
5. Covert, “We May Hear Too Much,” 203.


13. Heather A. Wessely, “Culture, History and the Public Interest: Developing a Broadcasting Service for the United States” (manuscript, Department of Communication Studies, University of Iowa, 1993), 54.


17. This legal distinction may in part be a post hoc version of the division of labor agreed upon in 1926 between RCA and AT&T, leaving the former with the air/broadcasting and the latter with wires/telephony. See Noobar R. Danielian, AT&T: The Story of Industrial Conquest (New York: Vanguard, 1939).

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**CHAPTER 27**

**Early Radio**

Susan J. Douglas

Susan J. Douglas is professor of communication studies at the University of Michigan. Her book Inventing American Broadcasting: 1912–1922 deserves serious attention from students of communication for its close reading of the early, formative period of broadcasting in the United States. The present excerpt is taken from her newest work, Listening In.
It was the early 1920s, nighttime, and around the country, especially in the Northeast and Upper Midwest, American boys and men (and, to a much lesser extent, women and girls) connected themselves umbilically by headphones to small black boxes powered by sets of batteries. They led the way in a cultural revolution: the turn to listening in the 1920s. Painstakingly moving a thin wire known as the cat whisker around a hunk of crystal, they heard a blend of talk, music, and static as their heads became filled with the voices and sounds of nearby and far-off places. Others, usually those with more money, had sets with tuning dials—five of them—all of which had to be perfectly calibrated to reel in particular stations. This was an exploration, and as such it was thrilling and often maddeningly frustrating.

As with the spread of home computing in the late 1980s and 1990s, often it was boys who embraced this device and introduced the rest of the family to it. This was an exploratory listening, predicated on technical expertise and patience, in which people listened not for continuity but for change; not for one message or program from New York but for many messages from all over the place; to see how far they could get, not which celebrity they could hear; and to hear the eerie, supernatural mixture of natural static and man-made voices. They listened to get a more immediate sense of their nation as it was living, breathing, and talking right then and there. They were lured by the prospect of witnessing entirely new auditory spectacles, the aural equivalents of lightning and fireworks. Turning to listening, entering the realm of listening for so many hours each night, was an entirely new cognitive, emotional, and cultural experience and one we still have an only rudimentary understanding of today.

These were the frothy "boom" years of radio, when virtually nothing was fixed—not the frequencies of stations (although at first everyone was supposed to broadcast on the same wavelength), not the method of financial support, not government regulations, and not the design or domestic location of the radio itself. There were no networks—known in the late 1920s as the chains—and there was very little advertising on the air. With a few exceptions, like the Sunday broadcasts of church services, there was not a predictable program schedule. Instead, stories geared for children might be followed by a lecture on "hygiene of the mouth" or "how to make a house a home," which would in turn be followed by phonograph music or "Madame Burumowska, formerly of the Moscow Opera" singing Rimsky-Korsakov's "Hymn to the Sun." Department stores, newspapers, the manufacturers of radio equipment, colleges and universities, labor unions, socialists, and ham operators all joined the rush to start stations.

Today we take it for granted, often wearily, that broadcasting is supported by advertising, that its mission is to promote compulsive consumerism, that most broadcast stations are affiliated with national networks or owned by broadcasting chains, and that broadcasting is regulated by the Federal Communications Commission, all too often in ways that benefit corporate consolidation and greed at the expense of real diversity on, and access to, the airwaves. It seems fixed, as if this system was and is the only one imaginable. It seems so hopelessly and relentlessly top-down.

Many of these precedents got set in the mid- and late 1920s—some of them even earlier—when none of this was taken for granted. In fact, we have had advertising-supported broadcasting for so long—seventy years—that it is easy to forget that this was extremely controversial and hotly debated in the 1920s, condemned as a crass invasion of people's private lives. (We can thank AT&T for pioneering the use of radio advertising in 1922 on its station WEAF.) Susan Smulyan and Bob McChesney, in their excellent books on early radio, remind us that there was nothing inevitable about the way radio came to be financed and regulated. This was a contested process, with educators and labor organizers, corporate interests, amateur operators, and the government all advancing their very different visions for the future.

Because this decade was so formative, radio historians have especially focused on the 1920s
done a fine job chronicling the rise of radio advertising, the establishment of radio regulation, and the evolution of programming from impromptu speeches and soprano solos to regularly scheduled shows like *Amos 'n' Andy.*

I want to explore something else here: what did it mean, amidst the visual onslaught of billboards, magazines, movies, spectator sports, and newspapers, to retreat to your home and turn to listening? I want to get back into the garage, the attic, and the living room—despite the fragmentary nature of the historical record here—to speculate on this new phenomenology of listening and to lay out what was involved in bringing radio into everyday life. People didn't just walk into a shop in 1922, buy a radio, bring it home, plug it in, and hear orchestral music. That wouldn't be possible until the late 1920s at the earliest. Every- day people had to assemble the device (which included stringing up an antenna), had to learn how to listen, how they wanted to listen, and what they wanted to listen to at the same time that stations, and then networks, were deciding what was best to broadcast. So I want to explore how the terms of radio listening itself were constructed, contested, and thus invented in the 1920s, by programmers and by listeners.

I also want to consider how this major perceptual shift in our culture, a concentrated and dedicated turn to listening, inflected evolving and uncertain notions of manhood and nationhood in the early 1920s. It was men and boys who brought this device into the home, and tinkering with it allowed them to assert new forms of masculine mastery while entering a realm of invisibility where certain pressures about manhood could be avoided. At the same time a quest for nationhood and a reversion to its opposite, tribalism—most of which was white tribalism—characterized the 1920s.

This technologically produced aurality allowed listeners to reformulate their identities as individuals and as members of a nation by listening in to signs of unity and signs of difference. By the late 1920s *chain broadcasting* was centralizing radio programming in New York and standardizing the broadcast day so that listeners tuning between stations at night often heard the same chain program. Meanwhile, independent stations featured locally produced programs with local talent. Listeners could tune in to either or both, and tie in, imaginatively, with shows that sought to capture and represent a "national" culture and those that sought to defend regional and local cultural authority. And in the debate about what kinds of shows and stations were better, which often dominated the letters-to-the-editor pages of the popular *Radio Digest,* we see enormous tensions surrounding network radio's role as a culturally nationalizing force.

It is important to emphasize here that what quickly got coined as listening in went through three distinct but overlapping stages in the 1920s, and that shifts in modes of listening were tied to technical changes in radio apparatus. The first stage, roughly between 1920 (although with the hams this had started much earlier) and 1924, was characterized by the phenomenon called DXing: trying to tune in as many faraway stations as possible. Most DXers started with crystal sets, often moved on to tube sets, and listened at first on headphones, the surrounding sounds of home shut out by the black disks on their ears. And while we don't have the kind of detailed surveys of listeners that historians long for, the journalistic record contains various romantic accounts by middle-class "distance fiends" who gushed about the pleasures of DXing. What is especially striking about these accounts is the way they describe using radio listening to imagine America as a nation more harmonious than it was yet simultaneously reveling in and embracing its differences—what divided it, what rebelled against "America" as a homogenizing notion.

The second stage was music listening, which began, of course, at the same time as DXing, since most of what stations played was music, but became more possible and popular with the introduction in 1925 of improved loudspeakers. The third stage, which crystallized with the extraordinary success of *Amos 'n' Andy* in 1929 as a network program, was story listening, in which people sat down at the same time each day or each week to
listen to the same characters enact comedic or dramatic performances.

The rapid explosion of exploratory listening would not have occurred without that fraternity called the amateur operators and later known as ham operators. They constituted the very first radio audience in the first decade of the century, and through their technical innovations as well as their social uses of wireless telegraphy, they paved the way for radio broadcasting in the 1920s. But they also extended the nature of such listening. In the 1920s, while most listeners were trying to tune in broadcast stations, the amateurs—who had not only received but also broadcast wherever and whenever they wanted before 1912—were forbidden from transmitting in the broadcast band and were relegated to an etheric reservation then thought of as pretty worthless: waves 200 meters and down, or shortwaves. Shortwaves, it was thought at the time, wouldn’t travel any distance at all; longer waves did that. If the amateurs were going to continue as active agents in the spectrum, they had no choice but to figure out whether they could get anything out of the shortwaves. And figure it out they did, long before Marconi or any corporation.

The amateur fraternity in America began to take shape between 1906 and 1907, after the discovery that certain crystals, like silicon or Carborundum, were excellent detectors of radio waves. More to the point, unlike the prototype vacuum tubes new to the market in 1907, crystals were cheap, durable, and reliable. The events at a receiving station were the same as those at the transmitting end but in reverse sequence. At the transmitting end, inventors had to devise the most efficient method of generating very-high-frequency alternating current from a direct current source. At the receiving end, the problem was “rectifying” these oscillations: translating high-frequency alternating current back to a unidirectional pulsating current that could flow through a telephone receiver. Radio waves are of such a high frequency that the telephone diaphragm alone could not handle their speed or rapid reversal. By 1906 the Fleming “valve” and De Forest “audion”—precursors to the vacuum tube—had been developed, and while they allowed the current to run in one direction only, they were very expensive, highly temperamental, and short-lived. Crystals rectified radio signals in the same way, but no one at the time knew how or why.

The discovery of the crystal detector opened up radio—then still called wireless telegraphy and still quite in its infancy—to legions of boys and men who were, basically, hobbyists. They were primarily white and middle-class, located predominantly in urban areas, especially ports, and they built their own stations in their bedrooms, attics, or garages. They became known for their ingenuity in assembling a motley array of electrical and metal castoffs—from curtain rods and bedposts to Model T ignition coils—into highly effective homemade sets. The one component that was often too complicated for most amateurs to duplicate, and too expensive to buy, was the headphone set. Coincidentally, telephones began vanishing from public booths across America as amateurs lifted them for their own stations. By 1910 the amateurs outnumbered everyone else—private wireless companies and the military—on the air.

Popular culture at this time—from the Boy Scout manual and Tom Swift and His Wireless Message to articles in The New York Times—celebrated amateur radio as an example of “the ambition and really great inventive genius of American boys.” These accounts gained force as real-life dramas made heroes of professional operators. On January 23, 1909, two ships, the Republic and the Florida, collided twenty-six miles southeast of Nantucket in a heavy fog. The Republic’s wireless operator, Jack Binns, sent distress signals for both ships, and because of his work nearly all of the twelve hundred passengers of both ships were saved. The story was front-page news for four straight days. By the time he got back to New York, Binns was a celebrity, sought after by reporters and autograph hounds, and offered one thousand dollars a week for ten weeks to appear on the vaudeville stage. Amateurs who listened in on Binns’s distress calls became heroes by association and brought more converts to the hobby.
At the same time it was becoming clear that not all amateurs were such upstanding Boy Scout types. There were some who deliberately sent false or obscene messages, and their favorite target was the U.S. Navy, the major military user of wireless. The temptation to indulge in such practical joking was enhanced by the fact that detection was virtually impossible. Fights ensued on the air when hams, posing as admirals, sent ships on wild goose chases, and when naval operators couldn't get a message through because local amateurs were comparing the answers to their arithmetic homework and refused to pipe down.6

The navy sought, unsuccessfully at first, to get the amateurs banished from the airwaves. The Titanic disaster, however, moved public and congressional opinion against the amateurs' unrestricted access to transmitting. The loss of so many lives, when there were ships near enough to rescue the survivors had they only had wireless onboard, drove home the need to require wireless equipment and at least two operators on all ships.

But few aspects of the tragedy outraged people more than the ceaseless interference, cruel rumors, and utter misinformation that dominated the airwaves in the aftermath of the disaster. Immediately after the Titanic's wireless operator, Harold Bride, notified stations that the ship had hit an iceberg, wireless stations all along the northeast coast of North America clogged the airwaves with inquiries and messages. Out of this cacophony emerged a message picked up by both sides of the Atlantic and reprinted in the major papers: "All Titanic passengers safe; towing to Halifax." Editors of the London Times and The New York Times were appalled to learn the next day that the message was false, and they blamed the amateurs for manufacturing such a cruel hoax.

The etheric congestion that persisted as the survivors made their way to New York further cemented the amateurs' fate. Passed just four months later, the Radio Act of 1912 required that all amateurs be licensed, and it forbade them from transmitting on the main commercial and military wavelengths. They could listen in, but for transmitting they were banished to an area of the spectrum regarded as useless: the shortwaves of 200 meters and less. The power of their sets was restricted to 1,000 watts.

Despite this, the number of amateurs increased in the 1910s, and they improved their image by providing impromptu communications networks when windstorms or other disasters crippled telephone and telegraph lines. In 1914 Hiram Percy Maxim, the inventor and radio enthusiast, organized the American Radio Relay League to establish a formal relay system or network among amateurs that could step in on a regular basis during natural disasters. Now there was a grassroots, coast-to-coast communications network that made it possible, according to Popular Mechanics, "for the private citizen to
Early broadcasters began to piggyback on the *star system*. Heavyweight boxing champion Jack Dempsey does a studio interview at a local station in 1922. *National Archives of Canada.*

communicate across great distances without the aid of either the government or a corporation.\textsuperscript{7}

During World War I the federal government banned all amateur activity and closed all amateur stations to prevent any interference with government transmissions. But by June of 1920 there were already fifteen times as many amateur stations in America as there were other types of stations combined, and the next year there were 10,809 licensed amateurs (many more, with smaller receiving sets, were unlicensed).\textsuperscript{8} This was the incipient broadcast audience who would form the core of DXers, whose excited talk about listening in would bring converts to the pastime and who helped their friends and neighbors set up their own receiving sets.

As these boys and men clamped on their headphones in the early 1920s, they were working their way through various cultural changes that required everyone to navigate between the powerful tides of tradition and modernity. The 1920s seemed, both then and now, a time of cultural extremes, of opposites. And one thing is clear: most Americans were deeply ambivalent about being poised between these poles. The proliferation of new technologies, the shortening of hemlines and bobbing of hair, the spread of modernism in art, literature, and music, and the census report which claimed that, for the first time in history, half of Americans lived in cities (although a city was preposterously defined as 2,500 people or more), all insisted that modernity had arrived, that Victorian culture had been overthrown. In many of those cities, like New York, Chicago, and San Francisco, the combined population of those born in foreign countries and those born here of foreign parents was sometimes double or triple the population of native-born Americans with native-born parents.

Speed and difference seemed to define the culture that radio entered. Although wireless
telegaphy had been around, and widely praised in the popular press, since the 1890s, people perceived the rapidity with which radio listening redefined everyday life as unprecedented. "Never in the history of electricity has an invention so gripped the popular fancy," claimed the Review of Reviews. "Its rapid growth has no parallel in industrial history," echoed The Nation's Business.9 This perception that Americans were feverishly overthrowing the past—its pace and its substance—was embodied in the radio boom.

Not surprisingly, many Americans wanted to cling to, even restore, life as it had been in the allegedly "Gay Nineties," before cars, movies, the second wave of immigration, women's suffrage, and the Harlem Renaissance. So the 1920s were also characterized by reaction, some of it vicious. Violent race riots in East St. Louis, Chicago, and Washington, D.C., between 1917 and 1919, and the subsequent epidemic of lynchings and the rise of the Ku Klux Klan, revealed pathological racial fissures in the culture. The spread of religious fundamentalism, especially in the South, seemed a direct repudiation of the speakeasies and secularism of the ever-growing big cities. Prohibition was "an ethnic conflict...an attempt to promote Protestant middle-class culture as a means of imposition on a disorderly world." The National Origins Act of 1924 severely restricted immigration, especially from southern and eastern European countries. What the Berkeley historian Lawrence Levine has called "Anglo-conformity"—the nativist insistence that immigrants abandon their past and embrace Anglo-American appearances and behaviors—clashed with a refusal by many to assimilate, become homogenized, disappear.10

So radio, which historians agree played a central role in delivering and forging a national culture in the 1930s and '40s, did not do so the instant the radio boom started. It couldn't. Rather, in this environment people used radio both to celebrate and strengthen local, ethnic, religious, and class-based communities and to participate in national spectacles, like election returns, the Dempsey-Carpentier boxing match in July 1921, or the World Series.

**NOTES**

5. For more detail on the amateurs, see S. Douglas, *Inventing American Broadcasting*, chaps. 6 and 9.