



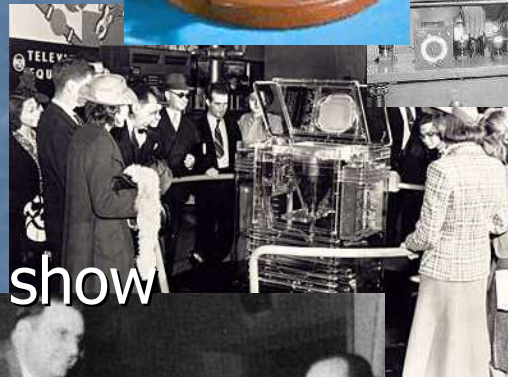
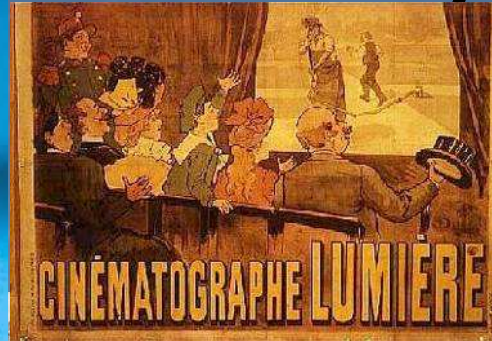
The Fandom of the Opera:

How the Audience for a Four-Century-Old Art Form Helped Create the Modern Media World



Traditional Media History

- 1876: Bell files patent for the telephone
- 1879: 1st Edison light bulb demonstration
- 1895: 1st movie theater
- 1920: 1st commercial radio station
- 1927: 1st sound movie
- 1939: TV introduced at New York World's Fair
- 1954: 1st NTSC color TV show
- 1961: 1st FM stereo broadcast



Traditional

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- 1954: 1st NTSC color TV show
- 1961: 1st FM stereo broadcast

Opera

- 1849: Havana Opera electrical voice-transmission experiments
- 1849: Paris Opera electric-light effect in *Le Prophète*
- 1886: opera movie system
- 1910: 1st radio broadcasts of operas
- 1900: opera sound movies
- 1936: opera *Pickwick* on TV before its opening night
- 1953: NBC *Carmen* in NTSC color
- 1925: Berlin Opera stereo radio broadcasts





What Is Opera?

- Latin: *opus* = work, *opera* = works
 - Singing
 - Instrumental Music
 - Storytelling
 - Acting
 - Visual Arts
 - Stage Craft
 - Dancing
- “exotick & irrational”
 - Samuel Johnson



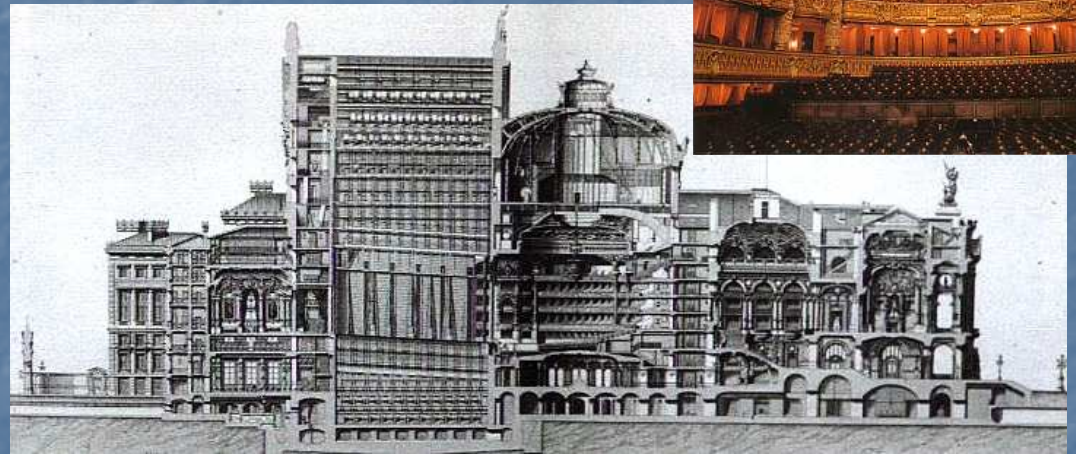
Opus
[a piece of work]
© Berkeley Breathed
<http://www.berkeleybreathed.com/>

Expensive!

■ Solutions:

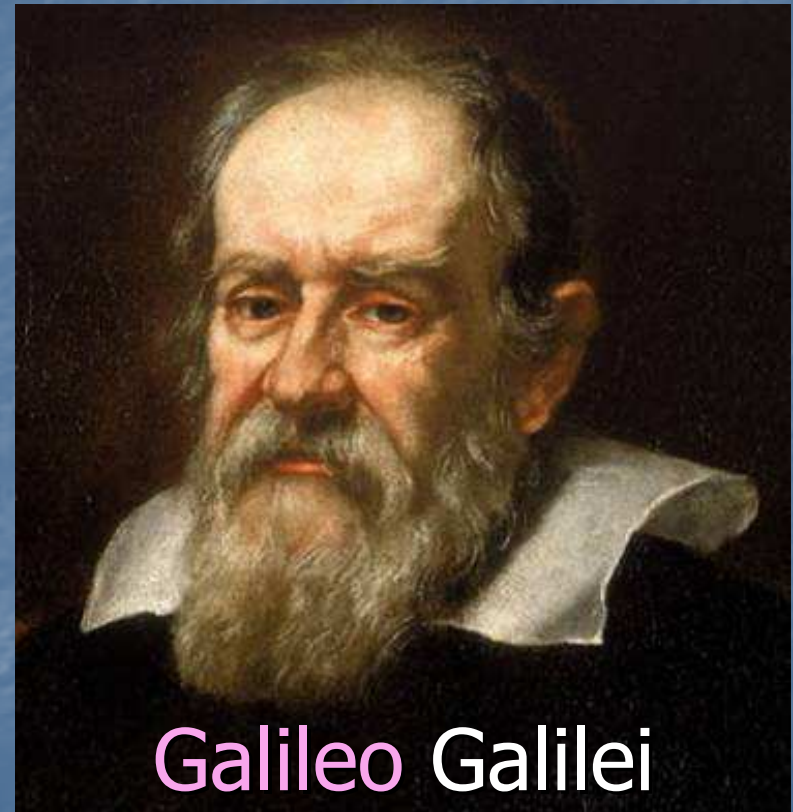
- boxes for the rich
- large auditorium
 - thus large gestures
 - “melodrama”
- large institution
 - with big budget
- “Of all the noises known to man, opera is the most expensive”
 - attributed to Molière

Palais Garnier
Paris Opera



Why Is Galileo Called Galileo?

- Isaac Newton
- Johannes Kepler
- Nicholas Copernicus
- Edmund Halley
- Claudius Ptolemy
- Christiaan Huygens
- Giovanni Cassini



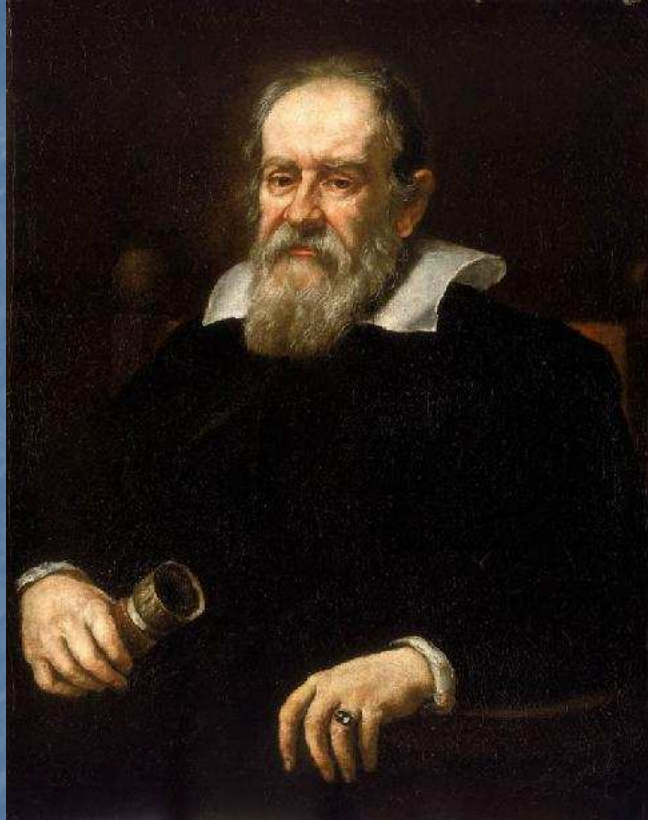
Galileo Galilei

Vincenzo Galilei, 1520-1591

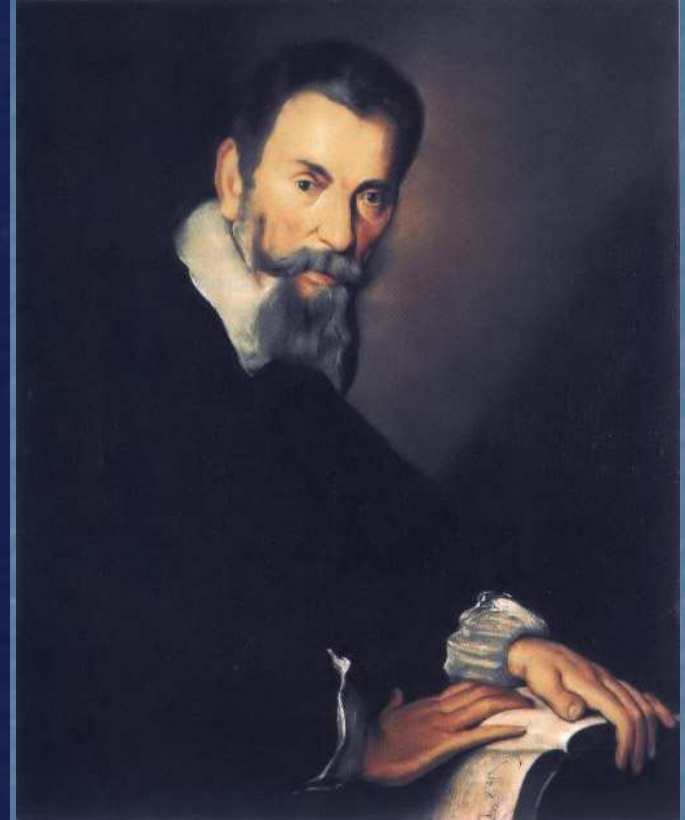
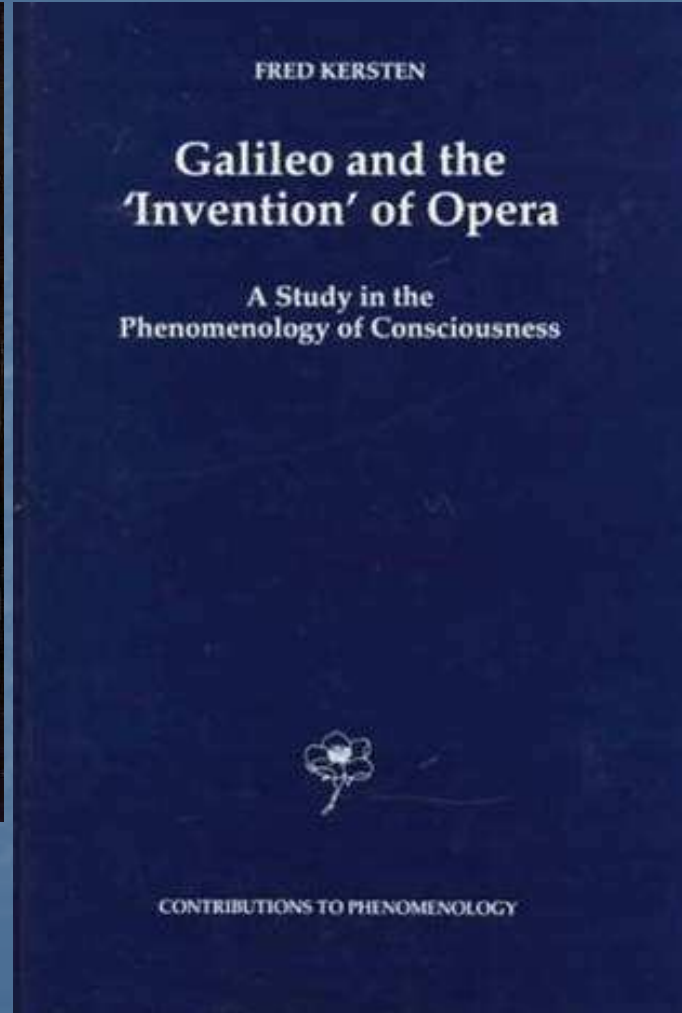
- Father of opera
 - founding member of Count Bardi's *Camerata*
- Father of modern acoustics
 - equations for tuning strings and pipes
- Father of Galileo
 - chose mellifluous name
 - taught him to experiment



"The Baroque Twins: Science & Opera"



Galileo Galilei
1564-1642
"Father of Modern Science"



Claudio Monteverdi
1567-1643
"Father of Musical Drama"

First Opera Medium: Books

RAPPRESENTAZIONE
DI DAFNE
FAVOLA PASTORALE
COMPOSTA DAL SIGNOR
Ottavio Rinuccini.
*Es fatta recitare in musica dal Signor
Iacopo Corsi.*

1598 - gift

LA DAFNE
D'OTTAVIO
RINUCCINI
Rappresentata alla Sereniss. GRAN DUCHESSA
DI TOSCANA
Dal Signor Iacopo Corsi.



IN FIRENZE
APPRESSO GIORGIO MARESCOTTE
MDC.
Con Licenza de' Superiori.

1600 – for sale

28 RINALDO.

Arg. Non svenar' O bella,
Di due Luci divini il dolce Raggio;
Che per pietà m'isento il Cor a frangere
Alm. Signor, deh! Per pietà, lasciami piangere!
Arg. Oscura questo Pianto
Il bel foco d' Amor, ch' in me s' accese
Per te mia Cara.
Alm. In questi Lacci avvolta,
Non è il mio Cor soggetto
D' un' amoroso Affetto.
Lascia ch' io pianga
Mia dura Sorte,
E che sospire
La Libertà;
Il Duol' infranga
Queste ritorte,
De miei Martiri
Sol per pietà.
Lascia Ec.
Arg. Tu del mio Cor Reina
Con dispotico impero
Puoi dar Legge a quest' Alma.
Alm. Ah! Non è vero.
Arg. Vuoi che questo mio Brando
T' apra il Varco a quel Centro
Ove il mio Cor trapassi?
Alm. Ah! No, tanto non chiedo; eh! Se m' amassi!
Arg. Della mia Fedeltate
Qual fia un pegno sicuro?
Alm. La Libertate.
Arg. Malagevol commando.
Alm. Amor mentito!
Arg. E se ad Armida, O cara,
Nel procurare al tuo bel piè lo scampo,
Note sien quelle Fiamme,
Che per te, mio Tesor, struggono il Core?
Scopo saremo entrambi
D' Amor geloso, e d' infernal Furor.

Alm.

RINALDO.

29

Arg. Divinest Creature, let not Grief's black Shade
Eclipse the beamy Beauties of thy Face;
My sympathizing Heart is touch'd with Woe
To hear thy just Complaining.
Alm. Give my big Tears their way:
Arg. Those Tears, bright Maid,
Deaden the Fire which Love has kindled in me;
Alm. Oppress'd, and troubled as you see me now,
Judge if my trembling Breast has room for Love!
Permit the wretched to complain
Of their unhappy Fate;
The Loss of Liberty's a Pain
That shou'd our Sighs create;
When you wou'd comfort an afflicted Mind,
Pity not Love, shou'd make you kind.

Permit the, &c.

Arg. You are the Queen of my submissive Will,
And with despotick Power may give me Laws!
Alm. Ah! 'tis not true!
Arg. Wou'd you behold a Proof?
This faithful Sword shall lead you to my Heart,
And cut you out a Road to Demonstration:
Alm. Alas I with not that! Oh! did you love me!
Arg. What can convince you of my Faith?
Alm. My Liberty.
Arg. Oh hard Command!
Alm. Oh, ill dissembled Passion!
Arg. What if while I, ambitious of thy Love,
Courtive thy wish'd Release, Armida's Skill
Shou'd give her fatal Notice of my Falschood?
How shall we both be tortur'd with Revenge,
While Jealousy, Love, and infernal Rage,
Excite her keen Repentment!

Alm.

1711 – multi-sales
translation
(Handel's **candles**)

libretto = little book

Early Sound Distribution

- 1637: first opera ticket
 - theater in Venice turned into first opera house (with boxes)
- 1673: *Phonurgia Nova* →
 - Athanasius Kircher publishes plans to extend the sound beyond the auditorium
- in-house sound ducts starting in 17th century
Buildings for Music, Michael Forsyth, MIT Press, 1985

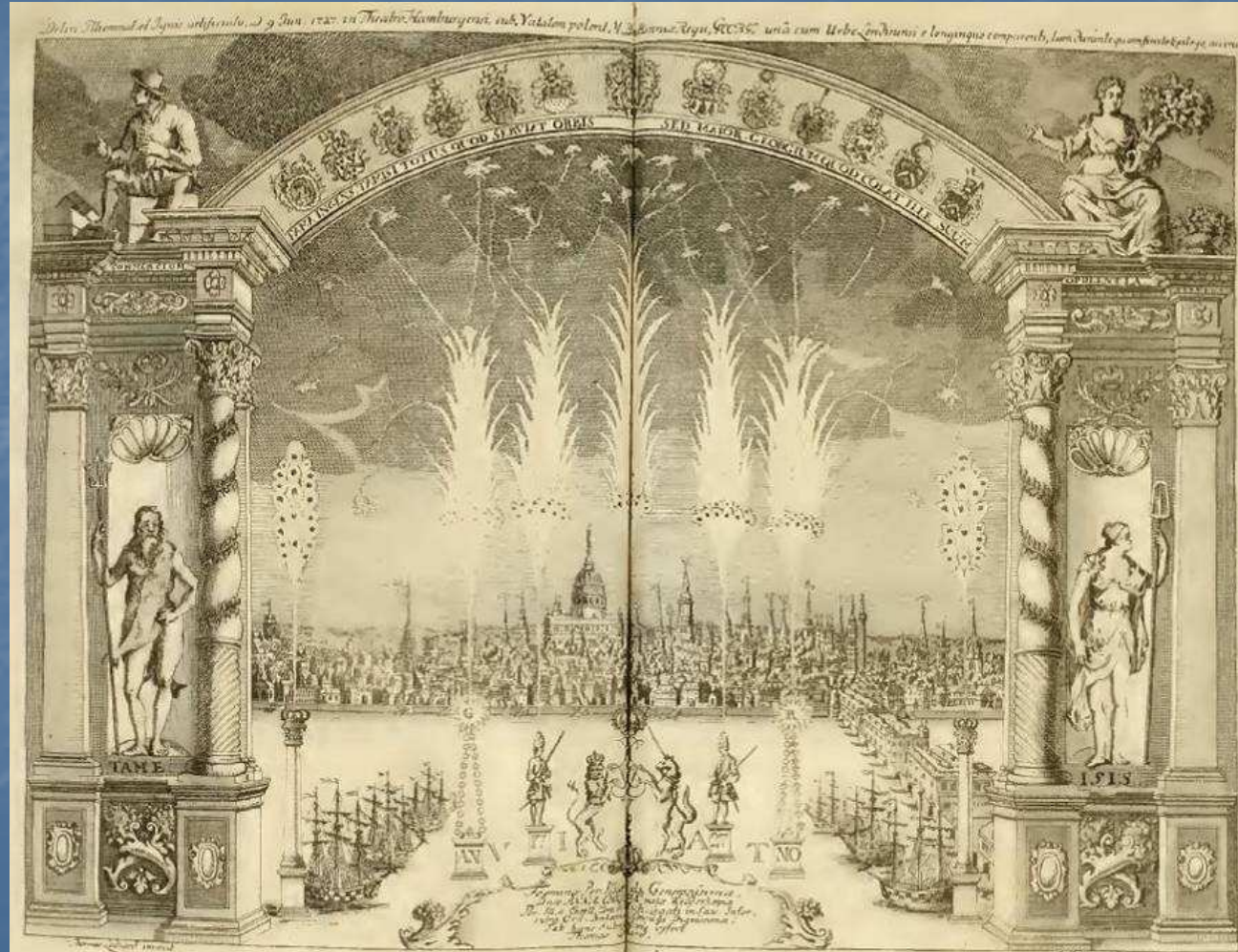


Early Moving-Image Projection

1728
book

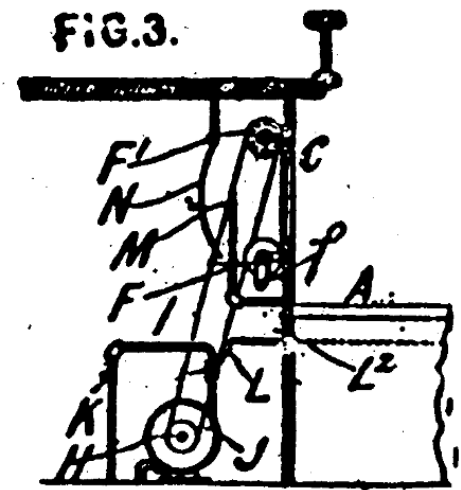
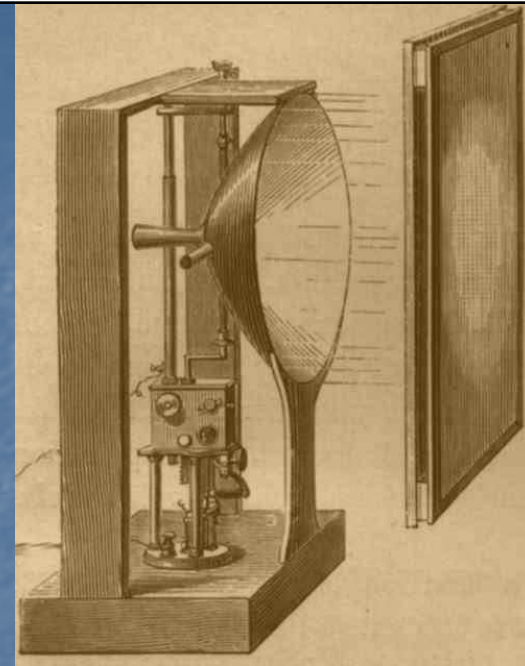
Hamburg Opera

■ (no later than 1726)
magic lantern



More Illumination

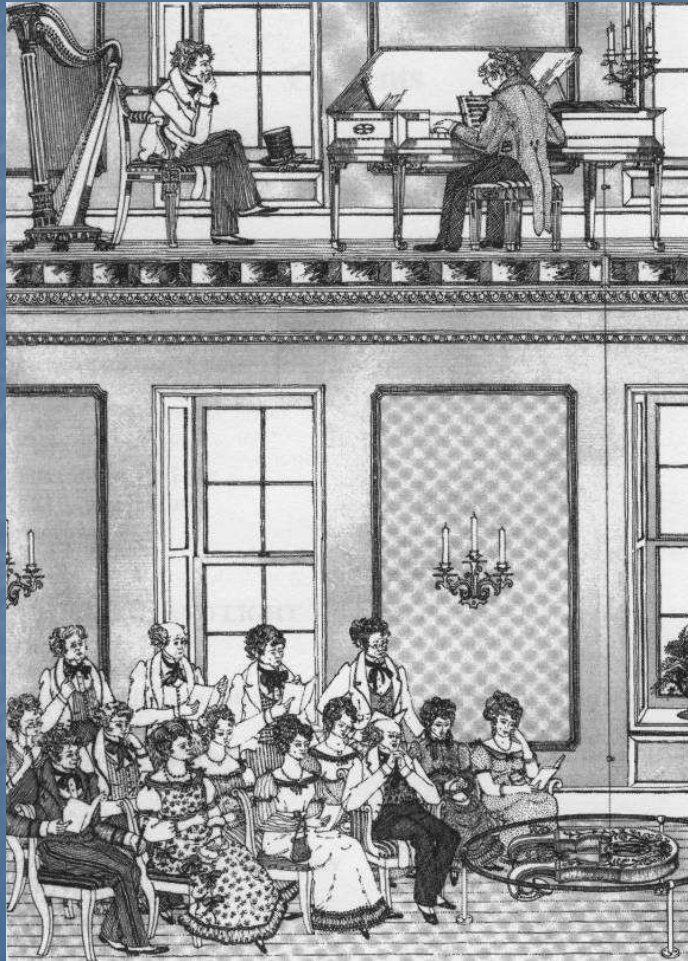
- 1849 electric-arc sunrise effect, Paris Opera, Jules Duboscq
 - later rainbow, spouting fountain, etc.
 - *Nature* applauds battery-fume safety
 - patents 1st photographic motion-picture projection system, 1852 (in 3D!)
- 1881 gas-jet libretto projection patent, UK, W.R. Lake & S.L. Jones



Media to Go Beyond the House

Wheatstone
“Enchanted-
Lyre” concert

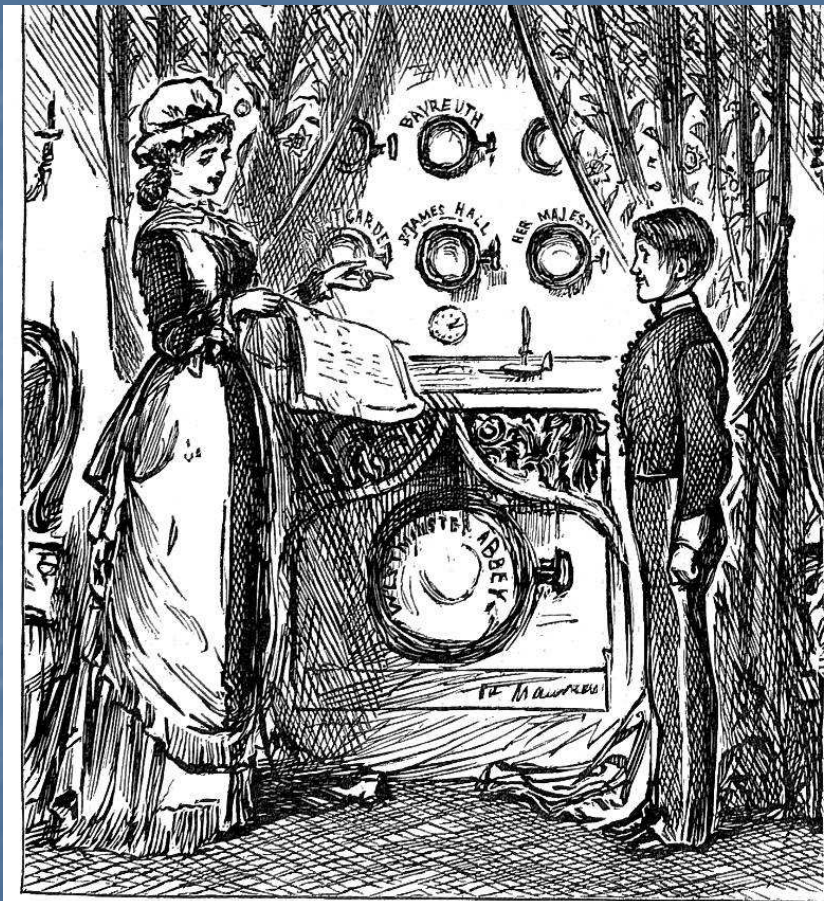
“by these
means the
music of the
opera may
ere long be
simultane-
ously” heard
elsewhere,
*Repository
of Arts*,
Sep. 1, 1821



The Telephone: Loss of Visual

- 1848: home-delivery for a fee, *Punch*
- 1849: electric tests, Havana Opera
- 1876: *NY Times* predicts BO drop
- 1877: Du Maurier cartoon, *Punch* →
- 1878: *Don Pasquale* in Bellinzona
- 1880: Zürich to Bâle, 80 km, microphone for opera, first courtesy home listeners

Punch, December 14, 1877



Musical Mistress of House ("on hospitable thoughts intent"). "NOW, RECOLLECT, ROBERTS, AT A QUARTER TO NINE TURN ON 'VOI CHE SAPETE' FROM COVENT GARDEN; AT TEN LET IN THE STRINGED QUARTETTE FROM ST. JAMES'S HALL; AND AT ELEVEN TURN THE LAST QUARTETTE FROM 'RIGOLLETO' FULL ON. BUT MIND YOU CLOSE ONE TAP BEFORE OPENING THE OTHER!" Buttons. "YES, MUM!"

Eagerly Awaiting Media

The New York Times

March 22, 1876

No man who can sit in his own study with his telephone by his side, and thus listen to the performance of an opera at the Academy, will care to go to Fourteenth street and to spend the evening in a hot and crowded building.

before Alexander Graham Bell announcement



“Hot and Crowded”

■ Lavoisier

■ Opéra de Paris

- lighting, ventilation

■ Open flames

- consume oxygen
- add CO₂
- generate heat
- cause cold drafts
- sometimes

- smoke, stink, toxins, dripping wax & oil, uncontrolled fires

B.—THEATER ROYAL, MANCHESTER.

Place.	Time.	Temp. F.	CO ₂ Per 10,000.	Organic Matter. Per Cent.	Bact. 1 c.c.	Molds Per c.c.	Total Micro- Organisms
	P. M.	°					
Pit.....	7.45	69	12.6	69.5	60	60	120
".....	8.15	100	14.1	70.0	65	69	134
Gallery.....	8.30	121	16.9	105.0	96	106	202
".....	9.30	110	16.5	109.0	97	120	217
Circle.....	9.30	95	12.3	46.0	29	11	40
".....	10.0	90	11.3	69.0	36	41	77
Peter Street out- side the theater.	7.45	39	4.9	16.9	26	40	66
	8.15	39	4.9	17.4	31	36	67
	8.30	36	5.3	17.9	29	30	69
	9.30	33	5.6	26.9	45	60	105
	9.30	33					
	10.0	35	5.9	63.6	69	100	169

Ventilating and Heating, John Shaw Billings,
The Engineering Record, 1893

Opera Could Be Deadly

- Fire codes, extinguishers
- Vienna Opera: 21-man “fire watch”

Salle Le Peletier
1873



Meucci

- stagehand, Teatro della Pergola, Florence
- technical director, Teatro Tacón, Havana, experiments 1949
- Staten Isl. museum

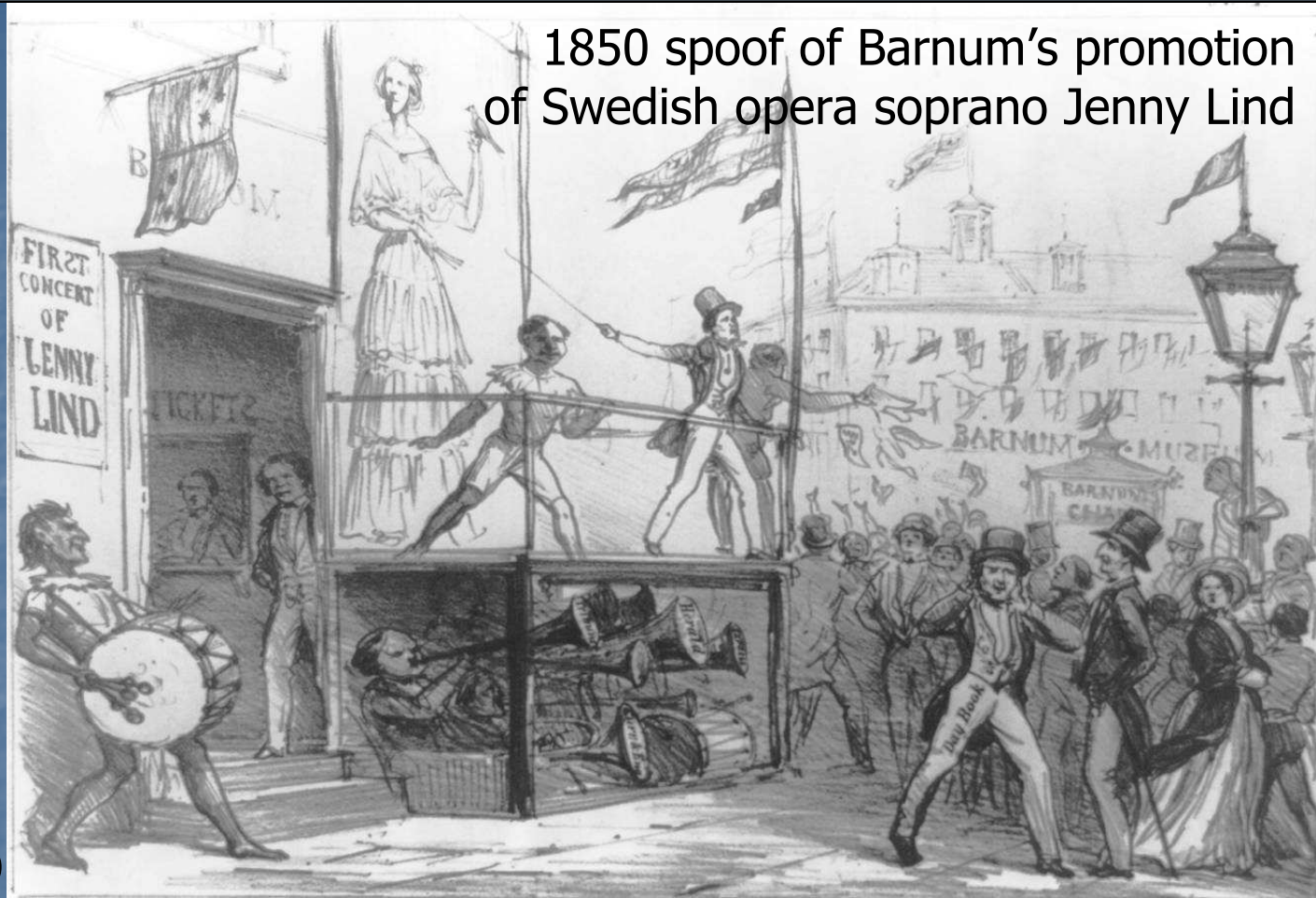


“...performances at the Paris Opera depend largely for their success on the scenery and ballet, the singers not ranking very high”

The Electrician and Electrical Engineer, August 1887, of a P. T. Barnum plan to

bring Paris Opera performances to the U.S. by telephone at \$5 per act (~\$120 in today's money)

1850 spoof of Barnum's promotion of Swedish opera soprano Jenny Lind

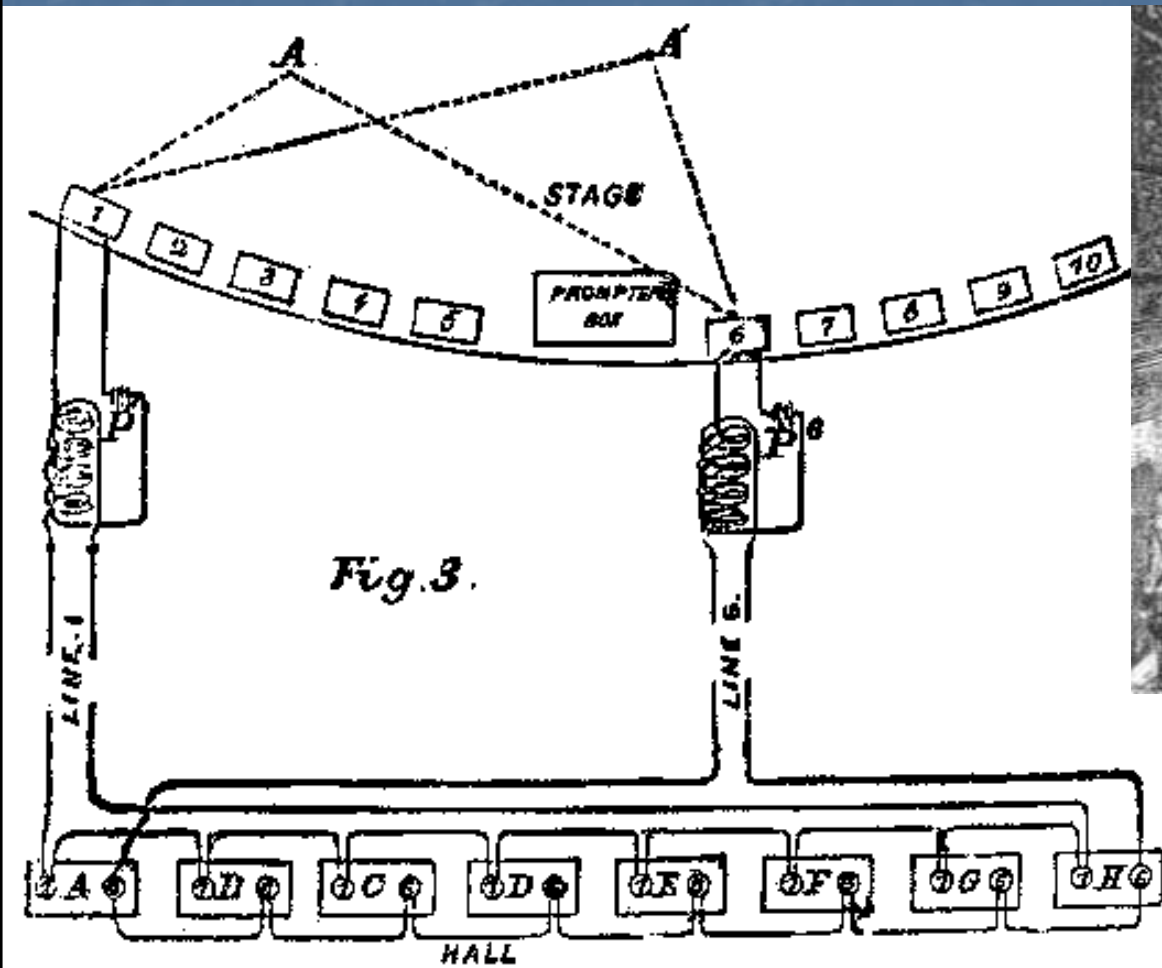


The First Home Listeners: 1880

- Edward P. Fry, connected to New York's Academy of Music no later than November
 - courtesy of Col. J. H. Mapleson
 - arranged photos of singers around himself
- William Hearnden, connected to Plymouth's Theatre Royal possibly in November
 - courtesy of J. R. Newcombe



Paris Stereo 1881 (London later same year)



Victor Hugo: "It's very strange. We heard the opera through two ear-pieces connected to the wall." "The children were delighted, & me, too."

Opera Promotes Telephones

171 Theatre Royal
172 Do.

Castle Street
Do.

Box Office
Orchestra

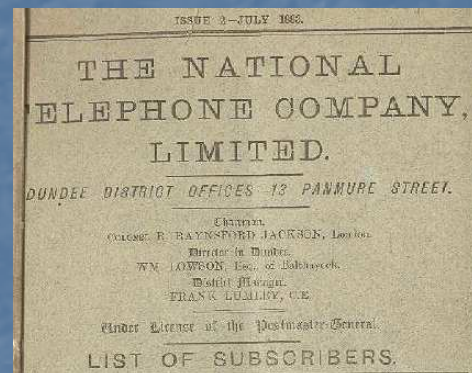
TO THE EDITOR OF THE ERA.

Sir,—I notice in your issue of November 4th an account of the fixing of a telephone in the Brighton Theatre Royal. Your readers may be interested to learn that for more than a month past there has been a telephone fixed in the orchestra of the Theatre Royal, Dundee, by means of which the subscribers of the National Telephone Company here can listen to the music in their own homes. The National Telephone Company have a connection with the town of Forfar, which is situated some twenty miles from here. On the occasion of the visit of Mr. D'Oyly Carte's Opera Company, the music and singing were distinctly heard and enjoyed by several gentlemen in Forfar.

Yours, &c., J. J. MANN,

Dundee, November 7th, 1882.

Electrical Engineer.



portion of
1883 Dundee
(Scotland)
telephone
directory

Death of a Princess, Birth of a Medium



King Luis I



Teatro de São Carlos



Princess Maria Ana

Faster-than-Light Neutrinos?



Oscillation Project with
Emulsion-tRacking Apparatus

Engineering to the Rescue



O Antonio Maria,
6 de março de 1884

Honor & Protocol Satisfied 1884



first ear buds?

Pay-Cable 1885

- Full season (90 operas) from Teatro de São Carlos 180k *reis* (~\$1825 today)
- Joint venture of theatrical promoters & local telephone company
- In same year, with only 80 telephone subscribers in the city, Madrid phone opera service planned, adding a central hall for non-telephone-subscribers



1884 TV?
telephone
transmitter

Headphones by 1888

- Reported in use for the Lisbon opera service in *The Electrical Engineer*
- Earlier? Fry, an invalid, said to read libretto, applaud, & pat photos
- Stereo headphones in UK for opera by 1895



Electrophone headphones and table



Before Headphones



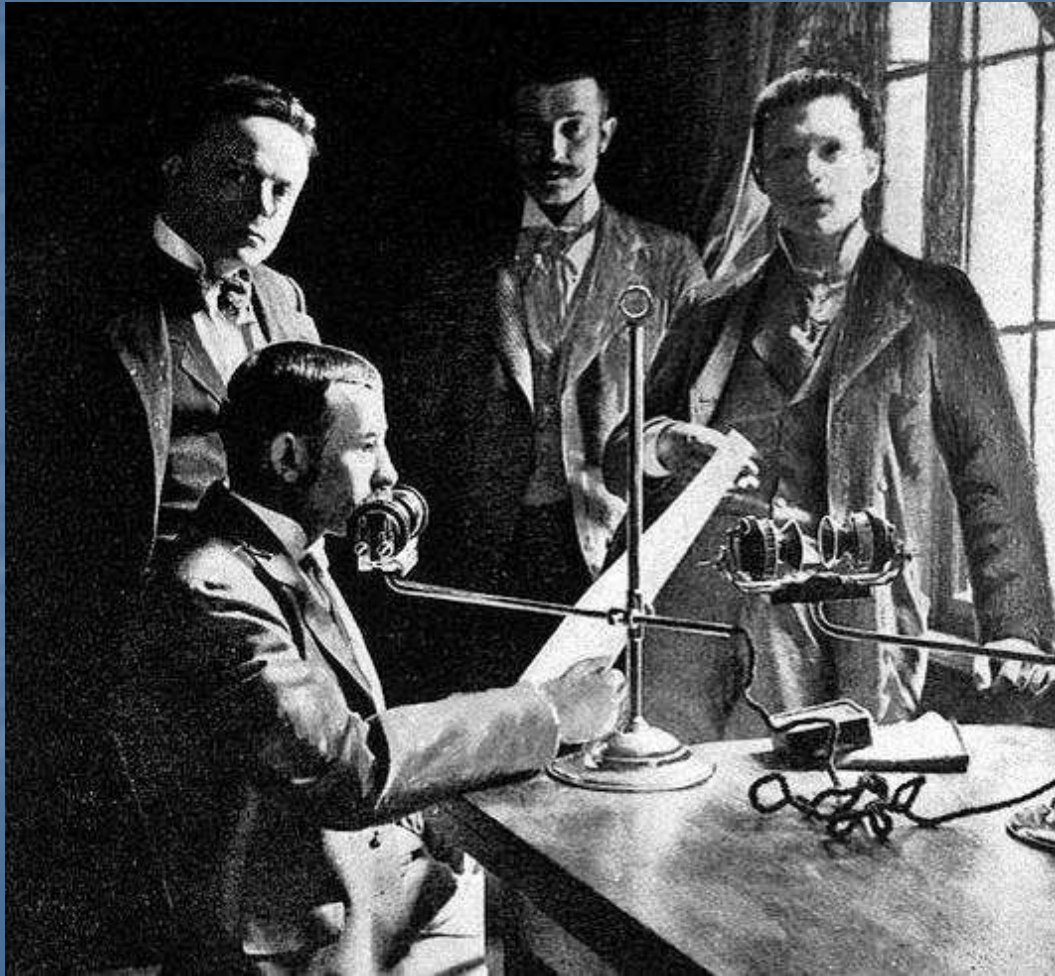
elbow rest

Business Plans

- Dundee: call charges only
- Lisbon: annual subscription
- Paris institutional: coin-op
- Paris residential: per-event
 - Marcel Proust subscribed
- Budapest: monthly charge



1st Newscast 1893



Mark Schubert, NYU-Poly, 2012 April 27



Telephone vs. Phonograph

■ Telephone

No man who can sit in his own study with his telephone by his side, and thus listen to the performance of an opera at the Academy, will care to go to Fourteenth street and to spend the evening in a hot and crowded building.

NY Times
Mar. 22
1876

■ Phonograph

sermons can be stored away in the cellar, to be brought out years hence with their tones unimpaired by age, and their loudest yells as piercing and pervasive as ever.

NY Times
Nov. 7
1877

- Edison: "The main utility... being for... letter writing"

Recording: Not Live & Too Short

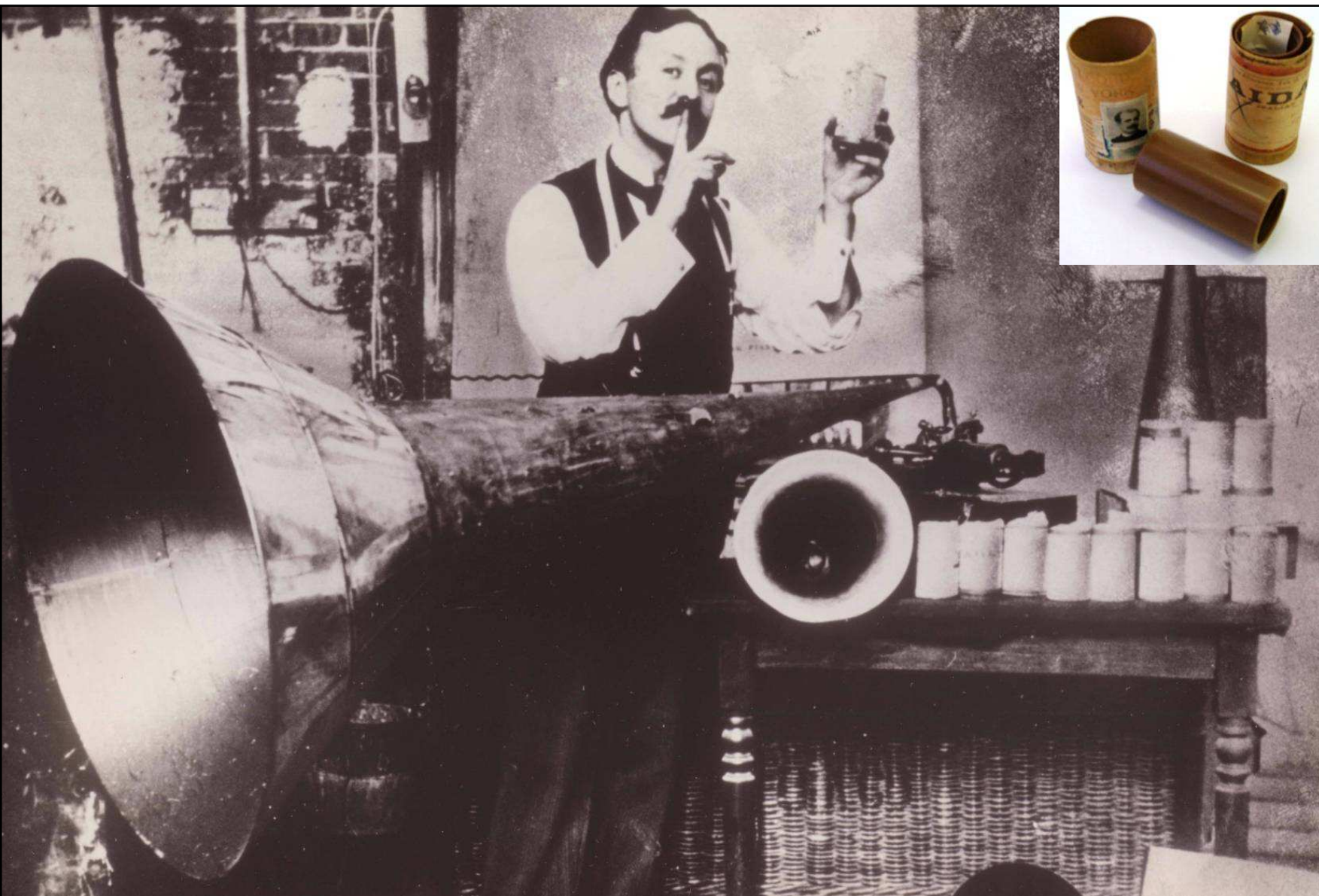
- 1860 song (1st played in 2008)
- 1877 Edison cylinder, “perfected” in 1888
- 1888 Berliner disk gramophone
- Early cylinders & disks 2-minutes
 - later extended to 4-minutes
 - cylinders recorded individually (accidental stereo)
- 1889 surviving opera recordings
 - not commercial



1889

- penny arcade phonograph
 - no visual
 - short time
 - not live
 - distortions
 - recording horn
 - playing tube





- Location opera recordings by Lionel Mapleson at the Metropolitan Opera starting 1900
- *Ernani* (abridged) on 40 disks in 1903 (almost complete *Pagliacci* 1907)

one
solution
to the
lack of
visual:
model
stages &
puppet
opera

<http://blog.modernmechanix.com/2007/04/26/boys-hobby-creates-puppet-opera/>

Popular Science
April 1940



1908

If records were so opera unfriendly, how did we get to here?

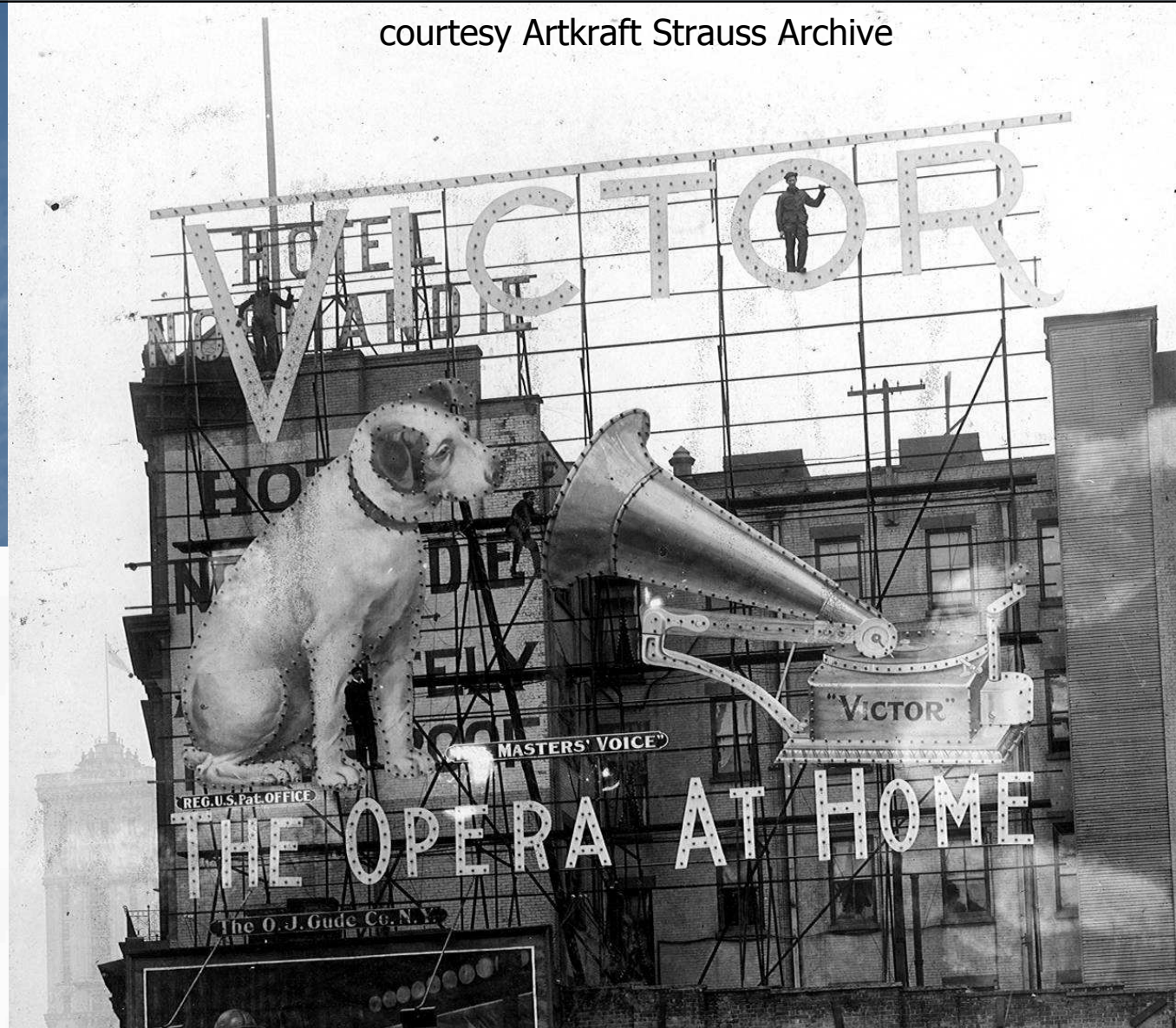
Punch



STARS IN OPPOSITION; OR, THE "RECORD" OPERATIC DUEL

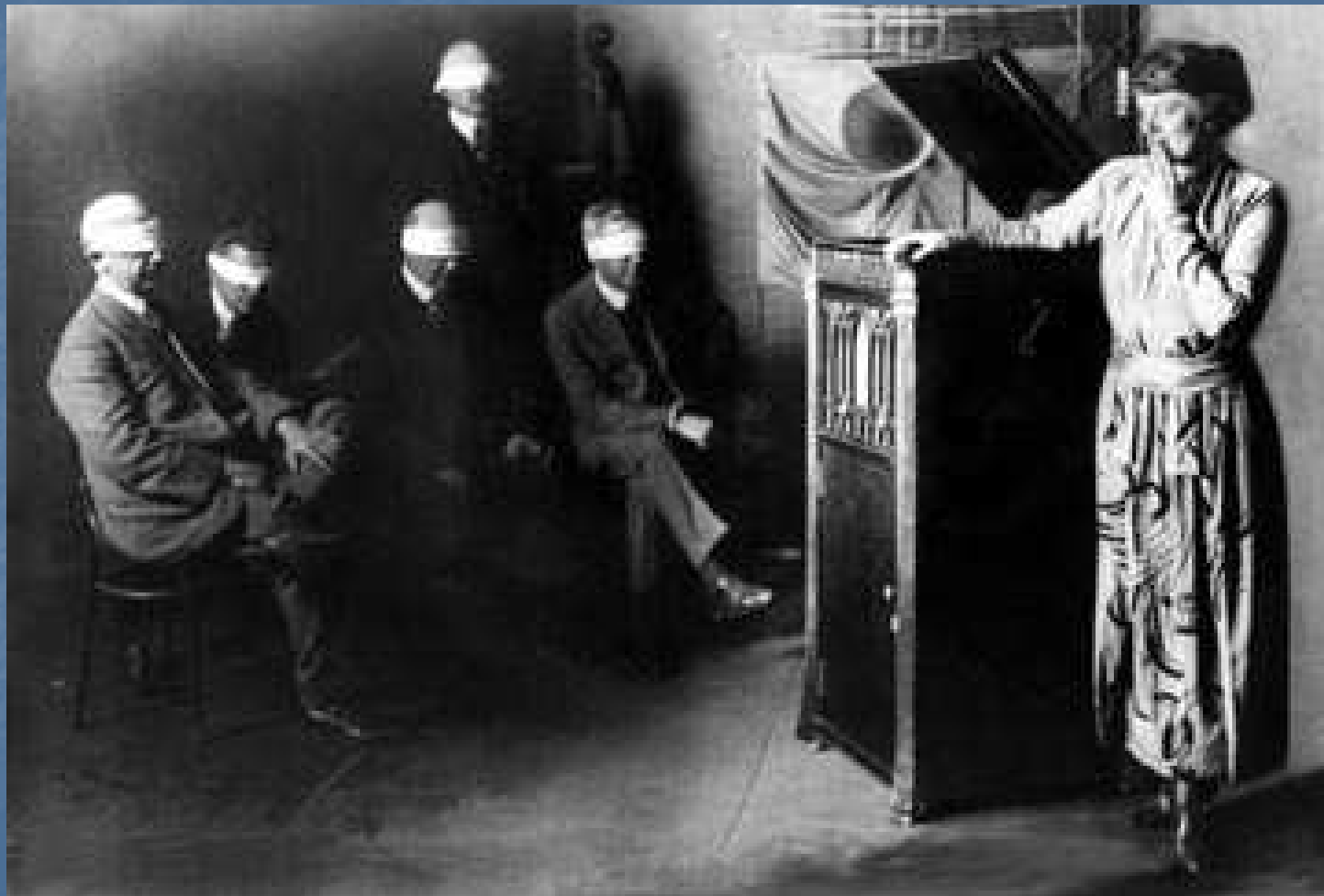


courtesy Artkraft Strauss Archive



By the courtesy of the
Gramophone Co., Ltd.
CARICATURE OF CARUSO MAKING A RECORD
Drawn by himself

Edison Tone Tests (1916 and on)



Perception Is Learned, But...

Pittsburgh Post, 1919

"It did not seem difficult to determine in the dark when the singer sang and when she did not. The writer himself was pretty sure about it until the lights were turned on again and it was discovered that [the singer] was not on the stage at all and that the new Edison alone had been heard."



Anna Case, tone-test soprano
(confessed in 1972)



blind deconvolution of horn distortion

Mark Schubin, NYU-Poly, 2012 April 27

1
9
7
6



1st commercial digital recording

Tom Stockham, Soundstream

The Oldest Movies: Le Prince

"Method and Apparatus for the projection of Animated Pictures in view of the adaptation to Operatic Scenes"
1886 (issued 1888)



Thomas Edison 1888

- “we may see & hear a whole Opera as perfectly as if actually present”
- many more mentions of opera as the impetus for movies

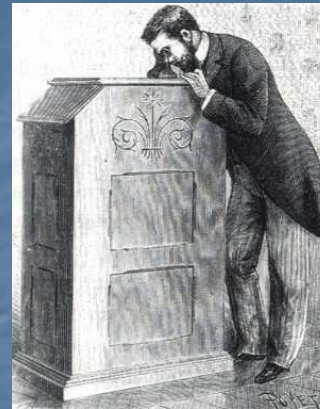
patent
caveat
Oct. 8

a Continuous Opera

I am experimenting upon an instrument
 which does for the Eye what the phonograph
 does for the Ear. Which is the recording and
 reproduction of things in motion and in such
 a form as to be both cheap practical
 and convenient. This apparatus I call
 a Kinetoscope "Moving View". In the first
 production of the actual motion that is
 to say of a continuous Opera the
 instrument may be called a Kinetograph
 but its subsequent reproduction for which
 it will be of most use to the public
 it is properly called a Kinetoscope.
 The invention consists in photographing
 continuously a series of pictures occurring
 at intervals which intervals are greater
 than eight per second, and photographing
 these series of pictures in a continuous
 spiral on a cylinder or plate in the
 same manner as sound is recorded on
 the phonograph. At the instant the
 chemical action on the cylinder takes
 place the cylinder is at rest and
 is only advanced in rotation a single
 step which motion takes place while
 the light is cut off by a shutter.
 Thus there is a practically continuous
 rotation of the cylinder but it

"Silent" Movies

- Earliest
 - individual, not live, no sound, very brief
 - *Carmencita* 1894
- Opera introduces movies
 - *Carmen* bullfight 1896
- Longer, local sound
 - opera stories (known)
 - opera singers (stars)



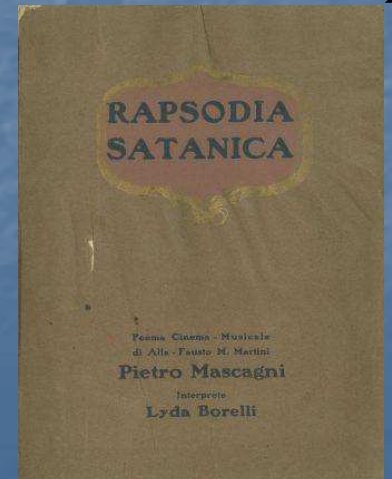
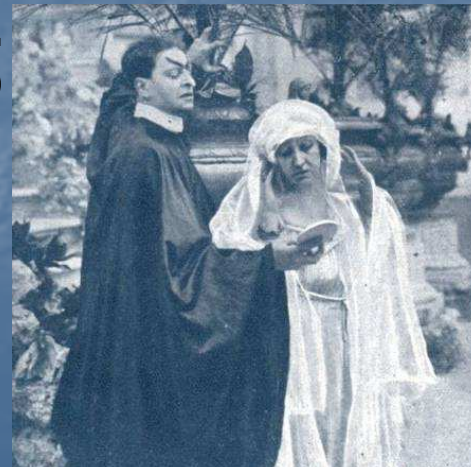
Carmencita

March 10-16, 1894
Edison's Black
Maria Studio



"Silent" Sound

- *Martha* 1899
 - singers behind screen
- *L'Assassinat du Duc de Guise* 1908
 - first film score (by opera composer Saint-Saëns)
- *Rapsodia Satanica* 1915
 - 1st "film opera"



Cue Lights in Set

*Das
Caviarmäuschen*
1918



Conductor at Bottom

*Wenn
Männer
streiken*
1919



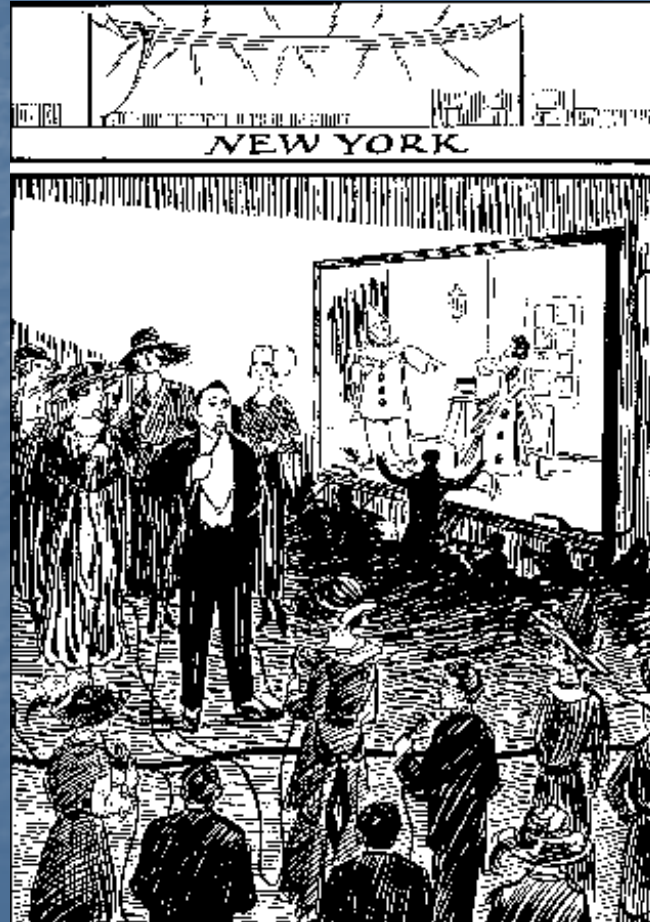
Score Backwards at Bottom

*La Mujer de
medianoche*
1925



Half-Live Movie Proposal

Hugo
Gernsback
"Grand
Opera by
Wireless"
*Radio
Amateur
News*
Sep. 1919



“Silent” Movie Intertitle

“You’re of the old world!
If you were born here,
you’d feel the same as I
do—”

Which
movie
?

The “First” Sync-Sound Movie?

“You’re of the old world!
If you were born here,
you’d feel the same as I
do — —”



1927

1900



1905



1927



Earliest Extant Sound Movie: 1894-5

“Dickson sound movie”

Why
didn't
sync
sound
continue?

music from
*Les cloches
de Corneville*,
an opera that
opened in Paris
7 years earlier

- no amplifier
- live vs. canned

First Milli-Vanilli of Opera

Cinophon
Caruso's
voice
1908



Hier
einsetzen!

Acoustic Broadcasting

- 1900 Paris World's Fair
- Auxeto-Gramophone
 - compressed air tank
 - needle controls valve



commercial
Victor
Auxetophone

early
system



Radio

- restored event & length
- 1907: live opera singer
 - leads to U.S. Navy radio
- 1910: live opera
- 1919: opera >2k miles
 - 1920: transatlantic & beyond
- 1925: stereo broadcast
- 1937: “non-visual” (w/sound effects)
- 1973: 1st stereo network

Hammerstein London Opera 1911

NEW IDEAS IN OPERA HOUSE.

**Wireless Station on Roof—Plan for
Free Admission of Students.**

Special Correspondence **THE NEW YORK TIMES.**



1920 Nellie Melba
global broadcast
(1st off-air recording)

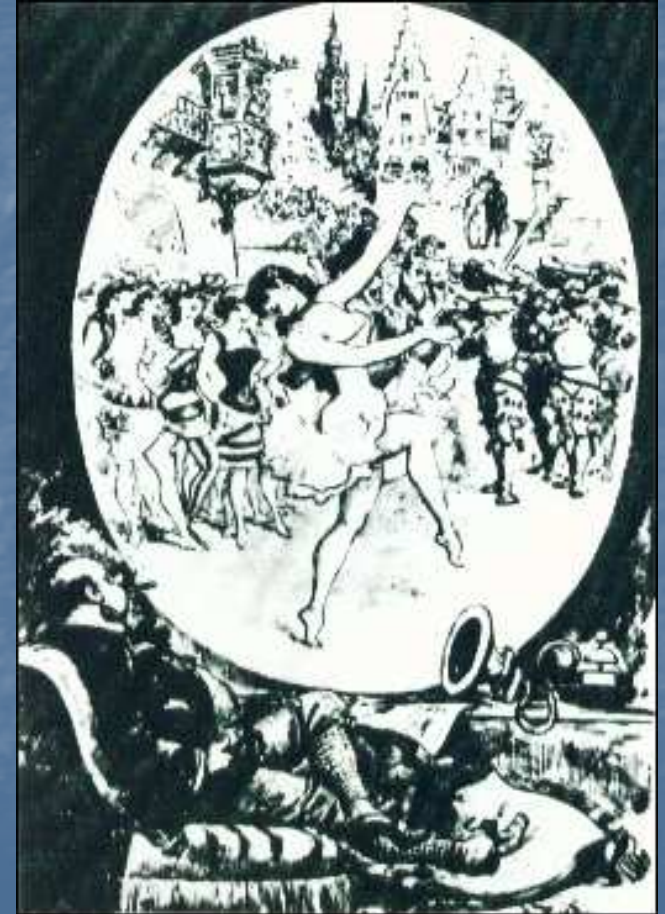


Met Opera
Saturdays

Prediction of Opera on TV, 1882

“...opera on the telephonoscope to which he treated himself daily after dinner...”- Albert Robida, *Le Vingtième Siècle* (*The Twentieth Century*)

predictions of TV, broadcasting, newscasts, & product placement, all based on Paris Opera 1881 demonstrations

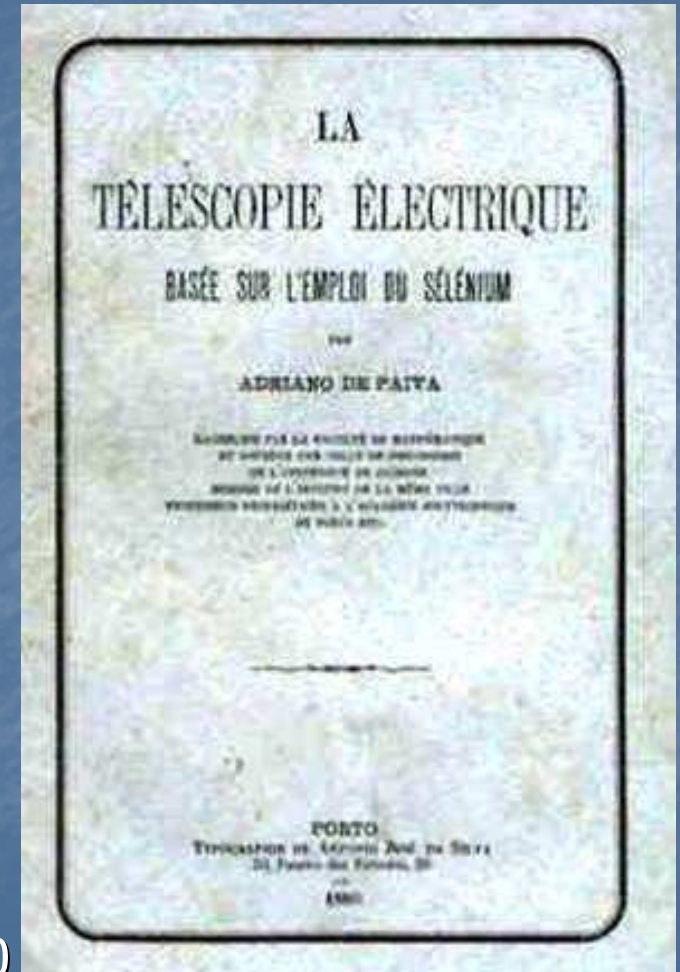


Science Fiction



1882

Science Fact



1880

Vision by Radio

C. FRANCIS JENKINS

COPYRIGHTED, 1925, BY
JENKINS LABORATORIES, INC.
WASHINGTON, D. C.



1930 Jenkins Radiovisor

The casing enclosing the mechanism is not very large, and contains, besides the radio vision mechanism, the radio receiving set, and a loudspeaker, so that an entire opera in both action and music may be received.

Television: Live Image & Sound

- 1928: conductor-camera proposal
- 1936: *Pickwick* excerpt pre-stage
- 1937: full-length, lip-synched
- 1938: dance-sync, film, adaptation
- 1947: from opera-house stage
- 1963: unstageable *Labyrinth*
- 1971: cable-TV (pre-HBO)
- 1976: 1st live stereo, subtitles
- 1989: HDTV (*Bavarian Ring*)



Washington Post
May 17, 1928

Music Sheet Has Radium Notes for Television Artists



TELEVISION performers, working in almost complete darkness, except for the flying spot, have found difficulty in reading music when they were broadcasting a program. To remedy this difficulty and enable the performers to see better the music manuscripts from which they are singing, Elliott Jaffee, a New York recording artist, has devised a luminous manuscript on which the characters are painted on black paper with radium paint.

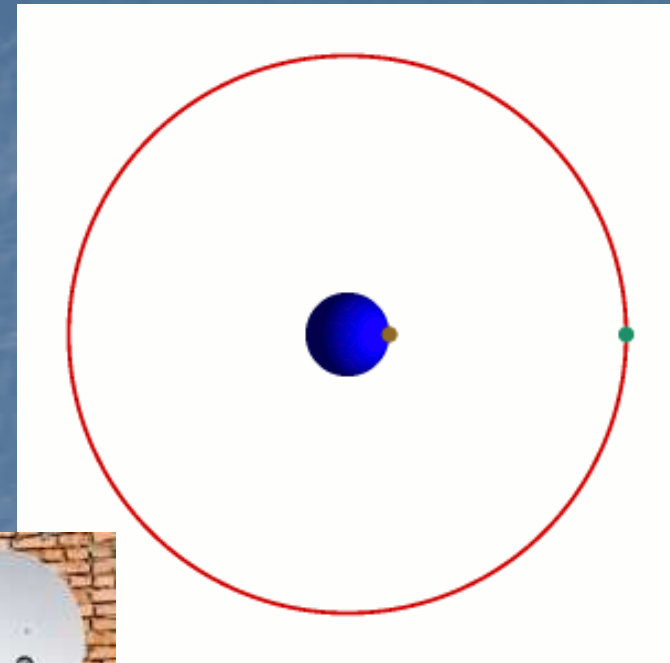
This invention eliminates one of the greatest difficulties the performers have encountered. Now, however, the music is as plain in the darkness as the figures on a radium watch.

Modern Mechanix
April 1932

Luminous manuscript for television artists has the characters written with radium paint on black paper, making the music visible to performers in darkness of studio.

Geosynchronous Satellites

- opera delivery since 1976
- proposed by sci-fi author Arthur C. Clarke, 1945
- basis: **Kepler's 3rd law of planetary motion, 1619**



Son of a Witch

- Published 1st two laws of planetary motion by 1609
- Journeyed in 1617 to save his mother, accused (and later convicted) of witchcraft, and read a book along the way
- Published 3rd law in 1619



Johannes Kepler
1571-1630

Ioannis Kepleri
HARMONICES
M V N D I

LIBRI V. QVORVM

Primus GEOMETRICVS, De Figurarum Regularium, quæ Proportiones Harmonicas constituunt, ortu & demonstrationibus.
 Secundus ARCHITECTONICVS, seu ex GEOMETRIA FIGVRATA, De Figurarum Regularium Congruentia in plano vel solido:
 Tertius propriè HARMONICVS, De Proportionum Harmonicarum ortu ex Figuris; deque Naturâ & Differentiis rerum ad cantum pertinentium, contra Veteres:
 Quartus METAPHYSICVS, PSYCHOLOGICVS & ASTROLOGICVS, De Harmoniarum mentali Essentiâ earumque generibus in Mundo; præsertim de Harmonia radorum, ex corporibus cœlestibus in Terram descendentibus, eiusque effectû in Natura seu Anima sublunari & Humana:
 Quintus ASTRONOMICVS & METAPHYSICVS, De Harmoniis absolutissimis motuum cœlestium, ortuque Eccentricitatum ex proportionibus Harmonicis.
 Appendix habet comparationem huius Operis cum Harmonices Cl. Ptolemæi libro II I. cumque Roberti de Fluâibus, dicti Flud. Medici Oxoniensis speculationibus Harmonicis, operi de Macrocosmo & Microcosmo insertis.



Cum S.C.M.^{te}. Privilegio ad annos XV.

Lincii Austriæ,

Sumptibus GODOFREDI TAMPACHII Bibl. Francof.
 Excudebat IOANNES PLANGVS.

ANNO M. DC. XIX.

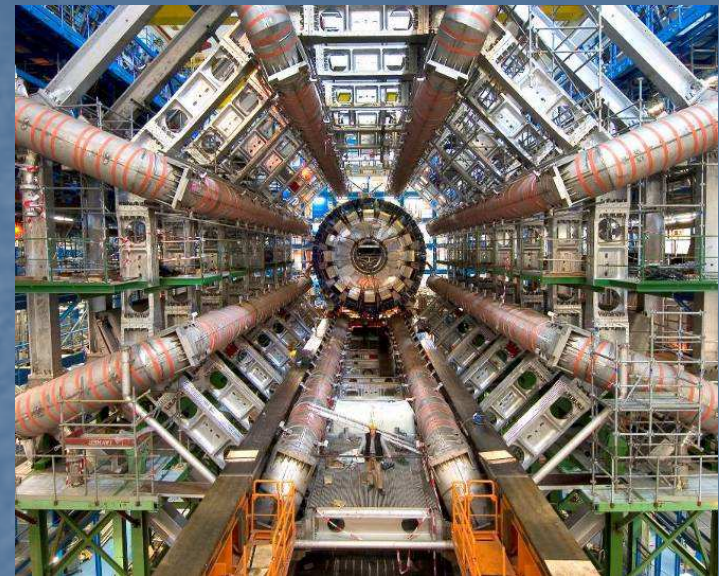
Kepler
 wrote
 (left)
 that he
 owed
 his
 ideas
 to this
 music-
 theory
 book
 (right)



Angels & Demons or Opera Media?



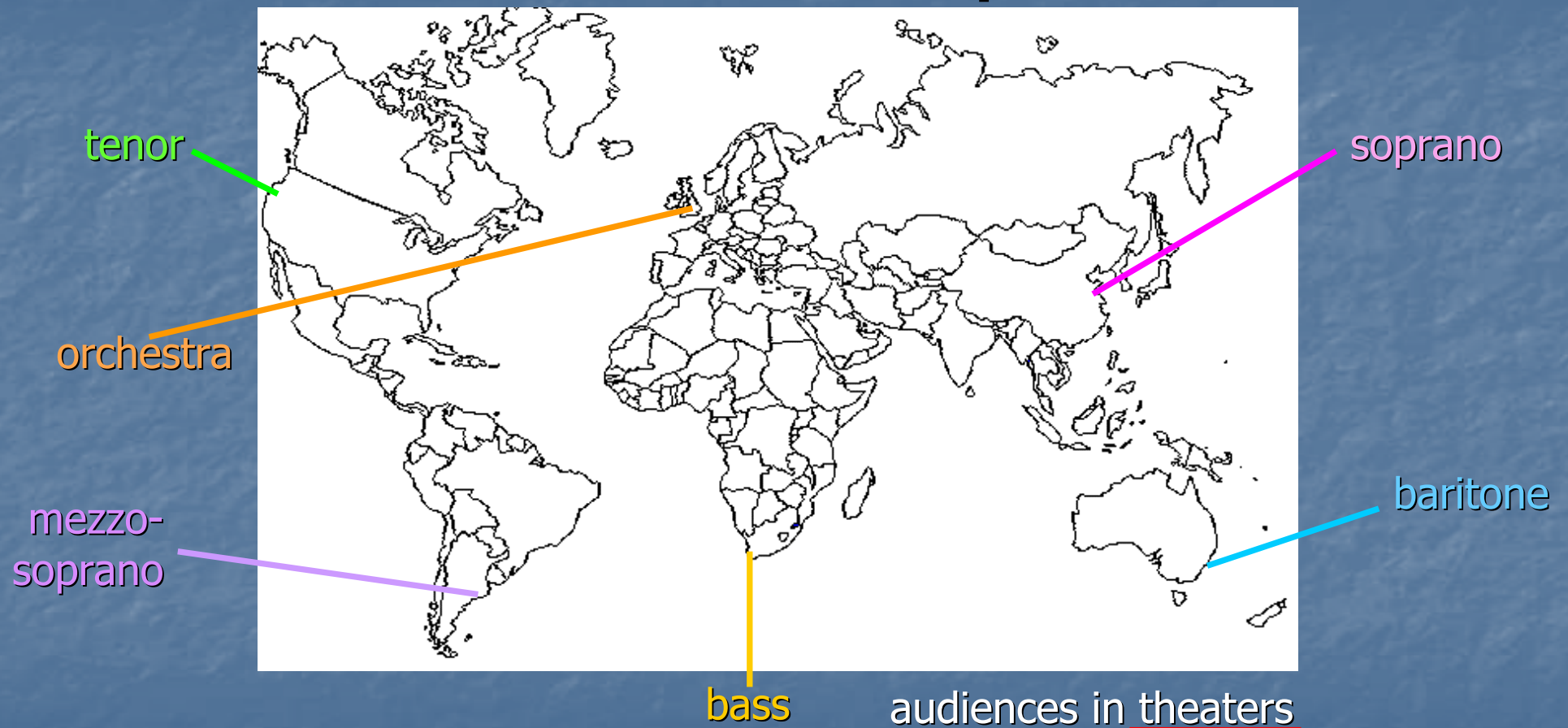
Castel Sant'Angelo, Rome, where Act III
of *Tosca in the Settings*
and *at the Times of Tosca*
takes place and was shot &
sent live, thanks to geosynchronous
satellites, in 1992, to 107 countries



CERN Large Hadron Collider, Geneva,
whose ultra-high speed data lines
have been used for the distributed
musicians & audiences of



The World Opera



Delay issues: NY-Sydney $\sim 16\text{k km}$, $\sim 53\text{ ms at } c$

Community TV: Adds Audience

and motion while in the electroscope. Both telephone and electroscope applied on a large scale would render it possible to represent at one time on a hundred stages in various parts of the world the opera or play sung or acted in any given theatre. The actors and singers will present, of course, a certain ethereal appearance, when thus viewed from a great distance, which, however, will not always prove really unpleasant to the audience.

letter to the editor of *The Sun* (New York), March 29, 1877

Live Cinema

- 1952 start
- 31 cinemas, 27 cities
- low def, B&W, <AM-radio-quality sound
- >60,000 seats, \$60 top
- rated highly



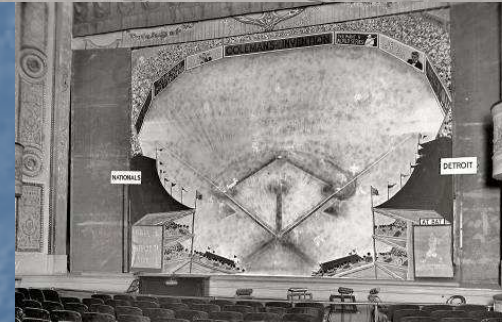
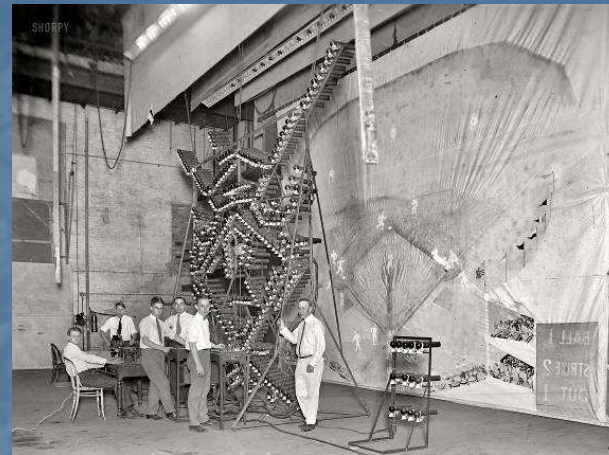
Free Community TV

- 1986 Basel plaza →
- 2006 Met HD plaza & Times Square
- 2007 SF AT&T Park



Baseball @ Opera Houses

- 1886
 - Atlanta boys
 - Detroit apparatus
- 1895
 - many systems of animatronics
- 1914
 - Providence arguments
- 1931
 - Tuscon free



1924 Coleman Lifelike
(system used in
Providence)

1931 Playograph

**Watch
Today's
World Series
Baseball Game**
Between The
**Philadelphia
Athletics**
And
**St. Louis
Cardinals**
From a Comfortable
Seat At The
Opera House

Every play will be reproduced
on the Playograph less than
one minute after the play is
made.

**PRESENTED TO ALL TUC-
SON FANS BY THE OPERA
HOUSE AND THE ARIZONA
DAILY STAR. NO ADMIS-
SION CHARGE.**

Cinema Opera Perception

- Group Mentality
 - if they don't complain, why should I?
 - applause
- Cognitive Dissonance
 - money, time, effort
 - if bad, then stupid
 - therefore good



Opera in 3D (predicted 1936)

- Glass's *Monsters of Grace* 1998
 - 3D projected backdrop in lieu of expensive set



L.A. opera audience



- *Don Giovanni* Opéra de Rennes 2009 (before *Avatar*)
- *Faust* Folkoperan 2010
- *Lucrezia Borgia* ENO 2011
- *Carmen* ROH (not live)



Cyberspace Opera



- 1987: *Countdown*, computer-aided
 - 1994: available on the web
- 1994: *honoraria in cybospazio* collaboration
 - 1995: 1st performance
- 2000: *Virtopera*: BR, DE, IN, IT, & web
- 2000: *The Internet Opera, or The Cedar Bucket (or The Waves of Cyberspace)*



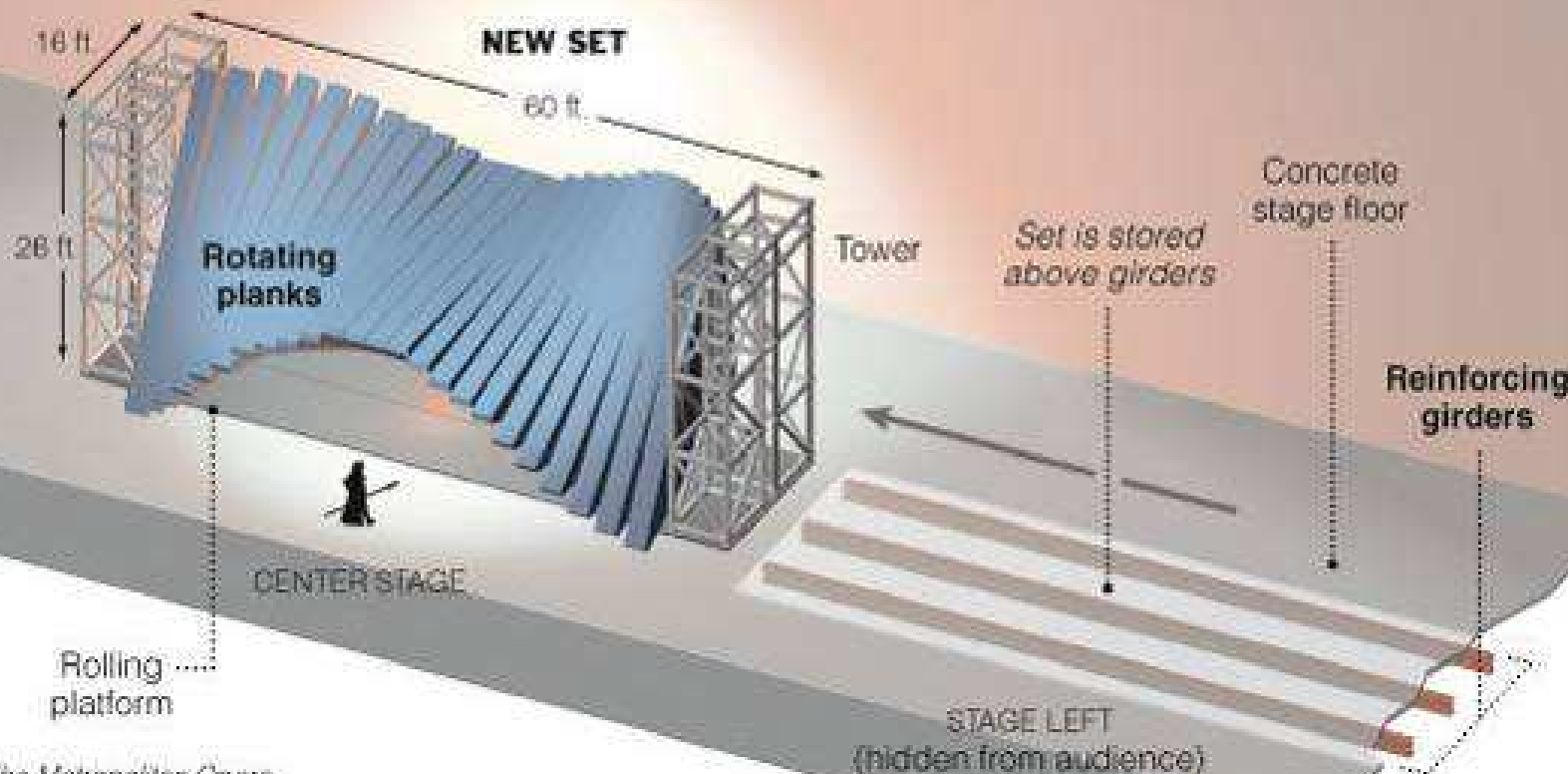
Scenic Real-Time Interactive CG

- Sensors:
 - IR cameras
 - microphones
 - rotational encoders
- Processing
 - interactive images
 - depth selection
 - video warping
- Presentation
 - 9 30k-lm projectors w/active noise cancellation



New Set Adds New Stress to the Met's Stage

The 45-ton set for the Metropolitan Opera's staging of Wagner's "Ring" cycle requires three new beams beneath the floor of the left side of the stage, where the set is parked when not in use. Without these reinforcements, the stage would be in danger of collapsing. Before a performance, the set will be rolled out to center stage, which has enough existing support.



Source: The Metropolitan Opera

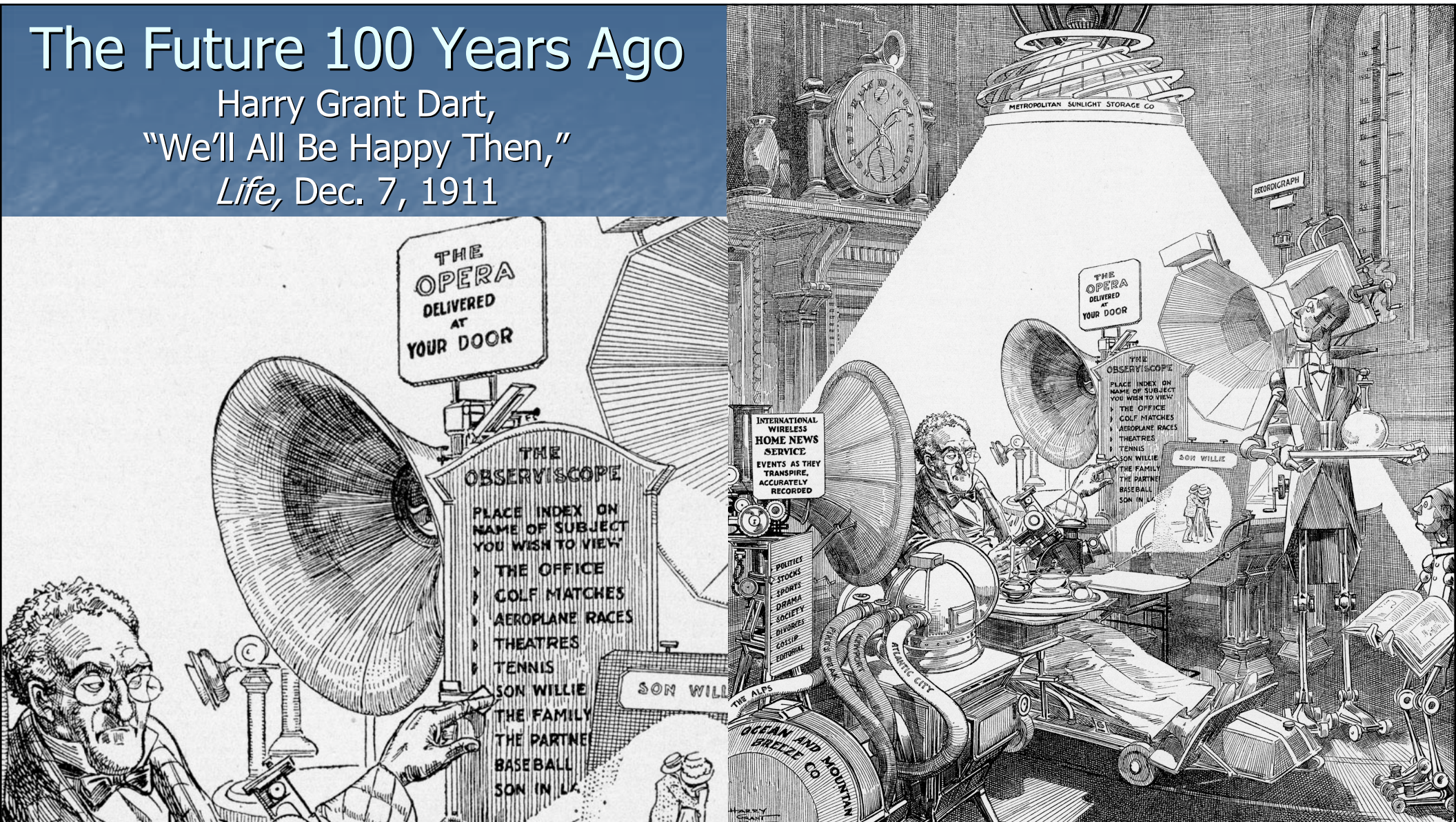
THE NEW YORK TIMES/ILLUSTRATION BY AL GRANBERG

<http://www.nytimes.com/2010/09/19/arts/music/19ring.html>

warp
engines
deal with
motion of
individual
planks;
as of
Siegfried,
also using
depth
planes
for 3D
effect

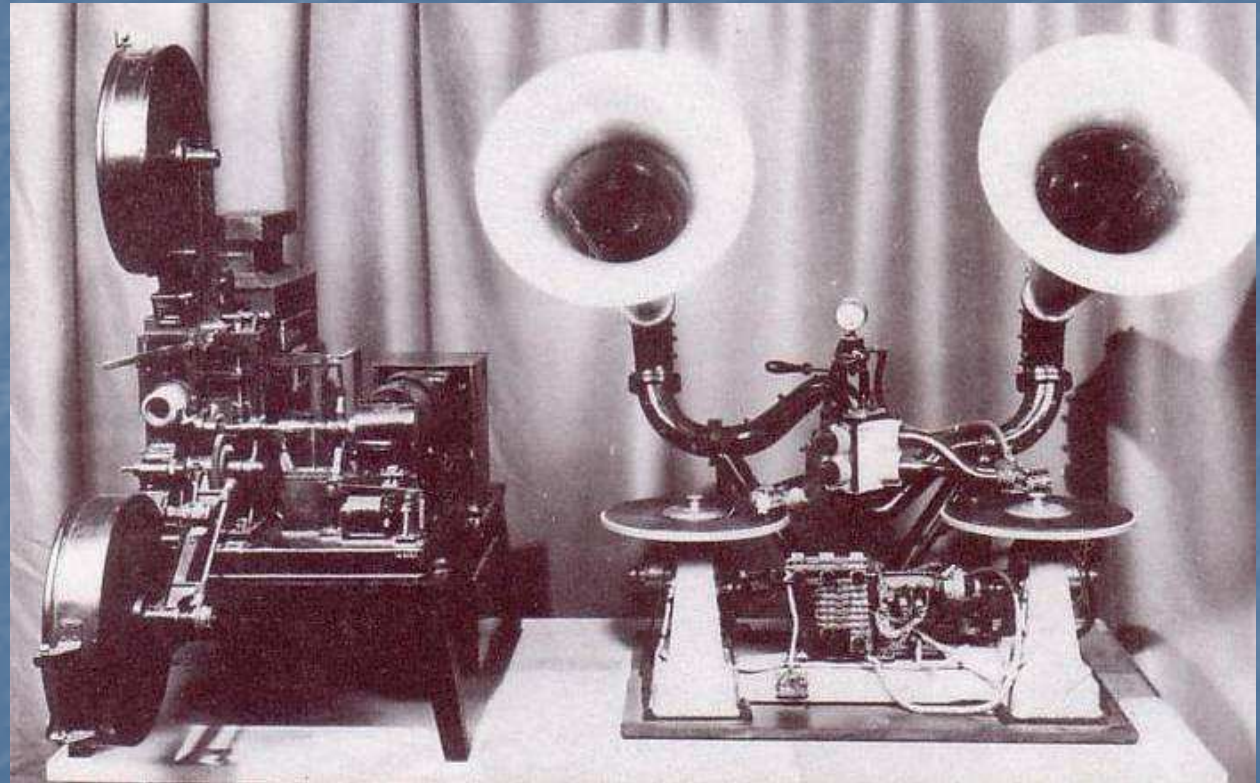
The Future 100 Years Ago

Harry Grant Dart,
"We'll All Be Happy Then,"
Life, Dec. 7, 1911



Questions?

“Fandom of the Opera”
presentations are
available in the
“Get The Download”
section of
SchubinCafe.com



Chronophone 1902