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# INVENTING AMERICAN BROADCASTING

1899-1922

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To my father, Colonel Harry V. Douglas,  
and to the memory of my mother, Barbara

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# THE SOCIAL CONSTRUCTION OF AMERICAN BROADCASTING

1912-1922

ALTHOUGH THE MILITARY and major corporations, in turn, monopolized radio technology between 1912 and 1917, they failed to control, or to take seriously, how many individuals outside these bureaucracies thought about using the apparatus. These individuals, the amateurs, signed in 1912 to their ethereal reservation of 200 meters and less, had not stopped exploring the "folds in the night." Their numbers had increased dramatically after 1912, and their influence on how radio would eventually fit into American society was enormous. Their ideas and their activities provided an important countervailing force to the bureaucratic management of, and mindset about, radio.

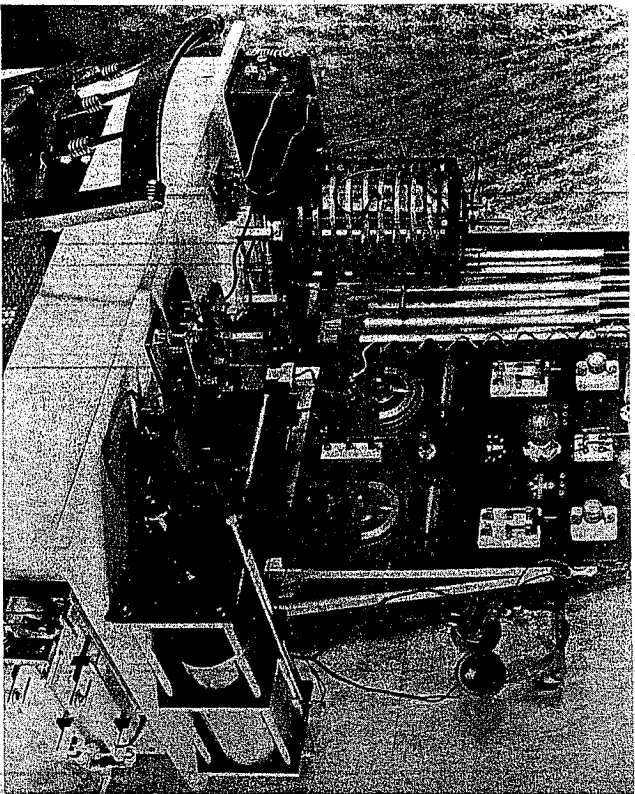
Despite the 1912 Radio Act—and partially because of it—amateur radio gained many new enthusiasts during the teens. Amateurs soon learned that there was considerable latitude in how the law was enforced. First, the appropriations for implementing the law were extremely modest: \$37,880 in 1913 to inspect all commercial ship and shore stations and to test and license all commercial and interested amateur operators in the United States.<sup>1</sup> Many amateurs simply ignored the law and continued their wireless activities, although those near naval stations exercised more discretion than they had in the past. Even those who were licensed realized that 200 meters was not an ironclad wavelength assignment and that they could move up to 375 or 400 meters without getting into trouble.<sup>2</sup> In addition, the Department of Commerce published a call book that contained the names of all the amateurs who had successfully passed the government tests and secured transmitting licenses. According to one amateur, "the astounding number listed in this book was a revelation"; the call book also documented that the amateur

hobby was national in scope.<sup>3</sup> The government, by publishing and circulating the call book, inadvertently encouraged amateurs to try to achieve greater distances so they could communicate with their compatriots across the country. As the amateurs' experimentation intensified and their enthusiasm grew, they recruited even more boys and young men to explore the ether.

The number of licensed amateurs and amateur stations increased sharply in the three years following enactment of the Radio Act: from 322 licensed amateurs in 1913 to 10,279 in 1916. Between 1915 and 1916 alone the department licensed 8,489 amateur stations. During the same period, only 5,202 commercial operators and fewer than 200 shore stations were licensed.<sup>4</sup> In 1917, the number of licensed amateur operators totaled 13,581.<sup>5</sup> Estimates placed the number of unlicensed receiving stations at 150,000.<sup>6</sup> Thus, even after federal legislation, the amateurs continued to dominate the airwaves. They were most numerous in the Midwest, in Great Lakes cities such as Cleveland and Chicago, and in seaports such as Baltimore, Boston, New York, San Francisco, and Seattle, each of which had hundreds of licensed amateurs and thousands more who were unlicensed.<sup>7</sup>

More amateurs began to use their apparatus to broadcast voice and music. One famous early broadcaster was "Doc" Herrold, who broadcast music and advertising as early as 1914. He used an arc transmitter and powered his San Jose station by illegally hooking into the streetcar lines of the Santa Fe Railway.<sup>8</sup> High school and college radio clubs, whose transmissions usually covered a radius of twenty-five to fifty miles, also began broadcasting more regularly. Amateurs recalled that between 1913 and 1915, voice and music broadcasting increased markedly.<sup>9</sup>

Radio broadcasting was enthusiastically promoted by its earliest pioneer, Lee De Forest. When De Forest negotiated with AT&T over the auction rights, he agreed to stay out of the radio-telephony business as AT&T conceived of it: point-to-point voice transmission from a specific sender to a specific receiver. He insisted, though, on being allowed to continue using his apparatus for the distribution of news and music, and on being allowed to manufacture and sell apparatus capable of receiving these broadcasts. To AT&T, such broadcasting was frivolous, a hobby, and certainly not a pastime that related in any way to its corporate goals, but to De Forest, broadcasting was a very serious business indeed. Since at least 1907, when he began performing experiments with his radiophone, De Forest had dreamed of bringing music, especially opera, into the homes of those unable to attend in person. De Forest did not abandon



An amateur station assembled at home: spark gap and sending key to the left, crystal detectors and tuning coil at right.

this dream, and once his trial was over and his company revived, he resumed his broadcasting experiments. His pioneering work on voice and music transmissions had made him a great hero "to amateurs who were eager to hear him on the air again."<sup>10</sup> It is impossible to ascertain whether De Forest expected, as early as 1914, that broadcasting would turn into such a huge business. What he did know was that there was a still-growing market for radio apparatus and a desire to use that apparatus to pick up faraway stations and unusual transmissions. De Forest, who had always hungered for attention and recognition, was a born ham, in both senses of the term. In 1915, he erected a 125-foot tower on the roof of his Highbridge factory and inaugurated regularly scheduled half-hour "nightly concerts" of phonograph music.<sup>11</sup> In October 1916, he transmitted music to the Hotel Astor.<sup>12</sup> That same fall, he broadcast the Yale-Harvard football game, and on election night, he provided six-hour coverage of the neck-and-neck presidential race, signing off at 11:00 P.M. with the announcement that Charles Evans Hughes had been elected president.<sup>13</sup> On New Year's Eve, he broadcast music to the Morristown, New Jersey, home of Theodore E. Gaty, vice-president of the Fidelity and

Casualty Insurance Company of New York. Billed as "the first wireless dance," the broadcast included a variety of musical selections, each introduced by the radio operator at Highbridge. Megaphones amplified the music in Gaty's home.<sup>14</sup> De Forest also took advantage of his broadcasts to promote his own apparatus, and later claimed he was the first to advertise over the airwaves.<sup>15</sup> De Forest well anticipated how radio would be used: to broadcast music and entertainment, sports events, news, and advertising into people's homes.

De Forest, whom historians don't usually characterize as a shrewd businessman, capitalized quite well on the transition from individual to institutional control over radio technology. He had, by 1914, developed a strong sense of who his audience was and what they wanted. He did not try to compete with the powerful communications corporations; rather, he catered to the market they dismissed. He took the amateur operators seriously, both as an audience and as a market; he did not ignore their importance. And during the war years, this audience continued to grow.

The number of radio clubs, and their members, increased as well. The Radio Club of America, headquartered in New York, installed a station in the Hotel Ansonia in 1915. The American Marconi Company, which in the first decade of the century began publishing a publicity magazine, changed the magazine's name in 1913 from the *Marconigram* to the *Wireless Age*. Two years later the magazine announced the formation of a club sponsored by the magazine, the National Amateur Wireless Association. The same year, Hugo Gernsback announced the organization of the Radio League of America.<sup>16</sup> These clubs came to boast thousands of members, but the clubs' political and organizational activities remained modest.

Hiram Percy Maxim, who had organized the Hartford Radio Club and then, in 1914, the American Radio Relay League, thought radio clubs should be more politically active and publicly visible. He sought to have the league expedite the exchange of information among amateurs and to develop the league into an efficient, well-coordinated organization. Maxim, a graduate of MIT and a practicing engineer for decades, had considerable business experience before starting the Maxim Company of Hartford in 1908. He hoped to apply the methods big businesses used in coordinating their national operations to the management of a national system of amateur radio. The organizational ethic and the desire for legitimacy was directing the efforts of the leaders of amateur radio, too. Maxim and other league members dreamed of a coast-to-coast relay through which amateurs would demonstrate their seriousness of purpose and their technical expertise. Maxim persuaded the Department of

Commerce to grant special licenses for transmission at 425 meters to stations at strategic points along the relay chain. He divided the league into districts and established wireless trunk lines between major relay points. The league published its own call book annually, which contained the names, addresses, call numbers, power, range, receiving speed, and operating hours of stations across the country. Accompanying this book was a map showing the location of these stations. In December 1915, the league published the first issue of its magazine *QST*, whose purpose was "to maintain the organization of the American Radio Relay League and to keep the amateur wireless operators of the country in constant touch with each other."<sup>17</sup> Maxim organized drills to increase the efficiency of the trunk lines and to eliminate operators who were too slow or whose apparatus was inadequate.

To demonstrate that the amateurs constituted a viable alternative communications network, Maxim planned the first countrywide message relay, which took place on Washington's birthday in 1916. At 11:00 P.M., a message from Colonel Nicholson of the Rock Island, Illinois, Arsenal was broadcast from station 9XE in Davenport, Iowa. The message read "A democracy requires that a people who govern and educate themselves should be so armed and disciplined that they can protect themselves." Amateurs relayed the message from station to station throughout the country; it reached New York at 1:30 A.M. The ARRL had arranged for the message to be delivered to the governor of each state and the mayors of major cities. In addition, the message was "read by Boy Scouts at Mount Vernon and on the battlefield of Bunker Hill."<sup>18</sup> The success of the relay, and the favorable publicity it received, added to the growing prestige of amateur wireless. Maxim had been shrewd in staging the relay so that the ARRL appeared willing and quite ready to cooperate with the government if and when that might be necessary. On his next trip to Washington, Maxim succeeded in getting the special license allocation upped from 425 to 475 meters. He now dreamed of a transcontinental relay with only two intermediate links.

One year later, the ARRL announced the success of its second national relay. The announcement came on March 8, 1917, seven days after news of the Zimmerman Telegram dominated the front pages. The press reported that hundreds of thousands of Germans were already in Mexico preparing to invade, and concern over American preparedness turned into panic in many quarters. Maxim framed the amateurs' success accordingly. Members of the league had relayed a message from New York to Los Angeles, and a reply back to New York, in less than two hours. Maxim said the ARRL was now prepared to provide "transcontinental

service through amateur plants, which, in case of war, would enable communication to be maintained, even if telegraph and telephone wires were cut." The *New York Times* reported the league "Ready for War Service."<sup>19</sup> Maxim clearly sought to discipline America's amateurs and to establish distinctions between those who were skilled operators with efficient apparatus and those who were hacks. He wanted to make the amateurs, both in reality and in image, more docile and cooperative, more in harmony with the prevailing social order.

Press coverage of the amateurs since the 1912 Radio Act emphasized their new utility to the government, especially in the event of war. Gone were articles titled "Curbing the Wireless Meddler." They were replaced by articles such as "The Good of Amateur Wireless" and "Wireless Amateurs to the Rescue." The romantic glow of amateur work continued to shine in "The Romance of Wireless" and "A New Style of Adventures." The *American Magazine* ran a competition in which readers were to submit essays on "My Hobby and Why I Enjoy It." Third prize in the July 1916 issue went to a twenty-two-year-old amateur who wrote, "Our hobby is wireless and we talk, read and think wireless continually." He asserted: "One who has never operated can nowhere begin to feel the thrill of satisfaction that we operators enjoy when working over great distances of space."<sup>20</sup> During 1916 and early 1917, stories celebrating the romance of amateur radio were eclipsed by stories that cast the amateur network as a potential military resource. Typical was an article in the *Woman's Home Companion* titled "Almost a Soldier . . . Is the Boy Who Understands Wireless Nowadays." The piece offered a brief description of how a boy could learn the hobby and announced the formation of a new organization, the Junior American Guard, sponsored by the Radio Signal Service of the U.S. Army. The boys and young men in this organization constituted "a third arm in the defense of the country, should occasion ever arise."<sup>21</sup> Yet, for the most part, the press failed to take note of or see the significance in the explosive growth of amateur radio during the teens.

When the United States declared war on Germany in April of 1917, all amateurs were ordered to close down and dismantle their stations. To accelerate the process, local police searched for and seized independent stations; by April 10, according to the *New York Times*, New York police had closed down more than eight hundred stations. German-Americans who had their own wireless stations were subject to charges of espionage. Some were called in for questioning; others had their stations destroyed and their homes ransacked by police or special agents.<sup>22</sup> The amateurs, who had just one month earlier relayed a message across the

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United States and back, were completely shut down. Press reports indicate that many amateurs were disgruntled by the order and in many areas of the country failed to see the need for the measure. An *Electrical Experimenter* article, republished in the *Literary Digest*, advised the amateurs: "The government is with us, not against us."

This was quite true. With the declaration of war, the military's need for skilled operators skyrocketed, and they were "scarcer than hen's teeth."<sup>23</sup> Training people would take months. Uncle Sam, it turned out, needed the amateurs, and launched a campaign through radio clubs and the press to persuade qualified amateurs to enlist as soon as possible. Telegrams went out to the ARRL, to Hugo Gernsback, to editors of technical journals, urging the amateurs to join up. Articles in magazines as diverse as *St. Nicholas*, *Scientific American*, and *Women's Home Companion* advised young men to turn their hobby to national service. "It's up to you if you prefer the trench to the radio tent behind the lines," offered one writer. "You can be heroic and manly in either."<sup>24</sup>

Thousands of amateurs responded to the call. The government set up radio schools for men and women at local YMCAs and at colleges and universities. The women were trained to serve as teachers of new recruits. But many of the amateurs needed only minimal training; they were already more than adequately skilled for military service and quickly passed the government's radio exam. In early January 1917, there were 979 navy radiomen; by November of 1918, that number had jumped to approximately 6,700, a large proportion of them from the ranks of the amateurs. The amateurs were no longer a source of competition and interference in the airwaves. Instead, the subculture of American men and boys who had previously fought with the navy over who owned the ether now supplied the armed services with thousands of willing, cooperative recruits. They were no longer outside the system, they were part of it.

When the war ended, however, the amateurs were eager to get back to their hobby. They had expected that the wartime restrictions on amateur radio would be lifted after the armistice in November 1918. But Secretary Daniels, who was stalling while he tried to reshape postwar wireless, maintained that the restrictions would not be lifted until the final peace treaty was signed. On April 12, 1919, the Navy Department lifted the ban on amateur receiving; the ban on transmitting remained until September 26. During the wait, the American Radio Relay League reorganized, reestablished its mailing list, resumed publication of *QST*, and reconstructed itself as a national organization. After the transmitting restrictions were lifted, the amateurs, whose licenses had expired during

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the war, had to reapply for new ones. This requirement produced additional delays, but by late fall of 1919, shortly after RCA was incorporated, the amateurs began to return to the air. On December 4, 1919, the ARRL coordinated another transcontinental relay. The number of licensed amateur stations continued to climb; by June of 1920, there were already fifteen times as many amateur stations in America as there were other types of stations combined. The number continued to grow: the Department of Commerce counted 6,103 licensed amateurs in 1920; one year later, the figure was 10,809.<sup>25</sup>

Because many of these amateurs had served as radio operators during the war, they were familiar with the advances in circuitry, tube technology, and aials. Many were eager to switch from spark technology to continuous wave, and they especially wanted to adopt the new transmitting tubes. Yet in 1920 these tubes were not on the market; they had to be obtained in other ways. Those who found work after the war with one of the electrical concerns involved with radio were able to get transmitting tubes for their own uses. Amateurs who obtained such tubes began to broadcast not dots and dashes, but speech and music to their fellow operators. The most famous of these amateurs was Frank Conrad.

Conrad, like many of his fellow enthusiasts, had been an amateur operator before the war. He also worked for Westinghouse and was a self-taught and gifted engineer. During the war, Conrad supervised Westinghouse's manufacture of portable transmitters and receivers for the Signal Corps. After the war, Conrad resumed his amateur work and, using transmitting tubes (to which he had access), began talking to other amateurs and playing phonograph music over the air from his station, 8XK. Soon he was receiving letters from other amateurs praising his broadcasts and making requests for particular songs. He scheduled his concerts on a regular basis: at first, every Saturday evening, and soon after, weeknight performances, as well. By May 1920, the Pittsburgh newspaper reported on the concerts, which included live performances, such as piano or saxophone solos, and phonograph music.<sup>26</sup> The amateurs, whose numbers continued to swell, were no longer receiving the dots and dashes that only a practiced initiate could decipher; now they were picking up speech and music. As a result, the amateurs could introduce their parents, friends, and siblings to the excitement of tapping the ether. The audience for broadcasting grew even larger.

Seeing an opportunity to increase its sale of amateur apparatus, the Joseph Horne department store in September 1920 ran an ad in the *Pittsburgh Sun* describing the Conrad wireless concerts and informing



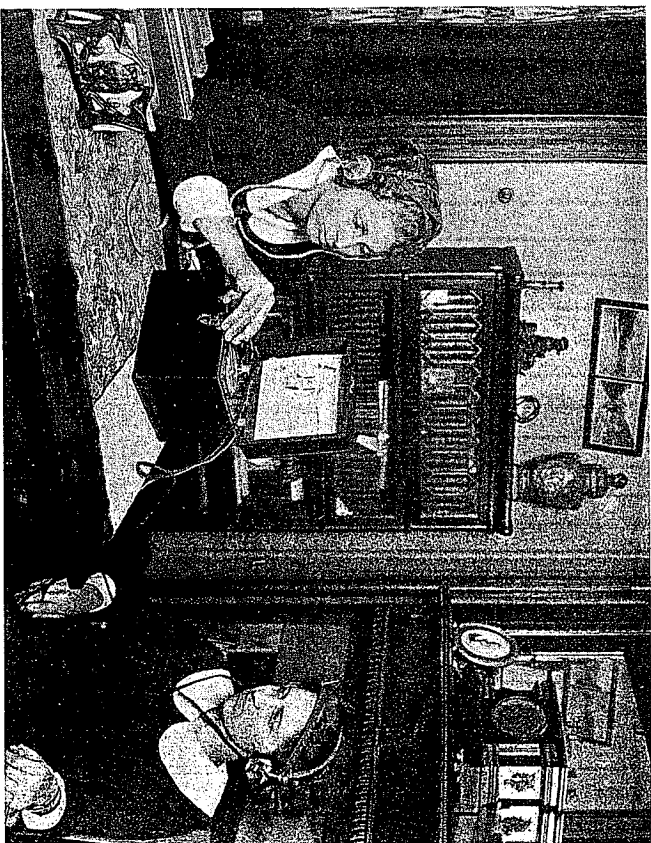
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the public that sets capable of picking up these concerts were on sale at Horne's for ten dollars. When Harry P. Davis, a Westinghouse vice-president, saw the ad, he suddenly grasped that the company's conception of the wireless market had been much too limited in scope. He realized that "the efforts that were then being made to develop radio and telephony as a confidential means of communication were wrong, and that instead its field was really one of wide publicity, in fact, the only means of instantaneous communication ever devised." He now comprehended that the amateurs did not represent a discrete market limited to technically inclined boys and men; rather, the amateurs were simply the forerunners of a much larger market for radio receivers. As Davis later remarked, "Here was an idea of limitless opportunity."<sup>27</sup>

Davis urged that Westinghouse authorize Conrad to build a more powerful transmitting station at the Westinghouse plant and that Conrad broadcast on an even more regular basis. These broadcasts, according to Davis's plan, would stimulate sales of radio receivers, and the profits from the sales would defray the cost of the station. Davis wanted the station completed by November 2, so Conrad could broadcast the presidential election returns. At 8:00 P.M. on November 2, 1920, the newly licensed station KDKA, operating at 360 meters, broadcast the election results. Amateurs listened enthusiastically, sometimes rigging up loudspeakers so friends and family members could listen, as well. To ensure that the broadcast had the right effect, both within and outside of the company, Davis provided Westinghouse officers with receiving sets, and also helped arrange for local department stores to have their radios tuned to Conrad's station. Newspapers in Pittsburgh and elsewhere took note of the event, but most newspapers and magazines ignored the broadcast. News of it was spread most rapidly and enthusiastically by word of mouth among amateurs and their families and friends. Over the next year and a half, the "broadcasting boom" swept the United States, beginning in the Northeast and moving south and west, reaching unprecedented levels of intensity by the spring of 1922.

Amateur operators and commercial establishments—primarily department stores, newspapers, and Westinghouse, G.E., and then AT&T—set up broadcasting stations. RCA had begun selling transmitting tubes in the spring of 1921, enabling amateurs to transmit speech and music. Although the Radio Act of 1912 had restricted amateur transmission to 200 meters or lower, during the teens Hiram Percy Maxim had succeeded in obtaining authorization for some stations to broadcast in the 350- to 400-meter range. Other amateur stations had also moved above 200 meters to longer wavelengths. With the advent of commercial broadcast-

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Westinghouse photograph promoting the radio hobby to girls.

ing, however, the Department of Commerce warned the amateurs that they must retreat to and remain at 200 meters. The corporate stations were assigned the 360-meter slot. An amateur station had to be re-licensed as a commercial station to use 360 meters, and various of the more powerful and sophisticated amateur stations made the shift, particularly those which were supported by newspapers or department stores. Other amateurs were recruited by colleges or universities to help start educational stations.

The amateurs revealed that many middle-class Americans were hungering for a sense of what people in different cities or states were like, what they thought and how they lived. The amount of listening in to far-off messages that took place, and the delight the amateurs took in this eavesdropping, suggests that these Americans had a feeling that there was more information available to them than they routinely received. They wanted this information in a less distilled, more immediate form: the popularity of motion pictures confirmed this. Amid the growing hubbub of public amusements, of cabarets, chautauquas, movies, and vaudeville, however, it must have been soothing to sit quietly at home

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Publicity photograph of amateurs listening to a ballgame, ca. 1922.

and yet be transported to distant places and be privy to all sorts of messages, personal and official. It is true that during the early twentieth century, many men and women of the middle and working classes pursued the various new amusements in the public sphere on an unprecedented scale. But at the same time, there was in many the reticence, the love of comfort and quiet, the distaste for crowds, and the resentment at having to compete with others over space, time, and status during leisure hours which produced a cultivated, well-nurtured domestic inertia. These people wanted new experiences, information, and entertainment, too, but they were not always willing to go out for this stimulation. The amateurs were the first subculture of Americans, during the explosive rise in public entertainment, to spend much of their leisure time at home, using a new communications technology to entertain themselves and others.

The amateurs and their converts had constructed the beginnings of a broadcasting network and audience. They had embedded radio in a set of practices and meanings vastly different from those dominating the offices at RCA. Consequently, the radio trust had to reorient its manufacturing

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priorities, its corporate strategies, indeed, its entire way of thinking about the technology under its control. The amateurs had also taken the press quite by surprise. Newspapers and magazines, which had paid scant attention to the formation of RCA or to the burgeoning amateur population, were confronted with a new communications system of major significance. As they sought to grasp its meaning, they also worked to resolve, through symbolism and romantic language, the desires of corporate monopolies, and of "the people," to get what they wanted from the ether.

IN THE WINTER and spring of 1922, magazines and newspapers rediscovered radio. To the press, the fad seemed to come from nowhere. "Little more than a year ago," observed a writer in *Current Opinion*, "the public regarded radiotelephony as a great mystery."<sup>28</sup> Now, millions were "listening in." Official announcement of the boom came from Herbert Hoover, then secretary of commerce, who described the "wireless fever" as "one of the most astounding things that [has] come under my observation of American life."<sup>29</sup> This proclamation from an official of Hoover's stature alerted the press that it had better take note of a pastime quickly assuming major cultural and economic significance. "The rapidity with which the thing has spread has possibly not been equalled in all the centuries of human progress," noted the *Review of Reviews*. "Never in the history of electricity has an invention so gripped the popular fancy."<sup>30</sup> Radio emerged "with almost stunning suddenness," becoming "within a few weeks . . . a force in public opinion and public taste fitly comparable to the press."<sup>31</sup> In March of 1922, the *New York Times* observed, "In twelve months radio phoning has become the most popular amusement in America. If every boy does not possess a receiving outfit, it is because he lacks either imagination or money. . . . In every neighborhood people are stringing wires to catch the ether wave currents."<sup>32</sup> The public demand for receiving apparatus seemed insatiable, and RCA, Westinghouse, and many smaller firms went into overdrive to supply customers. The first issue of *Radio Broadcast*, in May 1922, described people standing "in the fourth or fifth row at the radio counter waiting their turn only to be told when they finally reached the counter that they might place an order and it would be filled when possible."<sup>33</sup> In 1922, sales of radio sets and parts totaled \$60 million; in 1923, \$136 million; by 1924, \$358 million.<sup>34</sup>

Now the press, responding to the "tidal wave of interest in the subject," overflowed with interpretive articles on the social destiny of



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radio. Magazines such as *Collier's* and *Literary Digest* inaugurated radio sections in 1922, and new magazines such as *Radio Broadcast* were devoted entirely to the new craze. How would radio change America? What did the spread of broadcasting mean for Americans? These were the questions the popular magazines addressed.

The radio boom seemed all the more sudden because radio had been badly neglected by newspapers and magazines between 1915 and 1922. The press, through the content and tone of its articles, constantly emphasized the newness of the phenomenon. Little attention was paid to broadcasting's twenty-year gestation period. In this way, in its coverage of radio, the press helped to reinforce the media's tendency to ignore and thus deny their own history. This ahistorical stance made radio seem an autonomous force, so grand, complex, and potentially unwieldy that only large corporations with their vast resources and experience in efficiency and management could possibly tame it.

The sense of awe that had permeated the early articles on wireless telegraphy also colored the early articles on radio. To many writers, it was as if a fantastic dimension that people had suspected and hoped existed had finally been penetrated. People responded as if radio put them in touch with primordial forces. In "Broadcasting to Millions," A. Leonard Smith described hearing the sounds of static through his headphones: "You are fascinated, though a trifle awestruck, to realize that you are listening to sounds that, surely, were never intended to be heard by a human being. The delicate mechanism of the radio has caught and brought to the ears of us earth dwellers the noises that roar in the space between the worlds."<sup>35</sup> Joseph K. Hart wrote in the *Survey*: "We are playing on the shores of the infinite." He found this probing of the cosmos thrilling; he also sensed that the hubris that had made such exploration possible had a potentially dangerous underside: "The most occult goings-on are about us. Man has his fingers on the triggers of the universe. He doesn't understand all he is doing. He can turn strange energies loose. He may turn loose more than he figured on; more than he can control."<sup>36</sup> Grappling with the concept that something seemingly dark, quiet, and empty actually contained invisible life, another writer observed, "You look at the cold stars overhead, at the infinite void around you. It is almost incredible that all this emptiness is vibrant with human thought and emotion."<sup>37</sup> The air had been cracked open, revealing a realm in which the human voice and the sounds of the cosmos commingled.

Could this great void be filled not just with our voices, but with the voices of others, farther out in the cosmos? What were the sounds we called static, anyway? And could those in other spheres be listening in on

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us? Such questions were irresistible, especially when provoked by legitimate scientific observation. In the spring of 1919, Marconi announced that several of his wireless stations were picking up very strong signals "seeming to come from beyond the earth."<sup>38</sup> Nikola Tesla, another prominent inventor, believed these signals were coming from Mars. Marconi, too, considered Mars a not unlikely possibility. While *Scientific American* urged skepticism, *Current Opinion* quoted Tesla extensively in support of the Mars hypothesis. *Illustrated World*, a magazine that popularized recent technical developments, ardently embraced the prospect of interplanetary communication. In its article "Can We Radio a Message to Mars?" the magazine urged Americans to try to respond to the signals from beyond. This would no doubt require scientists to mobilize "all the electrical energy of the nation" to transmit signals of sufficient power. But the effort had to be made, for only then would the Martians know that "their signals were being responded to, and that intelligent beings actually inhabit the earth." The article enthused: "We can imagine what excitement this would cause on Mars." The most important reason for trying to contact Mars was to learn what the magazine assumed the Martians must know about improving, even perfecting, the quality of earthlings' lives. "It is not unreasonable to believe," predicted *Illustrated World*, "that the whole trend of our thoughts and civilization might change for the better."<sup>39</sup> These Martians could not only view our civilization with considerable detachment, they could also, presumably, give us all the secret answers, at last.

*Illustrated World* was a publication in which the distinctions between science and science fiction were minimized; its articles were written with an unsophisticated or credulous audience in mind. Its predictions about signaling to Mars would not have been taken seriously by some sectors of American society. Yet the underlying longings this article exposed are revealing, and they could hardly have been confined to readers of science fiction. In fact, the article contained themes that would be embellished in less fantastic, more earthbound articles about radio's potential. There was a hunger for contact over great distances and with beings who presumably knew more, and were wiser, than most contemporary Americans. Such contact would temper our deep and long held fears about being alone in the universe. Such contact would bring wisdom; it would be reassuring; it would be religious. Thus did the rhetoric surrounding radio draw from the past while it looked to the future.

The aspect of radio most universally praised in the press was its ability to promote cultural unity in the United States. "The day of univer-

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sal culture has dawned," proclaimed *The Survey*.<sup>40</sup> The author of an article titled "The Social Destiny of Radio" maintained that prior to broadcasting, a sense of nationhood, a conception that Americans were all part of one country, was only an abstract idea, often without much force. The millions of towns and houses across America were unrelated and disconnected. But now that atomized state of affairs was changing: "If these little towns and villages, so remote from one another, so nationally related and yet physically so unrelated, could be made to acquire a sense of intimacy, if they could be brought into direct contact with one another! This is exactly what radio is bringing about. . . . How fine is the texture of the web that radio is even now spinning! It is achieving the task of making us feel together, think together, live together."<sup>41</sup>

Stanley Frost, in his *Collier's* article "Radio Dreams: That Can Come True," saw radio "spreading mutual understanding to all sections of the country, unifying our thoughts, ideals, and purposes, making us a strong and well-knit people."<sup>42</sup> Those isolated from the mainstream of American culture would now be brought into the fold. Farmers, the poor, the housebound, and the uneducated were repeatedly mentioned as the main beneficiaries of the culture surrounding people "in the flexible, tenuous ether."<sup>43</sup> Frost reprinted in his article two letters of thanks written to Newark station WJZ by culturally dispossessed listeners. To set the stage for the first letter, Frost wrote, "There is a dingy house in a dreary street in a little factory town, where the miracle is working. A worried mother freis through the day to achieve a passable cleanliness for her flock, without power to give them the 'better start' and wider happiness she had dreamed. [A] little flurry of prosperity" allowed her to get a radio. The letter followed: "My husban and I thanks yous all fore the gratts programas we received every night and day from WJZ. . . . The Broklin teachers was grand the lecturs was so intrising. . . [the] announser must be One grand man the way he tell the stores to the children." Frost stated: "There are others, hundreds of letters a day of appreciation and delight from illiterate or broken people who are for the first time in touch with the world about them."<sup>44</sup>

A writer predicted in *Century Magazine* that radio would "do much to create a sense of national solidarity in all parts of the country, and particularly in remote settlements and on the farm."<sup>45</sup> The farmer's loneliness would be abolished, radio making him a real "member of the community." The writer continued, "If I am right, the 'backwoods,' and all that the word connotes, will undoubtedly dwindle if it does not entirely disappear as an element in our civilization."<sup>46</sup> Repeatedly, the achievement of cultural unity and homogeneity was held up, implicitly

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and explicitly, as a goal of the highest importance. One writer went so far as to complain, "At present, broadcasting stations are far too eclectic." The ultimate ethnocentric extension of the impulse toward cultural unity was the prediction that English would become the universal language. Argued one writer, "It so happens that the United States and Great Britain have taken the lead in broadcasting. If that lead is maintained it follows that English must become the dominant tongue."<sup>47</sup>

Yet, this desire for unity, for sameness, was not without its opposite, the pleasure taken in discovering cultural diversity. In the first years of the broadcasting boom, listeners delighted in picking up as many stations as possible. Dedicated enthusiasts posted a special map of the United States on a wall near the radio. Red dots on the map designated the location of operating broadcast stations across the country; the call letters of each station were also listed. Listeners would spend the evening tuning their radios in the hopes of hearing stations thousands of miles away. One self-described radio maniac referred to the actual radio programs as "the tedium between call letters." He maintained, "It is not the *substance* of communication without wires, but the *fact* of it that enthralls. . . . To me no sounds are sweeter than 'this is station soandso.'"<sup>48</sup> He described his delight in hearing "the soft Southern voice of Atlanta," while another enthusiast relished picking up the Spanish emanating from the station in Havana. Many of these stations adopted slogans that highlighted their special regionalism. Atlanta was "The Voice of the South," Minneapolis "The Call of the North," Davenport "Where the West Begins."<sup>49</sup> Radio allowed people to skip across the country, to go to never-seen and exotic places, all by turning a dial. Like the movies, radio blended the urge for adventure with the love of sanctuary in an ideal suspension. The difference with radio, at least in these early years, was the greater sense of control the listener enjoyed.

This feeling of mastery, coupled with the sense of adventure, kept radio enthusiasts at their sets night after night. Picking up far-away stations was frequently likened to other sports, especially fishing. "There are times when it is as difficult to land a given station—making the same demands upon patience, ingenuity, and even skill—as to bring to boat that elusive creature, the sailfish."<sup>50</sup> Another writer used the same metaphor: "This fishing in the far away with the radio hook and line is rare sport. The line is long, the fishing is getting better all the time, and it usually does not take many minutes to find out what you have on the hook."<sup>51</sup> As such a metaphor suggests, this active type of listening, which involved some technical expertise in adjusting the apparatus and bringing it to its maximum efficiency, was confined almost entirely to men and

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boys. Those who wrote about their ethereal adventures celebrated the many challenges radio posed: "Your wits, learning and resourcefulness are matched against the endless perversity of the elements."<sup>52</sup> Within the safety of one's home, and out of public view, one's masculinity could be tested and reaffirmed.

Even after the desired station was reeled in, the essentially passive act of listening to radio programming was imbued in magazine articles with a sense of empowerment. Listeners had a choice: they could turn the dial until they got exactly what they wanted to listen to; if they didn't like what they heard, they could shut the radio off. More people, whatever their circumstances, had access to cultural events than ever before. "We have all free tickets to the greatest radio show on earth," noted one writer. As Stanley Frost put it, "With radio we, the listeners, will have an advantage we have never had before. We do not even have to get up and leave the place. All we have to do is press a button, and the speaker is silenced." Therefore, predicted Frost, "We will get what we want."<sup>53</sup> This sense of control over cultural content, combined with increased access to cultural events, cultivated a sense of cushioned privilege. One "music loving gentleman" decided to turn in his ticket to hear the Philharmonic Orchestra and to listen to the performance on radio instead. "I can only afford a top gallery ticket," the man explained, "but the radio microphone always gets a good seat down-stairs. I enjoy the music just as well here by my fireside and I save a lot of climbing."<sup>54</sup>

Another writer hinted at how monetary and class differences had, in the past, determined who got the good seats at a concert. Those with the cheapest seats usually could not hear the music very well. With radio, though, everyone hears the music "as plainly as if he had the best seat in the auditorium."<sup>55</sup> Everyone who previously could not attend such concerts now could. Thus was radio seen as democratizing some of the advantages previously enjoyed by the well-to-do, and bringing all the benefits of high culture to the masses. At the same time, radio helped insulate its listeners from heterogeneous crowds of unknown, different, and potentially unrestrained individuals. One writer absolutely reveled in the marriage between entertainment and solitude: "This vast company of listeners . . . do not sit packed closely, row on row, in stuffy discomfort endured for the delight of the music. The good wife and I sat there quietly and comfortably alone in the little back room of our own home that Sunday night and drank in the harmony coming three hundred miles to us through the air." He imagined other listeners in their back rooms, garages, dining rooms, attics, or cabins, "each and all sitting and hearing with the same comfort just where they happen to be."<sup>56</sup> The

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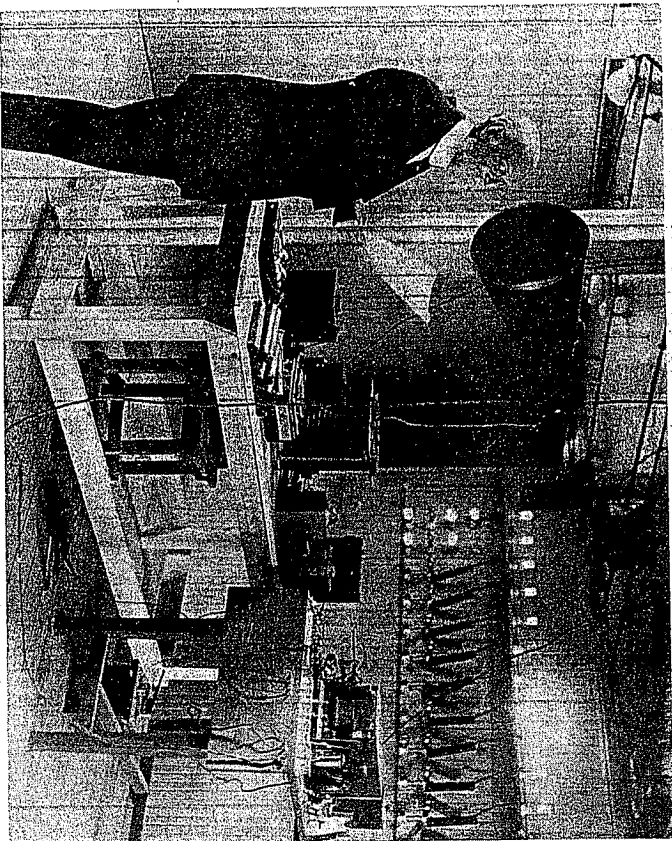
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listeners sat suspended, in delicious tension, between their hunger for contact with the outside world and their craving for the comforts of home. With radio, both appetites were satisfied at once.

Although radio had indeed become embedded within the larger network of commercial entertainment in America, for those who wrote about radio and its role in American life, radio represented an antidote to what critics considered the more debasing effects of mass culture. Reformers who fancied themselves the true custodians of American culture believed that leisure activities should be educational and morally uplifting, and should not overly stimulate the senses. These reformers were witness to the rise of public amusements and commercialized leisure activities that often deliberately flouted such genteel precepts. Dime novels relied on hackneyed writing and action-packed stories, and at times they even glorified their criminal protagonists. Comic strips told their stories with pictures. The dark, crowded nickelodeons in working-class neighborhoods seemed to reformers to be dens of iniquity. Amusement parks were specifically designed to overstimulate the senses. Leisure had not taken the course many reformers had hoped. Radio seemed to hold out a remedy, or at least an alluring alternative, to all this. Like the first press coverage of wireless in 1899, the new hopes invested in radio were shaped by a faith in technological determinism, a belief that certain machines could make history. The educated bourgeoisie who believed their conception of culture to be at risk became newly optimistic with the advent of broadcasting. Here, at last, was a mass medium that could instill the right values in people.

The educational possibilities seemed unlimited. *Collier's* "radio maniac" claimed that radio provided "an education both precise and varied." Through the radio hobby, his son had become more technically informed and manually dexterous while mastering American geography. In listening to the programs, he had learned about politics, music, agriculture, and sports.<sup>57</sup> Magazines also offered grander visions. Radio could "give everyone the chance and the impulse to learn to use his brains." In doing so, radio would "tend strongly to level the class distinctions, which depend so largely on the difference in opportunity for information and culture."<sup>58</sup> "Who can help conjuring up a vision of a super radio university educating the world?" asked one writer. With radio, minds could "be detonated like explosives."<sup>59</sup> In his essay "Radiating Culture," Joseph Hart envisioned previously bored students now being instructed "by a single, inspiring teacher who speaks to the thousands of revived students through a central radio-phone. A whole nation of students might thus come under the stimulating touch of some great teacher."<sup>60</sup>



The first lecture being delivered by radio from Tufts University, 1922.

Colleges and universities set up radio extension schools, and anyone could listen in. As one writer stated, every home had "the potentiality of becoming an extension of . . . Harvard University."<sup>61</sup>

Anxieties about musical tastes surfaced in these articles, although there was optimism that as radio matured, the quality of music played would improve. Several writers made explicit distinctions between "good music" and jazz, which was more popular and more frequently played. One complained, "Most of the musical talent that is now attracted by the broadcasting stations is of mediocre nature." He also contended, however, that there were "thousands upon thousands of people whose musical tastes [ran] high above the average received from the air." To prove that people preferred a "higher class of talent," he cited the popularity of AT&T's WEAf, which could afford to recruit such talent because it accepted advertising.<sup>62</sup> Thus might radio, by bringing opera and other "good music" to the millions, upgrade American musical standards.

Another area of American life radio might improve was politics. "We may even become more thoughtful about the selection of our pres-

dents," noted one observer sarcastically, "if we have to run the risk of hearing them speaking directly to us, however far from them we may try to keep ourselves."<sup>63</sup> Another commentator believed radio would make politicians more sensible and accountable to their constituencies: "Let a legislator now commit himself to some policy that is obviously senseless, and the editorial writers must first proclaim his imbecility to the community. But let the radiophone in the legislative halls of the future flash his absurdities into space and a whole state hears them at once." Citizens would be better able to judge a president who was "a real personality" instead of "a political abstraction."<sup>64</sup>

Bruce Bliven, writing for *Century Magazine*, gave voice to a progressive hope for radio's salubrious effects on politics. Crowds listening to a politician's speech in a large public setting were subject to "the mob spirit, with its factitious enthusiasm." The astute politician sought to take advantage of such mob psychology, and thus would cater more to the emotions than to the intellect. But with radio, argued Bliven, people would listen to the speech not as members of a crowd, but as individuals. The politician's ideas therefore would "have a better chance of being weighed for what they are really worth." Thus, radio might even produce a new kind of politician, a "man without the ordinary tricks of delivery, but possessed of a quiet, logical persuasiveness." Bliven allowed that such a man would have to have a "deep resonant voice such as will carry well in the microphone."<sup>65</sup> A major benefit was that more people than ever before would be able to hear their political leaders simultaneously. Political speeches reprinted in the newspapers often went unread, according to Bliven. With radio, more people could become politically informed than ever before, and they would have a sense of immediacy about the information they received. Politicians would seem less remote, more accountable, while the audience would gain a new sense of cohesiveness, even political empowerment, through the knowledge that everyone in a city, state, or region, or even everyone in the country, had heard the same speech at the same time without the distorting effects of mob response. This knowledge would further the sense of cultural unity: millions of people across the country, hearing together, reacting together, thinking together, as informed, politically aware citizens.

Religion was another area of life destined for change through radio. Sermons were an early staple of broadcasting; by 1921 KDKA transmitted the complete church service of the Calvary Episcopal Church of Pittsburgh every Sunday night. "Think of what this means to many people," urged the reporter for *Scientific American*.<sup>66</sup> He, too, men-



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tioned the farmer, the invalid, the housebound who, prior to radio, had been cut off from religious services. All of these people could now "almost imagine being in church." "The preacher who has a little black box mounted on the pulpit," wrote another commentator, "comes very soon to know that the congregation seated before him is to the great invisible listening throng but as the sprinkle of a few drops over the baptismal font to the pouring rain outside."<sup>67</sup> The preacher came to know this because preachers who broadcast their services received thousands of letters and telephone calls expressing thanks and requesting copies of the sermons. That radio seemed to be bringing more Americans into the religious fold was significant indeed. Since the late nineteenth century, religious authority had been undermined by Darwinism, the ethics of industrial capitalism, and a reverence for science and technology. Radio, however, promised a reconciliation between religion and the corporate-industrial secular world, for it was the first technology that could bring religion into people's homes. Radio, the product of monopolistic capitalism, would help reassert precapitalist, Christian values in America.

Contemporary writers, whatever their hopes or biases, were all aware that they were witnessing a social transformation of monumental importance. Radio listeners constituted "the greatest audience ever assembled by any means for any purpose in the history of the world." This audience was "remarkable" and "totally different in several ways from anything before known."<sup>68</sup> First of all, it was huge; conceiving of an audience as hundreds of thousands or millions of people required a major imaginative leap. Second, the audience was invisible and unknown. The speaker or performer could not see facial responses or hear laughter, booing, or silence; nor was there applause. At the same time that the size of the speaker's audience had multiplied beyond anyone's calculation, his visual relationship with that audience was severed. Bruce Bliven thought that "so much listening without seeing" had "upset one of nature's subtle biological balances" and had created "what might be called 'a hunger of the eyes.'"<sup>69</sup>

Because this audience was invisible, scattered, and unknown, commentators were unsure about its character. Was this audience just like a mob, only dispersed, but equally capable of being excited and manipulated by an ambitious speaker who was newly empowered by radio? Or was the audience compromised more of people like the magazine writers themselves: discriminating, thoughtful, with values and ideas of their own, certainly impervious to the wiles of a disembodied voice? The answers to these questions were critical, for they were directly related to radio's potential as a tool for social control. The magazine articles on the topic revealed an uneasy ambivalence about the audience. What did

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these invisible listeners want? How pliant were they? Would radio be a "tremendous civilizer," increasing public demand for "the daily news of events, the opinions of leaders, the counsel of the wise, the comments of observers, [and] the hopes of the prophets," as one magazine suggested?<sup>70</sup> If so, how would such broadcasts be received? Might one of these leaders or prophets be able to "tell men what to think and say and how to act"? Would he be able to "shape them to a common, uniform, subservient mediocrity"?<sup>71</sup> Would this audience be content to hear primarily "outrageous rubbish, verbal and musical," and would it be swayed by the "appalling mass of solemn bunk and some really vicious propaganda" that was already flowing through the ether?<sup>72</sup>

Implicit in virtually all of the magazine articles written in the early 1920s about radio's promise was a set of basic, class-bound assumptions about who should be allowed to exert cultural authority in the ether. The *New Republic* stated the position baldly. Radio, asserted the editors, "is mainly under control of men unfitted by training and personality for posts of such importance." These were businessmen, ignorant of radio's "proper use" and "indifferent as to whether it is used properly or not." Such men were not unlike those who first controlled motion pictures: "fly-by-nights, adventurers and reformed pushcart peddlers, not one in a hundred of whom had reached the social level where one takes one's hat off indoors." The proper use of radio, according to the *New Republic*, was educational: radio should be "an intellectual force." Radio could never fulfill this mission as long as it was managed by those whose interest was music or entertainment. Such men, the magazine asserted, "are admirably fitted to assemble orchestras, pianists and singers; but when it comes to lectures and addresses they are about as competent as Florenz Ziegfeld is to run Columbia University."<sup>73</sup>

It was not that members of the educated bourgeoisie objected to radio being used to influence those millions of invisible listeners; the bourgeoisie's major concern was that those exerting the influence embrace genteel values about what culture should be. The subtext of these magazine articles maintained that radio should be edifying—should appeal to the intellect rather than the emotions—should elevate musical tastes, and should promote contemplation and the ability to discriminate between the worthy and the base. Radio, by providing the perfect instrument for delivering high culture to the masses, could produce a new mid-culture that combined the content of high culture with the techniques of commercialized entertainment. As one writer put it, "The man who directs a broadcasting station must combine the astuteness of P. T. Barnum and the good taste of a Gatti Cassaza."<sup>74</sup>

Here was a captive audience of millions. It was true they could turn



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their dial, but the hope running through these articles was that, given a choice between quality and banality, the audience would prefer quality. Thus did radio present the educated bourgeoisie with an opportunity to exert social control through culture. All the talk of cultural unity, of bringing the culturally dispossessed into the radio family, of leveling class distinctions based on money or education, revealed an intense desire to have this technology affirm and extend the cultural tastes and norms of the upper tiers of the middle class. The great fear was that, if it was not properly managed, radio would extend the cultural authority of the P. T. Barnums and "reformed pushcart peddlers" of America who had, so debased, in genteel eyes, the leisure time of the masses.

Radio, then, meant progress for all. The technology would bring improvement to many areas of American life and thus benefit everyone, the ignorant and the well read, the poor and the rich, the individual and the institution. In these press accounts there was no tension between corporate ambitions and individuals desires: they were really the same thing.