

# The Rise of Broadcasting

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**History of Information 103**  
**Geoff Nunberg**  
**April 5, 2011**



# Where We Are



The broadcast age





## Itinerary, April 5

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Radio: technology, application, medium

Technological development of radio

Who controls radio?

Radio comes of age

(assignments)

Radio in public life

The arrival of television

Television as an information medium

The reinvention of radio



# Establishing Remote Presence

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Representing presence symbolically or iconically

Writing, print, telegraphy, postal service etc.; also painting, engraving, etc.

Extending presence:

Photography, telephony, cinema, radio, television



# The range of radio

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"radio"



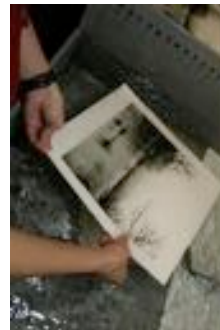
# The range of radio





# What makes for a "technology"?

How many technologies?

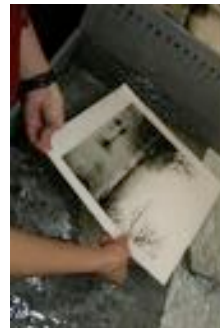






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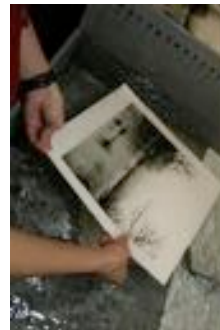
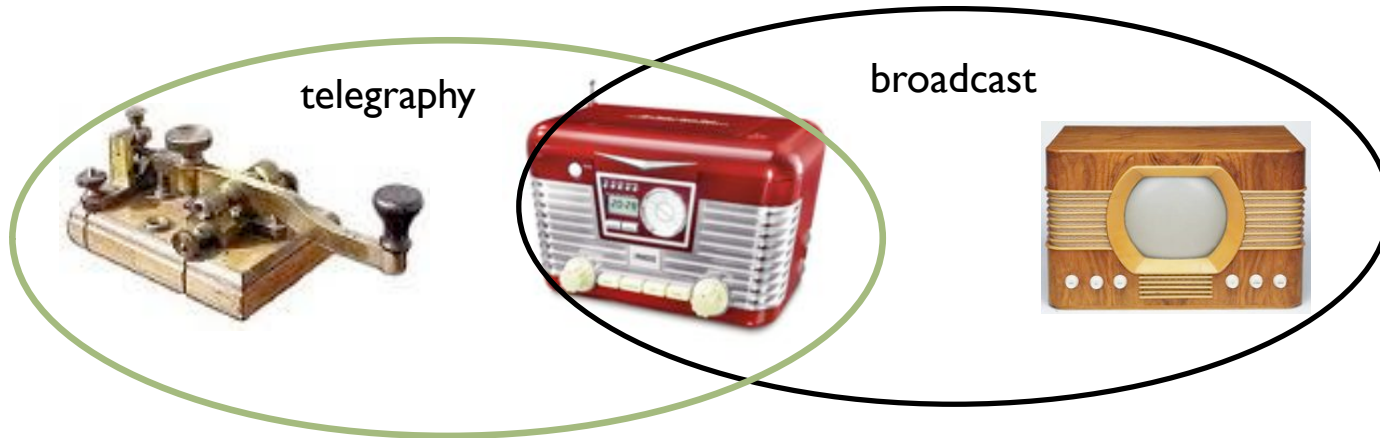






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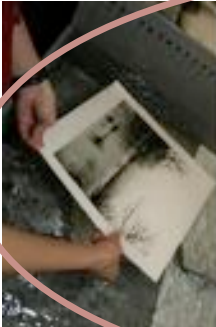

telegraphy



broadcast



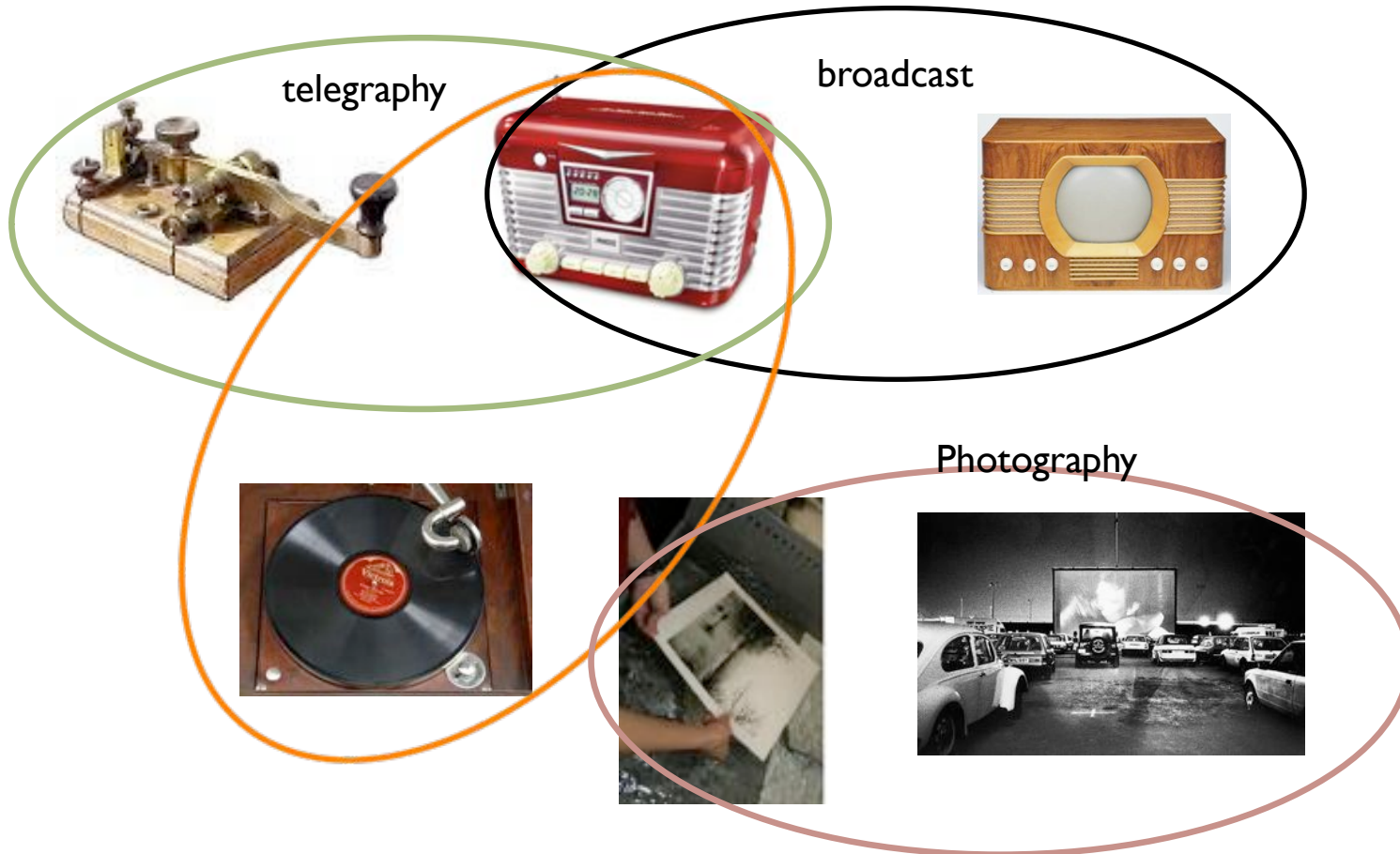
Photography





# What makes a "technology"?

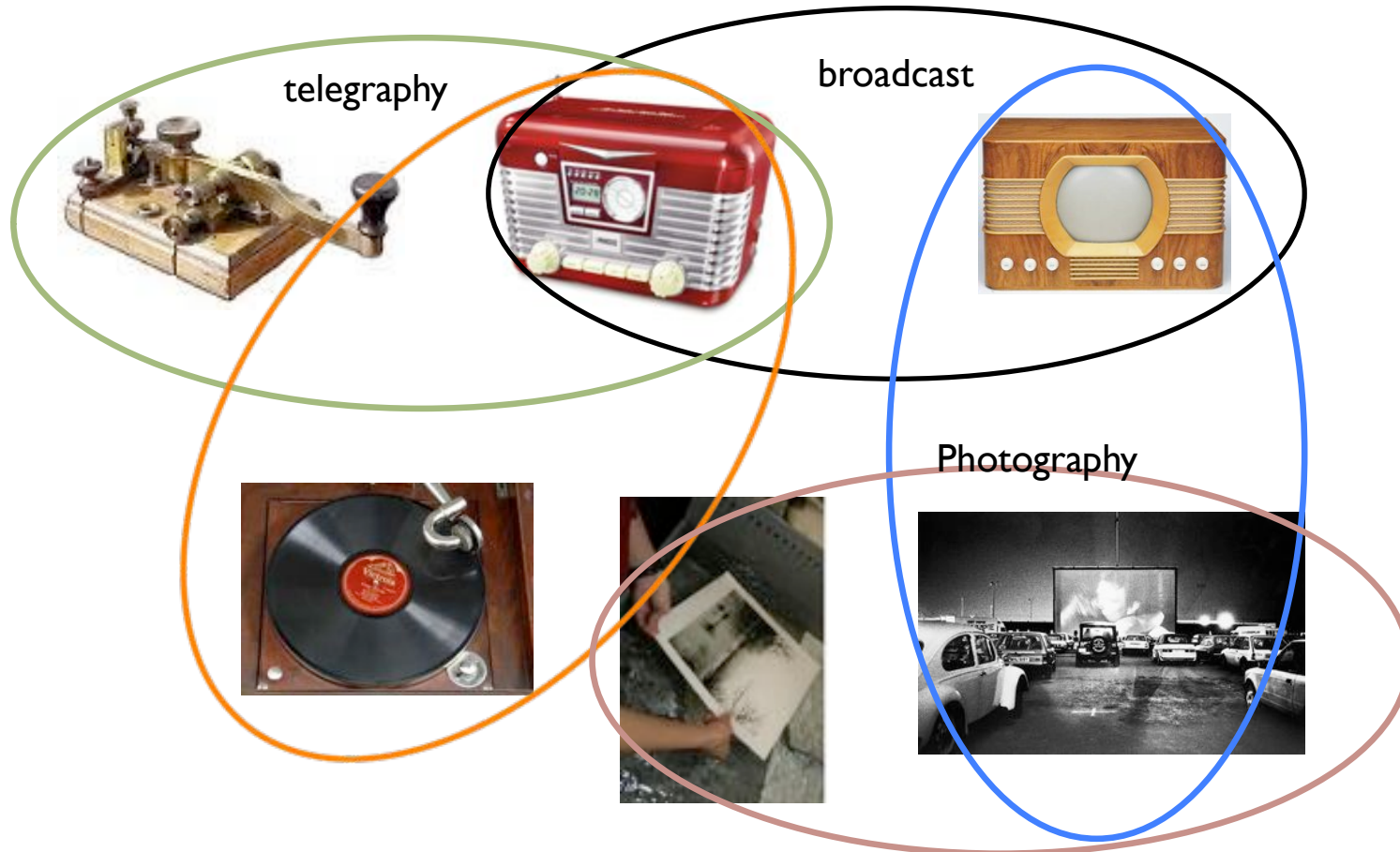
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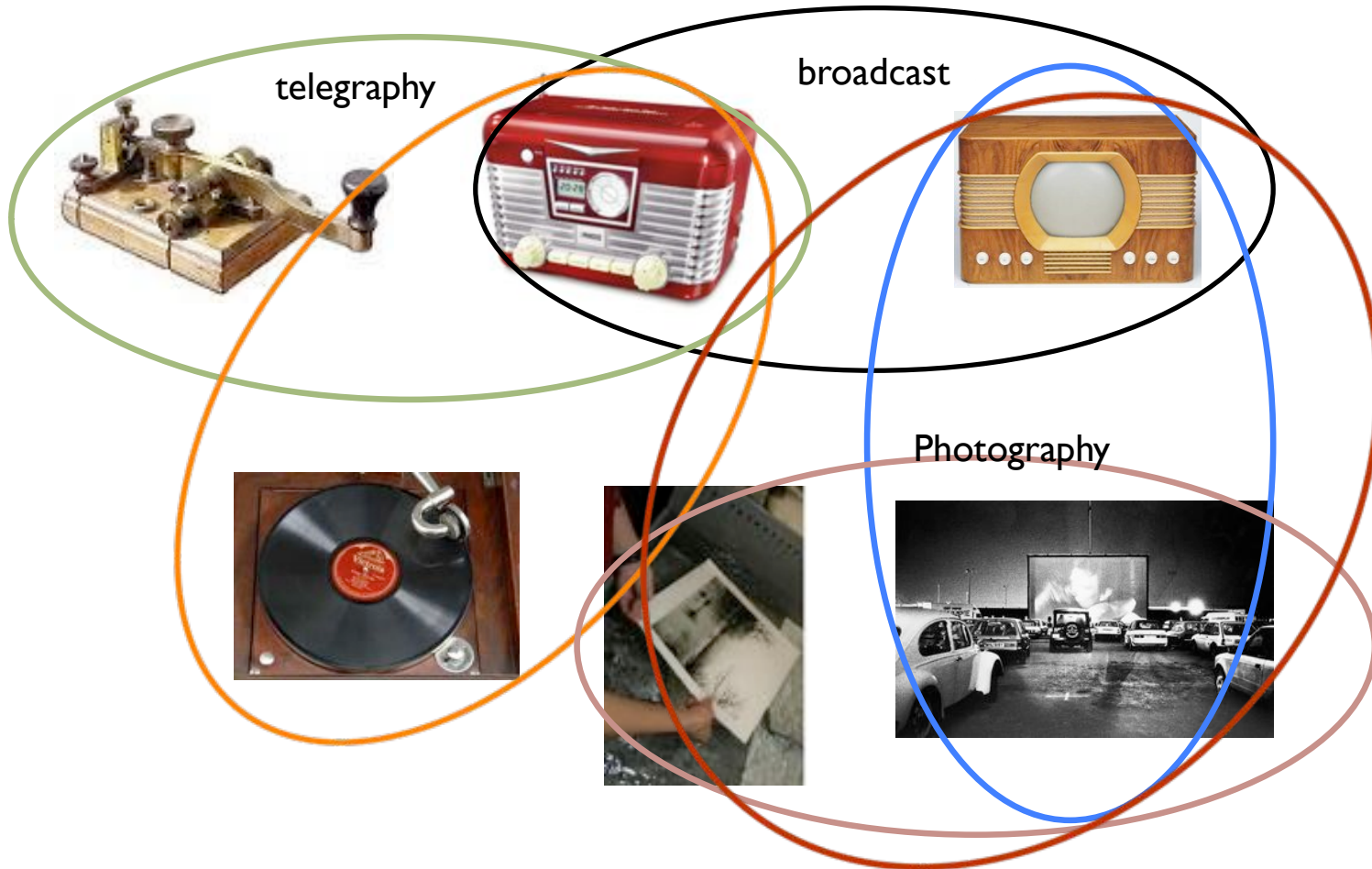
How many technologies?





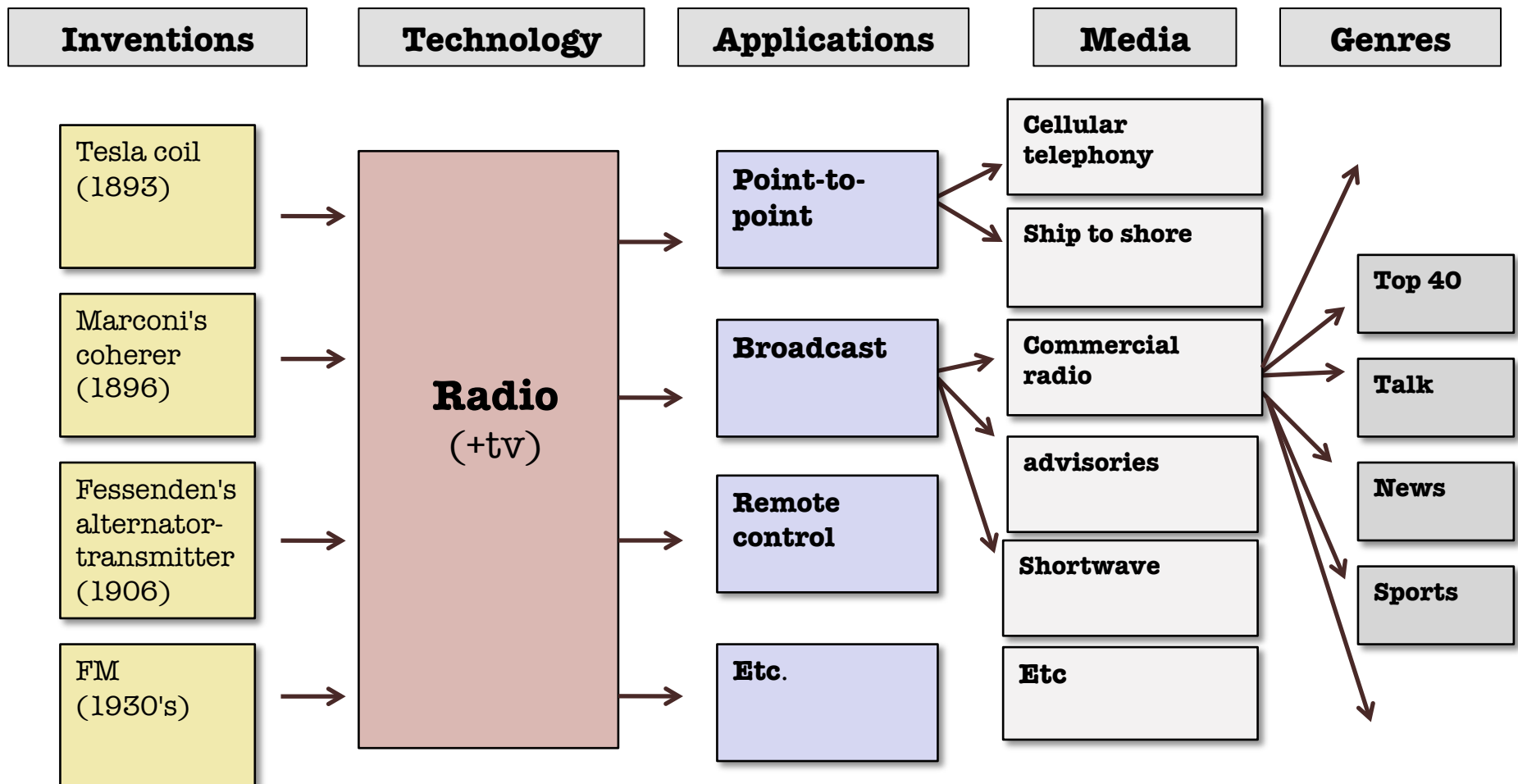
# What makes a "technology"?

How many technologies?





# Inventions, Technologies, Applications, Media, Genres

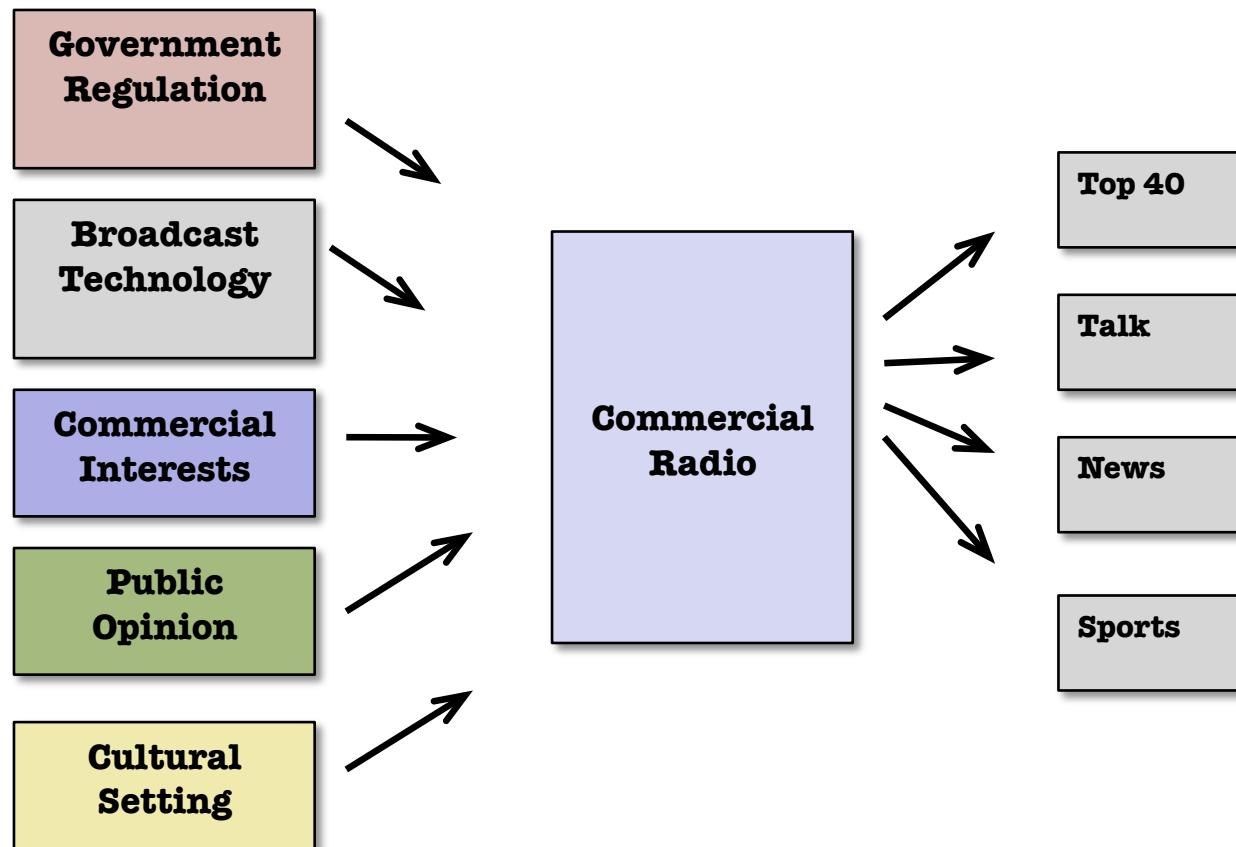






# Multiple Influences

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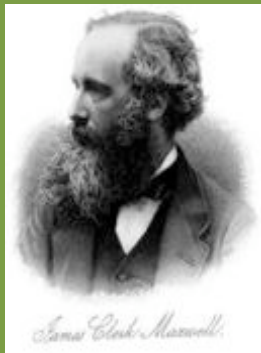


# **Technological Development of Radio**

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# Technological Development of Radio



James Clerk Maxwell



Heinrich Hertz

1861-1865: James Maxwell describes propagation of electromagnetic waves

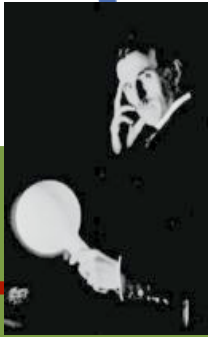
1886: Heinrich Hertz demonstrates transmission & reception of radio waves at 20 m. distance

*"It's of no use whatsoever[...] this is just an experiment that proves Maestro Maxwell was right - we just have these mysterious electromagnetic waves that we cannot see with the naked eye. But they are there."*

1895: Nikola Tesla transmits radio waves from NY to West Point (50 mi.)

1895: Guglielmo Marconi transmits radio signals over a mile using coherer, basis of early radiotelegraphy

# Technological Development of Radio



Tesla



Marconi



Fessenden

1894: Jagdish Chandra Bose uses radio waves in Calcutta to ignite gunpowder at a distance.

1896: Marconi receives British patent for transmission & reception of "Herzian waves" (US patent 1896)

1900: Marconi patents tuning dial

1901: Marconi claims to have transmitted radio signals from Poldhu (Cornwall) to Newfoundland

1906, Christmas eve: Reginald Fessenden makes first audio broadcast from Brant Rock, MA. Handel aria "Ombra mai fu" heard as far away as Norfolk, VA.

1909: Marconi awarded Nobel Prize.



Brant Rock transmitter



Bose



# Early Point-to-Point Applications of Radio



1905: Japanese use of radio helps in victory over Russian fleet at battle of Tsushima

1912: Titanic uses radio to signal for help, but one nearby ship misses signal; Congress passes Radio Act to allocate band frequencies, require licensed radio operators on ships.

1914-1918 British domination of wireless & cable technology gives it strategic advantages in WWI





# Who Controls Radio?

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# Models of Control of Broadcasting

After WWI, debates over how to regulate radio, apportion spectrum. RCA, Westinghouse, ATT jostle with Dep't. of the Navy for control.

## Several models:

Broadcasting is subsidized by set-makers (early US)

State-owned, politically controlled (many European nations)

State establishes quasi-independent public corporation supported by tax on receivers (e.g. UK until recently)

State licenses frequencies to commercial broadcasters, exerts some control over content; revenues derived from advertising (most US)



## How to Pay for Radio?

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Herbert Hoover

"[It would be] inconceivable that we should allow so great a possibility for service to be drowned in advertiser chatter"  
Sec. of Commerce Herbert Hoover, 1924





# Resolving the Control of Radio

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## 1927: Radio Act establishes Federal Radio Commission

Authorizes FRC to grant broadcasting licenses & assign frequencies. Limits power of FRC to control programming, apart from banning "obscene or indecent" language

Requires stations to give equal time to political candidates.

Opens radio to wide use of advertising; advertisers assume increasing responsibility for creating content

FRC favors "clear channel" allocations (1 station per frequency), which gives most bandwidth to networks & commercial stations, on grounds of "public convenience"



# Resolving the Control of Radio

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1934: Communications Act replaces FRC with Fed. Communications Commission.

Rejects efforts to establish "hybrid" systems like those in Canada & Australia, which made provision for state-controlled public interest broadcasting alongside of commercial radio



# Models of Broadcasting as Medium

How to think about broadcasting?

Broadcasting as common carrier (i.e., like phone service) with obligation to provide general access

Broadcasting as extension of press, exempt from control

Broadcasting as entertainment (like movies) subject to censorship/regulation



# Radio Comes of Age

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# The Emergence of Broadcast

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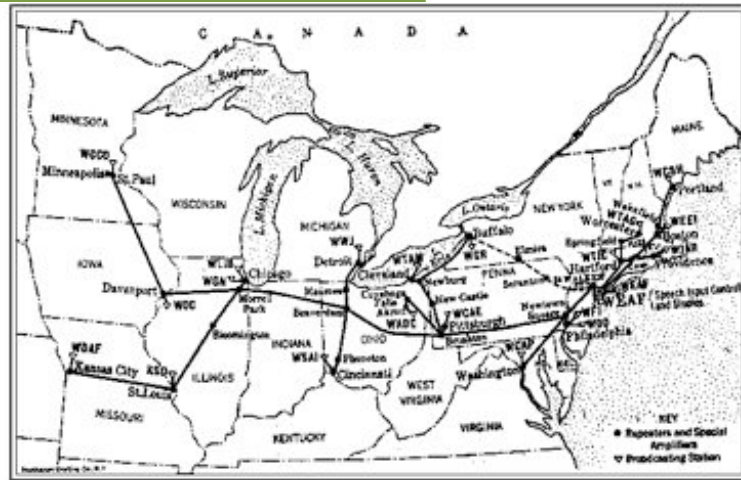
1920: Marconi Company sponsors first regular "public" broadcasts in UK, but Post Office bans further use until 1922

Nov. 2, 1920: KDKA Pittsburgh broadcasts results of presidential election; first station to schedule regular broadcasts.

1921: KDKA makes first broadcast of Major League baseball games



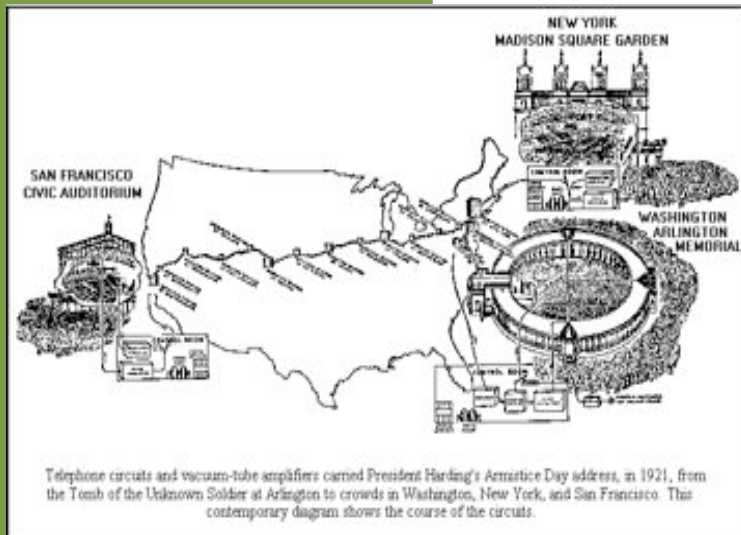
# Beginnings of Networks



1921 ATT organizes first network, using phone lines

1921: Telephone circuits carry Harding's Armistice Day Address from Arlington Cemetery to NY and San Francisco

GE, RCA, & Westinghouse respond, using telegraph lines; networks merged in 1926 as Nat. Broadcasting Company



Telephone circuits and vacuum-tube amplifiers carried President Harding's Armistice Day address, in 1921, from the Tomb of the Unknown Soldier at Arlington to crowds in Washington, New York, and San Francisco. This contemporary diagram shows the course of the circuits.



# "Radio Mania"



1922: BBC begins broadcasting from the roof of Selfridges in London

1920-1925: "Broadcasting boom" leads to rapid increase in number of stations & receivers.

Household penetration is 24% in 1927; 46% in 1930; 65% in 1934

Av. Cost of radio set, 1930: \$78

1934: First FM licenses granted, but technology doesn't catch on for 25 years

The "dxing" cult







# The Development of Programming



1925-1940 Emergence of radio-specific genres, with process dominated by advertisers: variety, music, drama, serials, quiz shows, etc.

1925: Grand Ole Opry first broadcast on WSM, Nashville

1928: "Amos n' Andy" originates at WMAQ Chicago

1930: WGN Chicago broadcasts "Painted Dreams," first radio soap opera about Irish widow & daughter



Freeman Gosden and Charles Correl



The Goldbergs



Jack Benny



## Commercial Radio



"American radio is the product of American business! It is just as much that kind of product as the vacuum cleaner, the washing machine, the automobile, and the airplane. . . . If the legend still persists that a radio station is some kind of art center, a technical museum, or a little piece of Hollywood transplanted strangely to your home town, then the first official act of the second quarter century should be to list it along with the local dairies, laundries, banks, restaurants, and filling stations."

J. Harold Ryan, president of Nat. Assoc. of Broadcasters, 1945, on the first quarter-century of radio





# Assignment

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Czitrom writes, "Less than fifty years after the first wireless explorations, radio broadcasting stood at the very center of American society, an integral part of economic, political, and cultural processes. ....Commercial broadcasting wedded the advertisers message to older popular cultural forms..."

Seventy years after this date, would you say that this characterization still holds of broadcasting — including both radio and television? **In specific terms**, how similar is the content of modern broadcasting to that described by Czitrom for the 1930's and 1940's and how is it different? On the whole which are more striking — the similarities or the differences?



## Things are the same...

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Czitrom describes that after World War II, disc jockeys became popular. We still have disc jockeys today on radio shows who create playlists for radio stations focusing on specific musical genres. There was also... "previously isolated kinds of American folk music, such as country and western and blues" in the 1930's and 40'. ...daytime serial or "soap opera" whose target audience was mostly women working in the home... ...psychological thrillers.... Television still broadcasts suspenseful action shows in the evening, such as Nikita, Smallville, CSI, etc. I find the similarities to be more striking since the genres have stayed the same for the most part... Soap operas and thrillers moved from radio to television probably because television offers a more visually-stunning medium to deliver a story. My



## ... but also different

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...the core selection of modern television programs remains for the most part strikingly similar to radio programs of the 40's...Although the FCC remains as a regulatory entity, no longer does "any unorthodox economic view (bring) down the hand of censorship." Television and radio programs voice opinions from both ends of the political spectrum. –Andy

Czitrom describes much of the past radio programs to consist of "family entertainment" that was appropriate for everyone. Today, shows need not necessarily be targeted to, or appropriate for, the entire family, as many shows on MTV are targeted specifically to teenagers. Time slots now are divided to different target audiences: daytime television for stay-at-home mothers and viewers that might not have jobs, prime time for the family, late night for adults, and Saturday morning for kids. ... Whereas past radio advertising was similar in effect to a door-to-door salesman describing a brand's strong points, today's advertising focuses more on brand familiarity and entertainment. Indeed, Geico car insurance commercials are mostly humorous and only briefly describe savings. Joshua



## ... or both

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For both television and modern radio..a wide range of political and economic viewpoints... are represented and are not subject to censorship. News programs seem to uphold objectivity by portraying all sides of an issue while reporting it to the public. However, I fear that censorship is still as widespread as it was in the '30's, but it is subtler and more difficult to identify. Corporate networks still depend upon their sponsors..., so offensive programming does not get broadcast. –Leyla

...certain elements of his statement no longer hold ... in particular, the characterization that “commercial broadcasting wedded the advertisers message to older popular cultural forms” There seems to be very little thought towards the older cultural forms that Czitrom is referring to (theaters, concerts, etc.). Ironically, in the time between then and now, broadcasters have established their own cultural forms, thus supplanting those “historical forms”. Phillip



# Informing the public

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# The Advent of the Commentator

1927: H. V. Kaltenborn,  
broadcasting news, first heard on  
CBS



1932: Walter Winchell begins NBC  
(later ABC) broadcast on "Jergens  
Journal"





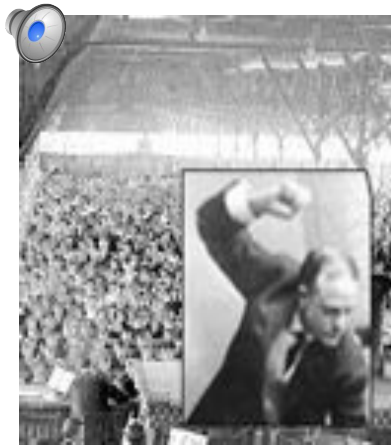


# Preachers, Politics & Propaganda

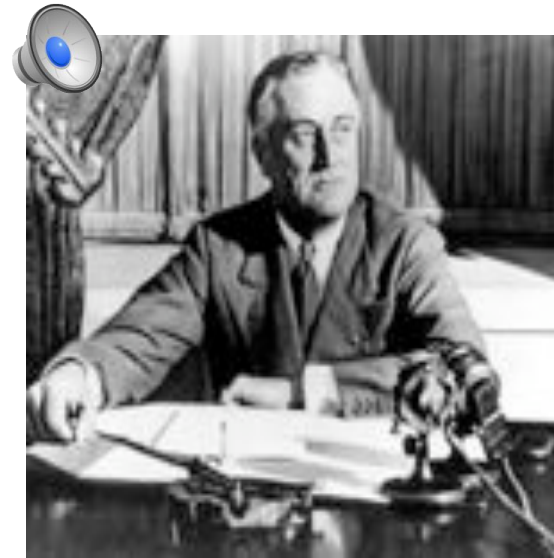
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Father Charles Coughlin, the "radio priest"



Billy Sunday



FDR after "fireside chat"

1941: 90% of Americans listen to radio 4 hrs/day



# The transparency of the medium



Oct. 30, 1938: Orson Welles Mercury Theater radio play of "War of the Worlds" creates some panic among listeners

"Transparency" of the information medium





## Radio Goes to War



1940: Edward R. Murrow's broadcasts from the London Blitz increase support for US intervention on Allied side;  
Radio establishes "virtual presence" (R. Rothafel, 1925)





# **The Arrival of Television**

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# The Invention of Television



"The First Invention to be achieved by committee" --Albert Abramson

1926 John Logie Baird demonstrates electromechanical television transmission

1934 Philo Farnsworth demonstrates all-electronic television transmission

1936 Experimental TV broadcasting in US, UK, France, Germany

1939: NBC inaugurates US broadcasting at NY World's Fair

1946 Regular network TV broadcasting begins in US





# The Advent of Television



In postwar period, television rapidly gains national audiences in US and Europe

1946: “Hourglass,” first hour-long variety show, airs on 3 NBC stations; “Faraway Hills” becomes the first TV soap opera

June 19, 1946 Joe Louis-Billy Conn fight viewed by 1m people over 140k sets (many in bars)

1947: First telecast of World Series game (Yankees v Dodgers); Harry Truman addresses US over TV from White House; Debut of “Kraft Television Theater”

1948: 350k TV sets in use, half in NYC area; “Howdy Doody” debuts



# The Advent of Television

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1949: 2m sets in US

1950: 5.3m sets in US,

1951: 13m sets in US; "I Love Lucy" premieres; Jan 1:

1953: TVs in 50% of American homes; Debut of "Today Show"



1954: Debut of "Gunsmoke," "\$64,000 Question," "Captain Kangaroo"; "The Tonight Show" (w. Steve Allen; switches to talk format w/ Jack Paar in 1957)

1956: Debut of "Playhouse 90"





## Further Developments: Color



- 1929: Color television demonstrated in 1928 by Bell Labs
- 1965: NBC announces that all new programming would be in color (except for "I Dream of Jeannie.")
- 1968: Sony introduces single-gun Trinitron color
- 1972: Sales of color sets exceed B&W





## Further Developments

1948: "Community Antenna" television (CATV) systems introduced in rural areas of Oregon & Pennsylvania.

1972: Sterling Cable (NY) launches Home Box Office (later first service to use satellite distribution)

1980: Cable reaches 15m households

1952: Raytheon introduces first transistor radio at \$49.95

1956: Zenith introduces first remote control (connected to TV by cable). First wireless control (Zenith "Space Command") introduced shortly after.





# Television as an Information Medium

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# The TV Documentary

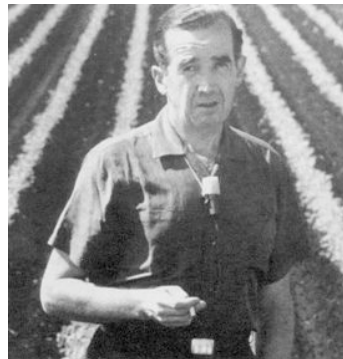


1950: "See It Now" debuts on CBS, w/Edward R. Murrow, edited by Fred Friendly

1952: Murrow presents "Christmas in Korea" from front lines

1956: Murrow's program on Sen. Joseph McCarthy

1960: Murrow and Friendly produce "Harvest of Shame" for CBS Reports



This scene is not taking place in the Congo. It has nothing to do with Johannesburg or Cape Town... This is Florida. These are citizens of the United States, 1960. This is a shape-up for migrant workers.... This is the way the humans who harvest the food for the best-fed people in the world get hired. One farmer looked at this and said, "We used to own our slaves; now we just rent them."

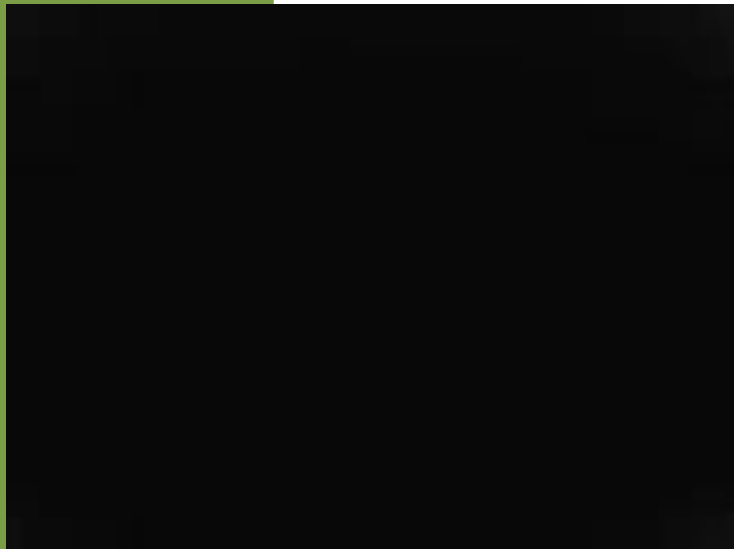


# Television Replaces the Newsreels

1911: Charles Pathe introduces first weekly newsreel, for RKO theaters

1927: Fox Movietone presents first sound newsreel, of Charles Lindbergh's takeoff

1931: *Time* founder Henry Luce launches "March of Time" weekly movie magazine, ends in 1951



1924



1934



## The rise of TV news



1963 CBS extends evening news to 30 min.

1965- Nightly news runs daily coverage of Vietnam war – Morley Safer films US troops burning houses in Cam Ne

1967 CBS launches "60 Minutes"

1969 Spiro Agnew launches attacks on "effete corps of impudent snobs" in media

1973 Telecast of Watergate Hearings

1980 Ted Turner launches CNN

1991 Desert Storm bombing of Baghdad relayed live by CNN





## "The Medium is the Message"

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Television has become, so to speak, the background radiation of the social and intellectual universe... so thoroughly integrated with American culture that we no longer hear its faint hissing in the background or see the flickering grey light. Our culture's adjustment to the epistemology of television is by now almost complete; we have so thoroughly accepted its definitions of truth, knowledge and reality that irrelevance seems to us to be filled with import, and incoherence seems eminently sane.

Neil Postman, *Amusing Ourselves to Death*, 1986



# The "TV-ization" of Spectacle



Effects of televising on sporting events, political rituals, etc.

State of the Union address broadcast since Coolidge 1923, but until the 1970's retains form of address to Congress

Eisenhower, 1955: "It is expected that more than \$12 billion will be expended in 1955 for the development of land, water and other resources; control of floods, and navigation and harbor improvements; construction of roads, schools and municipal water supplies, and disposal of domestic and industrial wastes."





# The "TV-ization" of Spectacle



## The "Lenny Skutnik" moment, 1982

Just just two weeks ago, in the midst of a terrible tragedy on the Potomac, we saw again the spirit of American heroism at its finest the heroism of dedicated rescue workers saving crash victims from icy waters. And we saw the heroism of one of our young Government employees, Lenny Skutnik, who, when he saw a woman lose her grip on the helicopter line, dived into the water and dragged her to safety.

Ronald Reagan, SOU speech, 1982

Cf similar changes in party conventions, debates, campaign speeches, etc.







# The Creation of New Political Spectacles



Kennedy-Nixon debate, 9/26/60:  
The convention as TV show





# The Transformation of Radio

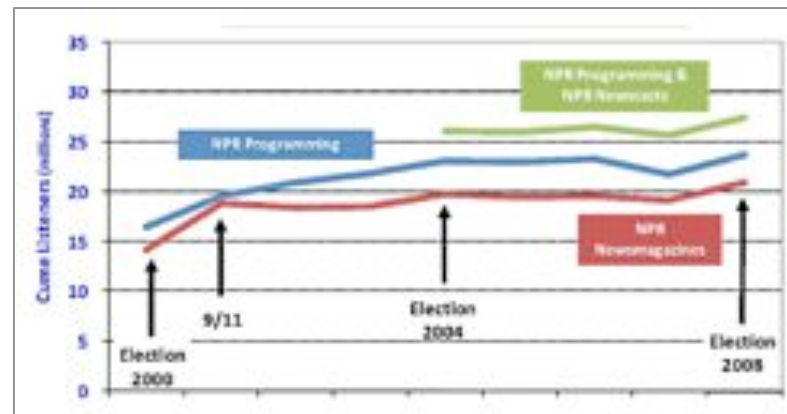


1950-1965 Radio retreats to all-news and "Top-40" formats; programming aimed at "drive time" audiences

1967: Public Broadcasting Act establishes Corporation for Public Broadcasting.

1970: NPR established, replacing earlier National Educational Radio Network; begins broadcasting in 1971 with coverage of Senate hearings on Vietnam. "All Things Considered" debuts 1 month later.

Currently 900 stations, 28m weekly listeners (up 60% since 2000); av. Age 50 (33 for podcasts), income ca. 80k.





# The Transformation of Radio, 2



Barry Gray



1945: On NYC's WMCA, DJ Barry Gray begins conversing with listeners live.

1960: KABC (LA) adopts first all-talk format

1982: Howard Stern begins broadcasting at WNBC (NYC)

1987: FCC repeals "Fairness Doctrine," dating from 1949, which required radio stations to present issues in an "equal and balanced" manner. Cites large number of stations variety of media voices.

1988: Limbaugh moves to NYC. Current weekly cume = 13.5 m, followed by Sean Hannity (12.5), Michael Savage (8.25), Laura Ingraham (5.0), Bill O'Reilly (3.25), others. Highest-ranked liberal talker is Ed Schultz (2.25)



# The New World of Political Broadcasting

1996: Fox News launched, pioneers political cable talk-show. Quickly establishes lead in average hourly viewership, though remaining behind CNN in cumulative audience.

2004: Air America radio begins syndicated broadcasting to provide "liberal voice" in radio; 2006, files for bankruptcy protection







# Role of broadcast media in modern political language

The intimacy of modern public discourse





# Pervasive Media

Only a visitor from an earlier century or an impoverished country could be startled by the fact that life is now played out against a shimmering multitude of images and sounds, emanating from television, videotapes, videodiscs, video games, VCRs, computer screens, digital displays of all sorts, always in flux, chosen partly at will, partly by whim, supplemented by words, numbers, symbols, phrases, fragments, all passing through screens that in a single minute can display more pictures than a prosperous seventeenth-century Dutch household contained over several lifetimes... Todd Gitlin



Vermeer, "The Concert"



## Readings and Assignment for 4/7

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Babbage, Charles. 1835. “Registering Operations” and “On the Division of Mental Labour,” chapters 8 & 20 in *On the Economy of Machinery and Manufactures*. [Project Gutenberg edition or Google Books 1832 edition]

Campbell-Kelly, Martin & William Aspray. 1996. “Babbage’s Dream Comes True,” (pp. 53-104) in Martin Campbell-Kelly & William Aspray, *Computer: A History of the Information Machine*. New York: Basic Books.