegraph, 1837**



# morselization



A: ·—	B: —···	C: —···
D: —··	E: ·	F: ····
G: —···	H: ····	I: ··
J: ·····	K: —··	L: ····
M: —·	N: —·	O: —···
P: ····	Q: —···	R: ···
S: ···	T: —	U: ···
V: ····	W: ···	X: —···
Y: —···	Z: —···	

**Alfred Vail**  
(1807-1859)

"a patient waiter  
is no loser" [1838]

"Morse" code  
patented 1840

"International Morse Code, 1851"

Wednesday, December 31, 1997 Published at 15:59 GMT

**World**

**The end of the line for Morse Code**



# interconnections

---

**Prussia-Austria: 1849**

**England-France: 1851**

**New York-Newfoundland: 1856**

**Britain-North America: 1858-1866**





# the press

## AP is older than was thought, papers show

A collection of 19th-century documents newly acquired by The Associated Press shows that the world's largest newsgathering organization traces its origins to 1846, two years earlier than traditionally accepted by journalism historians and the AP itself.

The documents were provided to the AP's corporate archives by Brewster Yale Beach, a great-great-grandson of Moses Yale Beach, the second owner-publisher of the original New York Sun and the driving force in creating the alliance of newspapers sharing news dispatches that became known as The Associated Press.

In the memorandum, Moses Sperry Beach describes an 1846 arrangement whereby Mexican war reports arriving at Mobile, Ala., by boat were rushed by special pony express to Montgomery, then 700 miles by U.S. mail stagecoach to the southern terminus of the telegraph near Richmond, Va. That express gave the Sun an edge of 24 hours or more on papers using the regular mail.

But Moses Yale Beach relinquished that advantage by inviting other New York publishers to join the Sun in a cooperative arrangement. The newspapers named in the agreement: the Sun, the Journal of Commerce, the Courier and Express.

The occasion for the arrangement, as the notes on the back of it indicate, was the death of James Gordon Bennett, publisher of the New York Herald. Bennett's boast of having effected the first telegraphic news service gained credence through repetition.

In an interview in 1884, Moses Sperry Beach said the Mexican War Press. It all grew out of this."



## Associated Press, 1846

James Gordon Bennet, *New York Herald*

James Webb, *Courier & Enquirer*

Gerald Hallock, *Journal of Commerce*

Horace Greely, *Tribune*

Moses Beach, *New York Sun*

Eustace Brooks, *New York Express*

## Reuters

Paul Reuter

1849: pigeons & "the last mile"

1851: moves to London

"follow the cable"



# techno-enthusiasms

---

"The progress of human knowledge has accomplished within a century **revolutions in the character and condition of the human race** so beautiful and sublime as to excite in every observing mind feelings mingled with the deepest admiration and astonishment. No age has illustrated so strongly as the present the empire of mind over matter and the ability of man to rise ... above obstacles with which nature has surrounded him. ... It is a happy privilege we enjoy of living in an age, which for its inventions and discoveries, its improvement in intelligence and virtue, stands without a rival in the history of the world ... Look at our splendid steamboats."

--Scientific American, 1841





# annihilation - carry

---

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

1728

**'The annihilation of space,' says a late number of the North American Review, 'occasioned by the introduction of steam into navigation, is in nothing more wonderfully exemplified than in the time within which it is possible to travel from New York to Jerusalem. The fact may be startling to our readers, but it is nevertheless true, that a person favored by circumstances, may reach Mount Calvary within thirty-three days after leaving Broadway. Thirteen days may take him to Bristol, two to Paris, three to Marseilles, ten to Syria, four to Jaffa, and one from there to Jerusalem.—And the French steamboats, plying upon the Mediterranean, to Syria, to Alexandria, to Greece, to Smyrna, and to Constantinople, are safe and pleasant vessels, and well found in all respects.'**



# annihilation - send

---

"A line of telegraph ... from London to Kurrachee,  
and from thence to every part of India, ...  
intelligence and commands 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

THE FIRST MESSAGE.

ENGLAND GREETES AMERICA

QUEEN VICTORIA

TO

PRESIDENT BUCHANAN.

# wishing on technology

May the Atlantic telegraph, under the blessing of heaven, prove to be a bond of perpetual peace and friendship between the kindred nations, and an instrument destined by Divine Providence to diffuse religion, liberty, and law throughout the world.

President Buchanan, 1858

Tomorrow the hearts of the civilized world will beat in a single pulse, and from that time forth forevermore the continental divisions of the earth will, in a measure, lose those conditions of time and distance which now mark their relations. ...

"The Atlantic has dried up and we become in reality as well as wish, one country."

*Times*

Hofl P2P - 24







# peace

---

"It is impossible that old prejudices and hostilities should longer exist, while such an instrument has been created for the exchange of thought between all the nations of the earth".  
Charles Briggs & Augustus Maverick, *The Story of the Telegraph*, 1858

"Steam was the first olive branch offered to us by science. Then came the still more effective olive branch--this wonderful electric telegraph, which enables any man who happens to be within reach of a wire to communicate instantaneously with his fellow men all over the world."  
-- Ambassador Thornton, 1858



## and moral progress

---

"Making a better machine cannot make men better."

Emile Zola  
*La Bête Humaine*, 1890

"facilitating Human Intercourse and producing Harmony among Men and Nations ... [I]t may be regarded as an important element in Moral Progress"

*Daily Chronicle* [Cincinnati] 1847

"the great chain that will bring all civilized nations into instantaneous communication ... the most potent of all the means of civilization, and the most effective in breaking down the barriers of evil prejudice and custom"

*Hunt's Merchants' Magazine*, 1868

"the hand of progress beckons .... a rivet is loosened from the chains of the oppressed"

*Commercial and Financial Chronicle*, 1865.



# decentralization

---

"The telegraph being alike open to *all* puts the whole community upon a par, and will thus 'head off' the most adroit speculators, because they will not have the power to monopolize intelligence  
*Public Ledger and Daily Transcript*  
(Philadelphia, 1846)





# innocent expectations

---

## **... and unintended consequences**

the press & public debate  
international cooperation  
diplomacy & peace  
commerce  
love



public sphere

---



# public sphere

---

**raising the level of debate**





# public sphere

## raising the level of debate

### *THE SUSPECTED MURDER AT SALT-HILL.*

SLOUGH, FRIDAY EVENING.

This extraordinary affair, which is wrapt in the greatest mystery, still continues to excite the most intense interest throughout this extensive neighbourhood. A great number of persons, anxious to have a view of the interior of the house, and especially the room in which the supposed murder took place, and now containing the body of the deceased (upon which an inquest was held yesterday), visited the house during to-day; but the constable, with whom is deposited the key of the house, has received strict injunctions from the coroner, before whom the adjourned proceedings will be resumed to-morrow morning, not to suffer any one to enter the premises, and these orders have been strictly attended to.

The deceased had two children living with her at the time of her death; Frederick, the eldest, aged five years, and Sarah, an interesting little girl, one year younger. They had been with her at the time of her death.



# public sphere

## raising the level of debate

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*The deceased had few or no political friends.*

It may be observed, that had it not been for the efficient aid of the electric telegraph, both at Slough and Paddington, the greatest difficulty as well as delay would have occurred in the apprehension of the party now in custody.

THE

# ACCOUCHEMENT

OF

# HER MAJESTY.

## BIRTH OF A PRINCE.

public sphere

[We were enabled to give the following in a large part of our yesterday's impression:—

*THE TIMES-OFFICE, Half-past 8 a.m.*

We have the happiness to announce that the **QUEEN** has been safely delivered of a **PRINCE**.

We are happy to state that Her Majesty is going well.

We are indebted to the extraordinary power of the Electro-Magnetic Telegraph for the rapid communication of this important announcement.

[The following appeared in a second edition of *The Times* of yesterday:—]

### EXPRESS FROM WINDSOR.

In addition to the intelligence of the auspicious event which we published at half-past 8 o'clock, we have just received the following

**OFFICIAL DESPATCH.**

raising the level of debate

### *THE SUSPECTED MURDER AT SALT-HILL.*

SLOUGH, FRIDAY EVENING.

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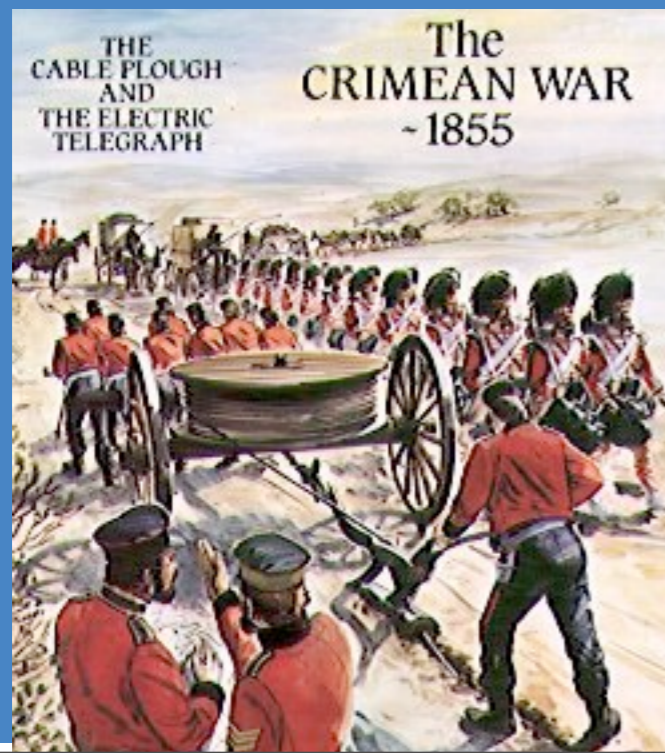
# openness

**or secrecy?**

Crimean War, 1855

"The press and the telegraph are enemies we had not taken into account"

Earl of Clarendon,  
British Foreign Secretary





# decentralization?

**land vs sea cables**  
**cable cutting and cable defence**  
**cable neutrality**

"If information is power, whoever rules the world's telecommunications system commands the world"  
--Peter Hugill



# decentralization?

## **military**

### **Marconi & the US Navy**

Clapping his glass to his sightless eye, "You know, Foley," he added, turning to his captain, "I've a right to be blind sometimes. I really do not see the signal. D—n the signal! keep mine for closer action flying."

Beninger, *The Control Revolution*, 1986

Yates, *Control through Communication*, 1989





# decentralization?

---

## **commercial**

the "second industrial revolution"

Alfred Chandler, *Scale & Scope*  
from family to managerial capitalism

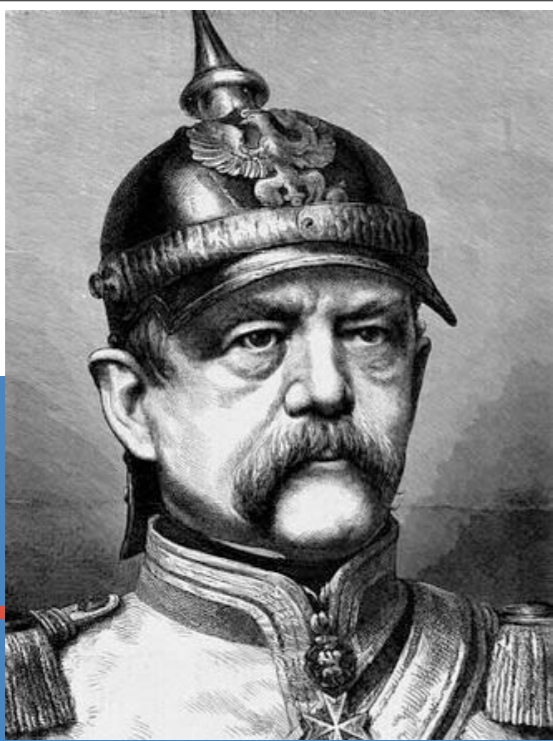
Harold Innis, *The Bias of Communication*

## **a prime example: Western Union**

"the first industrial monopoly, swallowed up its last  
two rivals in 1866. .... [O]nly in the United States  
and Canada did the telegraph remain under private  
control after 1868"

Du Boff, "The Telegraph...Technology & Monopoly", 1984





peace

## LATEST INTELLIGENCE.

(REUTER'S TELEGRAMS.)

### DECLARATION OF WAR BY FRANCE AGAINST PRUSSIA. FRANCE.

PARIS, JULY 15.

The French Legislature assembled at 1 o'clock this afternoon, when a communication was simultaneously made by the Government to the Senate and the Corps Legislatif explaining the situation of affairs and terminating by a Declaration of War against Prussia. The Government announced that his declaration is precipitated by the circular of the King to the Prussian agents abroad, which, firstly, confirms the affront to M. Benedetti; secondly, refuses to guarantee the renunciation of Prince Leopold of Hohenzollern; and thirdly, restores to him his liberty to accept the crown of Spain. The *Constitutionnel* publishes an extraordi-

### Bismarck & the Ems telegram

His Majesty [having told Count Benedetti that he was awaiting news from the Prince,] has decided [with reference to the above demand] not to receive Count Benedetti again, but only to let him be informed through an *ide-de-camp* that his Majesty [had now received from the Prince confirmation of the news which Benedetti had already received from Paris and] had nothing further to say to the ambassador.

"à Berlin, à Berlin"

**code controversies**

**Zimmerman cable**

Hofl P2P - 34





# franco-prussian war

**started by telegram  
resisted by pigeons**

the siege of Paris  
the government in Tours

## **OPEN LETTERS for PARIS.** **Transmission of by Carrier Pigeons.**

THE Director-General of the French Post Office has informed this Department that a special Despatch, by means of Carrier Pigeons, of correspondence addressed to Paris has been established at Tours, and that such Despatch may be made use of for brief letters, or notes, originating in the United Kingdom, and forwarded by post to Tours.

Persons desirous of availing themselves of this mode of transmission must observe the following conditions.

Every letter must be posted open, that is, without any cover or envelope, and without any seal, and it must be registered.

No letter must consist of more than twenty words, including the address and the signature of the sender, but the name of the addressee, the place of his abode, and the name of the sender—although composed of more than one word, will each be counted as one word only.

No figures must be used: the number of the house of the addressee must be given in words.

Combined words joined together by hyphens or apostrophes will be counted according to the number of words making up the combined word.

The letters must be written entirely in French, in clear, intelligible language. They must relate solely to private affairs, and no political allusion or reference to the War will be permitted.

The charge for these letters is five pence for every word, and this

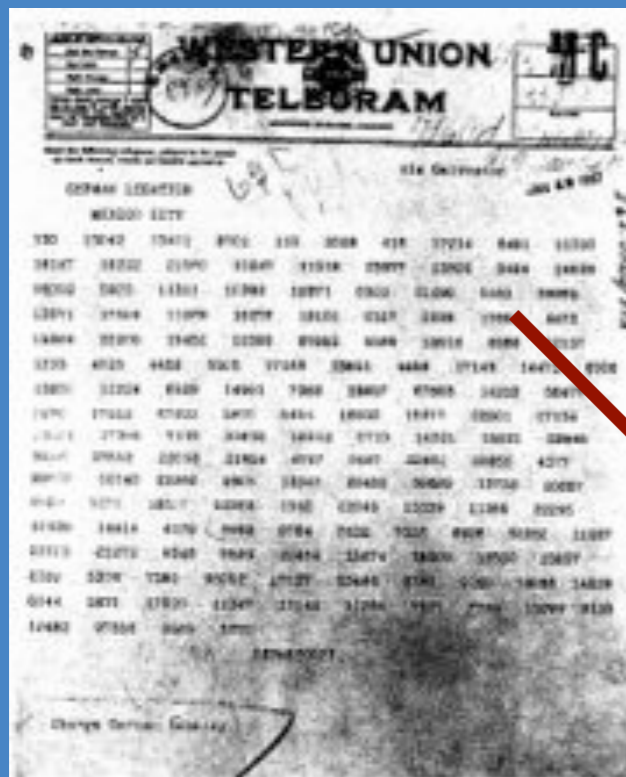






# war again

## Zimmerman telegram coded communications



4458	opmeriam
17149	Friedensschloß.
14471	⊙
6706	reichlich
13550	finanziell
624	unterstützung
6929	und
14991	Einverständnis
7382	ausserorts.
156(5)7	2a/3
67893	Mexico.
14218	in
36477	Texas
5870	⊙
17553	an
67893	Mexico.
5870	⊙
5454	AR
4102	IZ
15217	ON
22501	A

### ZIMMERMANN EXPLAINS.

Herr ZIMMERMANN paints what all his admirers here and in Germany will consider a damning picture of the contrast between American and German methods. "Our behavior con-  
trasts considerably with the be-  
havior of the Washington Govern-  
ment," he truly says. And he ex-  
plains. When he instructed the Ger-  
man Minister to Mexico to propose  
an attack on the United States by  
Mexico and Japan, it was done with  
the kindest regard for our feelings;  
it was done with the utmost secrecy.  
Washington, with a coarseness which  
revolts him, obtained and published  
these confidential instructions—"in a  
way that was not unobjectionable,"  
as he puts it with much self-restraint.

TELEGRAM RECEIVED.  
From Tel. from London # 5747.  
"We intend to begin on the first of February  
unrestricted submarine warfare. We shall endeavor  
in spite of this to keep the United States of  
America neutral. In the event of this not succeed-  
ing, we have Mexico a proposal of alliance on the  
following basis: make war together, make peace  
together, generous financial support and an under-  
standing on our part that Mexico is to reconquer  
the lost territory in Texas, New Mexico, and  
Arizona. The settlement in detail is left to you.  
You will inform the President of the above most  
secretly as soon as the outbreak of war with the  
United States of America is certain and add the  
suggestion that he should, on his own initiative,  
ask Japan to transmute adherence and at the same  
time mediate between Japan and ourselves. Please  
call the President's attention to the fact that  
the ruthless employment of our submarines now  
offers the prospect of compelling England in a  
few months to make peace." signed, ZIMMERMANN.



# commercial telegraph



## Rothschilds & Napoleonic Wars

### Admiral Cochrane

"Napoleon is dead"

Omnium from 26-1/2 to 33

**LONDON,**  
**TUESDAY, FEBRUARY 22, 1814**

Never, perhaps, was greater agitation produced in the Metropolis by any foreign news, than was yesterday occasioned by a fraud of the most impudent and nefarious description. An express arrived from Dover,



**Stendhal**

*The Telegraph*

Hofl P2P - 37



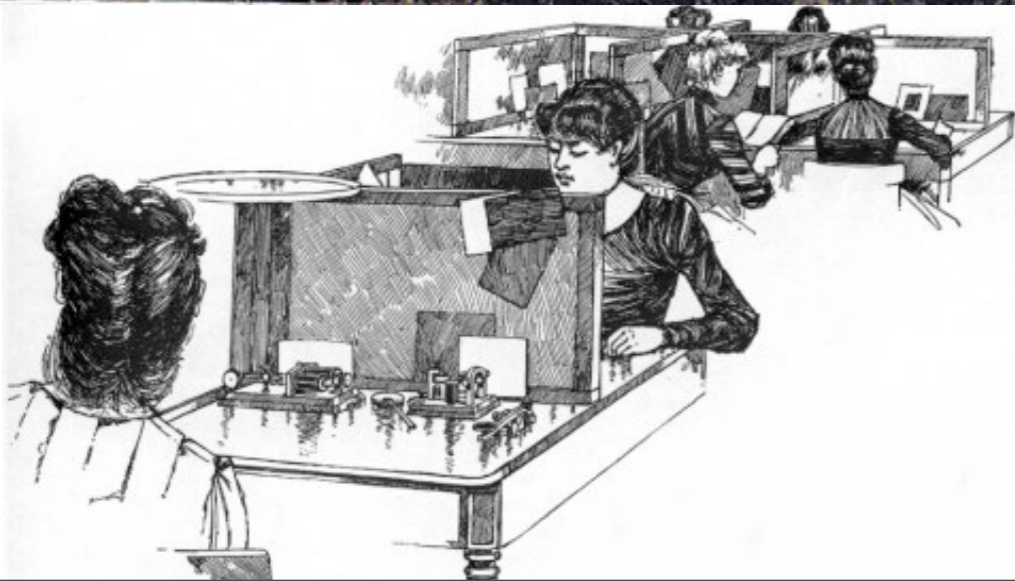


# love on the wires

**marriage over the wires**  
1848: *Anecdotes of the Telegraph*

**prevention & Gretna Green**

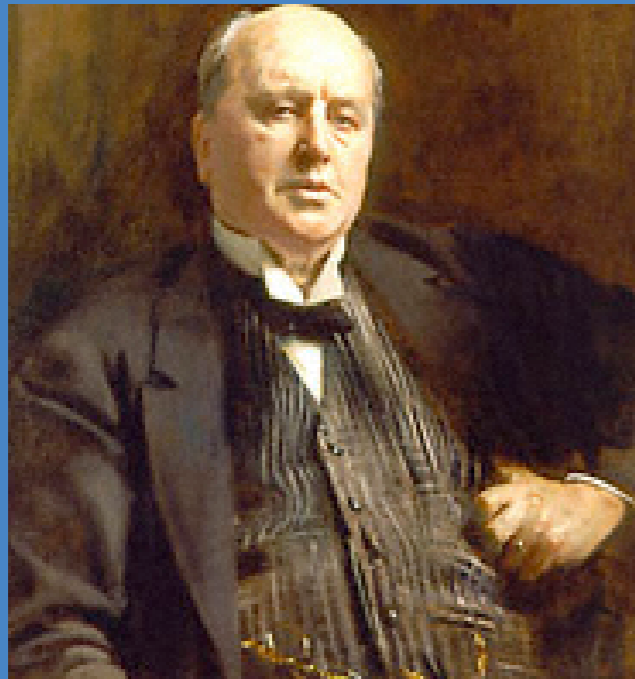
"what an enemy science is  
to romance and love"





# love and class

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**Henry James (1828-1911)**  
"In the cage" (1898)

the medium

"as if I had no more  
feelings than a letterbox"





# someone on the line

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## **Elizabeth Bowen (1899-1973)** *The Last September (1928)*

It's bound to be so unintimate--unless she does not consider the postmistress, and I do think surely she ought to because it is our postmistress...

I should write at once ... I'm not sure I shouldn't even telegraph, if it were not for the  
postmistress

## MUSIC BY TELEGRAPH.

About two months ago Mr. Elisha Gray, of Chicago, a gentleman well known in the electric telegraph world as a maker and inventor of some of the most valuable instruments now in use, conceived an idea which would be an extraordinary development of telegraphic science if he could only succeed in practically demonstrating it. Short as has been the lapse of time since he first began his experiments, he has succeeded, almost beyond his own anticipations, in perfecting an instrument which will convey sound by electricity over an unbroken current of extraordinary length—that is, without the aid of automatic repeaters. In the ordinary transmission of messages over the telegraph wires to points at long distances, a message is generally repeated by automatic-working instruments about every 500 miles, in order to renew the current of electricity. Mr. Gray has already transmitted sounds, which are distinctly audible at the receiving point over an unbroken circuit of 2,400 miles. This is, more properly speaking, a discovery—not an invention. The



# -graph to -phone

## what and who

### THE TELEPHONE.

HISTORY OF THE INSTRUMENT AND ITS INVENTOR—A CONVERSATION BY WIRE ON WEDNESDAY BETWEEN BOSTON AND A NEIGHBORING TOWN—THE "LAST ROSE OF SUMMER" SUNG BY TELEGRAPH.

*From the Boston Transcript, Feb. 1.*

At noon yesterday a distinguished party of gentlemen were assembled at the office of the Boston Rubber Shoe Company on Congress street in order to witness a series of experiments performed on the telephone between the inventor, Prof. A. Graham Bell, here, and his associate, Mr. Thomas A. Watson, at the residence of Mr. Converse at Malden, about six miles distant. Prof. Bell had

*New York Times, Feb 3, 1877*

*New York Times, July 10, 1874*

### THE TELEPHONE.

Prof. REUSS, a distinguished German performer on telegraphic instruments, has recently made an invention which cannot fail to prove of great interest to musicians, and, indeed, to the general public. The telephone—for that is the name of the new instrument—is intended to convey sounds from one place to another over the ordinary telegraph-wires, and it can be used to transmit either the uproar of a Wagnerian orchestra or the gentle cooing of a female lecturer.

*New York Times, March 22, 1876*



## TELEGRAPHING TUNES.

Results of Mr. Elisha Gray's  
Electrical Investigations.

He Is Able to Telegraph Music from  
Paris to Chicago.

Experiments with His Newly-In-  
vented Telephone.

Practical Bearings of His Re-  
searches.

Twenty Messages May Be Sent Over  
One Wire at Once.

The Theory of Musical Tele-  
graphy.  
*Chicago Trib July 12, 1874*

## THE TELEPHONE.

Horror of an Evanston Operator--  
Waltzing by Telegraph.

Prof. Elisha Gray and His Wonderful Invention--  
How It Works.

A telegraph operator at Evanston the other  
night was frightened almost out of his wits by  
hearing his "cut-out board" play "Ninety and  
Nine." When capable of thinking—for aston-

*Chicago Trib Feb 11, 1874*

## THE TELEPHONE.

*To the Editor of The Tribune.*

CHICAGO, Feb. 15.— Upon reading the criticisms  
of THE TRIBUNE on the playing of Gray's Tele-  
phone at Martine's Hall on the occasion of the tele-  
graphers' reception, it occurred to me that possi-  
bly a false impression had obtained in some minds  
as to what was claimed for it. It never has been  
asserted for a moment by the inventor that  
the instrument equaled in quality or volume  
of tone ordinary musical instruments in  
a present development. In fact he is  
not trying to develop a musical instrument  
at a system of multiple telegraphy based upon the  
simultaneous transmission and analysis of musical  
notes. As a musical instrument, however, it sur-  
passes all others in the distance to which it can be

*Chicago Trib Feb 16, 1874*

and where

## GRAY'S ELEGY.

THE INVENTOR OF THE TELEPHONE UN-  
WILLING TO ACCEPT THE PATENT-OFFICE  
DECISION AS SUCH.

The decision of the Patent-Office awarding  
priority of invention of the telephone to Alex-  
ander Graham Bell, of Cambridge, as announced  
in THE TRIBUNE of Sunday, created consterna-  
tion among stockholders of inventions of  
Elisha Gray and amusement in electrical circles.  
The stockholders had no ground for alarm, how-  
ever, as at the time of the consolidation of the  
American Speaking and the American Bell Tele-  
phone Companies ironclad contracts were  
signed perpetually protecting them. In other  
words, the decision has no financial bearing on  
the case. The Patent-Office award is a great  
historical matter in which Chicago has an in-  
terest, for the highest authorities of  
Europe and electricians generally re-  
gard Gray as the inventor of the  
telephone in reality, and the highest prizes have  
already been awarded him. Mr. Bell has soon lit  
to be elaborately represented by counsel in  
Washington, and on purely technical points,  
and by peculiar Celestial methods, and at great  
expense, has possibly sent his name down the  
historic corridors of time as the real inventor.

Dr. Gray in an interview yesterday concluded  
that perhaps a higher authority than the Pa-  
tent-Office, with legal jurisdiction, might yet  
change the verdict.

*Chicago Trib July 24, 1883*



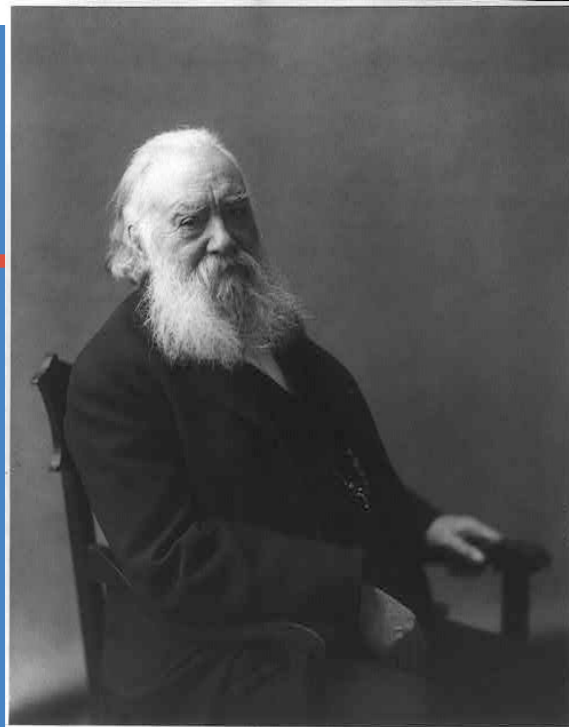
## warriors



They adored Mr. Edison as the greatest man of all time in every possible department of science, art, and philosophy, and execrated Mr. Graham Bell, the inventor of the rival telephone, as his Satanic adversary; but each of them had, or pretended to have) on the brink of completion, an improvement on the telephone, usually a new transmitter. They were free-souled creatures, excellent company: sensitive, cheerful and profane; liars, braggarts, and hustlers; with an air of making slow old England hum which never left them even when, as often happened, they were wrestling with difficulties of their own making, or struggling in no-thoroughfares from which they had to be retrieved like strayed sheep by Englishmen without imagination to go wrong.



# wars



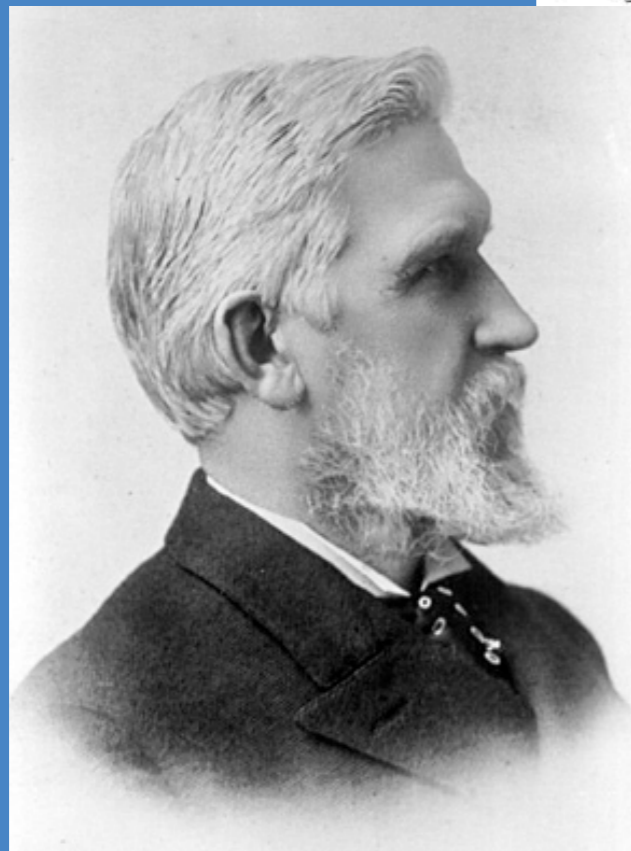
**1876:**

**patent vs caveat**

two hours difference  
decades of litigation

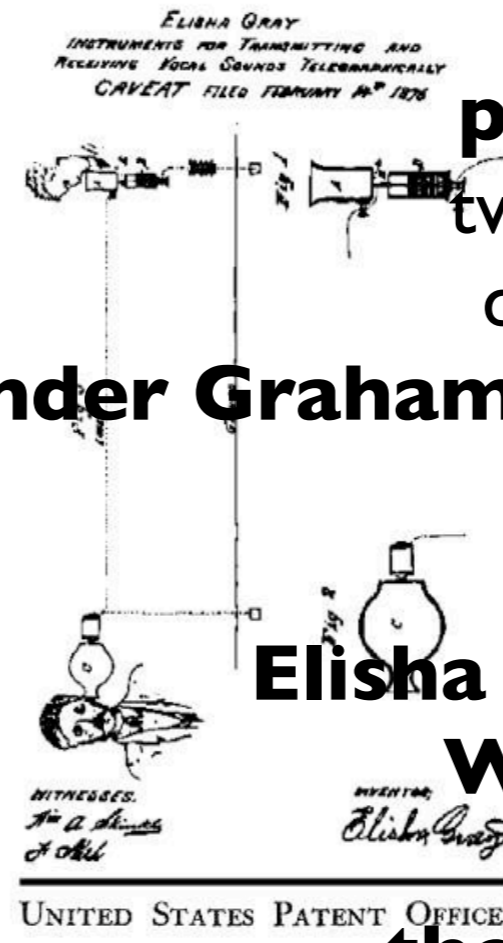
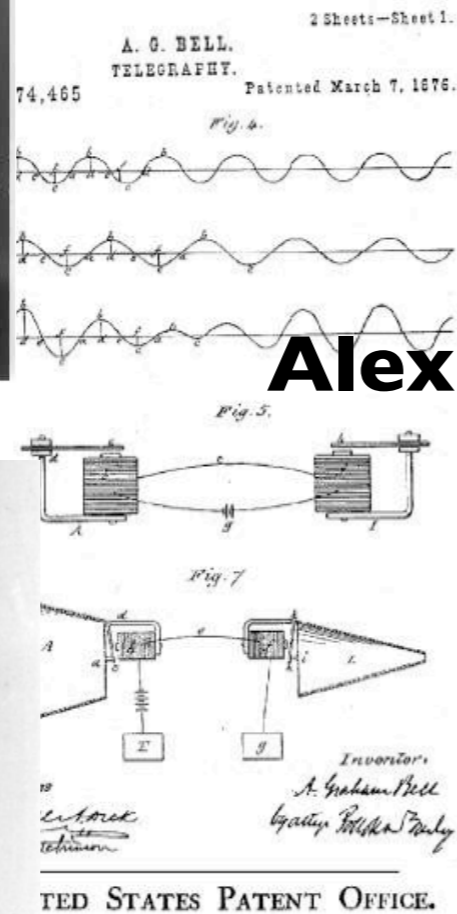
**Alexander Graham Bell (1847-1922)**

**Bell / AT&T**



**Elisha Gray (1835-1901)**

**Western Electric**



**the English patent**



what?

## early uses envisaged for the telephone

music

transmitting sermons

broadcasting news

providing wake-up calls

conferring degrees

telephoning in airplanes

political ads

"When offered the Bell patents for \$100,000 in  
1876, Western Union turned them down"

-Friedlander





## and who?

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### **business needs and sociability**

"Businessmen relied on letters and telegrams, often with complex codes, to produce written records of their transactions ... voice transmission, scratchy and often indistinct, could be an adjunct at best"

Claude Fischer, *America Calling* 1992



# shaping the phone

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## **communication channels**

national interest

private interest

public good

## **ownership of intellectual property**

nationalization (UK telegraph)

public ownership (France, photography)

private monopoly (US, AT&T)

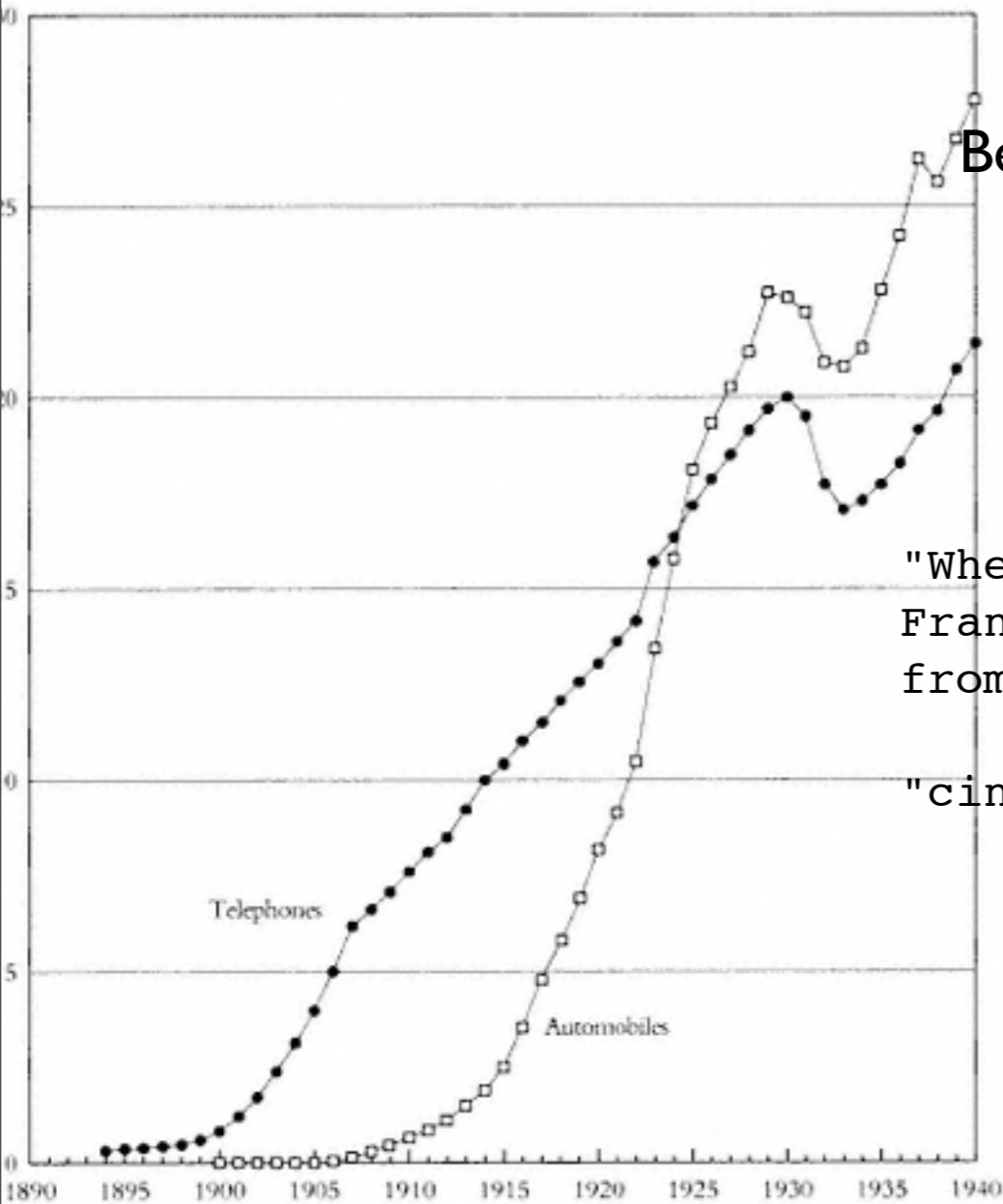
licensing (Xerox, ethernet)

competition



The battle was fierce, with spying sabotage, secret purchases of competitors, bribery of city officials, financial subversion. -- Fischer

# moving to monopoly



## early growth

Between 1880 and 1893, growth from 60,000 to 260,000 from 1: 1,000 to 1:250 phones : people

in 1902, roughly 300 companies

## but

"When the competing telephone exchange closed in San Francisco in 1880, the Bell local raised its charges from \$40 to \$60 a year. The local manager justified the move: ... 'The public always expects to be "cinched" when opposing corporatinos consolidate and it was too good an opportunity to lose"

--Fischer

## long distance control

denial of service

Kellogg conspiracy and other patent fights

diffusion of telephones and cars.

1894-1940



# once again, one voice

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"Someday we will build up a world telephone system, making necessary to all peoples the use of a common language or common understanding of languages, which will join all the people of the earth into one brotherhood. There will be heard throughout the earth a great voice coming out of the ether which will proclaim, 'Peace on earth, good will towards men'."

--John J. Carty, AT&T, 1891





# mediation

**exchanges (1878)**

**Strowger switch (1888-92)**

