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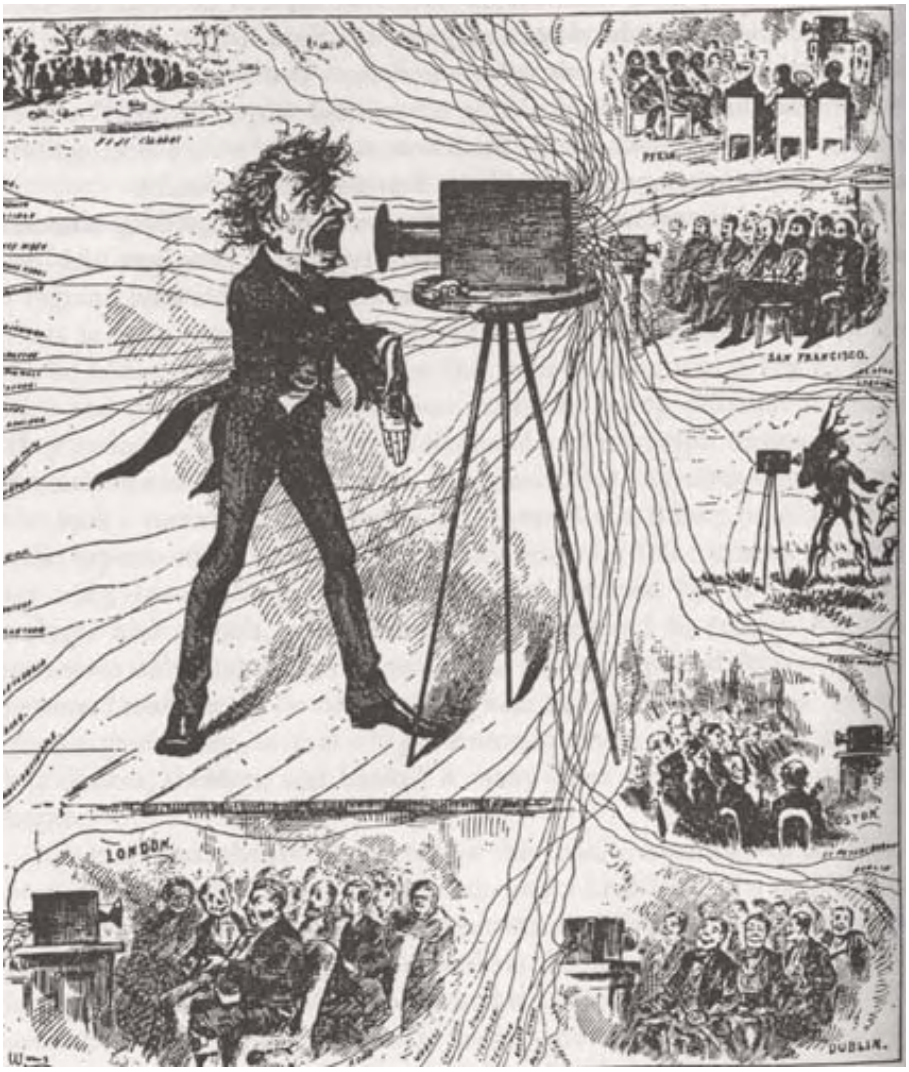

"Terrors of the Telephone," *[New York] Daily Graphic*, 15 March 1877.

Cablecasting to the Victorians

Duncan Fisher

Cable broadcasting is a French invention from the 1880's, that in its first few decades existed in varying forms in France, Portugal, Britain, the United States, and Hungary. The reasonable observer would expect such a thing in these places, there being an affluent and consuming public in all of them and also a maturing telephone system, through whose wires most of these enterprises could transmit. Telephones were good enough technically that Londoners, for example, could hear the French system if they chose to. And interest in entertainment by wire was well in place. Late-night line operators improvised concerts for each other on quiet phone and telegraph lines routinely, as the *Boston Herald* reported in 1891, for example. So there were numerous trials, some big and some small. The Home Telephone Company of Painesville, Ohio, broadcast a live recital to a thousand customers in 1905, and the New York Magnaphone and Music Company broadcast a recorded one in 1912, for example.[1]

Scholarship that describes and explains all this is spotty, focussing generally on the regional technical variations, and concluding that the whole undertaking was doomed by the arrival of broadcast radio, [2] though exactly what happened at the end of the wired service is not actually well documented. The scholarship ignores, in any case, the very basic and very interesting question of why some systems did well and others did not. For they were not all the same. The Portuguese system died early; the American experiments never reached commercial sustainability, and though the French and British *Théâtrophone* and Electrophone appear to have lasted through the Great War, their coverage was never as close to universal as their designers had hoped. The mighty *Telefon Hirmondò* in Budapest by contrast was instantly and enduringly successful, eventually simulcasting with radio, and staying popular with listeners until its destruction by the Second World War.

Why? What made Hungarian broadcasting so hearty, and its analogues in the west so sickly? The answer has nothing to do with broadcasting technicalities. It is a story of legal and cultural differences instead.

Overview of the Systems

1877: The idea of worldwide telephone broadcasting exists, shown by the harried cartoon performer in "Terrors of the Telephone," in the New York magazine *Daily Graphic*. Popular song out of St. Louis, "The Wondrous Telephone," alludes to the idea of broadcasting lectures and music into the home. [3]

1880: Clément Ader creates the *Compagnie générale des téléphones de Paris* for the purpose of broadcasting by wire.

1881: International Electrical Exposition in Paris demonstrates Ader's telephone system at the Palais d'Industrie, with live performances from the Opéra, the Opéra-Comique, and—with some technical difficulty—the Théàtre-Français. [4] It is in stereo, [5] and is sensitive enough for listeners to hear the prompter. [6] French President Jules Grévy is so pleased with this system that he has the Théàtre-Français piped into the Elysée Palace, along with the Opéra and the Odéon Theater as well. Victor Hugo is so delighted with the demonstration that he takes his children to see the system up close at the Ministry of Posts and Telegraphs.[7]

As Hugo later recalled the event in his diary:

> "Nous sommes allés avec Alice et les deux enfants à l'hôtel du Ministre des Postes. A la porte, nous avons rencontré [the chemist, Marcelin] Berthelot qui venait. Nous sommes entrés. C'est très curieux. On se met aux oreilles deux couvre-oreilles qui correspondent avec le mur, et l'on entend la représentation de l'Opéra, on change de couvre-oreilles et l'on entend le Théâtre-Français, Coquelin, etc. On change encore et l'on entend l'Opéra-Comique.
>
> Les enfants étaient charmés et moi aussi. Nous étions seuls avec Berthelot, le ministre, son fils et sa fille qui est fort jolie."

Also in 1881, in Budapest there are experimental

Cablecasting to the Victorians
Duncan Fisher (continued)

opera broadcasts, to 12 subscribers at a time, over the six-month-old city.

1884: Special transmission to the Ajuda Palace for the king and queen of Portugal, who wished to attend the premiere of "Laureana" at the San Carlo Opera House, Lisbon, but are unable to attend, being in mourning for the princess of Saxony. Edison director Gower Bell, who managed the feat, is awarded the Military Order of Christ. A Munich theater manager runs a telephone line to his villa on the Starnberger See to monitor the success of his shows. The Berlin Philharmonic is connected by phone to its own opera house. The opera in Antwerp is heard by ministers 30 miles away in Brussels.

1885: The San Carlo Opera, Lisbon, offers subscriptions by wire to its 90 seasonal performances; the putative audience extends as far as Palhavã, Olivais, and Braça de Prata.

1889: Ader's system is first called the *Théâtrophone*.

1890: First successful commercial telephone-based entertainment service, the *Compagnie du Théâtrophone*, set up by M. M. Marinovitch and Szaravady—all by coin-op boxes, placed in waiting rooms and restaurants around Paris.[8] Individual subscriptions offered to the *Compagnie du Théâtrophone* for hookups to five Paris venues. The cost is steep, at 180 francs for the year, and 15 more each time the system was used. Across the Atlantic, at the electrical exhibition in the Lenox Lyceum, Americans hear bits of comic opera from New York theatres, and also instrumental music, speeches, and recitations from Boston and Philadelphia.[9] No commercial service exactly like the *Théâtrophone* in the United States, however.[10]

1891: London: the Universal Telephone Company puts 50 microphones into the Royal Italian Opera House in Covent Garden, and 50 more into the Theatre Royal, Drury Lane, all for the sole use of Sir Augustus Harris, at St John's Wood, who even has a special extension to his stables.

1892: Demonstration telephone performance of *The Mountebanks*, a comic opera, from London's Lyric Theatre. The evening's revenues pay for the launch of The London Electrophone Company.[11] The Electrophone exchange is private, housed in a building adjoining the General Post Office exchange in Gerrard Street; there is a listening salon here.[12]

1893: The *Telefon Hirmondò*, or "Telephone Herald" (the expression is Magyar), is launched in Budapest, as a telephonic newspaper, direct to several thousand ready subscribers.[13] Home subscribers can listen through their municipal telephones if they have them, [14] or special earphones would be strung into their houses.[15]

1896: Private connections extend to a variety of London venues, but still only for the affluent: it costs £5 to install the equipment in one's house, and £10 to keep the wire live for the year.

1897: The wired entertainment service grows in popularity in England. The Electrophone Company works in concert with the National Telephone Company, so that it is necessary that home subscribers be connected with the telephone system in order to communicate with the Electrophone Company's switch room. The Electrophone receiver is generally fitted as an extension to the household telephone apparatus. There are also now sixpence-operated listening boxes in public venues like the Café Royal and the Piccadilly Restaurant: you put your coin in and wound up a clockwork timer that kept the connection open for several minutes. It is popular music, for the most part, running during theatre hours; a remote-control pointer on the box indicates which venue is playing at the moment. Service is now so popular that it originates even in popular churches (where the microphones are disguised as dummy Bibles and hassocks). The Company invites public inspection at their Soho headquarters and at the Victorian Era Exhibition, Earl's Court.[16]

1899: The Queen at Windsor Castle hears the Electrophone for the first time, when cadets and schoolboys sing to her from Her Majesty's Theatre in London. She and guests then listen to a concert at St. James' Hall.[17]

Cablecasting to the Victorians
Duncan Fisher (continued)

1901: *Hirmondò* experiments with coin-operated public listening posts.[18] Thomas Denison observes in passing that there is still nothing like this system in the United States. The popularity of the Electrophone in England still increasing, and rates are dropping, by more than 75%. Gone are installation charges, too. And the equipment is getting better. The Company now offers a loudspeaker, able to fill an entire room with sound. And they are proposing to introduce service to moving railway cars.[19]

1913: In celebration of the Entente Cordiale between Britain and France, the Electrophone and *Théâtrophone* systems exchange attractions.

1922: *Théâtrophone*-style feed from Stockholm Opera House used for experimental radio broadcast.

1925: *Hirmondò* begins radio simulcasting.

The Winning Formula

The Hungarian system appears to have outlasted all others by some years, though what finally happened to wired transmissions outside Hungary is not clear. An American observer thought he heard plans for the addition of a periodic five-minute spoken newsletter to the *Théâtrophone* programming.[20] By degrees they stopped functioning, it seems. What is clear is that these losing systems, so to speak, all differed from the Hungarian one in two important ways. First, private subscription was an afterthought among them, and an expensive one. Second, these systems broadcast entertainment primarily, hardly giving a thought to transmitting news reports or business information. The winner, by contrast, put business news first.

Service began at 8:00 a.m., with the overnight telegrams from Europe and America. Then came metropolitan news, and the list of strangers just arrived in the city. Summaries of the papers followed, then stock and corn exchange prices; local and church news went until lunchtime, when the Reichstag convened and parliamentary dispatches took over, issued every 10 minutes. Stock updates and foreign news alternated the rest of the day. In the evening, after the close of business, came music and literary readings. These originated at the *Hirmondò* studios or occasionally at the home of particularly famous writers.[21]

The winner also provided the service on the cheap. The cost to Hungarian subscribers was about a penny a day, about a fourth of what the English paid. The company supplied and installed the equipment for free.[22] The £15 that Queen Victoria shortly paid for her annual home service bought a year's worth of coal for a professional man's family.[23] A reason that the *Hirmondò* was so cheap was that, like a newspaper, it ran advertisements, at a goodly rate, too: 1 florin for 12 seconds. The price for a listener's subscription was 18 florins for the whole year.[24] The paper was able to pay cheap press rates for telegrams, too. Investors in the *Hirmondò* expected to win back their entire startup cost within 10 years.

Hirmondò treated the enterprise like an important service instead of an after-hours frivolity. The prime minister was a subscriber, and so were all the other members of the Hungarian cabinet, and the mayor of Budapest.[25] It worked instantly, and went from strength to strength.

Why was this successful formula never adopted in the west? There is certainly no record of any lobbying by, say, newspaper interests, against an electric competitor. Cheap news at home should have seemed natural, in any case. The public appetite for business news by telegraph was insatiable as far back as the 1870s, if Trollope's story of the Mexico to Salt Lake railway scam is anything to go by.[26] Sure enough, the Hirmondò rustled up 6,000 subscribers within 18 months of starting. Not that penetration of Budapest by the Hirmondò was more than 1% or so. The population of the city was slightly under 600,000. Desire for instant news was in any case universal; before they settled in Budapest, the *Hirmondò* syndicate had been authorized to set up a telegraphic newspaper for the city of Antwerp.[27

There was plenty of telephone infrastructure around, too, even to the point of coin-operated boxes on the street. Not that telephones were common in households yet. And there was plenty of capital in place, which explains the presence of stock tickers and multiplexed high-speed telegraphs.[28] There was even a tradition of local information sharing by

Cablecasting to the Victorians
Duncan Fisher (continued)

amateur telegraph. There were several of these in every American state by the 1890s by contemporary estimate. They were for business and civil security, not gossip or entertainment.[29]

Most of the world just did not use their wired broadcasting systems for business. Edward Bellamy, the novelist whose image of the beginning of the 21st century was enormously influential among English readers, fantasized about music, not information, flowing through the home cable receivers in future households.[30] For Octave Uzanne it was literature mostly, journalism by afterthought, and then only by special arrangement.[31] His contemporary Albert Robida conceived the same mission for the *téléphonoscope*, a cable television system in his own future-fantasy novel about the 20th century.[32] "For years," said American commentator Thomas Denison of his own nineteenth century, it was concerts or the latest news—in that order—that had been "one of the favorite dreams of the modern prophets."[33] And yet they did not do it that way.

Legal and Cultural Obstacles

There were things that made it difficult to do outside Hungary. The British nationalized their telegraph system in 1870. This made mass communications cheap and accessible, but the system ran into enormous deficit, which stunted the growth of the telephone system.[34] The problem was that the law regarded the telephone as a form of telegraph, and therefore under the rightful stewardship of the government. This status was formalized in 1880, when the Edison Telephone Company of London was obliged by the Attorney General to regard a telephone conversation as a telegram within the meaning of Section 4 of the Telegraph Act of 1869, which of course had made no mention of telephones. By extension, they and all other independent telephone companies now had to apply for licenses to operate. They were long licenses expected to run for 31 years. And they were costly. The Post Office was allowed to take 10 percent of all gross income and had the option periodically to purchase the whole company. The Post Office issued very few licenses in the end, and disastrously arrogated for itself all technical development. These constraints were liberalized slightly over the next decade, but this generally oppressive arrangement obtained all the way to 1951.

The French attitude to telephone management was much the same. The three private companies that existed under license in 1880 were grouped in that year to form the Société Générale des Téléphones, before being nationalized in 1889. The Posts and Telegraphs reserved for itself the right to develop the technical art, which it intended to do strictly along the lines that Ader had shown.

The American situation was an enormously complicated matter of municipal regulation, usually meddlesome though sometimes not, with occasional state and federal overlays of law. Generally speaking, telephones were a local project, functioning at the level of city council. And, generally speaking, city councils attacked telephones ceaselessly. The charge was always that the infrastructure was unsightly and disruptive to civic life. City councils, not inclined to own telephone concerns themselves, limited fiercely the revenue that these concerns were allowed to coin, even in the face of potential tax earnings for themselves. State governments backed up the constitutionality of these rate regulations as a rule, and in protest many Bell system franchises in the 1880s dismantled themselves, going so far as to remove equipment from customers' houses.[35]

North Americans were just plain provincial. On the ground level, they really hated poles and wires. This was the substance of the frequent activism—and there was a lot of it—against the expansion of long-distance service. Firemen and linemen actually came to blows over poles in Montreal.[36] Even professional electrical men were not always convinced that the coming-true of Bellamy's prophecies was a good thing at all. What of the cut-rate imitators of the first telephonic musicale, wailed a satirist in 1890? Imagine nickel-in-the-slot horrors such as "The Organ Grinders' Telephonic Mutual," or devastating popular renditions of "Sweet Violets" in everyone's boarding house! It was shocking, and too horrible for contemplation.[37]

Nor were Americans even very good at cooperating with mass communication projects involving the telephone. When the Chicago Telephone Company hired 150 operators to read

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election results to groups of subscribers in 1894, the exercise ended in anarchy. Republicans and Democrats fought over the wire, people interrupted constantly, and impatient individuals demanded their own election returns immediately and to blazes with the rest.[38]

The Hungarian project looked outrageous to Yankee sensibilities. One ungenerous US observer ridiculed the very idea of the *Hirmondò* outright. Was the project meant to be taken seriously, he asked? If it really existed in Budapest, and not on the Moon, he averred, Budapest must be full of the illiterate, the incurably lazy, the bedridden, and the blind.

For functional people, and those too virtuous to be blind or bedridden, a telephonic newspaper was simply nonsense: it saved no time, and it was "devastating to the faculties."[39] To be fair, even Hungarians ridiculed the *Hirmondò* when it was first mooted.[40] When the system did hit the streets, sure enough, its coffee house version was disruptive enough to annoy some patrons.[41]

Was the *Hirmondò* also just too foreign to be palatable to Americans? Its editorial independence was certainly not known among American newspapers. It was strange, they thought, that there were no opinion features running at all, and no editorial pieces, the editor alone being responsible for content.[42] Besides being executed oddly, the entire undertaking might have seemed just un-American somehow. The time would shortly come in the wireless world in America and elsewhere when nationality and technical peculiarities did run together, and did matter to buyers.

It was a dicey matter anywhere but Hungary, finally, to refine a voice communications system without being sued for patent infringement. British and American courts were adamant that the earliest Bell and Edison patents could not be outflanked by any sort of innovation. The engineering press ridiculed this attitude, and rightly called it counterproductive to technical progress. Numerous suits came to court. The courts stood fast, however, insisting that the chief electrician for the fledgling Budapest telephone exchange was able to improvise early amplifiers and loudspeakers freely when customers complained of line noise. It was this same telephone exchange that felt free to try broadcasting to its subscribers from the Vigado Opera House in 1881.[44]

All told, in anywhere but Hungary it was hard for potential cable broadcasters to lay wires, to invent better equipment, or to charge much of a fee for service. Not so the Hungarian system, which existed as a freely capitalized private company, was at liberty to invent things it needed, such as better microphones and a quite novel amplifier circuit, and which even enjoyed special legal right to string up wires.[45] In 1925, while the Americans were still reapplying burdensome radio legislation from 1912 to their fledgling broadcasters, the *Hirmondò* breezily started its simulcast over the air, an arrangement that could have existed nowhere else in the world.

Conclusion

Wire broadcasting systems like the French and English ones transmitted live music and oratory for casual, fee-paying listeners on the street; they barely grew to include home service, and their editorial purpose never evolved beyond entertainment. The Hungarian *Telefon Hirmondò*, by contrast, was conceived from the first as a home-delivered audio newspaper with a newspaper's editorial profile in which news and business came first, then entertainment followed; service eventually extended to listeners on the street. Like other important cities, Budapest had a prosperous audience enfranchised in politics and business, and well traveled and understood conventions of journalism. But Budapest also had unusually obliging communications laws. This did not obtain elsewhere, where cable broadcast systems, not coincidentally, did not lodge in homes and offices, and never covered the news. Phones were certainly used routinely for business in places like Britain and the United States. There was plenty of infrastructure, too. And capital was certainly available. People were even used to stringing up local cable systems of their own for passing around information. The problem outside Hungary seems not to have been a matter of technological limitation or openness to commercial enterprise, but a matter of obstructionist post and telegraph laws generally, and possibly suspicion, in the United States, of anything European.

Cablecasting to the Victorians
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Endnotes

[1] Carolyn Marvin, *When Old Technologies Were New: Thinking about Electric Communication in the Late Nineteenth Century* (New York: Oxford University Press, 1988), 212. There was also Thaddeus Cahill's strange and gigantic Telharmonium project that offered an early form of Muzak to restaurants along Broadway. See Thomas Martin, "The Telharmonium: Electricity's Alliance with Music," *Review of Reviews*, April 1906, 420-423.
[2] Robert Hawes, *Radio Art* (London: The Green Wood Publishing Co., 1991), 24.
[3] Reproduced in *A Tower in Babel: A History of Broadcasting in the United States to 1933* (New York: Oxford University Press, 1966).
[4] Marvin, 209-210. The hot updraft from the footlights at the Théâtre-Français interfered badly with the microphones. See "The Telephone at the Paris Opera," *Scientific American*, December 31, 1881, 422-423.
[5] Illustrated in detail in "Souvenirs de l'exposition d'électricité," *Le Magasin pittoresque* (1882): 91-94, and more broadly later in Théodose du Moncel, "Le telephone," *Bibliothèque des merveilles*, 5th ed. (Paris: Librairie Hachette, 1887), 117-127.
[6] Marvin, *op cit.*, for much of this overview.
[7] Victor Hugo, *Choses vues. Souvenirs, journaux, cahiers, 1849-1885*, ed. Hubert Juin (Paris: Gallimard, 1974), entry for November 11, 1881.
[8] "The Theatrephone," [sic] *Electrical Review*, June 21, 1890, 1.
[9] "Wanted, a Théatrophone," *Electrical Review*, July 5, 1890.
[10] Unlike "the weighing machines and pull-testers that so overcrowd our waiting-rooms everywhere." "The Theatrophone in Paris," *Electrical Review*, August 29, 1891.
[11] http://www.connected-earth.co.uk/Galleries/Shapingourlives/Livingwiththetelephone/Firstencounters/index.htm (accessed February 20, 2008).
[12] "Digital Futures MSc Course from the University of Plymouth," September 2004, at http://x.i-dat.org/~je/2005/text/report.pdf, p. 12 (accessed February 20, 2008).
[13] "Telephonic News Distribution," *The Electrical World*, March 18, 1893, 212.
[14] "Telephone Newspaper," *The Electrical World*, November 4, 1893, 362. There were technical tricks to keeping sound quality high along what amounted to a party line and for preventing subscribers from talking back into the system.
[15] "The Telephone Newspaper," *The Electrical Engineer* (London), September 6, 1895, 257.
[16] J. Wright, "The Electrophone," *The Electrical Engineer*, September 10, 1897, 343-344, discusses the technical points in detail.
[17] "The Queen and the Electrophone," *The Electrician* (London), May 26, 1899, 144.
[18] Thomas S. Denison, "The Telephone Newspaper," *World's Work*, April, 1901, 640-643.
[19] "Electrophone in England," *Electrical Review*, October 5, 1901, 414.
[20] "Wanted, a Théatrophone," 4.
[21] "The Telephone Newspaper," 257.
[22] See ibid., 257.
[23] See the contemporary tabulations in Arthur L. Bowley, *Wages in the United Kingdom in the Nineteenth Century* (New York: Cambridge University Press, 1900).
[24] For this, see Thomas S. Denison, "The Telephone Newspaper," *World's Work*, April, 1901, 640-643.
[25] Denison, 643.
[26] Anthony Trollope, *The Way We Live Now* (New York: Harper & Brothers, 1875), passim.
[27] "The Telephone Newspaper," 257.
[28] Tom Standage, *The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-line Pioneers* (New York: Walker and Company, 1998), passim.
[29] See "Amateur Telegraphers," *Electrical Review*, August 6, 1892, 308.
[30] Edward Bellamy, *Looking Backward: 2000-1887* (New York: Houghton, Mifflin and Company, 1887), chapter 11.
[31] Octave Uzanne, "The End of Books," *Scribner's Magazine Illustrated*, July-December 1894, 229.
[32] Albert Robida, *Le Vingtième Siècle* (Paris: G. Decaux, 1883).
[33] Denison, 640-643.
[34] David Hochfelder, "A Comparison of the Postal Telegraph Movement in Great Britain and

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Endnotes (continued)

the United States, 1866-1900," *Enterprise and Society*, Vol. 1 (2000): 739-761.
[35] See Robert MacDougall's superb description of this complex tale, in "The Telephone on Main Street: Utility Regulation in the United States and Canada before 1900," *Business and Economic History*, Vol. 4 (2006) online edition at http://www.h-net.org/~business/bhcweb/publications/BEHonline/2006/macdougall.pdf.
[36] Ibid.
[37] "Music on Tap," *The Electrical World*, September 20, 1890, p. 195.
[38] Gavin Weightman, *Signor Marconi's Magic Box: The Most Remarkable Invention of the 19th Century & the Amateur Inventor whose Genius Sparked a Revolution* (Cambridge, MA: Da Capo Press, 2003), pp. 215-216. Or maybe they just hated the telephone, like the Rochester woman who complained to her newspaper about telemarketers in 1909. ibid., p. 216.
[39] *Harper's Weekly*, September 28, 1895, p. 929.
[40] "The Telephone Newspaper," 257.
[41] W. B. Forster Bovill, *Hungary and the Hungarians* (New York: McClure, 1908), reproduced in Weightman, p. 212.
[42] Denison, p. 643. The editor had been sued for libel two or three times (unsuccessfully).
[43] Christopher Beauchamp, "Intellectual Property, Corporate Monopoly and Judge-Made Law: The Telephone Patents in Britain and the USA, 1880-1894, paper delivered before the Economic History Society, April 4, 2003, online at: http://www.ehs.org.uk/ehs/conference2003/assets/Beauchamp.doc (accessed April 5, 2008).
[44] Dan Mrkich, *Nikola Tesla: The European Years* (Ottawa, ON: Commoners' Pub., 2002), p. 16.
[45] Denison, p 2.

Fin-de Siècle Poster for the Théâtrophone by Jules Chéret

Caricature: Two Gentlemen Enjoying a Phonecast
"Earbuds" lay far in the future . . .

The *Araldo Telefonico*: Origins, Structures and Models of Italian Broadcasting

Gabriele Balbi*

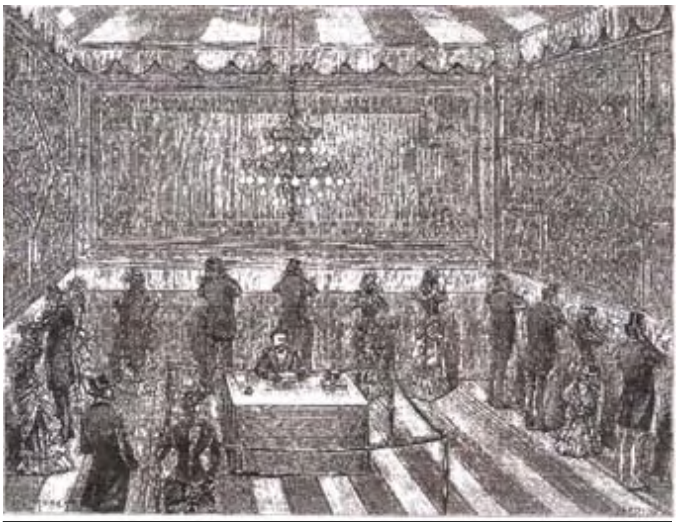
Today I'd like to speak about what I've called an "untold history of broadcasting." Until the 1920s and much later, as we will see, the telephone was in fact used as a way to transmit entertainment, talk shows, information, and news from a central station to different receivers.

Media history researchers agree that the early telephone cannot be considered to be just a point-to-point medium. Even before the official "invention" of the telephone, Philipp Reiss imagined a "Musical Telephone" and Alexander Graham Bell himself in 1876 did not differentiate between point-to-point and multicast commercialization of his instrument, which he imagined as "an electrical toy, for broadcasting music."[1] So, since its invention, the telephone was not regarded as just a point-to-point communication medium; its inventors also tried to spread "broadcasting uses" such as newscasts, entertainment shows, and musical content.

The dual nature of the telephone as both a medium of conversation and of content diffusion is confirmed by the link, especially in technical journals at the time, between the telephone and the phonograph. Both were part of a comparable "soundscape" when music and phone calls could hardly be distinguished. Also, one can consider it the first attempt to listen to broadcast entertainment. Occasional telephone concerts were transmitted by telephone companies in Italy and in other countries to celebrate specific events, such as the inauguration of new lines.

Just a few years after the invention of the telephone, telephone programs came into existence. The first example, the *Théâtrophone*, appeared in France at the famous 1881 International Electrical Exhibition. Clément Ader (the inventor of stereophony among other devices) and Tivadar Puskás (a co-worker of Thomas Edison) linked the Paris Opera to several "public hearing points" (telephone stations). There, people listened communally, but each individual had his or her own pair of headsets.[2]

An individual could listen to music by paying half a franc for 5 minutes—or more to listen longer. Although it was the first formal telephone public audience, it was still a one-time event. Audiences neither had a programming schedule nor could they choose to listen to a particular theatrical or musical piece. They had to listen to whichever theater the system happened to be connected to at the time. [Ed: Nonetheless, the *Théâtrophone* continued to operate in Paris until 1932.]



"Audition téléphonique de l'Opéra à l'Exposition d'électricité de 1881"

Telefon Hirmondò

The most famous example of these so-called circular telephones appeared in Budapest, the capital of Hungary. The inventor of the system was Tivadar Puskás. During the 1870s, while he was working with Edison, Puskás conceived the idea of linking all telephone subscribers to a central unit. The system, Puskás claimed, would allow a million people to listen at the same time.

*This article is an adaptation of a paper and slideshow presented at Technologies, Technologists & Networks: A Symposium on the History of Communication Technologies sponsored by the Smithsonian Institution's National Postal Museum and the Mercurians and held on October 17, 2007. The slideshow is available on the Internet at: http://www.postalmuseum.si.edu/symposiums/BalbiG.pdf.

The *Araldo Telefonico*
Gabriele Balbi (continued)

Puskás' system, *Telefon Hirmondò*, began transmitting in February 1893. It was the archetype for every later experiment with telephone proto-broadcasting networks as well as for the earliest radio broadcasting systems. The name of the Italian network, *Araldo Telefonico*, and that in the United States, "Telephone Herald," were direct translations of the Magyar word *Hírmondó*, meaning the crier who shouted the news from the center of the medieval village for all to hear.

Tivadar Puskás (1844-1893)

Unlike the Parisian *Théâtrophone*, Puskás conceived it as a service to be listened to either in public places or at home. The emphasis of his business plan was more on private rather than public consumption. For that reason, the company introduced home warning signals that indicated the imminent start of a new transmission. Subscribers could listen to only the programs they wanted to hear, and they could pick from a "program paper" delivered to their home.

The *Telefon Hírmondó* transmitted a fairly varied schedule. The term "schedule" did not appear until the advent of modern-day radio and television, however. The system presented an unbelievable variety of what we call, using another modern word, genres: news reports (the most important programs); entertainment; stock market news; politics from the Houses of Parliament; concerts and daily music programs transmitted from the most popular theaters; children's programming; foreign language lessons; literary reviews; the time signal repeated every hour; and advertising. Subscribers were members of high society: nobles, high-level politicians, the richest men of commerce, the most influential religious men and intellectuals. The cost of the service was surprisingly modest. All of these characteristics of the *Telefon Hírmondó* were inherited by later telephone "heralds."

From another point of view, *Telefon Hirmondò* also was a unique example of the circular telephone. It was a quite unexpectedly long-lived technology. It survived and merged into radio broadcasting. In 1926, the *Hirmondò* company secured a radio license in Hungary and the final demise of the circular telephone came only in 1944. *Telefon Hirmondò* was very popular and gained more than 7,000 subscribers before the First World War. Its popularity is demonstrated not only by the number of subscribers, but also by its geographical distribution within Budapest. According to contemporary newspapers, it was possible to listen to *Hírmondó* everywhere, and it seemed to have become "almost indispensable."

One of the greatest differences between the *Telefon Hirmondò* and other examples of proto-broadcasting telephone networks was its complex editorial structure: six news announcers ("strong-voiced men" called "stentors"), a business manager, an editor-in-chief, four assistant editors, and nine reporters. All together, *Hírmondó* employed about 180 people.

A stentor reads the news on *Telefon Hirmondò*

The *Araldo Telefonico*
Gabriele Balbi (continued)

It is also important to ask why *Hirmondò* was so popular. Two scholars have given two different explanations. The media (and Hungarian) historian Laszlo Solymar argues that the urbanized aristocracy and middle class of Budapest enjoyed a great amount of "free time." On the other hand, Asa Briggs, the British historian of the Victorian era, emphasizes that Budapest was a city of bureaucracy, where everything was the "slave of the government." So, *Telefon Hírmondó* could be considered a tool that did not encourage free or private communication, but instead bound together entrenched social groups.

England, France, USA

In England, the first examples of these proto-broadcasting telephones appeared at the popular 1892 Electric Exposition, during which an experimental system transmitted music from the Lyric Theatre to the Crystal Palace in London. Telephone concerts became a regular feature between 1894 and 1895 with the appearance of the Electrophone Company. Electrophone worked in close association with the National Telephone Company and later with the British Post Office. This relationship with point-to-point telephone service led to doubly unique technological solutions.

First of all, subscribers did not receive programs on a separate network, but through their standard telephone equipment. Secondly, subscribers could pay a double price for a two-way system. They could call the exchange using their normal telephone and ask for the "Electrophone service." The schedule resembled those of both the French *Théâtrophone*—with lengthy periods devoted to entertainment and less time for news—and the Hungarian *Hirmondò*—the service was distributed to homes. The decision to avoid news probably derived from the considerable power that newspapers possessed in Great Britain. By avoiding news services, Electrophone avoided competition with the press. The Electrophone system died in 1925, but a few lines in the Bournemouth area lived on until the mid-1930s, kept alive by a group of nostalgic listeners. Italy, too, saw its proto-broadcasting telephone system live on into the 1930s.

David Sarnoff, 1922

In the United States, after unsuccessful attempts in the 1890s to copy the French model and in the early 1900s to follow the Hungarian example, the U. S. telephone newspaper—the so-called *Telephone Herald*—started up at the end of 1911 in Newark, New Jersey, underwritten by a group of Wall Street businessmen. The start-up was delayed by a legal fight against the New York telephone company that claimed a monopoly on this service. The schedule was similar to that of the Hungarian model, with a lot of time devoted to stock exchange news.

The service became quite popular in a short period of time. After only three months, the company held over 2,500 subscriber contracts, but the number of installations was not much over 1,000. Despite its popular success, the undertaking suffered from three main problems that led ultimately to its failure. The first was the company's financial instability. The second was the poor quality of reception. The third was the service's late appearance in the United States, which led it into direct competition with David Sarnoff's "radio music box idea" (radio).

Araldo Telefonico

The broadcasting telephone came to Italy through the efforts of an Italian engineer, Luigi Ranieri, who was a representative for the Swiss company Escher Wyss & Company of Zurich, manufacturers of steam turbines. Ranieri was a "multimedia man." He was interested in telephotography, the transmission of pictures via telegraph or telephone networks. He worked in this area with the pioneering Frenchman, Édouard Belin. Later, Ranieri became involved in radiotelegraphy.

btained before World War I was

The *Araldo Telefonico*
Gabriele Balbi (continued)

Shortly after 1900, Ranieri asked for licenses to operate in Milan, Naples, and Rome. But the only license that he obtained before World War I was to operate in Rome. The Italian Postal Service allowed him to build a telephone network in that city modeled on the example of the Hungarian system. He launched *Araldo Telefonico*, the Italian translation of *Telefon Hirmondò*, early in 1910.

The initial programming also copied the *Hirmondò* model. Broadcasts ranged from time signals (one of the most popular Italian "genres" during early radio days as well) to communications from the stock exchange and Parliament; from updates on the horse races to newscasts that drew on the most famous Italian news agency Agenzia Stefani; from language courses to children's shows; from religious to fashion programs; and even a "home concert." Later Luigi Ranieri strove to develop and expand his network's range of offerings. For example, he signed contracts to have regular music broadcasts from the best theaters, "caffè cantanti," and Roman piazzas. He helped to develop a few highly popular broadcasts such as the weather service. Ranieri secured the participation of some of the most famous Italian entertainers, the puppeteer Vittorio Podrecca for example.

Araldo Telefonico's Public

The only quantitative information known about *Araldo Telefonico*'s subscribers is that their number grew from 100 in September 1910 to 1,100 in September 1912 and reached a peak of 1,315 in December 1914. We have more precise information about listeners' social class. They typically were high nobility—for instance, Queen Elena and Margherita—and Roman politicians. So many politicians participated that a listening station was installed in the Camera dei Deputati, the equivalent of the U. S. House of Representatives. Other subscribers included professors, lawyers, engineers, doctors, clerics, newspaper editors, and journalists. *Araldo* was not just a domestic medium; in fact, among the subscribers were movie theaters, music lounges and theaters (where some of *Araldo's* programs were broadcast), hotels, and exclusive clubs.

A Legal Embroglio

Throughout the entire course of his enterprise, Ranieri was involved in a long, drawn-out lawsuit against the Italian postal ministry for delinquency of payments to the ministry. For the first three years, he was unable to pay the required fees. Consequently, the ministry revoked his license in 1914. The case was settled in April 1917 by the Rome City Court. It is important to look at the language of their decision because, for the first time, we see the distinction made between mass communication—the telephone news of *Araldo Telefonico*—and point-to-point communication—the normal telephone network—in both the courts and in the public mind of the era:[3]

> "Communicating, actually, is different from transmitting, because communication implies the possibility of a two-way interaction: this is what the *Araldo Telefonico*, due to the constraints of its technology, could not do. It transmitted every day, at fixed times, political news and music collected by Ranieri; it resembled the newspaper rather than the telephone. Mr. Ranieri broadcast the news not through the press, but using technology founded on the principles of telephony: but that system was not the telephone in the common sense of the word. So [it is] neither communication nor telephone [...] the appellant [Ranieri] must be absolved from this infringement because his actions cannot be considered a crime. In fact, it lacks one of the essential characteristics for being punishable: the objective nature of telephone communication that does not appear in the *Araldo*.

Thus, because the *Araldo Telefonico* did not follow the principles of use of traditional telephone communications, it could not be subject to its laws. Significantly, the perception of this distinction emerged during the 1910s. Until that time, in fact, the dissimilarity between interpersonal and broadcasting media was not even imaginable. This is the same insight that the

The *Araldo Telefonico*
Gabriele Balbi (continued)

Italian historian Peppino Ortoleva emphasizes about the idea of television. Until the 1920s, the notion of television similarly fluctuated between two different concepts: that of video-telephony (peer-to-peer) and television in the common sense (broadcasting).

Fonogiornale

Ranieri discontinued *Araldo Telefonico* in 1917 because of the war and his own financial problems. The first Italian "herald" after the war appeared in Milan in 1918. The most important people in this enterprise were the famous journalist Beniamino Gutierrez and again Luigi Ranieri. The Milanese *Fonogiornale* was close in spirit to that of the French *Théâtrophone* and the English Electrophone. In fact, key components of *Fonogiornale*'s schedule were lectures, melodramas, and public concerts from the best Milanese theaters. *Fonogiornale* was plagued with financial problems, however, and it closed in 1928.

Araldo Telefonico Reborn

The *Araldo Telefonico* returned to Rome toward the end of 1922. It introduced a series of technological innovations that aimed at offering a more user-friendly service. These innovations included protected lines to prevent unauthorized use and new warning signals for incoming broadcasts that served especially to classify the programs into distinct genres.

Luigi and his son Augusto Ranieri began conducting experiments in radiotelegraphy during 1922 and 1923. Luigi even established the first radio station in Rome and maybe in Italy. In 1923, he started a company called Radioaraldo, which offered a service based on the same principles as the *Araldo Telefonico* (transmitting content), but using wireless technologies. Furthermore, Ranieri ran both services parallel to each other. One example of this parallel strategy was the scheduling of advertisements on both services. Advertisements were chosen with similar criteria and were strategically placed to run at similar times on the two channels.

Between March and September of 1924, Radioaraldo was involved in negotiations to establish the first national radio company. Radioaraldo established agreements with two powerful competitors. The first was SIRAC (Società Italiana Radio Audizioni Circolari), the Italian subsidiary of Western Electric connected to FIAT and the new Minister of Communications. The second company, Radiofono, was presided over by a senator and maintained connections with Guglielmo Marconi's companies.

On June 17, 1924, the Italian government issued a license to the three companies collectively under the name of URI (Unione Radiofonica Italiana). But Ranieri never received much political support or financial backing, especially compared with SIRAC and Radiofono and, in August of 1924, Radioaraldo was forced out of business.

Araldo Telefonico Lives On

Araldo Telefonico, nonetheless, did not perish with the advent of radio. On the contrary, at the beginning at least, *Araldo* was superior to radio for several reasons. For one, *Araldo* provided its listeners with warning signals for each incoming broadcast, avoiding the pointless delays experienced by radio listeners. *Araldo* also offered a superior quality and purity of signal, and its equipment was portable—capable of being carried from room to room—in opposition to the immobility of radio sets. The *Araldo* equipment also was technologically more reliable than radio.

Perhaps the primary reason for the superiority of *Araldo Telefonico* (at least from the audience's standpoint) was the fact that Ranieri held exclusive rights for rebroadcasts from the most well-known theaters. For a long time, radio buffs could not listen to the popular concerts that appeared only on *Araldo Telefonico*. Ranieri's exclusion from early radio was a grave error, and early Italian radio paid a high price in this loss of quality and artistic variety. Ranieri was the only person who had the know-how and experience to organize a broadcasting service.

Araldo Telefonico in Bologna

At the end of 1921, an Araldo Telefonico system was set up in Bologna thanks to the initiative of Italo Pellizzi and later of Augusto Rigoni. The programming was based on Rome's first run of *Araldo Telefonico*, including the indispensable time signals that were provided in collaboration with the University of Bologna Observatory.

Araldo Telefonico in Bologna was quite

The *Araldo Telefonico*
Gabriele Balbi (continued)

unique in one respect. It was the longest running telephone news service in Italy comparable only to that of *Hírmondó*. During World War II, on January 1943, thousands of subscribers of *Araldo Telefonico* sent an urgent telegram to Benito Mussolini, asking that he not terminate the re-broadcasting of radio shows over telephone lines. Following the launch of a radio station in Bologna in 1935, EIAR (an Italian radio network) refused to continue the re-broadcasting agreement.

The loyalty of listeners is surprising. They were not interested in *Radio Araldo*'s programming (which was basically retransmitting the programs that EIAR aired), but rather in the mode of listening to those broadcasts across telephone wires. The preference for the telephone technology is shown also by the fact that subscribers continued to pay for the service despite the subscription fee costing two and a half times greater than that of the corresponding EIAR fee.

Conclusion

That the circular telephone has been an overlooked aspect of media history can be explained in two different ways.

First of all, mass media research begins with the 1920s, ignoring the preceding decades. Standard historiography considers radio to be the first broadcasting medium. Research on the circular telephone is difficult, because it requires an interdisciplinary approach. Circular telephones are, in fact, technologies on the borderline between the history of mass media and the history of telecommunications, two disciplines that have rarely encountered each other.

In addition to these discipline-related disparities, two main differences exist between "herald" systems and radio. Perhaps it is useful to introduce a new model different from the one-to-one or point-to-point model of communication and the one-to-mass model (broadcasting). In this one-to-many model, subscribers receive content only if they are linked to a central transmitter station and they pay a fee. Of course, certain radio and television wireless systems now operate according to this model. The greatest difference between wireless broadcasting and "herald" media is the infrastructure cost. The circular telephone was diffused only by erecting expensive and lengthy wires, and this necessity really helped out the diffusion of wireless technologies.

The most important legacy of the circular telephone was the idea of a schedule. In every country, popular radio programs reiterated the schedule of their wired ancestors, or early radio systems explicitly repeated the same "heraldian" schedule. The circular telephone also bequeathed a management model to radio broadcasting.

Even if the circular telephone was not the same as radio, we can claim that it was a prodrome, a predecessor to broadcasting whose study is indispensable for understanding the politics, structures, philosophies, and programs of early radio.

Hirmondò Concert Room

ENDNOTES

[1] Gabriele Balbi and Benedetta Prario, "Back to the Future: The Past and Present of Mobile TV," 162 in Gerard Goggin and Larissa Hjorth, eds., *Mobile Technologies: From Telecommunications to Media* (New York: Routledge, 2008).

[2] "Auditions téléphoniques de l'Opéra à l'Exposition d'électricité de 1881," *Le Magasin pittoresque*, 1882, 83; online at http://histv2.free.fr/theatrophone/souvenirs.htm.

[3] Quoted in Balbi and Prario, 164.

Historic (Bell) Telephone Website
A Somewhat Satirical Look

We recently received an e-mail from a visitor to the Mercurians' website (www.mercurians.org) suggesting that we check out a website with a large amount of information on telephone history. The main link is: http://www.answerconnect.com/articles/, and the sponsor is a company known as "AnswerConnect," which provides around-the-clock answering services for clients. The website truly has a lot of content relating to the history of the telephone, but with a surprising emphasis on the telephone in Atlanta and rural Georgia.

The menu page contains links to other pages, most of which do not relate to telephone history, such as "Dilbert Fans." One of the telephone history "articles" ("Atlanta Telephone History") deals solely with the introduction and development of telephony in Atlanta, Georgia. The "History of the Bell System" really is no more than a short piece about AT&T with links to current information about the company and has little to say about the history of the so-called Bell System. "Telephone Museums" continues the emphasis on the Bell System with the BellSouth Telephone Museum in Atlanta. The link to the museum, however, does not take one to the museum's main website, but to a tourist site geared toward entertaining "kids" (www.atlantakids.org).

The first group of links are for such little known telephone museums as the Elisa Telephone Museum in Helsinki, Finland (a PDF file in English); the Georgia Rural Telephone Museum; the Telephone Museum in Ellsworth, Maine (http://ellsworthme.org/ringring/); the New Hampshire Telephone Museum (www.nhtelephonemuseum.com/); and the Museum of Communications in Washington state (www.museumofcommunications.org/), formerly known as the Vintage Telephone Equipment Museum.

The group of links on this same page starts with something called "International Telephone Museums," but most of the museums are located in such "international" locations as Kansas, Illinois, and, of course, Georgia: rural Georgia. Still, there are a few links for museums in Brazil and Argentina in South America and in such European countries as Denmark and Norway plus a museum in Edmonton, Canada. Next comes the "Virtual Telephone Museum" (http://www.museumphones.com/) and "Telecommunications Museum," which is the website of the Rye County, Colorado, "Telecommunications Virtual Museum." Readers of this newsletter will be especially "pleased" to visit the next link in this group, "The First Telephone Call," which took place on March 10, 1876. In fact, most of the content of this website is a paean to Alexander Graham Bell as the one and only inventor of the telephone. It includes, for example, the electronic text of Herbert N. Casson's "The History of the Telephone," on a University of Virginia website. "Photographs of the Telephone" and "Alexander Graham Bell" continue this trend. Nowhere does one find a reference to Elisha Gray (1835-1901) or even Antonio Meucci (1808-1889), let alone Philip Reiss (1834-1874).

Clicking "Historic Telephones" on the menu page takes one to a large collection of links arranged under such headings as "Antique Telephones," "History Links," "History Articles," "Information on A. G. Bell," "Web Pages about Telephones from Around the World," and "Antique Telephone Collectors." The overseas telephones include those in France, New Zealand, and the United Kingdom.

"History Articles" is rather disappointing, given the substantial amount of high-caliber research done on telephone history. It has but four articles. One is a tribute to "milestones in AT&T History" on the company's website; a second is a link to the "Telephone" entry on Wikipedia; and a third has technical information on service lines and switchboards. The fourth, however, is of some interest, as it is an essay on George and James Lorimer, who started their own company (the Canadian Machine Telephone) to manufacture telephone switching equipment in Peterborough, Ontario.

Historical myopia aside, the website offers pages dealing with the antiquarian side of Bell System history in the United States, especially in rural Georgia, and novice telephone collectors will appreciate the links to Telephone Collectors International and the Antique Telephone Collector Association.

Early Cuyler, squidbilly and noted resident of Dougal County in rural northern Georgia

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