# Vox Machinae: Phonographs and the Birth of Sonic Modernity, 1877-1930

**by**

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# DEDICATION

For Mom, Dad and Brandon.

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—not speculative philosophy or science fiction—but he was always just as excited as I was to see how capacious a concept this business of "history" might be. Jay has been a tireless advocate on my behalf and has helped me land on my feet more times than one.

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# ABSTRACT

In late 1877 Thomas Edison cobbled together a crude mechanism of metal and wood he called the "phonograph," a device capable of mechanically reproducing sounds as varied as speech and birdsong. The scientific community and the general public hailed Edison's invention as a wonder of the age and speculated endlessly on the practical applications to which it would soon be put. But as Edison and his financial backers discovered, making money from sound recording was no easy task.

"Vox Machinae" draws on business records, newspapers, trade journals and advertisements to detail the first five decades of the business of sound recording. It begins with the technology's origins as a staged spectacle in the 1870s before detailing its application to office work in the 1880s and 1890s. Following an examination of the nickel-in-slot phonograph parlors of the 1890s it explores the technology's evolution as a form of "home entertainment" in the twentieth century. "Vox Machinae" argues, first, that each of these business models was an historical artifact produced by a give-and-take between phonograph entrepreneurs, the public and sometimes-intransigent material things. The story of twentieth century music is not only one of race, class, gender, taste, capitalism and consumption. It is also one of motors, batteries and hand-cranks and it involves production and distribution no less than consumption and meaning-making. Secondly, this dissertation argues that the search for a profitable business model also enlisted phonograph entrepreneurs and the public in a project of determining exactly what kind

of things phonographs and recorded sounds were. Did the phonograph represent a "talking machine" in the European and American tradition of the speaking automaton? Was it a "sound writer," inscribing spoken messages on sheets of foil and then reading these scripts aloud? Or did one's phonographs and records serve as frictionless conduits, channeling the actual singing, playing, preaching, and joking of distant (or even deceased) subjects? Sound recording technology was not a stable entity to be packaged and sold to the public. Rather it represented an ontologically-fluid cluster of material, cultural and social relations requiring that those who wished to sell it must first determine what it was.

"Vox Machinae" complicates the existing historiography of recorded sound in two ways. First, it draws insights from Science, Technology and Society as well as the "new materialism" to show how the materiality of sound recording technology shaped its commercial evolution. Rather than a blank slate on which to project commercial ambitions, the phonograph presented would-be entrepreneurs with a tightly entangled set of commercial, material, social and cultural "problems" to solve. Secondly, it seeks to bring together the nuance of recent cultural histories with an older interpretive rubric—that of the "culture industry." In so doing, it lays bare the tight relationship between production and consumption, without succumbing to the totalizing, historically "flat" conception of the recording industry offered by Theodor Adorno and other mass culture critics.

# INTRODUCTION

If she grew bored with the Liberty Bell and Independence Hall a visitor to Philadelphia's historic city center in 1919 might have walked a few blocks, caught a ferry across the Delaware River to Camden, New Jersey, and there, right at the water's edge, seen something remarkable—the industrial plant of the Victor Talking Machine Company of Camden, New Jersey. It was a sprawling complex of buildings, comprising 1,663,552 square feet of floor space and around a dozen-and-a-half buildings of various sizes. Its lumber yards—sixteen acres worth—were stacked twenty to fifty feet high with wood of various kinds which disappeared into the complex's buildings at a rate of over 36 million feet a year. Ships plying the Delaware River delivered coal to a depot right at the water's edge. From there it was lifted by a crane onto a conveyor belt and elevated to storage bins at the top of the complex's power plant which yearly consumed 55,000 tons of the black, sooty fuel. [1]

If our bored tourist found her curiosity piqued by these sights (and if she "knew someone,") she might arrange a tour of the plant's interior, beginning with Building 2, the executive offices. Her tour guide would almost certainly want to tarry in the building's marble lobby, its wainscoted boardrooms, or perhaps one of its lavishly outfitted executive offices. These spaces were built, in part, for public consumption and projected Victor's aspirations as a

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[1] Frederick O. Barnum, III. *His Master's Voice In America. Ninety Years of Communications Pioneering and Progress: Victor Talking Machine Company, Radio Corporation of America, General Electric Company* (Boston: General Electric Co, 1991), 51-53, 75.

serious arbiter of taste. But Building 2 is also an ideal place to begin a serious examination of the factory's operations, and soon our bored tourist arrives at the Order Department. There, distributor's orders for talking machines, records, spare parts and other sundries are received, compiled and turned into quarterly production plans for the factory. The creation of these work schedules are, in themselves, substantial achievements in the realm of industrial planning, because during the height of Victor's success in the years after World War I, orders always outstripped production. Scarcity of plant space, time, labor and the competing priorities of profitability and good will among the trade (distributors complained incessantly over the failure of the company to fill orders) made planning a monumental task.

Having generated production schedules, the Order Department parsed them out into work orders which are sent along to the company's various departments—such as the cabinet plant. Proceeding to Building 17 our visitor finds workers transforming miles of wood from Victor's lumber yards into cabinets for the company's trademark "Victrola" and other, less luxurious, models of talking machine. Sawing, hammering, gluing planing, turning, carving, finishing, veneering and dozens of other operations take place there that would—in nearly all other factories—constitute a total industrial process. In this plant, it is just one of many and when the cabinets reach the top floor they are passed via conveyor belts across the 4th street bridge to Building 1. In Building 18, a fabrication process every bit as involved as the cabinet assembly had been churning out hinges, turntables, motors, brackets and other kinds of hardware. These materials too are passed across 4th street via a bridge to Building 1 where the wood and metal effluent of the two plants are brought together to produce finished phonographs. They are assembled, inspected for sound operation and placed back on conveyors bound for the packing

section. There, they are lowered into crates before being sealed shut by an automatic nailing machine and sent down the "lowerator" to the first floor of Building 1—the shipping department.[2]

The manufacture of phonograph records was itself an undertaking that could (and in many places, did) occupy a company's attentions completely. In 1919 Victor ran a studio in New York City, but a great deal of its recording was conducted on the seventh floor of Building 15. Beginning in 1918, the company also made recordings in Building 22—an impressive structure which in a previous life had been Camden's Trinity Church. For a single singer or instrumentalist, the process was simple enough. He or she stood before a recording phonograph and waited for the engineer to finish preparing the apparatus. In these, the pre-electric years of recording, no microphones aided in the capture of whispers or low notes, so when given the signal to begin singing or playing is given, the performer worked strenuously to project every note into the apparatus' upturned horn. At the same time, especially high or loud tones are likely to cause distortion in the recording. It was necessary, then, for performers to rush back and forth, distancing themselves from the apparatus when singing loud or high notes and quickly returning to the horn for low or quiet ones. For ensemble records, such as those produced by the Victor orchestra, a kind of primitive balancing was achieved by arranging instrumentalists around the horn according to their relative volumes—violins and other strings up front, brass and percussion in the back. The engineer gives the signal and the band launches into a three-minute rendition of "Stars and Stripes Forever," or "After You've Gone."

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[2] B. L. Aldridge, *The Victor Talking Machine Company*, ed. Frederic Bayh (Published online by the David Sarnoff Library, www.davidsarnoff.org), 71-84. Barnum, *His Master's Voice,* 54, 59.

All of this labor, however, produced only a single wax record. This soft wax original was then subjected to several rounds of electroplating to produce hard copper matrices—"negative" versions of the record which could be used to stamp out thousands or even millions of copies in another medium. To see where this medium originated, our visitor would proceed to Building 13. Built in 1914 to house the record materials manufacturing operation, it was constructed on piles right at the water's edge where, Victor's engineers hoped, breezes coming off the Delaware would disperse the excessive heat generated by the process. Here a mixture of shellac and other materials was heated and mechanically kneaded until it was pliable and uniform, and was then fed out in small square pieces which were taken to the record stamping room where they are again heated and then stamped with the original matrix containing sonic information captured in the company's studios. The overflow is trimmed from the (now round) pieces of shellac and, after inspection, they are packaged and sent to the shipping department.[3]

In the shipping department, workers compile distributor's orders, gathering the necessary number and models of talking machines and record selections before pushing it all out onto the loading dock to be put on railroad cars. During the busy season leading up to Christmas they fill ten such cars twice a day. An electric switch engine (the company's own) pulled them across Delaware Avenue to the station of the Pennsylvania Railroad where they are sent out across the country to company distributors.[4]

At this point, the continent-spanning machine that was the Victor Company became difficult to discern, spreading out across the North American continent and beyond like an

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[3] "Barnum, *His Master's Voice,* 51-53, 75, 80-82. "The Carefully Guarded Secret of How Phonograph Records Are Made," *The Christian Science Monitor,* April 15, 1922, 2. Alexander H. Kolbe, "How Phonograph Records are Made," *Popular Mechanics,* February 1922, 581-582.

[4]Aldridge, *The Victor Talking Machine Company,* 71-84. *Barnum, His Master's Voice,* 76-77.

increasingly fine network of commercial capillaries. If she has not had her fill of talking machines, our visitor might return to the offices in Building 2 to interrogate the distribution manager as to where all of these records and phonographs were going. In 1919, he would have informed her, Victor's wares filtered out to just over 100 distributors. Intermediary nodes in Victor's sales network, the distributors fulfill several important roles in the business of making and selling mechanically-reproduced sound. First and foremost, they are channels for the large amount of Victor merchandise pouring from the plant at Camden, and they must have the facilities to handle that flow. Most would have owned warehouses with their own railroad "spur," so that merchandise could be transferred directly from rail car to loading dock. Some of them, like Wanamaker's of Philadelphia were involved in general retail but most were distributors (and often retailers) of pianos and other musical instruments such as Lyon & Healy of Chicago and Sherman, Clay & Company of San Francisco. [5]

Just below the distributors in this Great Commodity Chain of Being, were 6,000 licensed Victor dealers whose wares are delivered from the distributors' warehouse via horse and wagon or, by 1919, truck. Dealers' primary point of contact in the Victor network were the distributors and Victor exerted constant pressure on distributors to discipline their subordinates. Distributors, for example, were charged with vetting potential dealers and ensuring their adherence to company policy, including inventory quotas and pricing guidelines. But Victor also aimed to influence its dealers directly. Through the house organ, the *Voice of the Victor*, the company inculcated its dealers into the cult of enthusiastic selling and, beginning in 1919, hosted a free two-week course in "practical salesmanship" in Camden for the benefit of dealers, distributors

[5] Victor Talking Machine Company, "List of Victor Wholesalers, February 1, 1919" RCA Victor Camden/ Frederick O. Barnum III collection. Box 9, Folder 22: Distributor Lists 1907-1945.

and their employees. To make sure the lessons were taking, twenty to thirty men employed as part of Victor's "traveling staff" fanned out from Camden on the nation's railroads to serve as "Ambassadors of Trade." Their principle job was to maintain connections with (and keep tabs on) local dealers.

Victor's system of manufacturing, distribution and sales—outlined here in the most cursory of terms—was phenomenally effective at achieving its designed aims. In the six year run-up to 1918 the company had sold 2.5 million instruments and 127 million records. But Victor was, in turn, only one (admittedly large) part of an entire industry—one which experienced phenomenal growth in these years. In 1919, 166 American companies were engaged in the business of manufacture and sale of phonographs and phonograph records. That same year the industry produced a total of 2,226,000 phonographs and 106,997,000 records, which—together with spare parts and other merchandise—represented a production value of $158,548,000. The Depression beginning in 1920 suppressed sales of phonographs and records in the next few years and by the end of 1921 fewer than 100 manufacturers of phonographs and related articles remained in the field. These hard times, however, fell disproportionately on marginal producers and Victor, Columbia, Brunswick and Edison's National Phonograph Company continued along. Ninety percent of the industry's 1921 output belonged to these four firms and a half-dozen others. That same year, an estimated 500 distributors (or "jobbers") and 22,000 local dealers worked to place manufacturers' phonographs and records before the general public.[6]

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[6] Barnum, *His Master's Voice,* 90. "Talking Machine Industry Grows," *Los Angeles Times*, June 6, 1921, pg. 15. G.D. Crain Jr. *Crain's Market Data Book and Directory of Class, Trade and Technical Publications* (Chicago: G.D. Crain, Jr., 1922), 403-404. The estimate of 6000 dealers comes from B.A. Aldridge who reports a figure of 6,043 Victor deals as of March 31, 1916. Aldridge, *The Victor Talking Machine Company,* 71-84. *Voice of the Victor,* January 1908, 2. *Voice of the Victor*, November, 1912, 7.

Due to this massive outflow of material by Victor and other manufacturers, the consumption of phonographs and phonograph records became commonplace in the years after World War One, even if class-stratified. Of the 100 working class families surveyed by Robert and Helen Lynd in Muncie, Indiana, at least twenty-three owned phonographs, but more socio-economically diverse surveys revealed higher rates of phonograph ownership. A study published in 1926 found that 34 percent of all the households surveyed in "small-town" Kansas owned phonographs, while a 1925 study of Zanesville Ohio found the technology in over half of the homes surveyed.[7]

More difficult to assess in 1919, however, was the profundity of the new technology's impact on American culture and society, but here we have an advantage over the bored tourist or even Victor's number-crunchers. In recent years cultural historians have detailed the many linkages between sound recording and American life which formed in the post-war period and they have left little doubt about the matter: recorded sound influenced the habits and shaped the meaning-making processes of Americans in every walk of life. The middle class consumed recordings of Enrico Caruso and other exemplars of European "art music," thereby taking part in the construction of a new middlebrow culture, while after 1921 African Americans found expression of their own middle class identity in the output of Black Swan Records, the first major black-owned recording company. Through recorded pop, country and blues, workers came to see themselves through categories of difference shaped profoundly by genres of recorded

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[7] Mary E. Hoffman, *The Buying Habits of Small-Town Women*, (Kansas City, New York, 1926), 73. Robert Staughton Lynd and Helen Merrell Lynd, *Middletown a Study in Contemporary American Culture* (New York: Harcourt, Brace and Company, 1929), 244.

music, while immigrants found their experiences reflected and interpreted in recordings produced in English as well as Yiddish, Polish, Italian and other languages.[8]

**Vox Machinae**

This dissertation details the history of sound recording in the years 1877-1930, paying particular attention to the technology's evolution as a commercial proposition culminating in the creation of the modern "recording industry." It traces the various business models pursued by phonograph entrepreneurs in these years, positioning each as an historical artifact produced by a give-and-take between phonograph entrepreneurs, the public and sometimes-intransigent material things. The story of twentieth century music is not only one of race, class, gender, taste,

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[8] David Suisman, *Selling Sounds: the Commercial Revolution In American Music* (Cambridge: Harvard University Press, 2009,) 204-239. Karl Hagstrom Miller, *Segregating Sound: Inventing Folk And Pop Music In the Age of Jim Crow* (Durham: Duke University Press, 2010); William Howland Kenney, *Recorded Music In American Life: the Phonograph And Popular Memory, 1890-1945* (New York: Oxford University Press, 1999), 65-87. What most Americans could not have appreciated was that around the globe musical recordings were effecting similarly dramatic shifts in the ways people conceived of self and other. Between 1925 and 1930 an explosion of recording activity took place across the world as record companies turned their attentions to "hula, rumba, beguine, tango, jazz, samba, marabi, kroncog, tarab, charaab" and other vernacular styles of the colonial ports. Circulating within and between these outposts of European empire, recordings inverted colonial sonic hierarchies through syncopation, rough timbres and sometimes overtly political lyrics. By "decolonizing the ear" the recorded musics of the soon-to-be "third world" created the subjective preconditions for decolonization proper. Michael Denning, *Noise Uprising: the Audiopolitics of a World Musical Revolution* (London: Verso, 2015). Americans, too, looked to music in recorded and non-recorded formats to help them make sense of themselves in an imperial context, with songs like "Chinatown, My Chinatown," for example, emphasizing the alienness of Asian-American immigrants. The song, with its depictions of the supposedly opium-addled Chinese sections of American cities, ascribed social inferiority and dangerousness to these groups at the same time that it hinted at a longing for their carefree "dreamy" lifestyles. On the other hand, Hawaii and her people, annexed to the United States in 1898 required another reconfiguration of Americans' mental maps. Starting as early as 1899, major recording firms acquired and sold records of Hawaiian traditional and *hapa haole* ("half-foreign" or "half-white") music and by the mid 1910s, a craze for all things Hawaiian had gripped the mainland. The style and content of these musics were always up for negotiation and native Hawaiians pushed back against the reductive and exoticizing tendencies of tin-pan alley. All the same, by the end of the decade Americans had come to understand Hawaii as a place of racially "other" but non-threatening natives, the most striking and pervasive symbol of whom was the sexually available Hawaiian "sweetheart." Through recordings of such music, American mainlanders came to view themselves and Hawaiians within a sonic framework that made sense of "self" and "other" in an imperial context. Charles Hiroshi Garrett, *Struggling to Define a Nation: American Music And the Twentieth Century* (Berkeley, CA: University of California Press, 2008), 201.

capitalism and consumption. It is also one of motors, batteries and hand-cranks. It involves production and distribution no less than consumption and meaning-making and to understand sound recording and its effects it is necessary to step back and take the whole process in at the level of an industry—a "culture industry." This dissertation departs from much of the existing literature on the history of sound recording, then, through its emphasis on the material (as well as the cultural) preconditions for the phonograph's twentieth century influence.

It argues, first, that the modern "recording industry" came about only after several other business models had been pursued, and that it was by no means the most obvious way to wring a profit from the phonograph. Secondly, it argues that each of these succeeding business models was tightly entangled with a distinct phonographic ontology, with the technology understood at different times as a talking machine, a sonic scribe, a sonic printing press and—eventually—as a transparent conduit for sonic events which happened elsewhere.

There are a number of existing theoretical contexts into which the phonograph could be placed and one of the most ready-to-hand is "media." The phonograph has certainly come to act as a form of media. "Vox Machinae," however, begins from a position of agnosticism regarding "media," because, as a category of analysis, the term actually smuggles in as presuppositions some of what this study sets out to explain. Media forms, everyone knows, come laden with complex patterns of human signification and intentionality. Media "mean" something in ways that other artifacts of human manufacture do not and they therefore "naturally" command our attention, even to the point of over-saturation and then inattention. Because of this supposedly inherent power, media technologies are readily able to implicate subjects in relationships, intellectual or affective, with subjects elsewhere. More pointedly, media *mediate* something.

Something must pass through a technology for it to be media. In the case of the phonograph, however, these assumptions were very often not characteristic of the way subjects initially perceived the technology. Phonographs *became* media over time.

On the other hand, the phonograph's historical effects map very closely onto another general category of objects familiar to the historian of American culture—commodities. If considered a commodity, the phonograph comes into focus as just one more instance in a long line of goods which American consumers have used to shape themselves and their worlds. Beginning no later than the late 17th century, the American colonial gentry had employed goods imported from London to distinguish themselves from the rabble. Large homes filled with expensive furniture, silverware and linens provided the visual markers of a genteel household and gave its occupants entry into polite society. In the eighteenth century self-fashioning took on an even more consumeristic gloss as the burgeoning middle class took up its call. The gentry had leavened its use of conspicuous accumulation with an emphasis on time-consuming personal refinement in speech, deed and manners. The busy bourgeoisie tended to settle for "polite" behavior and generally made up the difference with purchased goods. Colonial consumption, however, did not only serve as an invidious marker of class difference, but also allowed American elites and middling sorts to express a mediated form of national identity. In keeping up with the latest fashions out of London, colonials positioned themselves within a trans-Atlantic "empire of goods" thereby laying claim to Britishness. As tensions rose between the colonies and the mother country after 1765, consumption again played a pivotal role in crystallizing identity as colonials foreswore the importation, purchase or use of British-made goods. A shared ethos of self-sacrifice and modest living (reinforced by no small measure of surveillance and social

suasion) gave rise to a separate American public sphere and an identity separate from that of "British."[9]

For the most part, colonial proto-consumerism had remained the purview of the wealthy or well-born denizens of the coasts and rivers. In the Jacksonian Period, market relations sent their taproots deeper into the body-politic and further into the American hinterland, drawing the provincial middle classes and workers into the world of consumption. Lingering notions of republican virtue and self-sacrifice served as a brake on the excesses of the market revolution. By the time of the Civil War, however, Americans and their leaders had moved a long way down the road toward liberalism's conflation of consumption and the public weal.[10]

Americans' economic lives were again transformed in the last decades of the nineteenth century when a new constellation of market relations coalesced in the United States and abroad. In the 1880s industrial processes facilitated massive increases in output allowing well-capitalized companies to produce cookies, crackers, soaps and other, more durable, household items such as furniture or home "appliances" in unprecedented numbers. These consumables quickly saturated local markets forcing producers into expanded national and international territories in which to offload their products. The resulting overlapping territories necessitated that producers differentiate their products, giving rise to trademarks and branding. At nearly the same time, the

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[9] Richard L Bushman, *The Refinement of America: Persons, Houses, Cities* (New York: Knopf, 1992). For in-depth analysis of colonial consumption see Jennifer L. Anderson *Mahogany: the Costs of Luxury in Early America* (Cambridge: Harvard University Press, 2012); See also David Hancock, *Oceans of Wine: Madeira And the Emergence of American Trade And Taste* (New Haven: Yale University Press, 2009). Sidney Mintz investigates an even longer history of trans-Atlantic consumerism in his study of sugar consumption. See Sidney Mintz, *Sweetness And Power: the Place of Sugar In Modern History* (New York: Penguin Books, 1986); T. H. Breen, *The Marketplace of Revolution: How Consumer Politics Shaped American Independence* (New York: Oxford University Press, 2004).

[10] Charles Sellers, *The Market Revolution: Jacksonian America, 1815-1846* (New York: Oxford University Press, 1991); Joanna Cohen, *Luxurious Citizens: The Politics of Consumption in Nineteenth-Century America* (Philadelphia: University of Pennsylvania Press, 2017).

rise of nationally-distributed magazines, gave national brands a platform for advertising their superabundant goods to the American public. In the years around 1900 a burgeoning class of professional admen began filling the national magazines with eye-catching images and copy which transformed cutting-edge social-psychological theories into techniques of commercial persuasion.[11]

In many ways the turn-of-the-twentieth-century "consumer revolution" carried on in intensified form patterns of subjectivity-building established in earlier decades. For example, the close relationship between consuming and national belonging established prior to the Revolution was taken up by admen as well as consumer advocacy groups who argued in ever more explicit terms for a conflation of consumption and citizenship. The idea was enshrined in federal policy and labor politics by mid-century. Consumption-based claims to Americanness also came entangled with the politics of class. In the late nineteenth century, women factory operatives were still denied the identity of "worker" as well as the institutions and modes of sociality traditionally claimed by the male working class. Consequently, they fashioned identities out of consumption. Store-bought hats, dresses and makeup marked these women as "Americans" distinct from their (often) Old World parents. But working women also used these articles to

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[11] Susan Strasser, *Satisfaction Guaranteed: the Making of the Mass Market* (New York: Pantheon Books, 1989); Richard M. Ohmann, *Selling Culture: Magazines, Markets, And Class At the Turn of the Century* (London: Verso, 1996); Roland Marchand, *Advertising the American Dream: Making Way for Modernity, 1920-1940* (Berkeley: University of California Press, 1985); Pamela Walker Laird, *Advertising Progress: American Business And the Rise of Consumer Marketing* (Baltimore: The Johns Hopkins University Press, 1998); Stuart Ewen, *Captains of Consciousness: Advertising And the Social Roots of the Consumer Culture* (New York: McGraw-Hill, 1976); T. J. Jackson Lears, *Fables of Abundance: a Cultural History of Advertising In America* (New York: Basic Books, 1994); John Brewer and Roy Porter, *Consumption and the World of Goods*, (London ; New York: Routledge, 1993); Lawrence B. Glickman, *Consumer Society in American History: A Reader* (Ithaca, N.Y.: Cornell University Press, 1999); Susan Strasser, Charles McGovern, and Matthias Judt, *Getting and Spending: European and American Consumer Societies in the Twentieth Century*,(Cambridge: Cambridge University Press, 1998); Arjun Appadurai et al., *The Social Life of Things: Commodities in Cultural Perspective*, (Cambridge: Cambridge University Press, 2013).

establish a class-based identity which asserted dignity in the face of middle class and elite condescension and which could even become the fodder for political mobilization. When working women demanded that bosses provide places to store their expensive hats or when they flung eggs at scabs and tore at their dresses, they illustrated the politicized nature of consumer goods.[12]

Bicycles did much the same work of shoring up identity for their (initially) male and elite owners. The giant "high wheel" bicycles of the 1880s offered well-documented opportunities for self-injury, making them a favorite marker of masculinity for the nation's reckless sons of privilege. By 1900, the safety bicycle allowed a wider and more "polite" swath of elite society to enjoy the pastime. These users, in turn, often employed their bicycles to shore up class-based identities, such as when New York's fashionable set bicycled to the music of live orchestras at the exclusive Michaux Club. As bicycles spread through the middle and working classes after 1900, they again reinforced old identities. Poles, Cubans, Germans, Italians, Japanese, Chinese, Norwegians and African Americans all took to the streets of major cities in ethnically or racially homogenous bicycling clubs.[13]

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[12] Charles McGovern, *Sold American: Consumption And Citizenship, 1890-1945* (Chapel Hill: University of North Carolina Press, 2006); Lizabeth Cohen, *A Consumer's Republic: the Politics of Mass Consumption In Postwar America* (New York: Knopf, 2003); Nan Enstad, *Ladies of Labor, Girls of Adventure: Working Women, Popular Culture, And Labor Politics At the Turn of the Twentieth Century* (New York: Columbia University Press, 1999). For more on the role of working class women in the origins of modern consumer culture see Kathy Lee Peiss, *Cheap Amusements: Working Women And Leisure In New York City, 1880 to 1920* (Philadelphia: Temple University Press, 1986).

[13] Wiebe E. Bijker, *Of Bicycles, Bakelites, And Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge: MIT Press, 1995); Evan Friss, *The Cycling City: Bicycles And Urban America In the 1890s* (Chicago: The University of Chicago Press, 2015).

**Chapter Outline**

Chapters 1, 2 and 3 cover the period before 1900, each focusing on one of the three marketing strategies employed by the early phonograph industry in the two decades prior to the technology's mass diffusion into private homes. In this, the first half of the period under examination, industry personnel sought to situate the phonograph in a complex of meanings conducive to their own bottom line. At every turn, however, they found their ability to do so impeded by obstacles of distance, "agency costs," and mechanical intransigence. Consequently, the results of the phonograph industry's profit-making efforts in this period ranged from financially catastrophic to mediocre. At the same time, people *did* begin talking about the phonograph, and the range of things they said about the technology owed as much to the ostensibly irrelevant contexts of production and consumption as any ideal projected by manufacturers.

Chapter 1, follows the phonograph in the years after its beginnings on Thomas Edison's laboratory bench, as it circulated as an exhibition novelty. During this period the technology was framed by its handlers and audiences as a "talking machine" which mimicked—generally poorly — the sonic events which took place around it. As a talking machine, the phonograph was understood as a descendant of a long line of automatons which had walked, talked and played chess on European and American stages for centuries, and was even afforded a certain degree of "agency" in written accounts. Importantly, the mechanical, sociological, and economic factors which reinforced the "talking machine" understanding of the phonograph were the very same set of parameters which doomed it's profit-generating abilities.

After enthusiasm for the technology abated around 1879, it largely disappeared from public consciousness, but in the late eighties a reconfigured version of the phonograph stepped onto the platform of popular culture once more. In Chapter 2, we follow Edison and a new field of competitors represented by Alexander Graham Bell and his associates as they sought to capitalize on the phonograph's potential as an aid for business dictation. In this period, another understanding of sound recording pushed to the forefront of phonographic discourse, emphasizing the scriptive nature of recording and playback. The idea of the phonograph as a "sound writer" had been implicit from Edison's earliest public pronouncements on the future of the machine and even in the name he gave it. Rather than an autonomic mimic of trumpet solos and dog barks, subjects now understood the phonograph as the ideal amanuensis, capable of instantaneously transmuting spoken words into "text" in the form of dots and dashes on a wax cylinder. All one need do to have this script read aloud was to again place it in a phonograph and set it to going. The "sound writer" conception of recording fit well with text-centric understandings of information, and for that reason resonated with the scribbling classes for decades. But in the 1890s the technical limitations of the phonograph as a business tool pushed the industry away from that marketing strategy and as a result, other modes of selling, buying, and knowing recorded sound took root in American life.

In the years just before the turn of the century, the phonograph industry shifted its efforts from business applications back toward the field of amusements, and Chapter 3 picks up the narrative at this juncture. Outfitting their talking machines with coin-in-slot attachments phonograph companies placed the devices in public places to dole out music, skits, comic routines, and even sermons for a nickel apiece to curiosity-seekers. To supply the nation's

phonograph parlors with material there arose the world's first "recording industry" and as it evolved from a sideline in Edison's laboratory to a labor intensive industry with thousands of participants, the recording industry forced a reconsideration of the phonograph's ontological status. Consequently, the quaint phonographic scribe represented by the "sound writer" evolved into a consideration of phonography as a kind of "publishing." Subjects wrote of the process of recording sounds in terms emphasizing its continuity with the physical fabrication of the wax cylinder records or "phonograms," a tendency encouraged by the industrialized nature of the undertaking. The men and women who sang or recited into the recording horn became known as "cylinder makers" and their craft was often thought of not as a kind of artistry or authorship (which, in many cases, was reserved for the composers and writers who had penned the original text of the recorded song) but as a cousin of printing. Like the printers before them, cylinder makers were valued for their skill at a a highly repetitive and time-consuming task in which was paramount the accurate multiplication of someone else's text. As with the scriptive understanding of sound recording covered in Chapter 2, the emphasis on sound printing, militated against the identification of the recorded subject with the act of playback, though not entirely. By 1900, belief in the ontological identity of sonic "originals" and recorded "copies" had found a firm foothold in the minds of American consumers of recorded sound.

In Chapters Four, Five, and Six, we shift to the fourth phase of the phonograph industry in which phonographic consumption moved from public "phonograph parlors" to the private home. In its earlier marketing efforts the phonograph industry wrestled—often unsuccessfully—with obstacles to profit. In the years around 1900, however, it pioneered a number of mechanical, financial, and legal technologies which allowed it to more masterfully control the flow of money

and signs on which its success depended. At the same time that the phonograph was evolving into one of the world's first articles of mass consumption, it became necessary for the industry to assuage Progressive Era subjects' anxieties regarding consumption, the market, and mechanism. The same industrial-commercial virtues which facilitated profit—efficiency, seamlessness, literal and figurative "quietness"—also facilitated the sleight-of-hand necessary to convince the world that the phonograph belonged in the respectable parlor. The less the anarchy of industrial capitalism was permitted to show itself in the ritual of purchasing and consuming sound, the more efficient were the industry's operations and the more enthralled the consumer with his purchase. In both cases profit increased.

Chapter Four narrates the founding and phenomenal expansion in the years after 1900 of the Victor Talking Machine Company, the company which, more than any other, capitalized on and reinforced the cultural logic of home phonograph consumption. It focuses primarily on the "selling" end of the business, emphasizing Victor's efforts to control the distribution and sale of its products and argues that the company's project forwarded a particular "commercial aesthetic" predicated on the occlusion of price, scarcity, and, especially, competition. On one hand, the move to "rationalize" operations represented an effort on the part of Victor to save money and maximize profits. If Victor dealers engaged in unnecessary competition amongst themselves, for example, they wasted time and resources which could be employed in increasing *overall* sales, not just shifting them from one dealer to another. But the move to tamp down competition also dovetailed with the Progressive Era sensibility which saw competition and price cutting as representative of the irrational, anarchic and anti-social dynamics of Gilded Age capitalism. Such market signifiers cast doubt on the phonograph's value both by highlighting the mercenary

motivations of Victor and their dealers and by undermining the claims of artistic transcendence which Victor increasingly made for its products. In order to avoid these suspicious and unseemly associations, the company sought to rationalize its operations, making its national and international network of people, things and money operate seamlessly and quietly.

Chapter Five follows the phonograph out of the dealership to the domestic parlor. Unlike most other commodities of its time the sale of a phonograph marked only the beginning of the purchaser's relationship with his dealer, as the value of the technology lay not so much in the machine itself but in the constantly expanding universe of records manufactured to "play" on it. The successful placement of a phonograph in the home, then, was expected to redound to the ongoing benefit of the industry, but *only* if the human and material linkages facilitating the two way traffic in cash and shellac were maintained. If the phonograph broke down or reproduced unsatisfactorily, for example, consumers would likely lose interest in it and cease buying new records. With this in mind, dealers worked diligently to keep their customers' talking machines in good order, disseminating information about phonographic maintenance, running repair shops and even sending mechanics door-to-door to service poorly performing units. But as with Victor's efforts in controlling the semiotics of the salesroom, the material and human relationships enacted to perpetuate the sale of records had to be hidden from view in order to be most effective. The presence of the phonograph within the home, for example, represented a necessity in the project of selling a household phonograph records. The phonograph's motor, turntable, and horn, however, squared poorly with the ethos of the middle class parlor as a sphere of refinement insulated from the tawdry commercial and mechanical logics of the public sphere. Consequently, it was feared, fastidious homemakers might put the phonograph in a spare room

where it could fall into disuse, and no longer encourage record purchases. In order to prevent the phonograph from becoming an obtrusive and annoying presence Columbia, Victor and Edison worked to conceal those facets of its existence which disrupted the ethos of the parlor. Unseemly mechanical bits were concealed behind polished hand-carved cabinetry. The whirring and clicking of phonographic motors and governors were ingeniously muffled or channeled away from the ear. Ugly and disorganized stacks of records were given homes in specially-manufactured "record albums," where, properly indexed and slid into a cabinet, they would not remind the user of the fortune he had spent on them.

Chapter 6 builds on the previous two chapters, showing how the material and discursive transformations which the phonograph industry effected in the name of commercial viability contributed to an altogether new understanding of recorded sound which we have called "sonic modernity." To satisfy the demands of operational efficiency as well the psychological needs of the day, phonograph manufacturers sought to rein in the bluster and noise of its own operations. In so doing, they not only created a profitable business model but also facilitated a semiotic sundering of the phonograph from the technological, economic and social contexts of its production. At the same time, new record-making processes opened up the field of recording to a new class of performers—famous or semi-famous virtuosi of the art music world. These "stars'" increasing centrality in promotional materials and public thinking tended to hide the rote labor of record manufacture.With the phonographic apparatus and the labor of recording largely occluded, recorded sound presented an interpretative puzzle. Who's voice filled the parlor if not that of the now-eclipsed "talking machine?" This "agency gap," however, suggested its own solution. With the disappearance of human and mechanical labor embodied in the phonograph

and its records, it now became possible to conceptualize the device as a frictionless conduit to the sonic labor of "recording stars," unmediated by other human and non-human agents. Under these circumstances playback assumed an ontological identity with the "original" sounds created by the recording star in the studio.

"Vox Machinae's" six chapters set out to explore the material and discursive preconditions for much of the phenomena explored in the existing historiography— to ask "how" where others have asked "who?" "when?" "what?" "where?" and why?" In the conclusion "Vox Machinae" takes up a second and ancillary matter. Not only has the existing literature neglected to explain *how* the phonograph achieved its effects, I argue, but it has also failed to grasp the extent of its influence. Historians of recorded sound have demonstrated amply that phonographs and records have shaped the ways Americans and others map their imaginary worlds. In this regard, recorded sounds have behaved in the public sphere much like tea sets and cigarettes and bicycles. But recorded sound has not been just any other commodity, I argued, and the phonograph's influence in American life and culture has often taken the form of a kind of "ur" commodity, giving semantic structure to and propelling the consumption of other articles— clothing, books, magazines and cars. In the conclusion, I flesh out this point and attempt to theorize it within the broader framework of this dissertation.

**Terms**

The welter of terms appended to sound recording technologies in this period require some clarification. "Phonograph," the term used most often in this text, was the proprietary name appended by Edison to the original apparatus which debuted in 1877. The device contrived in the early 1880s by Alexander Graham Bell and his associates was named the "graphophone." The

newer apparatus differed significantly from the old tinfoil phonograph and its most conspicuous feature was its removable wax cylinder records. Finally, when in the 1890s Emile Berliner developed a third style of talking machine whose most conspicuous distinguishing feature was its flat disc records, he dubbed the device the "gramophone." The design was the one very successfully capitalized on by the Victor Talking Machine Company and it became the archetype for all phonographs to follow. In the United States, the sound recording industry and its consumers eventually settled on "phonograph" as the generic term for all sound reproducing technologies. In Great Britain and in Europe "gramophone" served the role played by "phonograph" in the United States, evolving in common usage to embrace all sound recording technologies generically. Finally, the term "talking machine" arose shortly after Edison's unveiling of the phonograph in 1877 and was also used as a catch-all designation for sound recording devices on both sides of the Atlantic.

This dissertation follows American convention in referring to all of the sound reproducing technologies under examination as "phonographs" (note the lower-case 'p'). Where necessary it employs "Graphophone" and "Gramophone" to denote the machines produced by the Columbia Graphophone Company and the Victor Talking Machine Company respectively. Finally, I have reserved use of the phrase "talking machine" to flag a specific conception of recorded sound which, though prevalent in the technology's early years, soon disappeared from common usage.

# CHAPTER I

## The Talking Machine

Soon after purchasing the rights to exploit the phonograph in early 1878 the Edison Speaking Phonograph Company (ESPC) determined that the path to phonographic profit lay through public exhibition rather than mass production and sales, and set about wringing every possible dime from one of popular cultural's oldest formal institutions— the stage. This commitment to the ancient art of staged spectacle, however did not constrain the ESPC, as one might expect, to pre-industrial business methods. Rather than mount the rostrum themselves, the company enlisted lecture agent and Lyceum impresario James Redpath to design a business strategy of industrial scope and ambitions. Within weeks, he had blocked the United States off into dozens of "territories" each with a single licensee holding a monopoly on phonographic exhibition.[1]

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[1] Because spectacle— rather than phonographs themselves— was the company's primary stock-in-trade, the ESPC were compelled to pursue a "spatial fix," creating artificial scarcity of phonographic spectacle within separate geographic territories. This required that the company contractually obligate itself to restrict sales of phonographs, but it also meant asserting the company's rights as holders of the Edison patents against patent-infringers. By producing a handful of machines— or even one— an infringer could do a great deal of damage to a spectacular commodity by flooding the market with imitations and driving its value down. Cheever likely had this in mind when he wrote that "interest in the thing will only last while it is a novelty and for that reason it seems best to start the thing at one and the same time in all parts of the country." As sure as the sun's path through the sky, eastern phonograph exhibitions (already underway, thanks to Johnson) would send knockoffs coursing westward across the fruited plain ahead of the ESPC's own machines. The problem would be exacerbated by a phased opening of territories. Far better to establish simultaneously as many territories as possible and reap the royalties from districts not already plundered by peripatetic infringers. Uriah Hunt Painter Papers, Edison Speaking Phonograph Company Letterbooks, Treasurer's Letterbox, (March-August, 1878) Cheever to Hubbard 3/20/1878

In this chapter, I analyze the national operations of the ESPC, paying particular attention to the far-flung infrastructure of relationships built and maintained by the company in their pursuit of profit. From the standpoint of the company and its investors, this infrastructure was erected in order to sustain two types of "flows." First, it was necessary for the ESPC to transmit to its agents in the field the necessary material and discursive equipment to entertain and enlighten audiences. This included the phonograph itself as well as its attendant paraphernalia, but it also included knowledge--tacit and otherwise--of phonographic practice and maintenance. When the infrastructure's actors succeeded in placing phonographs and phonographic expertise before audiences, they became responsible for a second, even more important, "flow": the return transmission of money. Money served as the lifeblood of the ESPC, funding its investment and expansion, but it was also the company's *raison d'être*. Money drove these men to purchase the rights to the phonograph and incorporate a company to exploit it. It is for the sake of money that the ESPC projected its influence out of the Northeast and established relationships with parties from Maine to California. Money drove them to manufacture phonographs and ship them to exhibitors and it was for money that the company expended enormous amounts of time and energy trying to secure the cooperation of their dispersed agents.

Because of the long distances involved and the sometimes subtle work set before it, the ESPC's infrastructure regularly failed in both its assigned duties and these two species of infrastructure failure carried distinct implications for the history of sound recording. First, adequate phonographs and phonographic expertise very often did not reach their intended destinations out in the hinterland and audiences were imposed upon with every variety of exhibitionary malfeasance, from ear-piercing playback to bungling exhibitors. Consequently,

audiences had constantly to grapple with the semiotics of the phonographic mechanism itself and of the physicality and uncertainty of phonographic practice. The phonograph, owing to its own mechanical stubbornness as well as exhibitors' regular failed attempts to bring the machine to heel was infused with the signs of agency. Rather than a device capable of "capturing" sonic events and "playing them back,"— a passive temporal portal through which passed sonic events — the phonograph, for these audiences, remained very much a "talking machine"— a mechanically simplified version of the speaking automatons of the 18th and 19th centuries.

Secondly, the ESPC found it difficult to maintain the necessary discipline to maintain the second crucial flow—the return transmission of money. On one hand, the disappointment of financial expectations grew directly out of the first set of failures. When phonograph exhibitors appeared clumsy or unknowledgeable; when the phonograph reproduced melodies "out of tune" or interlaced with piercing and scratching noise; when the spectacle failed to justify the 25¢ expenditure, audiences responded negatively. The standards for sound recording were, of course, historically contingent and themselves part of the economic and cultural negotiation which took place at early phonograph exhibitions. But the standard for "a good time" was not a *tabula rasa* on which the ESPC could chalk out their own financially-conducive designs. Audiences brought pre-existing expectations to bear on their understandings of the phonograph exhibition and these demonstrations could and did "fail." Their friends and neighbors would not likely make the same mistake they had. But even assuming the exhibition's success, exhibitors and licensees could engage in behavior deleterious to the ESPC's bottom line up to and including stealing the company's share of proceeds. In many cases these faithless agents lived and worked in locations far removed from the ESPC's headquarters in New York and these circumstances, taken together

with the company's scarce manpower and capital, ensured that little could be done to control their behavior. The failure of the infrastructure to successfully conduct money back to the ESPC, spelled disaster for the company and ensured its place as a quickly-glossed footnote in the corporate history of recorded sound.

**The Edison Speaking Phonograph Company**

It fell in large measure to men other than Edison to commercialize the magic of sound recording—men like Edison's friend and associate Edward Hibberd Johnson. Johnson and Edison's association began sometime in late 1871 when the two were brought in as consultants for a cohort of New York investors attempting to perfect an automatic telegraph. Over the years, the two developed a familial easiness. Edison indulged Johnson's scheming, regularly loaning him money for this or that investment or to tide him over until his ship (always just over the horizon) came in. Johnson served as an indefatigable supporter of the inventor and while none of his own grand designs seemed to pan out, Edison could count on him for his knowledge of matters mechanical and electric. For his part, Johnson seemed oblivious to the patron-client dynamic that had evolved between the pair and he never failed to frame Edison's beneficences in the language of mutually-beneficial business transactions. Edison generally pretended not to notice. He did, however, keep a running tally of his outlays on Johnson's behalf and occasionally groused about his improvidence.

Edison biographers Dyer and Martin attributed to Johnson "intense activity, remarkable grasp of electrical principles, and unusual powers of exposition" a characterization about equally as fair as that of the employer who wrote that he had "no idea of legal liabilities nor much more executive management." A photograph of him in his early thirties shows a mustached man in a

plaid jacket, buttoned to the top, with narrow shoulders, penetrating dark-colored eyes and severely parted hair. The image suggests a surplus of spirit bound up in an insubstantial frame; energy over matter; inspiration over perspiration. And, indeed, this is who Edward Hibberd Johnson was. It is fitting, then, that Johnson was the animating spirit behind the world's first "recording company"— the Edison Speaking Phonograph Company.[2]

Eighteen seventy-seven found Edward Hibberd Johnson exhibiting Edison's telephone in the Mid-Atlantic and Midwest. In July he received a letter from Edison giving him to understand that the inventor was at work on a machine capable of "mechanically speaking the letters of the alphabet." Johnson— perhaps uncharacteristically preoccupied with the task-at-hand— was only mildly impressed with this intelligence. By the fall it was clear that he was losing money on his exhibitions but Johnson had become convinced that the phonograph—together with new improvements Edison had made to the telephone—would allow him to command any price he might choose for his demonstrations. He resolved to gain control of the invention for himself. Ever short of cash, Johnson enlisted the help of his friend Uriah Hunt Painter in a scheme to acquire the patents from Edison, Johnson to supply the slick talk and Painter the money. Born

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[2] Edward Hibberd Johnson-- Legal Statements and Testimony, May 14, 1877, (TAEM QCB07116). The dates here are ambiguous. In a later recounting, Johnson told John Commerford Martin that the episode in which he met Edison took place in 1869-1870. In the earlier account, given under oath, Johnson recalls that he had been made supervisor of the Automatic Telegraph Company in the fall of 1871 and that this was relatively soon after his arrival on the scene as "there had been some experimental work done previous to that *when I was not there*." [emphasis added] I surmise that late 1871 is when Johnson showed up in New York and that he was installed as supervisor very soon after that. Edward Hibberd Johnson-- Legal Statements and Testimony, May 14, 1877 (TAEM QCB07116); Atlantic and Pacific Telegraph Co. and Albert B Chandler to Thomas Alva Edison, June 10, 1875, (TAEMW400B388); Edward Hibberd Johnson to Thomas Alva Edison January 3, 1877 [Supplied year] (TAEM D7701A); Edison, Thomas Alva -- Accounts, 1875-1882 (TAEM D8105ZZA); Frank Lewis Dyer and Thomas Commerford Martin. *Edison: His Life and Inventions* (New York: Harper & Brothers Publishers, 1910), 282; Harrington, George Harrington to Thomas Thompson Eckert [supplied or conjectured] January 21, 1875 (TAEM W400B416B); Edward H. Johnson, black and white photo print, William J. Hammer Collection, series 4, box 85, folder Edward Johnson. Archives Center, National Museum of American History, Smithsonian Institution, Washington, D.C.

into a well-to-do Quaker family in 1837 Painter spent his early adulthood as a surveyor and telegraph lineman, before achieving notoriety as a war correspondent for Northern papers during the Civil War. Painter himself was no amateur at the arts of persuasion. By the late 1870s, he had made a reputation for himself as one of Washington's most able lobbyists, a man whose profuse swearing and rude behavior aided in knocking down otherwise insuperable political obstacles. Johnson's close relationship with Edison, however, made him an invaluable asset in the project of securing the phonograph. Together Johnson and Painter enlisted the help of Gardiner Greene Hubbard, a wealthy Boston lawyer and son of Massachusetts State Supreme Court judge Samuel Hubbard. Not incidentally, Hubbard was also the co-founder and president of the Bell Telephone Company and the father-in-law of Alexander Graham Bell whose early telephonic experiments

he had personally financed. Beyond his ample financial resources Hubbard's reputation as a serious financier of technological innovation lent legitimacy to Painter and Johnson's scheme.[3]

On January 31, 1878 Edison and the Painter-Hubbard syndicate concluded an agreement, according to which Edison would be paid $10,000 on closing plus 20% of all future receipts. With the funds provided by this initial payment Edison would conduct further experiments to refine the phonographic concept. All improvements would convey to the syndicate, whose responsibility it would be to establish a company capitalized at $50,000. Less the payment to Edison, this left a war chest of $40,000 for manufacturing and other expenses. The Edison

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[3] Edward Hibberd Johnson to Thomas Alva Edison, June 12, 1877 (TAEM D7719K); Edward Hibberd Johnson to Josiah Custer Reiff, July 20, 1877 (TAEM D7719U); Edward Hibberd Johnson to Edison, Thomas Alva Edison, August 4, 1877 (TAEM D7719ZAA); Edward Hibberd Johnson to Thomas Alva Edison— Telegrams and Cables, August 30, 1877 (TAEM D7719ZAY); Edward Hibberd Johnson to Thomas Alva Edison-- Telegrams and Cables, September 8, 1877 (TAEM D7719ZBL); Edward Hibberd Johnson to Thomas Alva Edison -- Telegrams and Cables, September 28, 1877 (TAEM D7719ZCM); Edward Hibberd Johnson -- Articles, 1877 (TAEM D7719ZEJ). The letter in which Johnson announces his agreement with the American Literary Bureau is dated the 28th but we do not know which month. It is safe to say this is November, however, as Johnson makes the same announcement to Uriah Hunt Painter in a letter dated December 4th. Edward Hibberd Johnson to Thomas Alva Edison. (?) 28, 1877 (TAEM D7719ZEF); Edward Hibberd Johnson to Painter, Uriah Hunt Painter, December 4, 1877, (TAEM X154A1AD); Edward Hibberd Johnson to Thomas Alva Edison, July 17, 1877 (TAEM D7719T); Edward Hibberd Johnson to Thomas Alva Edison-- Telegrams and Cables, August 30, 1877 (TAEM D7719ZAY); Edward Hibberd Johnson to Thomas Alva Edison-- Telegrams and Cables, September 8, 1877 (TAEM D7719ZBL); Edward Hibberd Johnson to Thomas Alva Edison-- Telegrams and Cables, September 28, 1877 (TAEM D7719ZCM); Edward Hibberd Johnson to Uriah Hunt Painter -- Telegrams and Cables, December 7, 1877 (TAEM X154A1AE); "History's People: Chester County's Uriah Hunt Painter, Civil War Correspondent," Website of the Chester County (Pennsylvania) Historical Society Website http://www.chestercohistorical.org/historys-people-chester-countys-uriah-hunt-painter-civil-war-correspondent; Uriah Hunt Painter papers, 1859-1890, Collection Description, National Union Catalog of Manuscript Collections, Library of Congress Website, https://www.loc.gov/coll/nucmc/2011CivilWar/14_UriahHuntPainterpapers.html; Donald A. Ritchie, *Press Gallery: Congress And the Washington Correspondents* (Cambridge, Mass.: Harvard University Press, 1991,) 102; Uriah Hunt Painter to Gardiner Greene Hubbard, October 5, 1878 (TAEM X154A2CE); *Science,* December 31, 1897, 974; Raymond Wile, "Rise and Fall of the Edison Speaking Phonograph Company, 1877-1880," *Association for Recorded Sound Collections Journal* 7, no. 3, 10; A recounting of Cheever's and Roosevelt's roles as telephone pioneers can be found in W.F. Crowell, "Pioneer Struggle of the Telephone," *State Service*, May 1918.

Speaking Phonograph Company was incorporated on April 24 1878, and officially assumed the syndicate's obligations a month after that.[4]

In addition to Painter and Hubbard, the ESPC also borrowed capital from a small circle of investors drawn from the circles of telephone pioneers. Charles A. Cheever had founded the Telephone Company of New York in August the prior year and now hoped to diversify his investments in late nineteenth century sound technology with shares in the ESPC. Born in 1852 and paralyzed from the waist down since childhood he weighed only 70 pounds as an adult and had to be carried from place to place by a servant, but accounts of the man never failed to contrast the sorry state of his physical frame with the vigorousness of his mind and spirit. Indeed by his death in 1900, he had managed a remarkably active life, having amassed a fortune as a real estate developer and as president of several companies, and was an inventor with patents for telephones, fire engines, rock drills, and other electrical appliances. In establishing the Telephone Company of New York, Cheever had partnered with Hilborne Roosevelt, a noted manufacturer of musical organs who after studying the craft in Europe had opened a factory in New York in 1871. Two years Cheever's senior, Roosevelt shared with his partner (in addition to a love of moneymaking) interests in tinkering and in music and had followed his friend into the phonograph endeavor as an investor. Finally, the circle included George L. Bradley, who had served as treasurer of the New England Telephone Company. Gardiner Greene Hubbard was that company's president.[5]

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[4] Uriah Hunt Painter to Gardiner Greene Hubbard [supplied or conjectured], January 10, 1878 (TAEM X154A2AK). Wile, "Rise and Fall," 11, 16.

[5] Wile, Rise and Fall, 10; *New York Daily Tribune,* May 3, 1900, 2; *State Service,* May 1918, 14-22; *New York Times,* December 31, 1886, 5; "Hilborne Roosevelt," *New York Daily Tribune,* December 31, 1886; Elton Wayland Hall, *Francis Blake: An Inventor's Life 1850-1913* (Boston: Massachusetts Historical Society, 2003), 74; George Lothrop Bradley to Uriah Hunt Painter, August 8, 1878 (TAEM X154A2CA).

To help keep costs down, the Edison Speaking Phonograph Company shared office space with the Telephone Company of New York, though Johnson complained about this arrangement to Painter from the outset. It also took Johnson little time to arrive at a state of mutual antipathy with Charles Cheever, who had been installed as the company's treasurer. When in their first week at the office together, Cheever opened a letter addressed to Johnson, the latter noted with skepticism the former's claim that it was done by accident. In a letter to his friend Uriah Hunt Painter, Johnson gave his opinion of his officemate:

> He and I will get along all right— I begin to see through him already— I learned him in 5 minutes talk with he and Hubbard. His weakness is to be considered fertile in ideas— I gave him some— which in talking to Hubbard he gave as his own— I've nailed him. I'll keep him supplied with them and allow him to appropriate them— getting my compensation in some direction of more moment.

While intra-office intrigue evolved between the ESPC's employees, the company's clock ticked. Rent and other bills piled up whether or not the company made money, so it was imperative that the company determine a business strategy quickly.[6]

Unfortunately, it remained unclear as to how the company should proceed in exploiting their control of the phonograph. Edison himself had suggested production of 500 miniature models of the phonograph to be sold to the public, while Johnson favored the staging of phonograph exhibitions. Cheever thought both schemes might be pursued profitably but Hubbard thought little of the exhibition idea as he believed exhibitions would sate public curiosity before the company could get a standard model on the market. Meanwhile, an excited public put pen to paper in order to impress on the company their own investment in the new technology and their

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[6] Wile, *Rise and Fall,* 13; Edward Hibberd Johnson to Uriah Hunt Painter, February 6, 1878 (TAEM X154B1AA); Charles Augustus Cheever to Gardiner Greene Hubbard, March 20, 1878 (TAEM X154B2AF); Edward Hibberd Johnson to Uriah Hunt Painter, March 5, 1878 (TAEM X154A2AQ); Edward Hibberd Johnson to Uriah Hunt Painter, March 5, 1878 (TAEM X154A2AQ).

letters (to Hubbard's chagrin,) revealed that they generally did not want phonographs for home use but for public exhibitions. The ESPC began taking pre-orders for the larger exhibition-style machines but it was also clear that the company would need more revenue than that generated by sales to exhibitors. Cheever hatched a scheme to capture for the company some of the revenue generated by the exhibitions themselves--a royalty plan.

> …the royalties or money for lectures being probably the only source of revenue which we may expect for the next few months our idea thereby is to give license to lecture including assignment of reasonable sized territory to such lecturer, he to pay for the same in addition to the price of the machine a royalty of 33% upon the gross receipts of such lectures or exhibitions, we giving him as an equivalent therefore the exclusive right in the territory which may be assigned to him.

Cheever's letter marks the first articulation of the business model that the company adopted a month and a week later. By the end of the month it appeared as though the various parties to the decision had reconciled themselves to Cheever's idea.[7]

**James Redpath and the Exhibition Royalty Scheme**

In mid-April, a letter arrived at Menlo Park from famed lecture agent James Redpath who had recently seen the phonograph in action while in Washington D.C. Taken with the machine's commercial prospects, he offered his services to the ESPC. Redpath's entry into the fray settled the matter definitely in favor of a royalty scheme and within a couple weeks he was hired by the company to organize the sprawling trans-continental system of territories called for earlier by Cheever. He was a natural choice to head up the ESPC's exhibition system. In 1868 he had

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[7] Charles Augustus Cheever to Gardiner Greene Hubbard, February 9, 1878 (TAEM X012G1AF); Gardiner Greene Hubbard to Uriah Hunt Painter, April 2, 1878 (TAEM X154A2BA); Charles Augustus Cheever to Gardiner Greene Hubbard, March 14, 1878 (TAEM X012G1AN); Edward Hibberd Johnson to Uriah Hunt Painter (TAEM X154B1AM); Charles Augustus Cheever to Gardiner Greene Hubbard March 20, 1878 (TAEM X012G1AW); Charles Augustus Cheever to Gardiner Greene Hubbard, March 26, 1878 (TAEM, X012G1BC); Charles Augustus Cheever to Gardiner Greene Hubbard, March 20, 1878 (TAEM X154B2AF).

attended a lecture by Charles Dickens in his capacity as a reporter for the *Boston Daily Advertiser,* and in speaking with the author, was apprised of the disorganized state of lecture management on the east coast. He resolved to ameliorate this situation, and several weeks later established the Boston Lyceum Bureau.

In an interview with *The San Francisco Chronicle,* lecturer and Maine Senator James G. Blaine succinctly described Redpath's transformation of the lecture business. The paper reported that "although not a native-born citizen, [Blaine] often thought of Mr. Redpath as a typical New Englander, for he organized speech into a mercantile staple, a feat that he thought nobody but a natural Yankee could ever have even thought of, far less doing [sic]." Blaine's assessment of Redpath's innovations were quite accurate. Capitalizing on volume, Redpath's Lyceum Bureau made guarantees that smaller operations (or individual lecturers) could not. If an act of man or God prevented a Redpath lecturer from making his appointed rounds, the Boston Lyceum Bureau provided a suitable replacement or re-scheduled the talk. Unreliable speakers were dropped from Redpath's roster while house managers who wished not to be similarly blacklisted paid his speakers' fees in full—no matter how low the audience turnout. In order to secure the services of a highly popular (and profitable) draw like Mark Twain or Henry Ward Beecher, Redpath often forced house managers to book an entire slate of lesser lights from his roster. By judiciously mixing his "products" Redpath wrung more profit from lower grade speakers, standardized offerings across time and space, and smoothed over fluctuations in his own revenue flow.

By the mid 1870s Redpath's bureau had experienced several years of straitened circumstances. The Panic of 1873 had taken its toll on the lyceum's profits while every year the slow attrition of retirement removed more of Redpath's biggest draws from the field. In October

of 1875, amidst his own battles with poor health and the trauma of a recent divorce, Redpath sold the bureau and moved away from Boston spending the next several years living between New York and Washington.[8]

It was in this less-than-auspicious moment in James Redpath's career that he commenced his work on behalf of the ESPC. That work consisted largely in establishing exhibition territories and leasing them to licensees, increasing the reach of the phonograph beyond the northeast corner of the country where it was already circulating. Within a month or two of moving into the ESPC's offices, he had blocked most of the continental United States off into a patchwork of exhibitionary fiefs and though the evidence is fragmentary, some general remarks can be made on the geography of these territories. The most densely populated areas of the country were sliced up finely, with several territories per state. New York had at least ten. Massachusetts at least five. Ohio was broken into no fewer than four territories and it appears that Pennsylvania

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[8] Gardiner Greene Hubbard to Thomas Alva Edison, April 16, 1878 (TAEM D7830U). Raymond Wile, "Rise and Fall," 18. Since the 1830s local lyceum bureaus had sprung up around the country to provide educational and uplifting lectures to culture-hungry towns and cities in the American hinterland. Into the 1850's they had remained local affairs drawing notable speakers from the immediate area. Improving transportation, however, allowed lecturers to schedule entire tours of a region or even the country, and as with other industries the increasing volume of commerce facilitated by the railroad encouraged organizational evolution. It was one thing, after all, to physically transport a single speaker through a dozen American cities in a couple weeks. It was quite another to coordinate his engagements so as to minimize train fares; to negotiate fees; to promote the event; to vet venues and their mangers; and to attend to the universe of trifling considerations occasioned by a life on the road. By the early sixties, then, efforts were underway to rationalize the lecture circuit, and the most successful such effort took the form of a syndicate of midwestern lyceums called the Associated Western Literary Societies. While the AWLS represented the interests of its constituent local bureaus and in that sense lacked the hierarchical structure of the modern corporation. Redpath's bureau, unlike this midwestern precursor operated on strictly capitalistic principles. John R. McKivigan, *Forgotten Firebrand: James Redpath and the Making of Nineteenth-century America* (Ithaca: Cornell University Press, 2008); For more on the lyceum phenomenon see Carl Bode, *The American Lyceum: Town Meeting of the Mind* (Carbondale: Southern Illinois University Press, 1968); Donald M. Scott, "The Popular Lecture and the Creation of a Public in Mid-Nineteenth-Century America," *The Journal of American History* 66, no. 4 (March 1980): 791–809; Angela G. Ray, *The Lyceum And Public Culture In the Nineteenth-century United States* (East Lansing: Michigan State University Press, 2005); Tom F. Wright, ed., *The Cosmopolitan Lyceum: Lecture Culture And the Globe In Nineteenth-century America* (Amherst: University of Massachusetts Press, 2013). Tom F. Wright, *The Cosmopolitan Lyceum Lecture Culture and the Globe in Nineteenth Century America* (Boston: University of Massachusetts Press, 2013).

was split into a Pittsburg and a Philadelphia territory— the latter of which Johnson tried and failed to secure for his brother. In the South and Midwest the ESPC tended to allot exhibitors entire states which apparently was the case in Iowa, Indiana, Georgia, Mississippi, and Alabama. Finally, some territories transcended state boundaries altogether. These included Eastern Maryland and Delware; Virginia and the Carolinas; and a particularly expansive tract encompassing Wyoming Territory, Nebraska, Utah, and Colorado.

These territories, however, were only abstractions. The task of making money from the Edison patents could not be achieved by cartographical exercises alone but required the coordination of human labor and materials over the vast distances represented by the company's maps. In most instances the number of personnel involved was minimal and included a sole license-holder who tramped around the territory giving demonstrations of the phonograph himself. In others, a rudimentary capitalistic division of labor evolved with one party providing startup capital and another serving as exhibitor. Such was the case in Kentucky where a "man named Choate" agreed to provide capital for a phonograph exhibition while his partner, Jules Guthridge, acted as exhibitor.[9]

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[9] *The Daily Constitution*, May 10, 1878, 2; Charles Augustus Cheever to George Harrison Bliss, May 13, 1878 (TAEM X154B2AP); James Redpath to A.D. White, June 25, 1878 (TAEM X154B4BV); James Redpath to Ezra Torrance Gilliland, June 18, 1878 (TAEM X154B4BP1); James Redpath to J.H. Soule, June 21, 1878 (TAEM X154B4BR); Edison Speaking Phonograph Co., Ezra Torrance Gilliland and Robert Gilliland -- Agreements and Contracts, May 31, 1878 (TAEM X154A2BL); B.V. Eaton to James Redpath, June 11, 1878 (TAEM D7829ZCA); James Redpath to B.V. Eaton July 23, 1878 (TAEM X154B5AK); James Redpath to Charles Fiske, May 25, 1878 (TAEM X154B4AL); James Redpath to C. Barnes, June 3, 1878 (TAEM, X154B4AY); Edison Speaking Phonograph Co. to James Falconer Wilson, May 14, 1878 (TAEM X154B2AR); James Redpath to James S. Ross, June 25, 1878 (TAEM X154B4BU); James Redpath to C. Barnes, August 9, 1878 (TAEM X154B5AV); James Redpath to J.R. Smith, June 17, 1878 (TAEM X154B4BO); James Redpath to Alfred Barnett, June 27, 1878 (TAEM X154B4CB); James Redpath to A.T. Houck, June 28, 1878 (TAEM X154B4CD); James Redpath to A.T. Houck, May 27, 1878 (TAEM X154B4AO); James Redpath to James S. Ross, June 25, 1878 (TAEM X154B4BU).

In some cases, the long distances involved and the volume of business expected necessitated a more robust infrastructure. In important and distant markets like Chicago the ESPC found it necessary to portion out some share of the profits to a trustworthy soul who could ride herd over the largely anonymous personnel handling money for the company. To exploit the phonograph in Illinois, for instance, the ESPC relied on the local knowledge of George H. Bliss. After awarding the phonograph contract to the Painter-Hubbard syndicate over Bliss, Edison had conciliated his erstwhile associate by promising him some role in the business. Bliss returned to Chicago but could not put the phonograph matter out of mind, and continued to write letters to Edison reminding him of his promise. In March, Bliss accompanied Edison over to the offices of the ESPC where the latter personally requested that the company "do what you can for my friend Bliss…" Johnson, perhaps still feeling antagonistic toward his erstwhile competitor for the phonograph contract, obstinately dragged his feet on the matter, but Bliss persisted, eventually writing a letter to the company's bankroller, Gardiner G. Hubbard. Soon afterward a meeting occurred between Bliss and Charles A. Cheever, ESPC company treasurer. Cheever— more hesitant to flout Edison's wishes than the inventor's close associate Johnson— vetted Bliss, finding that "he seems to be intelligent and smart, and apparently from his appearance would push things." Still, he admitted in a letter of April 30 "I have no knowledge as to his responsibility excepting that Edison says he is all right." [10]

All things considered it was probably wise to make Bliss agent for Illinois. But there were obstacles yet to surmount in getting the Second City and its hinterland squared away for the

[10] George Harrison Bliss to Thomas Alva Edison, February 27, 1878 (TAEM D7829Q); George Harrison Bliss to Gardiner Greene Hubbard, April 1, 1878 (TAEM X012CA); George Harrison Bliss to Gardiner Greene Hubbard, April 18, 1878 (TAEM X012CB); Charles Augustus Cheever to Gardiner Greene Hubbard, April 30, 1878 (TAEM X154A2BF).

phonograph business. The ESPC had received a number of applications for territories in Illinois, three of them from men associated with the powerful Western Union Company. Though Bliss was inclined to believe that "too many cooks spoil the broth" neither he nor the ESPC wished to antagonize the Western Union party, so negotiations began immediately to harmonize the interests of all. On May 7 the ESPC received a telegraph from Anson Stager, phonograph applicant and president of Western Union, reading "if Illinois awarded to Bliss and three instruments are sent forward at once it will be satisfactory to all." The matter was settled. Bliss would serve as general agent for the state of Illinois, assigning exhibition territories and distributing phonographs to exhibitors under the authority of the ESPC. Most importantly, he would be responsible for collecting from exhibitors 30 percent of gross receipts to be remitted as royalty payments to the ESPC, keeping five percent for himself. Redpath, perhaps not trusting Edison's estimation of Bliss could not help but pile on one more layer of bureaucracy, installing George Hathaway, an old associate from the lyceum business, as "general agent" for the midwest.[11]

A friend of Edison's, Ezra T. Gilliland, performed a similar role to Bliss (or Hathaway) in the Ohio territory. In California, on the other hand, the ESPC employed another method of reducing agency costs, one as old as the propensity to truck and barter itself—they hired family. There, Gardiner Hubbard's brother, Samuel, was appointed general agent for the entire west coast. In the geographically-dispersed and impersonal world of late nineteenth century

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[11]George Harrison Bliss to Thomas Alva Edison, May 7, 1878 (TAEM D7802ZKN); Charles Augustus Cheever to George Harrison Bliss, May 13, 1878 (TAEM X154B2AP); Charles Augustus Cheever to George Harrison Bliss, May 17, 1878 (TAEM X154B2AV). The policy of the ESPC was that licensees would be charged from 25 to 30 percent royalties, depending on the territory. In a letter dated May 19th, however, Cheever advised Bliss to always charge the full 30 percent. Charles Augustus Cheever to George Harrison Bliss (TAEM X154B2AU); James Redpath to George Harrison Bliss, May 22, 1878 (TAEM X154B4AH).

capitalism, these fragile links of reputation and recommendation meant everything. Whenever possible, the ESPC employed the bonds of reputation, friendship, or blood to reinforce the precarious infrastructure of human relationships on which their commercial survival depended.

Once territories were established and assigned to (hopefully) responsible parties, the latter were responsible for staging phonograph exhibitions across their territory, presided over by the licensee himself or a hired proxy. Generally these exhibitions began with a lecture on acoustic science followed by a round of "experiments"--real time demonstrations of the phonograph in operation, featuring the exhibitor operating the mechanism and serving as the recording subject. Turning the crank-handle of the cylinder, he yelled loudly and clearly into the phonograph's upturned horn a readily-recognized bit of speech before resetting the machine, switching out a playing stylus for a recording stylus and again turning the machine's handle. If he had effected all of this with sufficient care, the audience would be treated to a tinny, warbling —and very quiet—phonographic version of "Mary Had a Little Lamb" or "Bingen on the Rhine." Tickets to such a spectacle generally sold for twenty-five or fifty cents at the height of public interest in mid-1878 and it was the responsibility of exhibitors to remit to the ESPC a portion—usually 25 percent— of their take. Redpath agreed to 20 percent of the net proceeds from exhibitor remittances until October 1 when all territories were to be thrown open to competition and all exhibitors released from royalties payments.[12]

**Infrastructure Failure and Public Perceptions of Phonography**

As I have argued above, the operations of the ESPC relied on two types of flows. One was comprised of information and materials (namely, phonographs and their attendant

[12] Edison Speaking Phonograph Co., Ezra Torrance Gilliland and Robert Gilliland-- Agreements and Contracts, May 31, 1878 (TAEM X154A2BL); Raymond Wile, "Rise and Fall," 18.

accoutrement) channeled away from company headquarters to the company's licensees and exhibitors in the provinces, and the other of signs and materials (namely, money) channeled back to the company. In this section we detail the first of these flows, paying special attention to the problems confronted by the company in transmitting phonographs and phonographic expertise to their agents in the field. After this, we explore the multifarious ways in which these difficulties—these "infrastructure failures"—inscribed themselves onto the nascent culture of sound recording.

Machines and the Problem of Expertise

The close relationship between the machine and the infrastructure in which it became embedded means that—while it is conventional to think of machines as concrete and bounded entities—the diffuse network of people, information, and technologies that facilitated its travels and exhibitory operations were no less a part of the phonographic assemblage than the mandrel, hand-crank or tympanum. Conversely, the machine itself represents just one (particularly concrete) aggregation of infrastructural components, continuous with the network of people and things in which it is embedded. Consequently the ability to fix these elements into given configurations and keep them fixed over long distances becomes just as important to the cultural work done by the phonograph industry as "who said what to whom and with what effect." For the men of the phonograph industry, changing the way subjects thought about sound (even accidentally) required that they successfully produce phonographic apparatus in specific configurations and successfully get them across the country in working order. Therein lay the rub, because to cobble together and field even a handful of the persnickety devices proved a challenge for the ESPC and its suppliers.

Edison could produce phonographs at Menlo Park, of course, and the earliest machines launched into the world were the nine "Brady Model" phonographs whose construction he had personally overseen at his workshops. Edison, however, was not capable of manufacturing these devices in bulk. The vast majority of phonographs which found their way out into the world in 1878, consequently, were not made at Menlo Park but started their lives in the workshops of small-batch manufacturers contracted by the ESPC.

In early February Edward Johnson began looking for a machine shop to produce the company's phonographs. At this early stage, however, the ESPC's business model was still evolving and it appeared to all involved that a cheap and mass produced article would satisfy the company's needs. Even if it meant foregoing economies of scale the company needed to put a product on the market, so Johnson resolved to get 50 of the little phonos made up as quickly as possible. His preferred manufacturer for this project, R. Hoe & Co., required ten days to produce an estimate. This was longer than Johnson wanted to wait, so on March 8 he "took the bull by the horns and closed a contract … with a smaller— but good— concern to make 25 [phonographs.] Deliverable in a fortnight—more perfect than Edison's model. $10 each." As it turned out, this other, smaller, concern was the workshop of Sigmund Bergmann, a former Edison employee and someone already well-connected to the cadre of men associated with the ESPC. By Monday March 18 it appeared that Bergman would finish the small phonos by the end of the week. Undoubtedly pleased with himself, Johnson numbered his unhatched poultry, bragging to Hubbard that these first 25 were already more-or-less sold. Hubbard, not yet sufficiently skeptical of Johnson's sunny projections, suggested they should place an order for 100 more. No phonographs appeared that week. The following Thursday Johnson, unfazed, wrote to Painter

that they would arrive on Saturday and that he had personally set aside Machines No. 1 and 2 for him and Hubbard. No phonographs came, but on Tuesday the following week Hubbard informed Painter—undoubtedly based on the confident assurances of Johnson—that they would arrive within the next day.[13]

Nearly a week later three poorly made phonographs arrived from Bergman's workshop and had to be sent back for "adjustment." Conveniently forgetting that he had turned to Bergman because he promised faster work than other workshops, Johnson wrote to a correspondent that "I could not induce my people to pay high price for good work; they prefer to pay lowest price and take risks." Five days later, Johnson was in possession of at least some of the phonographs and was sufficiently satisfied with the progress Bergman had made to send them out into the world. On April 15 he shipped a small phonograph to Thomas A. Watson—famed assistant to Alexander Graham Bell and recipient of history's first telephonic message: "Mr. Watson, come here. I want to see you!" Along with Phonograph #10, Johnson sent to Watson a conditional bill of sale stipulating—among many other things—that he was not to publicly exhibit his phonograph. Johnson might have saved his ink, because the machine proved to be a mechanical farce. One of Hubbard's associates, having seen Watson's phonograph in operation, advised him that selling

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[13] Thomas Alva Edison to Clarence J. Blake, February 9, 1878 [Supplied year, month, and day] (TAEM X011AA). Edward Hibberd Johnson to Uriah Hunt Painter, February 11, 1878 (TAEM X154B1AG); Edward Hibberd Johnson to Uriah Hunt Painter (TAEM X154B1AH); Edward Hibberd Johnson to Uriah Hunt Painter, March 17, 1878 (TAEM X154B1AK); Edward Hibberd Johnson to Uriah Hunt Painter, March 29, 1878 (TAEM X154B1AO); Edward Hibberd Johnson to Uriah Hunt Painter, March 29, 1878 (TAEM X154B1AO); Edward Hibberd Johnson to Uriah Hunt Painter, March 17, 1878 (TAEM X154B1AK); Thomas Alva Edison to Uriah Hunt Painter, March 4, 1878 (TAEM X154A2AP); Edward Hibberd Johnson to Uriah Hunt Painter, March 8, 1878 (TAEM X154A2AT); Thomas Alva Edison to Edward Hibberd Johnson, March 11, 1878 (TAEM LB001426); Gardiner Greene Hubbard to George Lathrop Bradley, March 18, 1878 (TAEM X012G1AR); Charles Augustus Cheever to Gardiner Greene Hubbard, March 26, 1878 (TAEM X154B2AI); Edward Hibberd Johnson to Uriah Hunt Painter, March 28, 1878 (TAEM X012G1BD); Gardiner Greene Hubbard to Uriah Hunt Painter, April 2, 1878 (TAEM X154A2BA).

these articles would do more harm than good for the company. Edison's chief lab assistant, Charles Batchelor, examined another of these phonographs in D.C. and was so appalled at its slipshod construction he fired off an angry letter to Bergman himself. In spite of these difficulties, the company forged ahead with the small phonos and on May 12 Johnson received a sample small phonograph from a Philadelphia manufacturing firm with a quote of $2.37.5 cents per unit. By this time, however, it was becoming clear that the short-term future of the phonograph lay in public exhibition, not mass production and sales. Johnson and the rest of the ESPC soon gave up on the small phono and only six are known to have made it into circulation.[14]

By early March, the ESPC had already received three orders for the larger exhibition models and Johnson had gone so far as to solicit estimates for their manufacture. On March 8 he pressed the issue with Painter. Particularly worrisome was the fact that some of the parties interested in the exhibition model were college professors, and Johnson fretted that the company's patents would not cover the construction of phonographs for educational purposes: "They will have them made elsewhere if we don't make them" he fretted to one correspondent. Little progress was made toward getting the exhibition model made until Johnson received a bid on March 28 from the Hope Machine Works of East Newark New Jersey. The firm estimated that they could produce a machine along the lines specified for $15 apiece. Johnson, perhaps

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[14] Edison Speaking Phonograph Co. to Thomas Augustus Watson, April 9, 1878, (TAEM X012G1BG); Edward Hibberd Johnson to Uriah Hunt Painter, March 8, 1878 (TAEM X154A2AT); Edward Hibberd Johnson to Thomas Alva Edison, April 10, 1878 (TAEM X154B1AQ); Edison Speaking Phonograph Co. to Thomas Augustus Watson, April 15, 1878 (TAEM X012G1BL); Edison Speaking Phonograph Co. to Thomas Augustus Watson -- Bills and Receipts, April 15, 1878 [Supplied year, month, and day] (TAEM X012G1BM); George Lothrop Bradley to Gardiner Greene Hubbard, April 19, 1878 (TAEM X012G1BN); Charles Batchelor to Bergmann & Co., April 20, 1878 (TAEM MBLB1267); Edward Hibberd Johnson to Uriah Hunt Painter, May 12, 1878 (TAEM X154B1AW); Rene Rondeau, *Tinfoil Phonographs* (Corte Madera: Rene Rondeau, 2001), 37.

(uncharacteristically) wary of "taking the bull by the horns" without the advice and consent of his superiors conferred with Gardiner Greene Hubbard. The order was shortly thereafter placed. The large phonographs were similarly prone to production difficulties. The Hope Manufacturing Company were unable to produce in sufficient volume and by the middle of May the ESPC was already behind in filling orders for exhibition models. Johnson solicited a sample from the Philadelphia firm of Partrick & Carter and soon thereafter contracted with them to manufacture large phonographs. On May 28 a partial lot of phonographs arrived at the offices of the ESPC. Already buried in unfilled orders Cheever wrote brusquely to Partrick & Carter: " Received only three machines yesterday. When will rest be done?"[15]

Even as he penned these irritated lines, however, more trouble was brewing. When Johnson removed the three machines from their crates and placed them on his bench he discovered that they were poorly made. Johnson fired off his own letter to the manufacturers: "Machines fifty five, fifty seven and fifty eight [have one]-sixteenth inch lateral motion. Diaphragms too far [from] cylinder and upright arms imperfectly fitted. [I don't] accept them." Frustration with Patrick & Carter ramified outward throughout the country as exhibitor after

[15] Edward Hibberd Johnson to Uriah Hunt Painter, March 8, 1878 (TAEM X154A2AT); Edward Hibberd Johnson to Uriah Hunt Painter, March 28, 1878 (TAEM X012G1BD). The extant letters detailing the estimate proffered that day are unclear as to which firm was offering it. We infer that it was the Hope Machine Works for two reasons. First, there is no evidence that Johnson had received any bids on the large phonograph since that offered by Joseph Thomas Murray in early March. Secondly, Hope Machine Works was awarded the contract. Joseph Thomas Murray to Thomas Alva Edison, March 4, 1878 (TAEM D7830L); Rondeau, *Tinfoil Phonographs,* 44-45; Gardiner Greene Hubbard to Uriah Hunt Painter, April 2, 1878 (TAEM X154A2BA). There are apparently no extant records of Johnson's dealings with the Hope Company. Their bid is inferred from Hubbard's letter to Painter. James Redpath to E.C. Bolles, May 15, 1878, (TAEM X154B4AA); Partrick and Carter and James Patrick to Thomas Alva Edison, May 21, 1878 (TAEM D7830ZAF); Charles Augustus Cheever to Partrick and Carter, May 29, 1878 (TAEM X154B2AX2).

exhibitor received notices informing them they would have to wait a little longer for phonographs.[16]

Despite the best efforts of the company and their suppliers, phonographs were eventually manufactured and delivered to the offices of the ESPC where they were sent out to customers. Not only was the phonograph (owing to its crude state of development) peculiarly susceptible to malfunction, but any breakdown in the long chain of labor and capital tasked with conveying it could exacerbate the machine's tendency to disappoint. The farther from New York the phonograph traveled, the more likely it was to suffer such failures. In August of 1878, a reporter for the *North-China Herald* noted that a phonograph exhibited in Shanghai was "a very rough looking affair, and being but a trial working model, had suffered severely in appearance from alterations in design and modification of details." Notwithstanding this jerry-rigged appearance, however, a close inspection of the machine revealed that it was not entirely artless in its construction. "The greatest possible care had been exercised where necessary, and in some parts the work was most highly and accurately finished." Unfortunately, at some point in its voyage, the phonograph was failed by one of the dozens of persons entrusted with its safe-keeping and was dropped, leaving its cylinder "somewhat out of true parallel with its axis." As a result "the effects from one-half the cylinder were much weaker than from the other." The crippled state of the phonograph was demonstrated when after a short lecture on its mechanical principles, the exhibitor turned the machine's crank reproducing a pre-recorded cock's crow. The phonograph

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[16] Edward Hibberd Johnson to Partrick and Carter, June 1, 1878 (TAEM X154B2AZ1). This document has been poorly reproduced and is not fully legible. Brackets indicate conjectured language. James Redpath to H.C. Ford June 3, 1878 (TAEM X154B4AX); James Redpath to C. Barnes, June 6, 1878 (TAEM X154B4AY); Charles Augustus Cheever to Gardiner Greene Hubbard, June 6, 1878 (TAEM X154B2BC).

"start[ed] off with a crow that would have done credit to the best rooster in China" but "as the other half of the cylinder came round," the mechanical "Cock-a-doodle-doooooooo" degenerated into "the merest whine, which would have disgraced an asthmatic chicken."[17]

Similar shortcomings of the phonograph's material infrastructure undermined a demonstration by Peter Oeker in San Francisco. On June 11, he was scheduled to exhibit the phonograph at the city's YMCA, but was stymied in this endeavor by an "unavoidable derangement of the instrument…" A series of preliminary test-runs of the instrument (to which the *Chronicle* appended such descriptors as "whining," "derisive," "horrible," "defective," "diabolical," "excruciating," "demoniacal,") evidently quite disturbed the few auditors who had shown up to the hall early, before it was discovered that the phonograph's needle had been worn down through usage. Somewhat mystifyingly "the proprietor of the phonograph was not supplied with duplicates" and the show was postponed until the following day while Oeker tried to source a needle. Several metalworkers attempted to fabricate a replacement before one finally hit on a workable design and Oeker promised the public that he would hereafter "be assured that the needle is perfect and properly adjusted before admitting the inexperienced to his experiments."[18]

Once the ESCPC had manufactured a reliable phonograph and shipped it safely across the country, other, less concrete considerations might prevent exhibitionary success. Operating the phonograph was, by all accounts, surprisingly difficult and there seems to have been no replacement for first-hand observation and practice. This was embodied knowledge in the strictest sense. Written instructions could cheaply and easily pass through the same channels of

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[17] *The North-China Herald and Supreme Court & Consular Gazette*, August 31, 1878, 222.

[18] *San Francisco Chronicle*, Jun 12, 1878, 1.

distribution as the phonograph itself, and indeed such instructions would have been the first step in preparing oneself for operating the machine. But ultimately, such preparation was insufficient. In his earliest letters to exhibitors Redpath insisted that the machine needed substantial practice in order to master its intricacies. When the Reverend E.C. Bolles of Salem, Massachusetts, wrote hoping to get his order rushed in time for a public exhibition, Redpath discouraged him from going on with the demonstration: "can you use one even if you had one? It needs 2 or 3 days practice." Similarly, he instructed George W. Bagely of Richmond that "the machine will work. But— it is an art to put it up and get in good working order—and get good results from it. This can only be learned by actual practice."

In short order, however, Redpath determined that this sort of advice was inadequate. For the average person, monkeying around with the apparatus simply would not prepare them to operate it. What was needed for adequate phonographic training was face-to-face instruction with a party who could put the machine through its paces themselves and guide novice exhibitors through the pitfalls of obtaining the necessary embodied knowledge. Tennessee's E.E. McCroskey was instructed that "it is absolutely necessary that someone should instruct you. The instrument cannot be successfully worked by anyone not familiar with the practical manipulation of it because the needle is apt to get out of adjustment." Redpath directed him to Ezra T. Gilliland, Edison's trusted associate and exhibitor for Cincinnati. Redpath enjoined Charles H. Fiske, exhibitor for Indiana to do the same. Indeed, the prescription "go to Cincinnati" became such common advice for new exhibitors that Redpath advised Gilliland to establish a $10 fee.[19]

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[19] James Redpath to E.C. Bolles, May 15, 1878 (TAEM X154B4AA); James Redpath to George W Bagely, May 20, 1878, (TAEM X154B4AD); James Redpath to E.E. McCroskey, May 30, 1878 (TAEM X154B4AV); James Redpath to Charles Fiske, May 25, 1878 (TAEM X154B4AL); James Redpath to Ezra Torrance Gilliland, June 12, 1878 (TAEM X154B2BF).

Of course, that was advice more easily followed in the Northeast and Midwest. When E. Barnes of Mobile, Alabama, inquired after a phonograph, Redpath informed him that he would have to travel to Cincinnati or Washington, D.C., to find someone to teach him how to use it. Given that state of affairs, he would prefer not to take Barnes' money for an article he would not be able to use. The Southerner, perhaps feeling patronized (Redpath's notoriety as an abolitionist and John Brown's biographer could not have helped matters,) wrote back assuring him that he would get along just fine as he was well-familiarized with modern technology. In his last letter on the subject, Redpath brushed aside Barnes' pretense to knowledge warning him that "your experience in photography, added to the experience of the most expert telegraphic operator in the country, would not avail you one whit…" Fortunately, there was now a suitable phonograph instructor in New Orleans. Redpath dramatically implored Barnes to go to him:

> Your instrument will be forwarded, but I beg you, for your own sake, do not attempt to operate it till you go to New Orleans and receive instructions from Mr. Billings. You would not be able to run a week without getting into difficulties with it that would spoil your exhibition. I say this after knowing the experience of several very competent men, who having attempted to run it have failed after their previous instruction— even some who had operated it under Mr. Edison's personal supervision.

The greater the distances involved, the less likely an exhibitor was to have had the benefit of such instruction and the more likely he was to be ill-prepared for exhibition.[20]

The phonograph, then, often found itself under the custodianship of men lacking the requisite expertise and— predictably enough— its luck was poorest in this regard on the west coast, far removed from Edison's New Jersey workshop. What appears to have been the very first public exhibition in San Francisco occurred on May 3, 1878, and was recounted the next day in a

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[20] James Redpath to C. Barnes, June 3, 1878 (TAEM X154B4AY); James Redpath to C. Barnes, June 12, 1878 (TAEM X154B2BG).

*San Francisco Chronicle* article uncharitably entitled "A Fraud: The Phonograph at the Grand Opera House." That evening, an audience gathered at the Grand Opera House for a performance of *The Corsair* with the added enticement of "an exhibition of something called a 'phonograph…'" After the first act, actor Sol Smith Russell delivered "some of his specialties, throwing in two or three extra recitations to bring the audience into exuberant good humor" but when he finished and stepped off-stage, a clamor arose from the gallery gods who wanted more of the same. They likely felt vindicated when the curtain rose revealing the actor alone onstage, but they were sorely disappointed by what happened next. The rapport Russell had established with the audience—and especially the rowdy occupants of the rafter seats—drained away as he "read a long and exceedingly prosaic discourse on the phonograph." The occasional interruption from the gallery notwithstanding, the audience politely suffered the lecture, but matters took a turn for the worse when the thespian began the phonographic demonstration. First, a recording said to be the voice of Denman Thompson was played for the audience and did, apparently, sound somewhat like the famed actor. A second recording— this one of Charles John Barton Hill, however, was "without the slightest resemblance to Mr. Hill's voice" and at this point the audience became restless and the phonograph's playback apparently even less convincing, "trembling as if in some fear of a shower of cabbages from the gallery." Russell also began to look worried. A third recording purported to be the voice of Lawrence Barrett was evidently even less satisfactory and jeering exclamations erupted from the audience followed by a roar of "derisive laughter" which gripped the entire house. Russell—well aware of the excesses to which nineteenth century audiences would go in expressing their disapproval—brought the demonstration to a quick close. "General surprise was expressed that Mr. Russell should have

lent himself to the aid of such a transparent humbug," the *Chronicle* reported, before declaring that the whole affair "had not a shadow of cleverness, either in the conception or in the execution."[21]

Russell's demonstration precipitated one of the most negative responses of any phonograph audience of the period. It is difficult to say precisely why this exercise went so horribly wrong, but there are clues. The phonograph at this juncture was still a peculiarly finicky contrivance, and commentators noted time and again that wringing a convincing performance from it required a practiced hand. There is no evidence that Russell had ever worked with the machine before nor that he ever would again. Neither does it seem that Russell was particularly well-prepared for his foray into phonographic demonstration. The *Chronicle* noted that his prefatory lecture— the long and exceedingly prosaic one— had been read from "a manuscript after the manner of the professed lecturer," placed on a music stand before him. A professional actor such as Russell would have had no difficulty in memorizing a lecture, given adequate time. Finally, if the *Chronicle* report is accurate, Russell almost surely doomed the demonstration before it even began, because he began by "thrust[ing] a piece of paper onto the cylinder." The tinfoil recordings of the early phonograph were exceedingly difficult to place back on the machine once removed, as the tiny rows of indentations would have to be aligned perfectly with the equally finely-wrought spiraled groove of the cylinder. At very least, it was the kind of operation best left to seasoned hands.[22]

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[21] *San Francisco Chronicle*, May 4, 1878, 3.

[22] *San Francisco Chronicle*, May 4, 1878, 3.

Strong circumstantial evidence points to Samuel Hubbard— holder of the phonograph exhibition license for the state of California— as the owner of the phonograph exhibited by Russell. Per his agreement with the Edison Speaking Phonograph Company Hubbard would have controlled all machines in the area, and an intermission demonstration of the device at a well-attended drama would have been just the thing for drumming up interest in future exhibitions. Several weeks after the Grand Opera House debacle, a *Chronicle* reporter—apparently a different one—heard that a phonograph had arrived in the city and wanted to have a look at it. It had been purchased by a San Franciscan, but unfortunately, "it did not perform its automatic service so well as was expected," and was taken to the California Electrical Works for repairs. If, as is very possible, the phonograph the *Chronicle* reporter found lying on the workshop floor was the same as that exhibited by Russell, an interesting picture beings to emerge. The phonograph's owner— completely ignorant as to the machine's operations— was flummoxed at its abysmal reception at the Grand Opera House. Frustrated, he takes the (decidedly non-electrical) apparatus to the California Electrical Works to have it "fixed" and there the *Chronicle* reporter finds it on May 22.

Whatever the provenance of the machine at the Electrical Works, the reporter was curious as to its operations and prevailed upon the company's electrician for a demonstration. The electrician agreed, but only after lodging the caveat that "as the entertainment was cheap the audience must not be critical." A recitation of "Mary's Little Lamb," a whistled rendition of "St. Patrick's Day" and an imitation of a street tough ("What d'yer soye?") were committed to the machine by the electrician and played back for the benefit of his guests. The *Chronicle* reporter recounted initial disappointment as "Mary's Little Lamb" began issuing from the phonograph:

"…none of the sonant utterances could be distinguished by any of the gentlemen gathered around the table, although the half-smothered whispering given forth could, by a reasonable stretch of the imagination, be recognized as the more heavily emphasized portions of the address originally delivered." "'St. Patrick's Day' by the machine," however, "was almost perfect though considerably subdued in volume…" Similarly positive results were obtained as the machine repeated the electrician's "What d'yer soye?" Playback was attempted again and by this time the electrician had apparently gotten a better grasp of the crank's idiosyncrasies because even "Mary's Little Lamb" sounded passable.[23]

But the damage had been done. The non-expert handling of the machine by the electrician had lowered the reporter's estimation of its worth and "the verdict of those present was that the gentleman owning the instrument had secured an amusing and expensive toy, of very little practical value." But the reporter's next comment gestures toward a peculiar geography at play in the phonograph's popular reception:

> It is the general opinion of prominent electricians on this coast that the phonograph, in its present incomplete condition, falls immeasurably below what the writers on the Eastern journals would have the public believe. The unlicensed manner in which their imaginations have galloped over the field of possibilities has caused an impression that these wonderful attainments have already been made, whereas they have just been born in the brain of Edison and coined into appearance of fact by the pens of sensational writers.

Californians had consistently been underwhelmed by the phonograph—at least *vis a vis* the enthusiastic receptions of their East Coast counterparts—and much of this difference can be attributed directly to the attenuated nature of the phonograph's infrastructural support "out west." An article later syndicated in the *Chicago Tribune* similarly hinted at a geographical component of the phonograph's performance in California, suggesting "perhaps it is affected, like all voices

[23] *San Francisco Chronicle,* May 23, 1878, 3.

new to the country, with violent influenza" and that "possibly it has an ear for the eternal fitness of things, and feels that in this soft land and sunny clime it should only furnish selections from the works of the Poet of the Sierras."[24]

In Chicago, the phonograph was similarly undermined by a failure of expertise. There the license-holder for the city, George H. Bliss, decided to serve as exhibitor himself with predictably mediocre results. On May 22 Bliss appeared at the First Methodist Episcopal Church, beginning his demonstration with a lecture on the phonograph's operations before commencing his demonstrations. His first attempt at playback was a salutation to Mr. Phonograph which came back "weak, but… evidently there," while a second recording— "All right! all right"— was repeated by the phonograph in a tone "faint and seemingly far off…" Bliss, perhaps beginning to regret not hiring an exhibitor, "explained that he was not an experienced hand at this kind of speech-making, and he might not do entire justice to the instrument." He soldiered on, however, through the rest of his demonstration which included an unsuccessful attempt at phonographic stuttering; a mediocre round of "Hickory Dickory Dock;" and a rendition of "Yankee Doodle" that "was hardly successful, only a mere jumble of unrecognized sounds coming out of the funnel," though "a second trial was happier in its results."[25]

The demonstrations in California and Illinois were both presided over by phonographers of—to say the least—questionable expertise. Sumner W. Bugbee, manager for San Francisco's annual May Festival must have suspected there was more to the phonograph than its abysmal track record in the city would indicate. As of May 25, 1878, he "for some time past … [had] been

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[24] *San Francisco Chronicle,* May 23, 1878, 3; *Chicago Daily Tribune,* June 2, 1878, 16.

[25] *Chicago Daily Tribune*, May 23, 1878, 7.

endeavoring to secure a phonograph for the purpose of giving a public exhibition of its wonderful performances at the first day of the Festival." Fortunately, he had recently received word from Samuel Hubbard— holder of the exhibitor's license for the state of California— that a phonograph would arrive from the East Coast in time for the opening of the festival. But Bugbee and Hubbard wished to avoid the disappointments of previous phonographic experiments in the city. The phonograph would be attended to by Mr. Paul Oeker, "a New York journalist who [had] devoted much study to the instrument," and who was a "personal friend of Edison's." Oeker had been planning a trip west in order to cover a couple labor stories when Bugbee and Hubbard's telegraph reached New York. Edison asked him to chaperone the instrument on its long train ride across the country and to serve as exhibitor for the San Francisco May Festival. Oeker's agreement to the arrangement was likely greeted as good news by Bugbee and Hubbard, both of whom were intent on shoring up the tenuous and roundabout circuits of expertise linking east and west coasts and to insulate their investment from the ravages of travel.[26]

Oeker arrived on the May 25 and two days later offered a demonstration of the phonograph for the press and a handful of guests. Under his practiced hand the device received and then played back, "in a voice even more distinctive than Oeker's," the first expertly recorded message in San Francisco history: "Good morning, Mr. Phonograph." Without the faintest acknowledgement of its earlier denunciation of the technology the *Chronicle* allowed that "this first outburst proved [the phonograph] to be the pronounced success that it has almost universally

[26] *Pacific Rural Press*, May 25, 1878, 328; *San Francisco Chronicle,* May 28, 1878, 1.

been alleged to be by all who have heard a *complete instrument managed by one who understood its needs"* (emphasis added.)[27]

On the 28th— the first day of the May Festival—however, Mr. Bugbee informed the public that the phonograph would not, as had been promised, be exhibited that day. It is unclear what human or technological malfunction prevented the phonograph's appearance on the 28th but Bugbee assured the public that it would make its appearance the following day. That it did, though the *Chronicle* reported that Oeker's demonstrations were made "under nearly every conceivable disadvantage with which a phonograph may reasonably fear to have to contend." The Festival's main attraction was the performance of a giant chorus of several thousand members and phonograph performances were scheduled for before and after the chorus's performance and during intermission. But the clamor of so many milling and chattering performers and attendees made it difficult for Oeker to satisfactorily exhibit the phonograph (which was regularly noted for its low volume.) The festival planners had had the pavilion's floors thickly laid with sawdust in order to combat the din. Additionally a special room had been constructed for the phonograph exhibition at the southeast corner of the pavilion, both to insulate it from noise and to allow for the event to be ticketed separately from the Festival. Unfortunately, the "the imperfectly boarded compartment had about the same acoustic properties as attach to a frontiersman's slab barn" and the noise outside interfered with Oeker's work. Nonetheless, the newsman-cum-phonographer persevered, and put the phonograph through its usual paces causing the machine to repeat sentences and bits of cornet playing ("John Brown's Body" and "Yankee Doodle.") For reasons hard to discern from distance of the twenty-first century, the phonograph's

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[27] *San Francisco Chronicle,* May 28, 1878, 1.

"best hit" of the day came when Oeker made the phonograph issue an "extravagantly consumptive cough," and say "Oh my! What a bad cough I have." "The tone" of this comment, noted the *Chronicle,* "was as sepulchral as if the cough had already consigned Mr. Phonograph to the grave" and it "brought down the house as even Miss Drasdil's "Il Tanti Palpiti" or the superhuman drummer in the Anvil Chorus failed to do."[28]

In reflecting on the success of the phonograph demonstration the *Chronicle* argued that Sumner Bugbee "proved himself yesterday… competent in the management of the most minute details…" The author, like Bugbee himself, recognized the ensemble nature of the undertaking in question and noted that the Festival manager had expertly pieced together the infrastructure necessary for a successful phonograph exhibition. Machine, exhibitor, and performance space, such as it was, had served their purposes. As we have seen this was no easy task on the West Coast, so far removed from the human and material resources necessary for the phonograph's operations. But they might have withheld such praise, because despite having been led to believe that the phonograph would appear again on the final night of the festival, the *Chronicle* dryly noted on the June 1 that the phonograph had not been exhibited. It is impossible to say what went wrong here. Did Oeker, perhaps frustrated by the trying circumstances of the festival, call off the final day of performance? Had the phonograph broken down? There is no way to know by what chain of events San Francisco was deprived of Mr. Phonograph's tubercular cough but it also does not matter. Failures of the infrastructure, be they human or mechanical, militated against the phonograph's potential to transfix audiences and empty their pockets.[29]

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[28] *San Francisco Chronicle,* May 30, 1878, 3.

[29] *San Francisco Chronicle,* June 1, 1878, 3.

Public Reaction

In this section we turn to the experience of audiences, emphasizing in particular the ways in which the infrastructure and its effects entwined with other discursive influences to shape subjects' perceptions of mechanically reproduced sound. Particularly when the infrastructure failed, the signs of human and mechanical labor were thrust forward and the illusion of sound recording as a passive conduit for autonomous sonic events was undermined. This tended to emphasize the autonomy of phonographic "playback," suggesting that the phonograph was not practicing a kind of sonic "catch and release" but was rather speaking, mimicking, singing, sneezing and so forth. This was a "talking machine" and as such, the new technology came embedded in a set of discourses inherited from an older mechanical tradition; that of the "speaking automaton."

One of the first such "talking machines" was an invention of Hungarian tinkerer Wolfgang von Kempelen who by the early 1790s had contrived a primitive approximation of the human speaking apparatus consisting of a bellows, system of tubes and pipes and a musical instrument reed. Reportedly, it could speak a few phrases in French and Italian. When Americans were apprised of Edison's 1877 invention of the "talking machine," however, many would have been reminded of another, more recent, attempt at mechanical speech—that of Joseph Faber, born about 1800 in Freiburg, Germany. Faber worked as an astronomer until failing eyesight forced him to take up engineering, and after reading von Kempelen's *On the Mechanisms of Human Speech* he began his own experiments with talking machines. By 1835, he had built a device which drew substantially on von Kempelen's, but which surpassed it in most regards. First, Faber's machine employed a series of variously-shaped tubes capable of producing the five

basic vowel sounds, an innovation which went far in solving a problem which long-bedeviled his predecessor. Most importantly, Faber's design replaced the hinged box which served as a mouth assembly for Kempelen's machine with a more anthropomorphic contrivance featuring an ivory tongue as well as a rubber palate, lower jaw, and cheeks. The entire apparatus was controlled by a keyboard with separate keys for each phoneme.

Faber's machine made its American debut in New York in early 1844 followed by an exhibition in Philadelphia. American audiences proved indifferent to the machine and Faber destroyed it in a fit of drunken rage, a decision which the inventor undoubtedly regretted in the cold gray light of morning. The hangover had hardly worn off, however, before he was replicating his life's work and by the end of 1845 Faber was again exhibiting his speaking machine. The following year Faber headed to London where he was contracted to exhibit the device by no lesser a figure than P.T. Barnum. One audience member later described his evening with Faber and the speaking machine.

> I paid my shilling and was shown into a larger room, half filled with boxes and timber, and badly lighted with lamps. In the centre was a box on the table, looking like a rough piano without legs and having two keyboards. This was surmounted by a half-length weird figure, rather bigger than a full-grown man, with an automaton head and a face looking more mysteriously vacant than such faces usually look. Its mouth was large, and opened like the jaws of Gorgibuster in the pantomime, disclosing artificial gums, teeth and all the organs of speech. … One keyboard, touched by the Professor, produced words which, slowly and deliberately in a hoarse sepulchral voice came from the mouth of the figure, as if from the depths of a tomb.

Faber and his talking machine— which Barnum had billed the Euphonia—eventually returned to the United States and toured there through the 1860s.[30]

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[30] R. Linggard, *Electronic Synthesis of Speech* (Cambridge: Cambridge University Press, 1985), 4-8. David Lindsay, "Talking Head," *American Heritage's Invention and Technology* 13, no. 1, 56-63.

The expectations for mechanical speech established by Faber's machine as well as the phonograph's disruption of those expectations was expressed by the *Scientific American* in December of 1878. The author claims almost exasperatedly that the phonograph seems to be an illusion or a trick of the mind before describing what one would *expect* a phonograph to look like: "We have heard other talking machines. The Faber apparatus for example is a large affair as big as a parlor organ. It has a key board, rubber larynx and lips, and an immense amount of ingenious mechanism which combines to produce something like articulation in a single monotonous organ note." The phonograph, though, is comprised of "a few pieces of metal, set up roughly on an iron stand about a foot square, that talks in such a way, that, even if in its present imperfect form many words are not clearly distinguishable, there can be no doubt but that the inflections are those of nothing else than the human voice."[31]

The tendency to frame the phonograph in terms established by the Faber machine and other automata obtained even among industry insiders. An Edison-issued pamphlet issued the next year warned prospective audiences that sounds coming "from the iron tongue of the phonograph" suffer a diminution in volume and tone compared to the originals. The notion that the phonograph represented a mechanical mimic brings together the significations embedded in the machine's simple construction as well as the influence of the attenuated infrastructure. The recurring failures of operators as well as that of their machines kept the physical apparatus at the

[31] *Scientific American,* December 22, 1877, 384-5.

center of the phonographic spectacle, making impossible the occlusion of technological mediation at the center of later phonographic discourses.[32]

If the phonograph was not bottling sound— if its utterances were not to be understood as the preservation of existing sounds— then perhaps it was somehow producing sounds on its own. Published accounts of the phonograph consistently emphasized this possibility, positioning the machine as a mechanical mimic. In April, the *Washington Post* related a phonograph's "noisy, successful imitation of a barn-yard rooster calling upon his hens to cackle and scratch." In May 1878, the *Boston Daily Globe* allowed that "the phonograph repeats in a clear tone every word and sound recorded on the tinfoil sheet." A writer for the *New York Evening Post* wrote of the phonograph that "any sound, no matter what, is faithfully reproduced. Laughing, whistling, coughing, singing, and ordinary speaking." Later, phonographic fidelity will be assessed in terms of "sound quality," but audiophiles of this generation showed great concern that the phonograph had not "missed" any of the human flourishes of the original performance and were consistently surprised when it did not. The *Atlanta Constitution* reported in December of 1877 that "the phonograph, each evening, is receiving and reproducing cornet solos from one of Atlanta's young musicians which come forth with wonderful, accuracy, giving every sharped and flatted

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[32] *Manchester Guardian*, April 22, 1878, 5. For more on the history of automata see, Adelheid Voskuhl, *Androids In the Enlightenment: Mechanics, Artisans, And Cultures of the Self* (Chicago: The University of Chicago Press, 2013); Jessica Riskin, *The Restless Clock: a History of the Centuries-long Argument Over What Makes Living Things Tick* (Chicago: The University of Chicago Press, 2016); Gaby Wood, *Edison's Eve: a Magical History of the Quest for Mechanical Life* (New York: A.A. Knopf, 2002); James W. Cook, *The Arts of Deception: Playing With Fraud In the Age of Barnum* (Cambridge, Mass.: Harvard University Press, 2001); Minsoo Kang, *Sublime Dreams of Living Machines: The Automaton in the European Imagination* (Cambridge, Mass.: Harvard University Press, 2011); Nick Foulkes, *Automata: A Brief History of the Automata from Ancient Times to the Fée Ondine* (Paris: Éditions Xavier Barral, 2017); Kara Reilly, *Automata and Mimesis on the Stage of Theatre History*, (New York: Palgrave Macmillan, 2011); Julie Wosk, *My Fair Ladies Female Robots, Androids, and Other Artificial Eves* (New Brunswick: Rutgers University Press, 2015); Wendy Beth Hyman, *The Automaton in English Renaissance Literature, Literary and Scientific Cultures of Early Modernity* (Burlington: Ashgate, 2011).

note." The only performance more difficult to reproduce than a perfect one, after all, is an imperfect one, and the phonograph's ability to do so redounded to its reputation as an astute mimic. Some found incredible, for example, the story that a rendition of "God Saved the Queen" sung out of tune in the United States was reproduced note-for-flubbed-note by the machine upon arrival in Britain.[33]

The same preoccupation with the phonograph's mimetic acumen manifested when speech was recorded. In St. Louis a phonographic demonstration made "the crowd laugh and demand a repetition of the amusing scene," which, a reporter recounted "[was] repeated without the variation of a vowel." In Atlanta the following month "Prof. Wm. Henry Peck spoke a Shakspearian [sic] quotation into the phonograph," laying on the nineteenth century orotundo, but "every sound of his voice was reproduced with perfect distinctness, even the catches that he purposely threw in, being duplicated." A witness noted that the phonograph articulated the Professor's rolled 'r's' with a gusto which "would have made a Frenchman ashamed of himself." Similarly, audiences never seemed to tire of hearing Edison's invention discourse in foreign languages. A writer for the *Constitution* related details of an Atlanta exhibition in which the phonograph had been compelled to repeat phrases in "English, Irish, Latin, Greek, French, Spanish, Italian, Hebrew, Chinese, Indian and nigger." He appeared chagrined that this only tied the record established in Marion but was confident that "a half dozen languages can doubtless be added to these" in future demonstrations. When Edison exhibited the phonograph before the Polytechnic Association of the American Institute in Washington D.C., it "proved its capacity as a linguist by repeating sentences spoken to it in English, Dutch, German, French, Spanish, and

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[33] *Washington Post,* April 19, 1878, 4; *The Globe*, May 25, 1878, 2; "Improving the Phonograph," *New York Evening Post*; *Daily Constitution,* June 23, 1878, 4; *Times of India,* May 11, 1878, 4.

the Hebrew" and further "imitated with marvelous fidelity the barking of dogs, crowing of cocks, etc." A witness to the 1878 Paris Exhibition observed a phonograph exhibition but found it "very queer to hear it talking French."[34]

It may seem counterintuitive, then, that at the precise moment that the apparatus was pushed forward (thus sundering the connection between the human recorded subject and the mechanical playback) that discourse around the phenomenon evidenced a creeping anthropomorphism, but such was the case. At a private exhibition in January 1878, a reporter from the *New York World* "felt that the phonograph was prophetically mocking him" when it apparently refused to record his voice. *Scientific American* reported on an exhibition in February 1878, where the phonograph "withstood the test triumphantly, and remained in modest silence while praises were lavished upon it." The following month, *Harper's Weekly* weighed in on the matter, reporting that "the little instrument records the utterance of the human voice, and like a faithless confidante repeats every secret confided to it whenever requested to do so… With charming impartiality it will express itself in the divine strains of a lyric goddess, or use the startling vernacular of a street Arab." Before a hostile San Francisco audience "it was observed that the instrument had a slight huskiness in the throat, and trembled as if in some fear of a shower of cabbages from the gallery." "One of Edison's phonographs made an appearance before a large audience" in Chicago's First Methodist Episcopal Church and "talked and sang itself hoarse,— or rather talked and sang until its little diaphragm became cracked." A week later a St. Louis Post reporter observed at a phonograph demonstration that the machine "seems to place

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[34] "The Funny Phonograph," *St. Louis Evening Post*, May 30, 1878; *Daily Constitution,* June 22, 1878, 4; *Scientific American*, February 9, 1878, 86; *St. Louis Evening Post*, June 18, 1878, 2.

itself in an attitude of attention" and that when the lecturer speaks into its funnel "the phonograph seems to comprehend and to hold itself in readiness."[35]

Similarly, accounts of phonograph exhibitions demonstrated a consistent and almost perplexing neglect of the phonograph's human exhibitors and the act of recording. In February 1878 the *Detroit Free Press* reported on an exhibition in New York:

> The phonograph has taken to lecturing. It gave an entertainment in New York a few evenings since and was frequently applauded. It is rather an imitator than original. It recited a somewhat antiquated narrative concerning Mary and her little lamb. The audience stood it like the latter. It laughed and said "Oh, dear! Oh, dear!" and then the audience laughed. It related the sorrowful tale of Jack and Jill and its tears were mingled with those of the audience. It finally said "good night, ladies," and that closed the performance."

The account is wholly innocent of any mention of the phonograph's human handler. The *New York Times* employed similar devices in parts of its reporting on Edison's June 3 exhibition. As the audience settled into its seats, "on a platform beside the organ were placed two phonographs, one of which was made to utter" with no reported human mediation "an address of welcome to the assembled audience…" The other recited "Now is the Winter of our discontent made glorious summer,' &c" also apparently of its own volition. After the bulk of the audience departed, a few individuals remained for a reception with Edison who characteristically closed the evening by "caus[ing] his machine to utter the plaintive howls of a dog, of which the imitation was perfect." No mention of Edison's howling— nor whether it was perfect. In April 1878, a Washington Post reporter did his best to avoid this mystifying language and to adhere to the accepted canons of dispassionate journalistic observation. His story on Edison's demonstration before the Academy

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[35] *The Globe,* January 7, 1878, 3; *Scientific American*, February 9, 1878, 86; *Harper's Weekly,* March 30, 1878, 249-50; *San Francisco Chronicle,* May 4, 1878, 3; *Chicago Daily Tribune,* May 23, 1878, 7; *St. Louis Evening Post*, May 30, 1878, 2.

of Sciences begins with careful description of both the recording and playback of phonograph messages by Charles S. Batchelor. Slowly, the account loses its moorings in narrative positivism, starting with an ambiguously attributed "successful imitation of a barn-yard rooster calling upon his hens to cackle and scratch." The sense of carnivalesque builds in the reported events as by this time "the audience, scientists and non-scientists, had lost interest in molecules, vertebrae, batrachiae, constants, asymptotes and all other technical terminology in the profounder interest excited by the marvelous machine before them." In parallel fashion our reporter renounces his commitment to detached observation announcing that the phonograph "bent to its work with a will, seemingly flattered by the attention which Mind paid to Matter." The phonograph has achieved sentience and its first conscious act is to upstage its human handler. "It sang 'Uncle Ned,' reproducing the fine baritone voice of the operator, and stopping short as he did and for the same reason— want of tin foil. It coughed. It said in explanation that it had a bad cold, and it coughed again. It whistled a tune. It halloed."[36]

Even in more restrained accounts— ones which consistently include mention of human participants, for starters— subtle anthropomorphizing tendencies persist. Notably, in describing the phonograph, observers employed specialized verbs usually reserved for humans' noise-making activities—or at least those of living creatures. In March 1878, a *Scientific American* reporter observed as a phonograph handler "confided to the disk names, numbers, scraps of poetry, comic songs, and various other bits of information… Presently the phonograph began, in clear, distinct tones, to count, to call names, to describe its own peculiar talents, to give its own address, and finally to sing." Advertising copy regularly had recourse to the same language. One

[36] *Detroit Free Press*, February 20, 1878, 2; *New York Times*, June 4, 1878, 5; *Washington Post,* April 19, 1878, 4.

such ad enjoined readers "Don't fail to hear it talk, laugh, and sing." George H. Bliss, the Edison licensee for the state of Illinois assured one incredulous writer to the *Tribune* that he "has heard the phonograph talk, laugh, cough, whistle, and sing." A phonograph exhibited in Indianapolis was said to have a "voice" though one "muffled and indistinct." It "repeated selections from Mother Goose, sang a stave of 'John Brown's Body Lies A-Mouldering,' and did some spelling, coughing and laughing."[37]

**Infrastructure Failure and (Un)Profit**

When masterfully-built phonographs made it across the country in one piece, and when exhibitors knew their craft, the ESPC's phonograph exhibitions very often succeeded in entertaining and edifying audiences audiences. Still the ESPC's commercial viability relied on a second set of material and semiotic flows passing in the opposite direction, from the hinterlands to company offices in New York City. In this section we turn to this second "flow;" that of money and information. Just as long distances made difficult the transmission of phonographs and phonographic expertise to agents, these same long distances stretched thin the human relationships on which depended the return flow of revenue. Ultimately, the inability to police these human relationships proved a disastrous state of affairs for the ESPC—one contributing significantly to the company's eventual collapse after 1878.

Money, Information and the Problem of Discipline

A persisting irritation to the managers of the ESPC was the failure of agents to remit their contractually-stipulated revenue reports and royalty payments. The agent for the entire West Coast—no less trusted a figure than Hubbard's own brother—remained delinquent on these

[37] *Scientific American,* March 30, 1878, 249-50; *Chicago Daily Tribune*, June 2, 1878, 5; *Chicago Daily Tribune,* May 16, 1878, 6; "Edison's Phonograph," *Indianapolis News,* June 13, 1878.

obligations throughout the history of the ESPC, for example. Cheever politely reminded him in June 1878 that he owed the company remittances and in August Redpath issued him a restrained epistolary upbraiding him over his failure to discipline *his* agent, Paul Oeker, who had yet to file a single report on his exhibition receipts. Redpath sent along a package of blank report forms just in case Oeker had lost his. A Quebecois licensee named J.E. Gore had failed to remit any money or reports as of June 17 and ten days later the Ball Brothers of Ironton, Ohio, had still not paid a cent in royalties nor filed a report with the company. The ESPC even had difficulty maintaining the sanctity of the territories, those portioned-out bits of geography designed to maximize the number of profitably-exhibiting parties. In 1878, an exhibitor working for licensees the Ball Brothers, had spent two weeks in Cincinnati and the company suspected him of exhibiting there. Not only was Cincinnati out of their territory, but it lay within the domain of another exhibitor.[38]

In the most egregious cases, the various personnel marshaled to pursue the ESPC's interests not only neglected their obligations or performed poorly but presented positive threats to the company and its ambitions. In early May, George S. Pike's horse broke loose doing damage to persons or property, while he was making his appointed rounds as a phonograph exhibitor. The aggrieved parties, upon discovering Pike's affiliation with the Phonograph Company threatened to sue the ESPC, while local authorities sought to confiscate his phonograph. Cheever wrote Pike to distance the company from liability. "We have nothing to do with the method you take for exhibiting. You are not employed by us and any action brought would not hold against the Company…The phonograph itself is our property and is held by you

[38] Charles Augustus Cheever to Gardiner Greene Hubbard, June 6, 1878, (TAEM X154B2BC); James Redpath to Samuel Hubbard, August 7, 1878 (TAEM X154B5AS); James Redpath to J.E. Gove, June 17, 1878 (TAEM X154B4BL); James Redpath to Ball Bros, June 27, 1878 (TAEM X154B4CA).

subject to certain conditions set forth in your lease. Any attachment of the machine itself would be done at the peril of the court officer issuing such attachment…" In one summary motion Cheever distanced the company from its agent-turned-liability and reasserted its control over his phonograph aiming to protect revenue and fixed capital from the erosion of the open market. Personnel, then, served as sources of revenue but also vectors for infrastructure instability.

The company's reputation was equally vulnerable to wastage. In September 1878 George Warren (alias Norman C. Martin) was arrested in Youngstown, Ohio, for forging the signatures of president and vice-president of the New York Life Insurance Company and thereby stealing $64,000 from the company's bank account at Union Trust. The ESPC could not have been pleased with the *New York Times* piece on the arrest which informed the public that Warren had been working as a phonograph exhibitor at a county fair and that he had exhibited in Cleveland months earlier.[39]

In the case of the Ball Brothers, legal action was taken against the exhibitor, but this nearly never happened. With a shoestring budget and two or three full-time office employees, the ESPC simply did not have the resources to enforce their dictates across the country. Of course, the company had hoped to achieve a level of discipline through the hierarchy of their human infrastructure. In late May, the company tried to draw on this human capital, sending out a circular soliciting licensees for information on parties building or exhibiting phonographs without permission. It reassured would-be snitches that in most cases the infringers were merely unaware of the damage they were doing and that hardball would be reserved for the recalcitrant. Licensees and other "general agents" were also expected to bring recalcitrant exhibitors to heel

[39] Charles Augustus Cheever to George S. Pike, June 6, 1878 (TAEM X154B2BA); *New York Times*, Sep 29, 1878, 1.

but these straw bosses often proved just as impotent as those at headquarters in disciplining personnel. For example, the Canadian licensee J.E. Gore quickly deflected blame onto his exhibitor when Redpath wrote him looking for the company's royalties. Gore had sent his subordinate the report blanks but had heard nothing from him.[40]

Because of these failures of discipline, Redpath and the ESPC resorted to creative leveraging. At least once, Redpath had recourse to the public adoration of Edison to pressure a licensee into paying up. When the Committee for Boston's Old South Church purchased the phonograph exhibition rights from its previous holder, there was confusion over the ongoing obligations tied to the contract. The Committee believed they had purchased the *entire* bundle of rights associated with the exhibition and owed the ESPC no royalties. Redpath disabused them of the error at which point George Simmons of the Committee threatened legal action as well as a "trial by newspaper." Redpath dismissed the threat and countered with his own, informing Simmons that he "can show that if the Committee of the Old South Church do not pay the Co. 30 percent of their receipts they are simply swindling Mr. Edison. You will excuse the phrase, but it states the exact truth."[41]

If moral suasion and the established lines of authority failed to discipline agents, the company's only recourse was to enlist the help of its distant and tenuously-maintained contacts, offering rewards for their cooperation. In May, Redpath wrote to George H. Smardon, whose Portland, Maine, territory was yielding disappointing receipts. After reassuring him that the provinces take a while to cultivate, he brought up a "Mr. Foss," whose exhibition territory lay in

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[40] James Redpath to Ball Bros., June 27, 1878 (TAEM X154B4CA); Edison Speaking Phonograph Co -- Circulars and Brochures, May 21, 1878 (TAEM X154A2BI); James Redpath to O.G. McCall, June 17, 1878 (TAEM X154B4BN).

[41] James Redpath to George Simmons, June 26, 1878 (TAEM X154B4BY).

the rural districts outside of Portland and who Redpath suspected of cheating the company. In a remarkable gesture of perverse incentives he asked Smardon to go spy on Foss, promising him the latter's territory if he detected any chicanery. Even more brazen was the proposition Redpath laid before exhibitor E.E. McCroskey whose east Tennessee phonograph demonstrations were failing to generate much profit. The exhibitor for Georgia, it appears, had been "acting the scoundrel." If McCroskey would find him and—under the authority of the ESPC— confiscate his phonograph, Georgia would henceforth be his. Perhaps Redpath's crowning achievement in leveraging scarce human resources was his handling of J.M. Nixon, exhibitor for Wisconsin and Minnesota. By June 26 it had become evident that Nixon would not pay the ESPC royalties nor file reports on his earnings, so Redpath resolved to solicit another party to seize his phonograph as was done in Georgia. For whatever reason, this plan failed to materialize and Nixon continued to exhibit the phonograph without remitting royalty payments. By July 9 Redpath had had enough and resolved to sabotage Nixon, cost effectiveness be damned. He wrote to J.M. Hickey of Illinois who was looking for a territory and offered him a phonograph at sales price and the full run of Wisconsin and Minnesota if he would go exhibit in all the locales on Nixon's circuit. Hickey could tour just ahead of him and reap a feast from Nixon's advertising, leaving him the crumbs.[42]

Collapse of the ESPC

It is unlikely that anyone could have wrung a substantial profit from the royalties scheme, but Johnson, Roosevelt, and Cheever came to agree by no later than June 10 1878 that Redpath's

[42] James Redpath to Ball Bros., June 27, 1878 (TAEM X154B4CA); James Redpath to James S. Ross, June 25, 1878 (TAEM X154B4BU); James Redpath to Gardiner Greene Hubbard, June 26, 1878 (TAEM X154B4BX);James Redpath to J.M. Hickey, July 9, 1878 (TAEM X154B5AF).

management of the exhibition business had been a disaster— a rare instance of agreement among the company's factions. Whatever comity arose from this meeting of minds, however, was short-lived. By the end of the month Painter had successfully spearheaded a movement by the company's directors to force Cheever's resignation as company treasurer, suspecting (correctly, it was eventually discovered) that he had been diverting company funds into his own faltering investment, the Telephone Company of New York. Johnson and Painter wasted little time in establishing hostile relationships with his replacement, Charles Bailey.

By early July Redpath was advising his colleagues to abandon the royalty scheme for outright sales. The executive committee continued to kick the can down the road and Redpath eventually took matters into his own hands, doing away with exhibitor remittances in favor of a one-time up front royalty payment. The fee was adjusted according to Redpath's perception of the territories' commercial values, but in practice (as Johnson pointed out) it amounted to arbitrary pricing. By August Johnson had grown sufficiently weary of the practice to tell Painter baldly "I wish we were rid of this royalty nuisance." Nerves frayed as receipts failed to live up to expectations. All the while, Painter worried over the company's anemic income and its office expenses and wrote a panicked letter to Redpath in which he fretted that the company would soon have to borrow money just to stay in the black.[43]

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[43] Wile, Raymond, "Rise and Fall," 20-21; Hilborne Lewis Roosevelt to Hubbard, Gardiner Greene Hubbard, June 10, 1878 (TAEM X012G1CB); Edward Hibberd Johnson to Uriah Hunt Painter, July 25, 1878 (TAEM X154A2BV); James Redpath to Uriah Hunt Painter, July 8, 1878 (TAEM, X154A2BO);James Redpath to B.V. Eaton, July 23, 1878 (TAEM X154B5AK); Edward Hibberd Johnson to Uriah Hunt Painter, July 29, 1878 (TAEM X154A2BW); James Redpath to E.L. Peet, July 29, 1878 (TAEM X154B5AN); Edward Hibberd Johnson to Uriah Hunt Painter, August 17, 1878, (TAEM X154A2CD) Edward Hibberd Johnson to Uriah Hunt Painter, July 2, 1878 (TAEM X154A2BM); James Redpath to Uriah Hunt Painter (TAEM X154A2BO).

On October 1 the ESPC's exhibition contracts expired, ending exhibitors' territorial monopolies and allowing the company to sell phonographs to all comers. But with this sunset also came the end of royalties payments, the only steady source of income the company had ever known. All the same, by early September the company had turned its financial position around by selling off most of its stock, and Johnson was working on a new lower-priced phonograph to appeal to a wider market of non-exhibiting users. In January 1878, Edison and the ESPC concluded a new agreement absolving each other of many of the obligations stipulated in the original contract, but which preserved the ESPC's right to build and market phonographs.[44]

Johnson, Painter, and Hubbard also undertook several projects aimed at boosting the ESPC's pitiable revenue stream. On January 18, they concluded an agreement with Edison extending the company's sales license to all nations of the Earth except "India, Australian Colonies, Russia, England, Norway, Sweden, Austria, Germany, France, Italy, Spain and Belgium." Much of this proscribed territory belonged to another Edison associate, one Theodor Puskas, and while they appreciated their expanded horizons, the ESPC eyed Western Europe covetously. Puskas had struggled getting phonograph orders filled and Painter warned Edison that this could create a market for patent-infringing third party manufacturers. "Make Puskas 'put up or shut up' on phono[graph]," he begged Edison, "or let us in on some of European territory." The same day Johnson complained that on the basis of Edison's earlier (apparently more generous) promises regarding the expanded territory, he had began negotiations with a customer he was now prohibited from selling to. Because of the confusion, the company lost a twelve-

[44] Charles E. Bailey to Gardiner Greene Hubbard, September 6, 1878 (TAEM X154B3AJ); Uriah Hunt Painter to Thomas Alva Edison, January 18, 1879 (TAEM D7932D); Edison Speaking Phonograph Co. and Thomas Alva Edison -- Agreements and Contracts, January 21, 1879 (TAEM D7932ZBF07B).

phonograph sale. Getting to the heart of the matter, Johnson asked "When does Puskas' time run out?" As if it weren't obvious enough, he added "When he resigns— or you discharge him— we want a hack at it."[45]

Another set of circumstances was unfolding which eventually ended Johnson's tenure as the ESPC's treasurer and "company expert." In early May 1878 Edison and a circle of investors organized the Edison Telephone Company of Europe to push Edison's telephone system in Britain and the Continent. The company's organizers met on the 12th to adopt by-laws and incorporated the ETCE two days later. Edison, needing a trustworthy proxy to represent his interests on the other side of the Atlantic tapped Johnson, who presented the matter to his wife, likely with all of the overblown exuberance he could muster. One day after the company's organization Johnson wrote his patron: "She consents. Ergo, I go unless the company veto."

But "veto" the plan they did. On May 28 Hubbard mailed a letter to Johnson in which he piled on the young man's shoulders all of the guilt he could mail in a standard rate envelope. The stockholders of the ESPC, he reminded him, had joined in this endeavor because of Edison's promises to continue "perfecting" the phonograph—an obligation which he had been neglecting for several months. Johnson's own labors to improve the phonograph represented the ESPC's only hope for future profits and if he were to leave, they would not only be deprived of his future discoveries but also the months of technical expertise he had accumulated as a salaried employee. Though Hubbard left it un-explicated, both men would have understood that Johnson

[45] Edison Speaking Phonograph Co. and Thomas Alva Edison -- Agreements and Contracts, January 18, 1879 (TAEM D7932ZBF07A); Uriah Hunt Painter to Thomas Alva Edison, January 25, 1879 (TAEM D7903ZAG); Edward Hibberd Johnson to Thomas Alva Edison, January 25, 1879 (TAEM D7932F).

was to some extent morally culpable in the matter because he was a close personal associate of the derelict Edison.[46]

Edison, recoiling from this "row" rescinded his offer to Johnson. Fortunately, he had recently received a letter from De Lancy Horton Louderback, an employee of the Western Electric Company who had heard that Edison was looking for a European representative and who wished to volunteer his services. After a cursory "background check" Edison offered Louderback the position, but he declined: the job only lasted six months and Louderback was loath to sacrifice his salary at Western Electric for such an ephemeral revenue stream. Growing desperate, Edison turned to Charles H. Walton, an employee of the Gold and Stock Telegraph Company who came recommended by an associate. On June 9, as he was preparing to leave New York for Menlo Park, Walton received a letter from Edison, withdrawing the original offer to serve as Edison's "expert" in Europe, and offering him an auxiliary position instead. As it turns out, Edison had recently been informed by an unnamed third party that Walton had misrepresented the nature of his position at the Gold and Stock Company. He was not an expert in matters telegraphic, as he had claimed, but was only a company clerk. On top of that, Edison was disconcerted by intelligence indicating that Walton was not "strictly temperate." Furious, Walton refused Edison's second offer and insisted that the inventor disclose the identity of the party spreading this libel against him. Two days later, Edison, disgusted with the accuracy of that

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[46] Edison Telephone Co. of Europe Ltd., James Hopson Banker, Robert Livingston Cutting, Jr, Samuel Stockton White, Robert Livingston Cutting and Thomas Alva Edison -- Agreements and Contracts, May 2, 1879 (TAEM CH001AAA); Edison Telephone Co. of Europe Ltd -- Incorporation and Association Papers, May 2, 1879 (TAEM CH001AAC); Edison Telephone Co. of Europe Ltd -- Incorporation and Association Papers, May 2, 1879 (TAEM D7940R1); Edward Hibberd Johnson to Edison, Thomas Alva Edison, May 13, 1879 (TAEM D7941ZAL); Gardiner Greene Hubbard to Edward Hibberd Johnson, May 28, 1879 [Supplied year] (TAEM X154B3C628).

old adage about “finding good help,” hired Johnson for the position, Hubbard and associates be damned. Johnson sailed for Britain about July 1.[47]

With Johnson’s departure across the broad Atlantic the Edison Speaking Phonograph Company was deprived of its progenitor and animating spirit. Still the men of the ESPC forged ahead without their nestor. In February Johnson had begun soliciting manufacturing quotes for a small mass-produced phonograph to be sold to the general public, a belated recognition of Edison’s initial recommendation to the company. In April it appeared that the ESPC would award the contract to Brehmer Brothers Manufacturing Company. Johnson continued tinkering with the phonograph, however, and negotiations dragged on, manufacturers submitting bids on a design and Johnson informing them that it was obsolete and that he would need a bid on a phonograph with the new specifications. Hubbard urged him to hurry but to no avail, and when Johnson departed in the summer the unresolved matter landed on Painter’s desk. Additionally, Painter began searching for a wholesaler to carry the new phonographs, and tried to enlist as the company’s sole distributor Strassburger Pfeiffer & Co, a mail-order firm specializing in toys. By

[47] Thomas Alva Edison to Edward Hibberd Johnson, May, 1879 (TAEM D7941ZBM); Western Electric Co. and De Lancey Horton Louderback to Thomas Alva Edison, May 17, 1879 (TAEM, D7941ZAV); Thomas Alva Edison to Henry Bentley, May, 1879 (TAEM D7941ZBK); Thomas Alva Edison to Western Electric Co. and De Lancey Horton Louderback, May 30, 1879 (TAEM D7941ZBJ); Edward Hibberd Johnson [supplied or conjectured] and Uriah Hunt Painter to Charles Augustus Cheever, June 7, 1879 [supplied year] (TAEM X154B3C667); George Edward Gouraud to Thomas Alva Edison, June 6, 1879, (TAEM, D7941ZBS); Charles H Walton to Thomas Alva Edison, June 9, 1879 (TAEM D7941ZBV); Charles H. Walton to Thomas Alva Edison, June 9, 1879 (TAEM D7941ZBW); Charles H. Walton to Thomas Alva Edison, June 9, 1879 (TAEM D7941ZBW); Charles H Watson to Thomas Alva Edison, June 9 1879 (TAEM [D7941ZBX); Edward Hibberd Johnson, George Edward Gouraud and Thomas Alva Edison-- Agreements and Contracts, June 11, 1879 (TAEM HM790069);Thomas Alva Edison to George Edward Gouraud, July 1, 1879 (TAEM D7941ZCM).

early August, however, he determined that wholesalers were too expensive and that the ESPC would sell the phonographs themselves.[48]

Around the same time, Painter (finally) placed an order for 500 of the little phonographs with Brehmer Brothers who finished the first batch in early November and asked that the ESPC inspect their work before they continued. Painter retrieved two of the phonographs from Brehmer Brothers' facilities and brought them to Menlo Park where Edison himself gave them a thorough going-over. Edison allowed that the work was generally very good, but several improvements would have to be made to the machine's construction if it were to be reliable. Brehmer responded that they would incorporate some of the suggested improvements, but that others would increase manufacturing costs. After several rounds of such back-and-forth, Brehmer proceeded to fill the balance of the order. The ESPC did manage to sell some of these little phonos but ultimately the endeavor was a failure.[49]

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[48] Remington and Sons to Edward Hibberd Johnson, February 14, 1879, (TAEM X154CBB); Remington and Sons to Edward Hibberd Johnson, February 19, 1879 (TAEM X154CBC); Colt's Patent Fire Arms Manufacturing Co. to Edward Hibberd Johnson, March 28, 1879 (TAEM X154CBF); Brown and Sharpe Manufacturing Co. to Edison Speaking Phonograph Co.— Telegrams and Cables, March 29, 1879 [supplied year](TAEM X154CBF1); Edward Hibberd Johnson to Brehmer Bros., April, 1879 [supplied year] (TAEM X154B3C570); Brehmer Bros. to Uriah Hunt Painter, April 8, 1879 (TAEM X154A3AG); Brehmer Bros. to Edward Hibberd Johnson, April 9, 1879 (TAEM X154CBJ); Brehmer Bros. to Edward Hibberd Johnson, April 11, 1879 (TAEM X154CBK);Brehmer Bros. to Edward Hibberd Johnson, June 19, 1879 (TAEM X154CCI); Gardiner Greene Hubbard to Edward Hibberd Johnson, June 10, 1879 (TAEM X154CCG); Uriah Hunt Painter to Strasburger Pfeiffer & Co., July 3, 1879 (TAEM X154B3C689A); Uriah Hunt Painter to Thomas Alva Edison, August 2, 1879 (TAEM D7903ZGH).

[49] Uriah Hunt Painter to Thomas Alva Edison, August 6, 1879 (TAEM D7903ZGK); Uriah Hunt Painter to Thomas Alva Edison, August 15, 1879 (TAEM D7932ZAR);Uriah Hunt Painter to Thomas Alva Edison, November 11, 1879 (TAEM D7932ZAZ); Uriah Hunt Painter to Thomas Alva Edison, November 13, 1879 (TAEM D7932ZBA); Thomas Alva Edison to Brehmer Bros., November 17, 1879 (TAEM LB005354); Brehmer Bros. to Edison Speaking Phonograph Co., November 20, 1879 (TAEM D7932ZBC); Brehmer Bros. to Thomas Alva Edison, December 11, 1879 (TAEM D7932ZBC1); Brehmer Bros to Thomas Alva Edison, December 15, 1879 (TAEM D7932ZBC2); Queen & Co. and Samuel L Fox to Uriah Hunt Painter-- Telegrams and Cables, August 11, 1880 (TAEM X154CCX).

In April, Brehmer Brothers' workshop suffered a cataclysmic fire, irreparably damaging some of the phonographs, and necessitating that the rest be taken apart, re-polished, and fitted with replacement parts. They were not insured and much of the loss fell on the ESPC. While Brehmer Brothers did eventually repair around 100 of these damaged machines, the added expense shaved away most of an already meager profit margin. To make matters worse, the little phonograph proved nearly impossible for consumers to use and retailers had trouble selling them. Commenting on the situation from across the Atlantic, Johnson summed the situation up brusquely: "Yes the little phonograph is undoubtedly a failure and I would not expend another dollar on them." The ESPC limped on for some time after this debacle, managing to sell a handful of full-size phonos every month and fending off returns of small phonographs from angry retailers.[50]

**Conclusion**

In this chapter, we have detailed the rise and fall of the Edison Speaking Phonograph Company, emphasizing in particular the attenuated nature of the human and material relationships on which the company relied, and the economic and semiotic results of that strained infrastructure. On one hand, the inability to place mechanically-sound phonographs in the hands of adequately-trained exhibitors ensured that phonograph exhibition remained in the 1870s a decidedly mechanistic affair. Audiences remained aware at all times of the machine before them,

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[50] Edward Hibberd Johnson [supplied or conjectured] to Uriah Hunt Painter, April 30, 1880 (TAEM X154A3AQ); Brehmer Bros. to Edison Speaking Phonograph Co., June 16, 1880 (TAEM X154CCV); Brehmer Bros. to Edison Speaking Phonograph Co., November 10, 1880 (TAEM X154CDE); Edward Hibberd Johnson to Uriah Hunt Painter, December 10, 1880 (TAEM X154A3AX); Queen & Co. to Edward Hibberd Johnson, November 18, 1880 (TAEM X154CDF); Sigmund Bergmann to Charles Batchelor, August 3, 1880 (TAEM D8001J1); Sigmund Bergmann to Uriah Hunt Painter, August 13, 1880 (TAEM X154CCY) Sigmund Bergmann to Uriah Hunt Painter, August 20, 1880 (TAEM X154CDA); Sigmund Bergmann to Uriah Hunt Painter, October 6, 1880 (TAEM X154CDD); Edward Hibberd Johnson to Uriah Hunt Painter, December 10, 1880 (TAEM X154A3AX).

and spoke and wrote of the phonograph as a "talking machine" which "mimicked" its handler rather than "capturing" his or her voice and then re-releasing it. But the same infrastructural peculiarities which encouraged the "talking machine" discourse spelled the doom of the environment in which it thrived. Just as the ESPC found it difficult to convey expertise and machinery through the thinly-stretched social and material relationships of their infrastructure, the return flow of cash from licensees and exhibitors very regularly failed somewhere en route.

Despite the underwhelming results of the enterprise, some of the Edison Speaking Phonograph Company's investors remained involved with the development of the phonograph for years after the collapse of the ESPC. Charles Cheever later helped organize the Metropolitan Phonograph Company as well as the Automatic Phonograph Exhibition Company, firms established to capitalize on the technology after its resurrection in the mid-1880s. Nor had Gardiner Greene Hubbard's involvement in matters phonographic come to a close. For others, however, the short foray into phonography had been all the fun they could stand. Uriah Hunt Painter would have little to do with matters phonographic following the collapse of the ESPC, and Hillborne Roosevelt would have no opportunity to do so, dying just a few years later "by a complication of disorders, aggravated by pleurisy." *The New York Times* mentioned nothing of his involvement with the phonograph but eulogized him as "one of the largest organ builders in this country and in the world." In his thirty-seven years he had contributed improvements to the telephone including the magnetic call bell and a telephone switch for which he drew royalties until his death. Edward Johnson's sojourn in England proved highly successful and his original six-month contract was extended to nearly eighteen months—all this while feuding bitterly (and predictably) with his immediate supervisor, Edison's telephone licensee, Edward Gouraud.

Returning to the United States in late 1880 Johnson went to work pushing Edison's electrical system, running the Edison Lamp Factory and overseeing the electrical wiring of (very wealthy) homes before ascending to the presidency of the Edison Electric Illuminating Company of New York.[51]

While these endeavors made him a wealthy man, Johnson never could settle down into a life of respectable acquisitiveness, and he remained a mercurial, imaginative spirit—albeit one with more expendable income. By 1890 he had secured for himself a country home outside of Greenwich Connecticut called "Alta Crest." The hilltop Colonial-style mansion afforded vistas of the surrounding countryside including a view of the lighthouse at Bridgeport shoals over thirty miles away, but just as importantly, its liberal use of electrical lighting made it a highly visible landmark, earning it the nickname of "Electric Hill." In its wainscoted hall "a large handsomely finished organ pour[ed] forth melodious music by the hour, by the simple manipulation of an ordinary electric switch." Johnson's upstairs "den" featured an electric cigar lighter, two electric stoves, an electric teapot, and electric fans and was presided over by a "huge horned owl" which "blinks electrically, with large yellow eyes, from his perch in one corner across the room at a hideous bearded Chinese mask, which emits the red fire of passion from its open eyes, mouth, and nostrils." In the middle of the ceiling hung "a large specimen of porcupine fish, within

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[51] *The New York Times*, December 31, 1886, 5; Uriah Hunt Painter to Thomas Alva Edison, August 24, 1879 (TAEM D7937ZCA); Edward Hibberd Johnson to Thomas Alva Edison, October 6, 1879 (TAEM D7941ZFF); Arnold Henry White to Charles Batchelor, March 15, 1880 (TAEM D8049ZCE); Edison Telephone Co. of London Ltd. and Edward Hibberd Johnson,— Agreements and Contracts, September 24, 1879 (TAEM D7941ZEM); George Edward Gouraud to Thomas Alva Edison -- Telegrams and Cables, November 30, 1880 (TAEM D8049ZHN); Edward Hibberd Johnson to Uriah Hunt Painter, December 10, 1880 (TAEM X154A3AX); Edward Hibberd Johnson to Thomas Alva Edison (TAEM D8049ZII); Edward Hibberd Johnson to Thomas Alva Edison, February 21, 1880 (TAEM D8049ZAV); Edward Hibberd Johnson to Thomas Alva Edison, March 4, 1880 (TAEM D8049ZBJ); Edward Hibberd Johnson to Uriah Hunt Painter, December 10, 1880 (TAEM X154A3AX); Edward Hibberd Johnson to Uriah Hunt Painter, December 17, 1880 (TAEM X154A3AZ).

whose transparent and bristling skin is concealed an incandescent lamp sufficient by itself to light the room." Nestled in among these electrified wonders, however, Johnson placed another, decidedly more primitive bauble—"one of the first phonographs ever made." This device had once seemed to Johnson and others like an exercise in pure imagination, a miracle made real by the wizardry of Menlo Park. Now—bathed in incandescent light and surrounded by electrified gadgets—it seemed like a ponderous relic of the nineteenth century, as brutal in its materiality as a steam locomotive. Acceding to the demands of his imagination as well as those of his billfold Johnson had forsaken this "monument to tinfoil, lung power and muscle" for the thrilling and deadly possibilities of invisible electricity. Across the room from this artifact stood another phonograph, "the very last instrument, especially constructed for Mr. Johnson, at the phonograph works," along with "a choice selection of musical cylinders, which prove an endless source of entertainment to everyone." In the years since Johnson had deprived the phonograph industry of his labors, other imaginative souls had taken the field, breathing spirit into increasingly sophisticated talking machines.[52]

[52] *Scientific American*, Aug 2, 1890.

# CHAPTER II

## The Sonic Scribe

In 1892, visitors to the World's Dispensary Medical Association in Buffalo, New York, discovered a firm at the cutting edge of workplace rationalization. Established to market Dr. Ray Vaughan Pierce's remedies (concoctions whose "curative" powers owed largely to alcohol and opium) the Dispensary maintained a mail-order operation of enormous scope sustained by a policy of liberal advertising in the nation's newspapers. Keeping denizens of the fruited plain supplied with such indispensable articles as "Smart Weed" and "Dr. Pierce's Pleasant Pellets," however, forced on the Dispensary an organizational task of daunting proportions. In order to meet the challenge, Dr. Pierce and his colleagues had outfitted their headquarters with some of the era's most sophisticated systems for the mechanization and rationalization of work. In the company's two largest buildings a Corliss steam engine provided motive power for office machines, binding and printing equipment and elevators. To distribute this energy throughout the buildings, engineers had installed a system of pulleys and belts called "shafting" which ran along the ceilings of the complex's workrooms and offices. With this system in place, the Dispensary achieved centralized, efficient, and relatively quiet motive power. To keep the various parts of the complex in constant communication, management had installed speaking tubes between its various rooms and the company had been one of the very first in Buffalo to embrace the

telephone, putting the company in instantaneous contact with suppliers and customers all over the country.

Visitors to the World's Dispensary Medical Association that year would have discovered one more sophisticated technological system, this one relying on phonographs to rationalize production of a resource just as important to the company as motive power or spoken communication—texts. Every morning employees brought to the company's offices trays of unrecorded wax cylinder records or "blanks." As necessary, doctors and other staff mounted these blanks on personal phonographs into whose speaking tubes they then dictated outgoing correspondence and other communications. The blanks, now containing records of the operators' recitations, were removed from the phonographs and set aside. At intervals, "messengers" retrieved these records and deposited them in the company's transcribing rooms, where a staff comprised mostly of women used their own phonographs to listen to the dictated messages and convert them into type-written texts ready for the mails. Through this method, the office manager might have pointed out to visitors, the World's Dispensary Medical Association maintained a veritable torrent of correspondence, sending out an average of 2000 letters a day.[1]

Beginning in the late 1880s, the phonograph industry embraced a business model based on sound recording's potential as an aid to office dictation, and through their efforts scenes such as the one described above became common in American offices. In its first commercial outing in the late 1870s, the phonograph had been offered as an exhibition novelty, an application which had generated a great deal of curiosity but very little profit. The failure of phonograph exhibition (and with it, the Edison Speaking Phonograph Company, which had been organized to capitalize

[1] *The Phonogram*, March 1892, 66-67.

on that business model,) inaugurated a period of several years in which the phonograph disappeared from public consciousness. After 1886, Edison and a new field of competitors took up the phonograph once more, determined to transform it from a useless toy into a serious tool of business.

The present chapter details this, the second historical phase of the phonograph industry, posing and answering three closely-related questions. First, why did Edison, his colleagues and competitors all find so plausible the business potential of the office phonograph? From the vantage point of the early twenty-first century, nothing can be clearer than that the phonograph was destined to generate billions of dollars in revenue as a means of distributing pre-recorded music. How, one is tempted to ask, could phonograph capitalists of the late 1880s have failed to foresee that? Less negatively, what did they know that we do not? This chapter argues that the office phonograph recommended itself so readily to phonograph capitalists and consumers because, for them, sounds were *made* of letters, scripts or text. In this discursive context, the phonograph appeared as a sonic scribe—a machine which wrote sounds down and read them back. The textual bias in understandings of the phonograph suggested that profitable applications of the new technology would take the form of replacements for ink-and-paper texts and thus was born the business phonograph.

Second, this chapter asks: how did the insinuation of the phonograph into the nineteenth century business office adapt to or transform pre-existing relations between people? It argues that at this stage in its commercial development the phonograph largely conformed to such relations of production as already existed and in some cases even exacerbated tendencies already apparent within the unfolding logic of capital—particularly those of mechanization and centralization.

Further, because of the mass entry of women into the formerly all-male preserve of the office in the late nineteenth century, the phonograph's role in absorbing and restructuring existing labor relations implicated it in a project of reaffirming *gender* roles as well.

Third, why did the phonograph's role as an aid to dictation give way to an overriding emphasis on recorded music? This chapter argues that the replacement of the office phonograph business model by musical recording in the 1890s cannot be explained solely as an outcome of consumer disinterest. In some locales, after all, demand for office phonographs remained consistently high through much of the 1890s. Rather, high operating costs sunk the business phonograph, and in this the "agency of things" played a central role. Long distances, leaky batteries, and intransigent mechanisms conspired at every turn to rob local phonograph companies of their profits. While office managers were sometimes quite enthusiastic about the promise of phonographic dictation, few would or could pay enough for the labor- and resource-intensive service to make it a profitable enterprise for investors.

In the chapter's conclusion we bring these various narrative and analytical strands together and place them in the broader arc of this dissertation. The (partial) eclipse of the office phonograph business model took with it the "sonic scribe" phonographic ontology with which it was so closely associated, opening the door not only to new monetizing paradigms but also new ways of understanding what sound and sound recording *was*. Additionally, just as new business models and new phonographic ontologies replaced old ones, the gender- and labor- based social relations sustained by the phonograph were eventually replaced by other, more protean ways of identifying and being in the world based on consumption and self-fashioning.

**Sound as Text and the Business Phonograph**

Edison and others rallied around the phonograph's potential as an aid to office dictation, in large part, because of that application's close conceptual relationship to predominating ideas regarding the ontology of sound and sound recording. Sounds, in the understanding of Edison and his contemporaries were "made" of text. The phonograph could, of course, capture a wide variety of sonic data, most of it not in any way construable as "text"—pitch, timbre and rhythm, for example. Later, these sonic characteristics will move to the center of phonographic ontology. For the phonograph capitalists of the late 1880s and early 1890s, however, they represented non-essential characteristics or even distortions of the more substantial (and profitable) sonic text. The phonograph, as a creator of sonic texts, represented to these men a "sonic scribe."Though the phonograph-as-sonic-scribe found its most concrete instantiation with its introduction as an aid to dictation in the late 1880s, its discursive origins predate these events and even those detailed in Chapter One. For that reason, this section begins decades before the invention of the phonograph.

No figure from the phonograph's pre-history demonstrated the scriptive understanding of sound more unambiguously than Édouard-Léon Scott De Martinville. In 1853, Scott, a typesetter at a Parisian publishing house stretched a sheet of paper over a wooden frame and secured to it a rigid needle before positioning the entire apparatus so that the needle rested on a pane of soot-covered glass beneath it. The glass was passed quickly under the needle while Scott and his friends directed claps and yells at the stretched membrane. The result was an undulating line scratched into the layer of soot looking very much like a modern seismograph or polygraph readout. Scott's experiment had produced the world's first sound recording and in subsequent

years, Scott repeated this operation countless times, slowly improving his apparatus and always transferring the soot-on-glass inscriptions onto paper for permanent keeping.

Scott's process captured a record of sound very similar to that achieved two decades later by Edison. They were, in fact, potentially "playable" a fact demonstrated with dramatic aplomb in 2008 by a team of American researchers who digitized Scott's famous wave inscriptions and then "played" them using computer software. Scott himself never endeavored to "play" his recordings in this way, and phonograph enthusiasts, scholarly and otherwise, have excoriated him on the count for decades. These critics, however, have largely missed the point. Scott sought, not a method of "canning sounds" for later consumption, but rather, a method by which sound might "write" itself in graphic form, a usage hinted at by the name Scott appended to his apparatus—the "phonautograph." When in 1878 word of Edison's *reproduction* of sounds crossed the Atlantic, Scott denied altogether the significance of the achievement and moved to tamp down his countrymen's enthusiasm for the Yankee novelty. In an essay written in 1878 he reminded his readers that the real desideratum—a readable sonic alphabet— still lay beyond science's grasp and that "science and civilization are best advanced not by controlling sound via hearing alone, as Edison tries to do," but rather, through "mastering sound via sight." If any doubt remained as to what this meant, he added "the solution the civilized world seeks is for the voice to write itself."[2]

What Scott did not appreciate, however, was the profoundly scriptive understanding of sound which Edison had brought to his work on the phonograph *or* the degree to which that understanding persisted in his own and others' conceptions of the technology. Edison's

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[2] David Giovannoni, "A Man of Vision," in David Giovannoni, *Édouard-Léon Scott de Martinville, Inventor of Sound Recording: A Bicentennial Tribute* (Champaign: Archeophone Records, 2017), 7-17.

designation of the apparatus as a "phonograph"— much like the phonautograph before it— suggested a technique by which sound was written, but more than semantics linked Edison's work to that of Scott. Just as Edison was in the midst of developing the first phonograph in July, 1877, he received a letter from Edward Johnson, referencing an earlier discussion between the two men in which Edison had described his forthcoming invention. Johnson refers to Edison's concept as the "idea of mechanically speaking the letters of the alphabet" and informs Edison of the reaction to the news by a mutual friend of theirs, physician and scientist George F. Barker. "Prof. B. is delighted," Johnson wrote, "and says it looks as if you might reach by short cut the end sought by scientists for ages viz.- the ascertainment 1st of what constitutes a vocal sound of a letter & 2—how to mechanically reproduce it." At this early stage in the technological development of the phonograph, Edison and at least two of his circle of scientifically-literate friends found the "idea of mechanically speaking the letters of the alphabet" an apt description of the new process. The conceptual continuity between Edison's "sound writer" and that of Leon Scott is further demonstrated by a letter to Edison from one Joseph Edgar Crowell, dated February 28 1878. Crowell had read the description of the phonograph published by the *Sun* and worried that Edison had preempted one of his own ideas. In a deferential letter asking for clarification from Edison, Crowell described his own idea, a device utilizing a vibrating membrane to drive a pencil back and forth across a strip of moving telegraph paper. The device, Crowell said,

> could be placed in front of the speakers' desk or table, and the machine wound up, and when he was through, the speech would be written out from this automatic phonography the same as manual short hand. Of course this is all theory, and would necessitate a good deal of trouble in ascertaining the phonetics of the unknown short-hand, but if the theory is correct it would be something that <u>could</u> be accomplished.

The phonograph, as described in the papers, suggested to Crowell a method of graphically recording sounds for visual inspection and reading. It is unclear whether he even understood that the phonograph could "read" the script aloud, such was his preoccupation with the device's ability to create a written record.[3]

Familiarity with the phonograph's operations only further cemented subjects' scriptive understandings of the technology. This owed in large measure to the fact that the early recording medium itself—flat sheets of tin foil— encouraged comparisons to paper and the spiraled lines of indentations impressed in them by the recording stylus to a form of writing. In early 1878, Edison explained to a reporter for the *New York Sun* that the phonograph's stylus "pricks the tinfoil, leaving perforations resembling the old Morse telegraphic alphabet." When it was time for playback one need only "reset the cylinder, so that the steel point may run over the holes or alphabet made when we talked in the mouthpiece." The reporter later adopts Edison's rhetoric, writing that "one of old Mother Goose's rhymes was murmured into the mouthpiece, and its alphabet pricked out by the action of the steel point." In May the *Toronto Globe* described the mechanics of the phonographic process as well as the indentations made on the foil during this process. "These marks," the author allowed,"are as little like ordinary words as could well be conceived, the nearest approach to them being the marks on the paper slip in the old-fashioned system of recording telegraphic despatches [sic]."[4]

Some held out hope that the phonograph's tinfoil records might someday be "read" by the human eye. In the same December 22, 1877, issue in which was recounted the phonograph's first

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[3] Edward Hibberd Johnson to Thomas Alva Edison, July 17, 1877 (Thomas A. Edison Papers, Digital Edition, D7719T); Joseph Edgar Crowell to Thomas Alva Edison, February 28, 1878 (TAED D7804).

[4] *Scientific American* (Supplement,) March 16, 1878, 1828. Reprinted from the *New York Sun*. *The Globe*, May 20, 1878, 4.

public demonstration, *Scientific American* suggested to readers an interesting possibility: "there is no doubt that by practice, and the aid of a magnifier," said the magazine, "it would be possible to read phonetically Mr. Edison's record of dots and dashes." Fortunately, the inventor "saves us that trouble by literally making it read itself." Though the necessity of "reading" the phonograph's writing had been avoided, *Scientific American* had a cast made of a tin foil sound recording and then used it to print a "facsimile" of the indentations "in order to exhibit to the reader the writing of the machine which is thus automatically read…" Some, including Edison, refused to leave unexplored the possibility of this "self-writing" alphabet and searched vigorously for a way to decode the script. In October 1878 *Nature* reported that Edison himself "has made some experiments with a view to accomplishing of the reading of the phonograph record by sight." He had found however that "although a fundamental form exists for each articulated sound" it was very difficult "to free the record from what might be called accidental influences." Any number of variables, including the distance from the mouthpiece, the volume of the speaker or the regularity with which the crank was turned would dramatically alter the shape of the indentations. Even the same sound uttered by different people could manifest in starkly different ways in the foil.[5]

Though the clues are more subtle, non-scientists and -technicians also responded to the early phonograph in ways which suggested an understanding of the device as a sonic scribe. One reporter visiting Menlo Park observed as Edison committed "Mary Had a Little Lamb"— that old standby of phonograph exhibition— to the phonograph's tin foil, and then rotated its cylinder backwards so as to effect a reversed playback. The reporter claimed to hear:

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[5] *Scientific American*, December 22, 1877, 384-5; *Nature*, October 3, 1878, 599.

Go to sure was lamb the,
Went Mary that everywhere and,
Snow as white was fleece its,
Lamb little a had Mary.

Interestingly, Edison's nursery rhyme retains in reverse not only its phonetics but also the integrity of individual words. But the Wizard of Menlo Park had not yet exhausted his machine's repertoire of gimmicks. He caused it to reproduce blowing, whistling, the sound of a bell, coughs, sneezes and laughter. "But most remarkable," wrote the reporter, "the instrument sent back the voices of two men at the same time." To demonstrate the effect Edison recited into the phonograph a verse of "Bingen on the Rhine" before resetting the machine and commencing playback. "While these affecting words were pouring out," however, "the Professor shouted into the funnel several petulant exclamations." Once more, Edison reset the machine and commenced playback:

A soldier of the legion lay dying in Algiers,
— —"Oh shut up!"— — — "Oh, bag your head!"
There was lack of woman's nursing, there was lack of
— — — — — "Oh, give us a rest!" — — — — — — — — — —
woman's tears
— — "Dry up!"
But a comrade stood beside him while his life blood ebbed
— — — "Oh, what are you giving us!" — — — "Oh, cheese
away.
it!"
The dying soldier faltered, and he took that comrade's
— — — — —"Police! Police!" — — — — — — — "Po-
hand,
lice!"
And he said, "I never more shall see my own, my native
— — —"Oh, put him out!" — — — — —"Oh, cork your-self!"

Edison's rude interjections become in the reporter's retelling seamlessly interlaced with the poem, the recording process leaving intact individual words which have merely settled in a new

order like a shuffled deck of cards. The account makes no gesture toward the concurrency of words nor the effacement of some words by others. All are present and accounted for *ad seriatim*, in brazen defiance of the medium's temporal parameters. A week later a *Times* reporter was present when an exhibitor engaged in freewheeling innovation, marrying "Mary Had a Little Lamb" to the overdubbing technique employed by Edison at Menlo Park: "Mary had a little —oh shut up— lamb. Its fleece was white— give us a rest— as snow. And everywhere—go to bed— that Mary went, the lamb was sure to go—How's that."[6]

The printed text medium in which these accounts circulated forced on them a particular logic— that of textual linearity. But there is little evidence that the writers felt constrained by the limitations of their format, even foregoing some editorial options (such as reversing the spelling of individual words) that would have conformed more closely with 21st century understandings of manipulated audio. Nor is there evidence that others found their accounts implausible. The *Sun* story was re-published without comment in no less skeptical an outlet than *Scientific American.* At the same time, to over-emphasize the role of these printed narratives in creating the discourses analyzed here is to miss much of the point: the mass-mediated circulation of these accounts was itself one current in the river of text that was nineteenth century culture. Textualizations of phonographic performance were cause *and* effect of a culture in which sounds were "made of" letters.

In an 1878 letter to the *North American Review,* Edison informed his readers that "the main utility of the phonograph…[is] for the purpose of letter-writing and other forms of dictation." Assuring the public that this was no distant projection but an imminent reality, he

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[6] *Scientific American Supplement,* March 16, 1878, 1828; *New York Times*, Mar 24, 1878, 2.

went on to inform them that the application of the phonograph to dictation "will be made the moment the new form of apparatus, which the writer is now about completing, is finished." No such "new form of apparatus," however, was anywhere near completion and Edison's pronouncements on the matter represented characteristically optimistic bluster. Throughout the end of the decade, exhibitions remained the only plausible strategy for monetizing the phonograph's operations and the public continued to regard the device as a "talking machine." The phonograph-as-sonic-scribe remained an ancillary paradigm in phonographic understanding.[7]

With the failure of the Edison Speaking Phonograph Company after 1879, interest in the phonograph and its future as an aid to dictation quickly dissipated. Investors opted to quit "throwing good money after bad" and the public came to regard the phonograph as a diverting though ultimately useless gadget. For his part, Edison moved on to the problems of electrical lighting and allowed the phonograph to languish until the late 1880s when other inventors stepped in to challenge his claim over the principle and profits of sound recording. The industry subsequently built by Edison and these competitors achieved that which had eluded the inventor and his colleagues a decade before—the application of the phonograph to the problems of office dictation. It is at this point, when the phonograph was so unanimously associated with the mechanical reproduction of scripts, that it became in the eyes and ears of the world, a sonic scribe.

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[7] *North American Review*, May-June 1878, 527-36.

**The Rebirth of the Phonograph**

The phonograph's reintroduction to the world—and the realization of phonographic dictation—began, not with Edison, but with another of America's techno-scientific titans, Alexander Graham Bell, who deeply regretted his failure to grasp the phonographic principle before Edison's 1877 announcement of discovery. He had, after all, been working on problems very similar to those touching on phonography. In March of 1878, he had written his father-in-law that "it is a most astonishing thing to me that I should possibly have let this invention slip through my fingers when I consider how my thoughts have been directed to this subject for so many years past." The recipient, one Gardiner Greene Hubbard, might have reassured his son-in-law, however, that this was no *fait accompli*, Edison's claims to have fixed in foil the ephemeral essence of the spoken word. In his capacity as president of the Edison Speaking Phonograph Company, Hubbard knew better than anyone the hyperbole that Edison and others had employed in selling the world on the new device, and the distance between rhetoric and reality would only become clearer in the months to follow. Indeed, it is likely that as Hubbard's disappointment with the phonograph mounted, he encouraged his son-in-law to work on improving it, perhaps even occasionally strolling out to Bell's makeshift laboratory (in the loft of Hubbard's stable) to press the issue.[8]

In 1880 the French government awarded Bell its prestigious Volta Prize— including 50,000 francs— in honor of his achievements in telephony. Bell, who had recently opened a lab in DC with his partner, Charles Sumner Tainter, renamed this operation the Volta Laboratory and

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[8] Alexander Graham Bell to Gardiner Greene Hubbard 3/18/78, in Raymond R. Wile "The Development of Sound Recording at the Volta Laboratory," *Association for Recorded Sound Collections Journal* 21, No. 2 (1990): 209.

hired his cousin Chichester as company physicist. Owing in large measure to the fact that Bell was contractually obligated to hand over telephone improvements to the Telephone Company, Volta Laboratory turned its attentions to the phonograph. After experimenting with several approaches to sound reproduction, Tainter and Bell deposited at the Smithsonian Institution a device consisting of a modified first-generation Edison phonograph. The grooves on its brass cylinder had been widened and filled with wax, its diaphragm replaced with an improved (more sensitive) one, and the old indenting stylus replaced with one capable of incising. On June 25, 1885 Bell and his colleagues applied for a basic patent covering the graphophone and shortly thereafter Hubbard (still president and director of the old ESPC) approached the Edison faction in hopes of establishing a unified company for exploiting the phonograph/graphophone. Edison refused, so when word arrived in December that their patents had been approved, Bell and his colleagues began organizing their own company. The Volta Graphophone Company was organized on May 3 1886 and immediately began efforts to publicize the machine. Their efforts caught the attention of House of Representatives reporters Andrew Devine and John White, as well as that of James O. Clephane, a former reporter currently occupied as the owner of a stenographic service. On June 22 1887 they organized the American Graphophone Company, a concern charged with marketing and distributing the graphophone.[9]

The founding of the American Graphophone Company and the media buzz surrounding it lit a fire under Edison, who turned his attention to the phonograph again after years of neglect. In

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[9] The Bell faction sought an alliance with Edison because they believed (incorrectly) that his original phonograph patents still covered the fundamental concept and that they would not be able to market a machine without Edison's consent. Raymond R. Wile "The Development of Sound Recording at the Volta Laboratory," 210-219; Walter L. Welch, Leah Brodbeck Stenzel Burt, and Oliver Read, *From Tinfoil to Stereo: The Acoustic Years of the Recording Industry, 1877-1929* (Gainesville: University Press of Florida, 1995), 21-24; Raymond R. Wile, "Growing Hostilities Between Edison and the Phonograph and Graphophone Developers," *Association for Recorded Sound Collections Journal* 22, No. 1 (1991): 8-11.

May 1888 he unveiled the “Improved Phonograph” to the world. Edison had initially attempted to steer clear of elements covered by the graphophone’s patents but eventually determined (incorrectly) that key elements, including the incising stylus, were preempted by his original phonograph patent.

His flagrant appropriation of the Bell improvements would have undoubtedly precipitated a court battle were it not for a Pittsburgh glass magnate named Jesse H. Lippincott. In the autumn of 1887 the American Graphophone Company had been approached by a Thomas R. Lombard, recently awe-struck by a demonstration of the Bell machine and desirous of forming a company to commercially exploit it in the United States. Negotiations fell through as the American directors insisted that Lombard take the contract on under personal liability (that is, without the protections of incorporation), but an associate of Lombard, Jesse H. Lippincott stepped forward, willing to assume such a contract. On March 29, 1888, Lippincott and American entered into a contract whereby the latter would manufacture graphophones and the former would lease or sell them across the United States. Moving quickly, Lippincott approached the Edison faction in hopes of securing control of the phonograph. On June 28 Lippincott secured from Edison the right to market the phonograph, in so doing bringing the Bell and Edison factions to heel (temporarily) and uniting the interests of the phonograph and the graphophone in one agency, the North American Phonograph Company.[10]

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[10] Wile, “Growing Hostilities Between Edison and the Phonograph and Graphophone Developers,” 11-26; Welch, Burt, and Read, *From Tinfoil to Stereo: The Acoustic Years of the Recording Industry, 1877-1929*, 25; Thomas Edison, ”The Perfected Phonograph," *North American Review*, June 1888, 641-50; G. L. Frow, *The Edison Cylinder: Phonographs 1877-1929* (Kent: Mulholland Printers, 1978); Timothy C. Fabrizio and George Paul F, *The Talking Machine: An Illustrated Compendium, 1877-1929* (Atglen: Schiffer Pub., 1997).

Under the terms of the contract American Graphophone Company was to supply Lippincott with an initial order of 300 graphophones to be manufactured by Western Electric. The Company would henceforth arrange for the production and delivery of no fewer than 5000 machines annually for fifteen years, and Lippincott was obliged to take (and pay for) no fewer than 5000. No production quotas were established between North American and Edison until August of 1889 when Lippincott wrote to confirm a verbal contract by which the Edison Phonograph Works agreed to supply forty-five phonographs a day beginning August 1 and lasting until the first of the year. North American would pay $45 apiece for these machines until 3000 had been purchased at which time the price would drop to $40. Before finalizing these arrangements, American Graphophone insisted that North American pay them a royalty on every phonograph sold or leased by the company—a recognition of the graphophone patents utilized in the Improved Phonograph.[11]

To market the products of the phonograph and graphophone factories Lippincott arranged for the incorporation of over thirty local companies holding territorial monopolies in most of the United States and Canada. The telephone industry (with which many of North American's principles had experience) had earlier exploited the company-and-sub-companies business model to great effect, and Lippincott hoped the structure would prove as effective in his own nascent industry. The sub-companies idea represented an organizational halfway house. Local parties brought their own capital to bear in the formation of these firms, sparing the NAPC the herculean financial burden of erecting a sales infrastructure on their own. The formation of the sub-

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[11] Wile, "Growing Hostilities Between Edison and the Phonograph and Graphophone Developers," 22; Raymond R. Wile, "The North American Phonograph Company: Part I (1888-1892)" *Association for Recorded Sound Collections Journal* 35, No. 1 (2004): 11.

companies not only saved the NAPC expense in building their own infrastructure. The process also contributed positive revenue to the parent company's coffers in the form of an organizing fee paid by the local companies for the right to market phonographs and graphophones. On the other hand, the sub-companies idea sought to avoid some of the troubles attendant on dealing with "free market" independent contractors. When the sub-companies remitted to North American their organizing fee, they also deposited with the company 12.5% of their capital stock, to be increased to 25% when their license was extended in five years. As a shareholder in these local companies, North American Phonograph Company could exert a measure of control over their clients impossible in dealing with independent local distributing and retailing firms.[12]

North American and its local clients were to pursue a relatively straightforward business plan: The parent company would lease machines to the local companies at a rate of $20 per annum and the local company would in turn rent them out for $40. Parties could and did rent phonographs for a number of public and private purposes, but the NAPC and its local subsidiaries expended the vast majority of its time and resources in pushing the devices as aids in office dictation. In a January 1889 circular sent out to prospective investors, Lippincott offered rosy projections of the company's footing and its prospects:

> The entire United States has been given out for the formation of thirty local companies; all of these except two have been organized and received licenses ... And are now actively engaged in the promotion of the business. So far the demand for instruments has been largely in excess of the supply. Up to date about two thousand have been sent to the various companies and have gone into actual use. In the near future we are promised by the manufacturers one hundred and fifty a day, and judging from our experience of the past two months, and the demands made upon us, even this quantity will not be sufficient to fully supply the public.

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[12] Raymond Wile, "The Local Phonograph Companies," 1888-1920, *Association for Recorded Sound Collections Journal* 36, No. 1 (2005): 1-27.

By January of 1890 Lippincott reported that the local companies had rented 6,275 phonographs and graphophones, most of which were employed in offices.[13]

**Phonographs, Gender and the Transformation of Office Labor**

Even though the office phonograph's time at the center of the industry's attention was short, its insinuation into offices implicated it in a set of complex and ongoing economic and cultural reconfigurations. While the industry often positioned the phonograph as a remedy for the dislocations of these larger transformations, it more often than not helped to preserve or even intensify existing tendencies within the organization of office labor. When in the 1870s women began to flood into office employment as typists and stenographers, for example, partisans of the business phonograph argued that the technology would keep women employees separated from boorish and possibly abusive male coworkers. That it often did. But the phonograph also allowed office managers to cut labor costs, both by reducing the skills needed to replicate texts and by passing the work off from high-paid men to lower-paid women.

Late nineteenth century office workers labored in an environment dramatically different from that of their professional forebears and one still in the midst of rapid evolution. In the eighteenth century a fairly concrete division of labor had separated "clerks" from their counterparts in the ranks of manual labor. By the early nineteenth century, however, it appears that these categories had come to overlap somewhat. Manual laborers now often possessed the training to pull double duty as clerks, and most clerks (especially young ones) were expected to deliver packages, handle inventory or even sweep or wash windows. Above all else, however, the

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[13] Circular from the North American Phonograph Company, 1889, in Wile, "The North American Phonograph Company: Part I (1888-1892)," 9; Wile, "The Local Phonograph Companies, 1888-1920," 1-27.

clerk's work entailed writing, and in busy commercial houses clerks spent the better part of their day scribbling at journals, ledgers, invoices, contracts, memos, correspondence, inventories, expense records, and receipts. The speed of one's pen became paramount in this context and writing, to the chagrin of many a clerk, took on an industrial character. "Ho!" one young clerk wrote, "The torn coat sleeve to the table. The steel pen to the ink. Write! Write! Be it truth or fable. Words! Words! Clerks never think." If the novice kept at the task, proficiency came, but so too did the aches and pains of daily repetitive exertions. In *Billy Budd and other Tales* Herman Melville described the clerk's ergonomic travails. "If, for the sake of easing his back," Melville wrote "he brought the table lid at a sharp angle well towards his chin, and wrote there like a man using the steep roof of a Dutch house for his desk, then he declared that it stopped the circulation in his arms." If the clerk "lowered the table to his waistbands and steeped over it in writing," however, he then experienced a "sore aching in his back."[14]

For all the job's frustrations, the early nineteenth century clerk generally recognized in his occupation a type of employment superior to many. Clerks were understood as apprentices whose destiny lay in joining the ranks of the proprietary middle class and as a cohort shared an ethos of self-improvement and upward mobility. Their positions, unlike those of manual laborers,

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[14] Stuart Blumin argues that the early nineteenth century saw a decisive split between white collar work and other forms of labor, giving rise to the middle class. More recently, Brian Luskey has pushed this separation back into the eighteenth century and argued that the nineteenth century saw a partial collapse of the headwork/handwork division of labor. Stuart M Blumin, *The Emergence of the Middle Class: Social Experience in the American City ; 1760-1900* (Cambridge: Cambridge University Press, 2002), 66-107; Brian P Luskey, *On the Make: Clerks and the Quest for Capital in Nineteenth-century America* (New York University Press, 2010), 54-82; Thomas Augst, *The Clerk's Tale: Young Men and Moral Life in Nineteenth-Century America* (Chicago: University of Chicago Press, 2003), 219-232; Michael Zakim, "The Business Clerk as Social Revolutionary; or, a Labor History of the Nonproducing Classes," Journal of the Early Republic 26, No. 4 (2006): 577; Quote from Zakim, "The Business Clerk as Social Revolutionary," 580; Second quote from Zakim, "The Business Clerk as Social Revolutionary," 581. Michael Zakim, *Ready-Made Democracy: A History of Men's Dress in the American Republic, 1760-1860* (Chicago: University of Chicago Press, 2003).

were generally given only to whites, allowing them an increased measure of social distance between themselves and African Americans—no negligible "psychic wage" in an age of gross racism. Finally, the clerks of the nineteenth century worked and played in a nearly all-male environment far removed from their mothers' parlors. Inside and outside of work they conversed on the economy, on sports, and especially, on women. They drank in taverns together, rough-housed, formed baseball teams and joined fraternal lodges. In an era in which women were associated with the stifling (if nurturing) domestic parlor, the all-male workplace represented for young clerks a sphere of unparalleled freedom.[15]

White collar life began to change dramatically with new forms of commercial organization at mid-century. Beginning in the 1850s with railroads, massive multi-department firms evolved to manage the exponentially-increasing flow of information and goods made possible by improved manufacturing techniques. In order to keep up with firms' increasing paperwork, the number of office workers exploded in the decades following the Civil War, with the number of store and office clerks rising from a half-million in 1880 to 1.5 million twenty years later. This increase in the size of the workforce, however, meant little compared to the cultural and economic changes which occurred in the lives of the clerical classes. To manage the new multi-department firm, armies of "middle managers" moved into companies, creating new levels of bureaucracy and more starkly hierarchical distributions of authority. Gone were the days when the clerk enjoyed a special relationship with the company owner and could expect to be trained in general business practices for that day when he struck out on his own. No such

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[15] Blumin, *The Emergence of the Middle Class: Social Experience in the American City; 1760-1900*, 66-107; David R Roediger, *The Wages of Whiteness: Race and the Making of the American Working Class* (London: Verso, 2007); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: Basic Books, 2001), 194-221.

general practices existed in the increasingly specialized world of commerce, and even if there were, the late nineteenth century was no place for small time operators. The clerk, once an aspiring proprietor, had become by the last decades of the nineteenth century a lifelong "company man."[16]

Other developments in the postbellum office contributed to the anxiousness of its expanding population of clerks. Beginning in the 1870s women flooded into offices as typists and stenographers further "feminizing" white collar work and disrupting the male-only patterns of office sociality which had long served as one of the job's perks. The profundity of this transformation in the American office's gender landscape is hinted at by its scale. Between 1870 and 1930 the number of women employed as bookkeepers increased from 800 to 465,000. In 1880 only 154 Americans reported their occupation as stenographer or typist. Four percent of them were women. By 1910, women represented 77 percent of the nation's 112,600 stenographers and typists.[17]

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[16] Alfred D Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass: Belknap Press, 2002), 1-12, 81-120; Stuart M Blumin, *The Emergence of the Middle Class: Social Experience in the American City*; 1760-1900, 290. Brian Luskey argues that the immiseration of clerical work began much earlier than the postbellum period and that clerks' professional mobility had always been a myth. Blumin argues that these changes did not truly set in until after 1900. Luskey, *On the Make: Clerks and the Quest for Capital in Nineteenth-century America*, 54-82.

[17] Elyce Rotella argues that women's increased role in the office was actually facilitated by office machinery, which lowered the time necessary to train workers, thus increasing the profitability of short-term hires. Given the cultural expectations of marriage and childrearing women were considered particularly poor candidates for long-term employment. Elyce J. Rotella, "The Transformation of the American Office: Changes in Employment and Technology," *The Journal of Economic History* 41, No. 1 (1981): 51-57. Lisa Fine pushes back against techno-deterministic or economistic interpretations of women's conquest of office work. She points out that jobs were often mechanized *after* women took them and that women successfully moved into jobs in which automation had not taken hold. Lisa M. Fine, *The Souls of the Skyscraper: Female Clerical Workers in Chicago, 1870-1930*, (Philadelphia: Temple University Press, 1990); Charles W. Wootton and Barbara E. Kemmerer, "The Changing Genderization of Bookkeeping in the United States, 1870-1930," *The Business History Review,* Vol. 70, No. 4, 541-586; Kim England and Kate Boyer, "Women's Work: The Feminization and Shifting Meanings of Clerical Work," *Journal of Social History*, Vol 43, No. 2, pp. 307-340.

Trained in one of the era's many systems of shorthand writing, a stenographer rapidly recorded the spoken words of a speaker before retiring to his or her desk and reproducing the message in traditional "longhand," intelligible to the world at large. In this way the labor of text construction was split in two: "head work"—the purview of management—and "hand work" which could be outsourced to an operative whose time was less valuable than his employer's. In the 1870s and 1880s, the typewriter contributed further to labor specialization by transferring some of this "hand labor" from stenographers to inexpensive and disproportionately female typists.

It was at this anxious moment, in which long-established patterns of office work were rapidly realigning along new technological and gendered lines, that the North American Phonograph Company undertook to introduce the office phonograph. One professional group, in particular took particular heed of the new technology-- stenographers. Phonographs, it appeared, threatened a deskilling of stenographic labor, with shorthand reporters reduced from purveyors of an esoteric commercial alphabet to low-paid machine operators. They might also be replaced altogether. Unsurprisingly, many stenographers responded to these possibilities negatively. In an 1891 address to his fellow stenographers, George B. Motheral admitted that "in speaking about the Phonograph-Graphophone before a body of stenographers …I feel that I am handicapped by the adverse opinions formed in the minds of many of the stenographers in this country in regard to that machine."[18]

Some stenographers responded enthusiastically to the phonograph, but this cohort tended to be comprised of those with secure employment. Among those men and women who welcomed

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[18] *The Phonogram*, May 1891, 109-110.

the device, one professional cohort stands out— court reporters and other state employees. Frank E. Nevins, of the St. Louis Circuit Court, for example, wrote to the Missouri Phonograph Company to offer his own perspective on the phonograph's role in stenography, informing them that he had embraced the machine in his own work and that it allowed him to dispense with shorthand note-taking. He could now "discharge [his] work with one-half the expenditure of vital energy." The Columbia Phonograph Company of Washington D.C. owed its success to its access to the city's well-funded government offices and the New England Phonograph Company similarly placed many of their machines with the "official stenographers in Boston." In general, enthusiasm for the phonograph among stenographers was the prerogative of a well-situated minority.[19]

For their own part, industry personnel were quite explicit about the class element in stenographers' reactions to the new technology. George Hoit of the Chicago Central Phonograph Company remarked that his company had faced opposition from "nickel-in-the-slot stenographers" but from "first-class stenographers" had had no trouble to speak of. George E. Tewkesbury's Kansas Phonograph Company also maintained good relations with his territory's stenographers but ran afoul of the "nickel-in-the-slot organization," apparently meaning the combined efforts of more precariously-employed shorthand reporters. Nor did "expert stenographers" cause much trouble for the Metropolitan Phonograph Company of New York, though more marginal stenographic laborers did oppose their efforts to introduce phonographs into the city's offices. At the First Annual Convention of Local Phonograph Companies, W.L.

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[19] *The Phonogram*, May 1891, 130; "Proceedings of the First Annual Convention of Local Phonograph Companies of the United States," in *The Conventions of the Local Phonograph Companies, 1890-1893*, ed. Patrick Feaster (Bloomington: Phonozoic, 2009), A66.

Smith of the New Jersey Phonograph Company reported that his company had been opposed in their efforts to introduce the phonograph in their territory by stenographers. In Minnesota by 1890, stenographers had organized a body expressly to boycott the phonograph's entrance into offices while Kansas City alone hosted nine such groups by the same year.[20]

Nor were these marginal stenographers' concerns unfounded. An article in the March 1890 edition of the *National Stenographer* reported on the phonograph' impact in one office:

> …in a business house with a large correspondence, one that I know of personally, they formerly employed a number of stenographers. They now employ one good stenographer, to whom all members of the firm dictate the correspondence that he does not know how to answer himself; he dictates his notes into the Phonograph, the cylinders are turned over to six cheap typewritists, and in another room, from a like number of phonographs, are copied on typewriters rapidly and the work done without mistakes.

According to George Hoit of the Chicago Central Phonograph Company, one of the company's clients, S.A. Maxwell & Co. Had by May 1890 rented seven phonographs and replaced all of its stenographers.[21]

Industry insiders were well aware of the political-economic implications of the phonograph, and in their less-guarded moments recognized that their commercial ambitions put them in direct conflict with the nation's stenographers. At the first annual meeting of North American's sub companies in 1890, Jesse Lippincott, president of the corporation, told colleagues that "we are trying to a certain extent at least, to supplant an industry that is already established, that of the stenographer." At the same conference E.L. Lindsay of the Wyoming Phonograph Company spoke plainly of the need to undermine stenographers' places in the office.

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[20] "Proceedings of the First Annual Convention of Local Phonograph Companies of the United States," A52, A56-A58, A63, A69.

[21] *The Phonogram*, January, 1891, 25; "Proceedings of the First Annual Convention of Local Phonograph Companies of the United States," A190.

In Lindsay's estimation, it was incumbent on the various companies to establish schools to teach *typists* how to take phonographic dictation and to transcribe it. Otherwise, he said, "you go to a stenographer there and he don't like to change his method of doing business and claims he cannot operate the machine and at the same time operate the typewriter." Similarly, the managers of the New England Phonograph Company concluded that the only way to circumvent the stenographers' hold on office dictation was to train their own typist/phonographers "so that when a man wants a machine we not only give him a machine but we give him an expert operator with it."[22]

In more public venues the industry generally downplayed the threat posed by the phonograph to stenographers' jobs. In a November 1892 article titled "The Phonograph and Stenographer Allied" the *Phonogram* declared "there is room for all" and urged stenographers to learn to use the machine which, at any rate, was already coming into wider use. Months earlier, the magazine had pursued much the same tack, insisting that stenographers should see the phonograph as "a supporter and ally," and "not a supplanter and antagonist."[23]

The project of legitimizing the phonograph's role as an aid to dictation, however, required more of the North American Phonograph Company and its subsidiaries than cheap encomiums to cooperation. The industry had also to make a case for its salutary effects within the broader set of transformations in office labor with were going on-- transformations which deeply troubled office workers and even society-at-large. None of these "problems" presented themselves with greater urgency than women's recent invasion of the office, an invasion which put an end to the

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[22] "Proceedings of the First Annual Convention of Local Phonograph Companies of the United States," A68-A76.

[23] *The Phonogram*, November 1892, 233-234; *The Phonogram*, March 1892, 61-63.

space's homosocial character, but even, it appeared, might numerically overwhelm the men altogether.

The phonograph itself, in its binary operations of recording and playback, suggested a division of labor that easily mapped onto a binary gender schema. The publications of the early phonograph trade came replete with illustrations of this relationship. The May 1891 issue of *The Phonogram* carried on opposing pages illustrations of the prescribed techno-gendered relationships. In the first, a young male office worker delivers a message into the phonograph's speaking tube. In the second a young woman sits listening to the phonograph through ear tubes and transcribes the recorded message with the aid of a typewriter. A promotional publication from the Indiana Graphophone Company presented a nearly identically gendered presentation of phonographic practice. On one page is depicted an early middle-aged man sitting at the phonograph with its speaking tube pulled up to his mouth. Behind him are his desk, account books and other assorted office accoutrements. A caption informs readers that he is "dictating to the phonograph." On the opposing page, a younger woman sits at her own machine, hearing tubes in place, pecking away at the typewriter. She is "transcribing from the graphophone." On one hand, these illustrations emphasized the permanence of the (male) stenographer's role by anchoring the operations of phonographic transcription in the immutable nature of sexual difference. The phonographic reproduction of texts, no less than the biological reproduction of humans, they suggested, required the ongoing presence of men. At the same time, these illustrations affirmed that phonographic practice would serve to strengthen the existing gendered parameters of communication: men spoke and women listened. With the general proliferation of

phonographs, workplace patriarchy could be shored up against incursions by the rising tide of women.[24]

Missing from the rhetoric and representations of the phonograph industry was a third possibility--that the phonograph might preserve patriarchal office relations while simultaneously eliminating the jobs of men. At Chicago's A.N. Marquis Publishing Company, the dictating and transcribing room was staffed by a male dictator, whose cylinder recordings kept busy two young female typists. Similarly, a photo of The World's Dispensary Medical Association of New York shows one of the company's transcription rooms. Four female employees take dictation from phonographs, while a male supervisor monitors their labor from the back of the room. The preferred iconography of the phonograph industry depicted men and women in one-to-one Romantic dichotomy. The reality often looked more like Old Testament patriarchy with rooms full of female typists watched over by salaried managers and marginal younger men (like stenographers) banished to shift for themselves.[25]

Not only stenographers, but also American society in general, found reason to fret over women's newfound roles in offices and much of this anxiety focused on the practice's threat to sexual propriety. In the 1901 novel *The Typewriter Girl*, by Olive Pratt Rayner, turn-of-the-century readers are apprised of the moral danger presented by the promiscuous mixing of men and women in the office. The protagonist, an American typist, enters an office looking for work in London.

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[24] *The Phonogram*, May 1891, 112-113; "The Graphophone" (Indianapolis: Indiana Graphophone Company) New York Public Library, Performing Arts Research Collections-Recorded Sound.

[25] *The Phonogram*, March 1892, 66-67, 84-85.

> My voice trembled a little, but I mustered up courage and spoke. "I have called about your advertisement…" He eyed me up and down. I am slender, and, I will venture to say, if not pretty, at least interesting looking… The eldest clerk, with the foxy head, wheeled around, and took his turn to stare. He had hairy hands and large goggle-eyes… I felt disagreeably like Esther in the presence of Ahasuerus--a fat and oily Ahasuerus of fifty… He perused me up and down with his small pig's eyes, as if he were buying a horse, scrutinizing my face, my figure, my hands, my feet. I felt like a Circassian in an an Arab slave market…"

Cromwell Childe, head of a stenographers' and typewriters bureau, inadvertently acknowledged the situation's threat to propriety when he described the ideal female office employee: "There is a hint of merriment and tolerance, but, along with these, a decided evidence that bounds may not be overstepped."[26]

Women's entrance into the office also coincided with and exacerbated an ongoing crisis in the organization of workplace space. For most of the nineteenth century, the business office had generally been a fairly rudimentary affair, its proportions small and its spaces undifferentiated. Beginning in the 1870s and 80s, however, the increasing size and scope of corporate and state bureaucracies demanded more complexly-managed administrative facilities. At the same, the emergence of steel-frame skyscrapers facilitated the construction of larger spaces that could be partitioned in ways more complex than the old single-room office. Office managers brought more functions "in house" and sorted employees into spatially-segregated departments to increase efficiency. Of course, the project of rationalizing work spatially also represented a spatial rationalization of gender. Women overwhelmingly entered the office as typists or

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[26] Olive Pratt Rayner, *The Type-Writer Girl* (New York: George Munro's Sons, 1901), Quoted in Margery W. Davies, *Woman's Place Is at the Typewriter: The Feminization of the Clerical Labor Force* (Cambridge, [Mass.]: Radical America, 1974), 13; Lisa M. Fine, *The Souls of the Skyscraper: Female Clerical Workers in Chicago, 1870-1930*, 60.

stenographers (or both,) so the project of segregating the office by type of work came with the added "benefit" of cloistering women in their own spaces.[27]

Architectural measures, however, could only accomplish so much, because the job of receiving dictation took the stenographer-typist into every corner of the workplace. Fortunately, the phonograph could be relied on to remedy this fraught state of affairs.“If the operator is a refined and sensitive lady, as is often the case,” Edward Easton reassured *Phonogram* readers, “she may write out the dictation of the most personally offensive and disagreeable member of the opposite sex, without the infliction of his presence, a necessary evil under the direct dictation system." Since the dictator's message could be stored on the phonograph's wax cylinders, there was no need for the stenographer-typist to meet with him in person. Like the typists at the World Dispensary Medical Association, they need only wait in their gender-segregated workspace for the company's "messengers" to deliver wax records from the various offices. On the other hand, the phonograph's potential for gender segregation could also be a liability. The Minnesota Phonograph Company discovered that, while it was rather easy to rent phonographs out to offices, after a period of time "[the phonographs] get old and [customers] don't use them; they lay them by." Why? "They've got a pretty stenographer somewhere that they'd rather use than the phonograph."[28]

Just as with the phonograph's purported capacity to check the growing power and numbers of women in the office, its potential as an agent of spatial rationalization also reinforced the logics of capitalism in ways that workers probably did not foresee. Throughout the nineteenth

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[27] Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930* (Baltimore: Johns Hopkins University Press, 2010), 94-123.

[28] *The Phonogram*, February 1892, 35; “Proceedings of the First Annual Convention of Local Phonograph Companies of the United States,” A62-A63.

century clerks and other "head workers" had worked side by side with their bosses, an arrangement that conferred a certain dignity on the clerk's position, if not equality with management. The postwar expansion of the office workforce and of the managerial bureaucracy re-shaped office relationships along more explicitly hierarchical lines, with supervisors retreating to walled-off personal offices. Dictation, however, forced managers into real-time collaborations with stenographers, undermining the impersonal and hierarchical relationships of the corporate office and conferring on stenographers a special status at odds with the proletarianizing drift of the late nineteenth century office. Once again, however, the phonograph promised to shore up the logics of capital where architecture alone had proven insufficient to the task. By splitting dictation into distinct labors separated by time and space, it allowed managers to dispense with the unseemly ritual of collaborating with stenographers. The boss could, in this vision of phonographic dictation, recite his correspondence into the device, and then send the records out for transcription by stenographers or typists elsewhere. In an 1891 letter to the *Phonogram*, attorney J.H. McGowan explained his own investment in the phonograph as an agent of social distancing. He admitted that he was a "nervous man" but believed "that any person is more or less disturbed in his mental processes by the simple presence of another." For this reason, he found it preferable to dictate his letters into the phonograph, shut up alone in his office without even the disturbance of a stenographer. "This opportunity to be entirely alone when one dictates," he considered to be "one of the great advantages of the Phonograph."[29]

At several junctures the phonograph industry positioned the phonograph as a remedy to the ills of the postbellum office-- at least as perceived by some contemporaries. Just as often as

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[29] *The Phonogram*, May 1891, 131.

the technology successfully ameliorated these problems, however, it reinforced existing tendencies within the evolution of corporate capitalism, undermining the status of the office's traditional workforce and especially that of stenographers. The advent of the office phonograph did, in some ways, benefit women office workers. When male stenographers balked at the technology, North American's sub-companies turned to women. In those offices where the phonograph was taken up as an aid to dictation, this nearly always meant that men lost jobs to women. However underpaid, women stood to earn more money as phonographer-typists than most other occupations open to them in the late nineteenth century, and in this respect the phonograph's effects were positive.

But, once again, even this benefit only unfolded within a larger framework in which the phonograph reinforced the larger logics of capitalism. The replacement of skilled male stenographers with semi-skilled female phonographer-typists represented a relative de-skilling of the workforce and--most importantly--a decrease in wages. Under some circumstances, the office phonograph even threatened to push the rationalization and division of labor one step further by facilitating the outsourcing and centralization of typewriting. In Chicago, for example, Stevenson's Phonographic Exchange placed their machines in the offices of customers who used them to dictate their correspondence and memos onto wax records. An Exchange employee dropped in daily to retrieve the recorded cylinders and bring them back to headquarters where they were dutifully typed out by Exchange typewritists and sent back to the customer. M.R. And H.C. Snyder's transcription bureau in Washington, D.C. provided similar services in the nation's capitol "sending to members of Congress and others for phonograph cylinders for transcription, returning the copy, etc." In large markets such as these, then, the phonograph contributed to a

further winnowing of the labor pool, replacing humans with machines and widening corporate profit margins.[30]

**Infrastructure Failures and the Death of the Office Phonograph**

Keeping these phonographs running (and the rental revenues flowing,) required an enormous amount of ongoing labor. Even more so than the crude mechanism of 1877, the Improved Phonograph and its competitor the Graphophone relied on an attenuated infrastructure of human and non-human components, and the specific demands of office phonography weighed heavily on this thinly-stretched web of relationships. Where conditions were ideal a respectable profit could be wrung from the precarious enterprise, but in most parts of the country vast distances stretched this infrastructure past the breaking point. This section argues that the eclipse of the office phonograph business model owed very little to public disinterest. Rather, the intransigence of material things and physical distance made the office phonograph business model a losing proposition in most parts of the country. Even in those cases in which the business model made money, the high costs associated with it cut into profits and ensured that phonograph companies would seize on any opportunity to widen their profit margins.

Exceptions, they say, prove the rule, and this was never truer than in the early history of the Columbia Phonograph Company of Washington D.C. Columbia prospered in the office phonograph business by exertions which few territorial companies could match and under more promising circumstances than nearly any of them enjoyed. The origins of the company lay in February 1888, when Edward D. Easton, an American Graphophone Company shareholder, secured from that company an exclusive contract to handle graphophone sales in Delaware,

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[30] *The Phonogram*, October 1891, 36-235.

Virginia and Washington D.C. In January the following year he and a cadre of investors incorporated the Columbia Phonograph Company. When American Graphophone handed national marketing over to Lippincott, Columbia became the local company for the North American Phonograph Company, entitled to market both graphophones and phonographs in their district. Like most of his colleagues, Easton had placed great stock in the application of sound recording to business purposes and Washington's armies of reporters, lawyers, and stenographers, combined with generously-funded federal offices, meant the company had as good a chance of "making a go" of the office phonograph business as any firm in the country.[31]

Despite this advantage, Columbia maintained profitability only through the most stringent of industrial management and the company's operations were characterized at every turn by an emphasis on efficiency. An office building near the center of the city served as headquarters for Columbia's Washington operations, and like a commercial homunculus, it housed in microcosm most of the functions which would some day grow into fully-formed components of the "recording industry." In its basement employees repaired broken machines and attended to customers' batteries. On the first floor the company maintained offices for its president and general manager while the second floor housed "the display parlors, where the public transact their business," and which were "the handsomest used for the purpose in the country." The third floor eventually served as a musical department while the fourth floor was given over, anticlimactically, to storage. From these headquarters, poured forth every day a workforce of phonograph inspectors, men trained in the peculiarities of the machine and who were indispensable in keeping the company's phonographs laboring away in customers' offices.

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[31] Sean Wilentz, *360 Sound: The Columbia Records Story* (San Francisco: Chronicle Books, 2012), 21.

"Mounted on bicycles," the inspectors rode "swiftly from place to place over the smooth concrete streets of Washington" making regular rounds and attending to malfunctions as quickly as possible. Lest an impatient subscriber endeavor to fix their own malfunctioning machine, the company's offices were staffed "days, nights and Sundays" and "telephone calls [were] always promptly answered." Under normal circumstances, inspectors were expected to provide preventative maintenance for the company's phonographs. In late 1891, *The Phonogram* described the handiwork of a diligent inspector: "the instrument had been overhauled, the rusty parts had received a polish, the adjustments were all correct, the cylinders were put into proper order, the electric motor ready, and the whole air of the machine life-like and waiting, as it were, to respond to a touch."[32]

The close relationship between operational efficiency and customer satisfaction (and Columbia's profits,) led Columbia to even rationalize the workings of its customers' offices. President Edward Easton of Columbia devoted a great deal of consideration to the ideal practices to be encouraged in phonographic offices. His prescriptions, spelled out in meticulous detail in an article for the *Phonogram* entitled "Make the Phonograph Convenient" suggested a continuity between the desiderata of technological and human efficiency, operational seamlessness, and the profits of the phonograph firms. Phonograph company managers, he said, should do everything in their power to facilitate their customers' convenience. "Busy men, accustomed to calling a stenographer and dictating without leaving their chairs," he said, "are sometimes embarrassed in the use of the phonograph, because before beginning they are obliged to gather up their correspondence, leave their desk, go to and open the machine, put on the speaking-tube, hunt up

[32] *The Phonogram*, April 1891, 88; *The Phonogram*, January 1891, 24; *The Phonogram*, October 1891, 212.

a pared blank (or, worse still, pare one), and in short, undertake the entire operation in the most inconvenient way." To address this problem, Easton said, phonographs should always be employed in pairs. One should be set directly into the dictator's desk "far enough back to leave room for spreading out the letters to be answered or signed, but not to exceed fifteen or sixteen inches from the front edge of the desk." The office clerk would have sole run of the other phonograph, which he would use for listening to the former's recorded dictations and typing them out. By employing two phonographs in this way, the customer could avoid a number of rank inefficiencies. First, a phonograph shared between dictator and transcriber required a sharing of workspace which was certain to cause mischief in time lost and misplaced office effects. Secondly, the shared machine would have constantly to be switched back and forth between "record" and "playback" setups, again causing frustration and inefficiency as well as constant uncertainty of the machine's readiness for action. Thirdly, the use of one phonograph imposed a labor "bottleneck" and was hardly better than old fashioned stenography. Under those circumstances clerks or typewriters could not type out the boss's dictations until he had ceded the machine to his subordinate. With two phonographs, recording and transcribing could go on simultaneously. Additionally, Easton advised phonograph companies to provide their customers with quite specific instructions for running their office phonograph:

> Three boxes, each to hold twelve cylinders, are used, the first bearing a label marked "Blanks"…; the second empty and marked "To be transcribed;" the third box empty and marked "To be pared." The dictator is instructed to draw from the box marked "Blanks," placing each cylinder as he fills it into the box marked "To be transcribed," which box is drawn from by the type-writer operator; the latter being taught to place all transcribed cylinders in the box at his desk marked "to be pared," which paring he does at the first convenient opening, returning the pared cylinders to the principal's box marked "Blanks."

Urging customers to adopt such a system, Easton explained, would ensure that "all friction is overcome from the very start" and that "unless some such method be suggested or employed, things will always be at sixes and sevens."[33]

In no sphere of activity was the company's pursuit of seamlessness more dogged than in supplying its phonographs with motive power. In a letter to the *Phonogram*, the company informed the trade that "busy men will not use the phonograph commercially if there is much friction in regard to power" and for that reason resolved to avoid "friction" at any cost. In its early days Easton and Company had leased out quite a few of the treadle-powered devices put out by the American Graphophone Company. These proved unpopular and the company transitioned over to the battery-powered electric motor machines first supplied by Edison's Phonograph Works. Recognizing that "efficient and absolutely reliable battery service was indispensable to the success of the phonograph," Columbia secured in 1889 the services of William W. Donaldson, an electrician and storage battery expert who soon revolutionized the company's approach to batteries and their maintenance. Donaldson divided Washington into twelve sectors, each containing roughly the same number of phonograph subscribers. Every morning, company employees canvassed one section of the city retrieving all of the batteries there and replacing them with freshly charged ones. The spent batteries were re-charged overnight at Columbia's offices and then taken to the next sector the following day. In this way, every phonograph battery in Washington—numbering over four hundred by late 1891— was replaced every two weeks.

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[33] *The Phonogram*, September 1891, 189-191.

The company worked feverishly to prevent battery failures in their customers' phonographs and even forewent efficiency (and profit) in some areas in order to ensure continuity. Donaldson noted, for example, that there were batteries made which could hold charges for longer than two weeks but that "the multiplicity of plates required in a battery of sufficient size and capacity to last for a longer period brings in the element of uncertainty, which must for successful work be avoided." On balance, longer-lasting batteries might help cut Columbia's labor costs by reducing the number of service calls necessary to keep customers' phonographs running. In the long run, however, they injected into the phonograph's operations a degree of unreliability, threatening the aesthetics of efficiency and continuity on which the company predicated its value-claims.[34]

Columbia was largely successful in its mission to keep their customers' cylinders turning and a disproportionate number of the laudatory letters turned over for publication to *The Phonogram* came from phonograph users in their Washington D.C. Territory. F.J. Haig, clerk of the Committee on District Columbia wrote that his phonograph had "never been out of order or needed the slightest repairs," and attributed this faultless operation to E.D. Easton and the Columbia Company. J.H. McGowan also of the District of Columbia wrote "I have no trouble whatever with my two machines. The company sees to the changing of the batteries as frequently as necessary, and keeps the machines oiled and cleaned." Thomas W. Smith, remained quite pleased with the machine he rented from Columbia and had "no hesitation in recommending it to the business community." Other metropolitan sub-companies also appear to have performed well

[34] *The Phonogram*, September 1891, 198.

and letters to *Phonogram* consistently praised the operations of local phonograph companies in New York, Philadelphia, and other large cities.[35]

For the majority of North American's sub-companies, however, the inherent challenges of leasing and maintaining office phonographs proved nearly impossible, and this owed much to the effects of geographic distance. The office phonograph, as we have seen, relied on human and non-human actors for its successful operations. Where this infrastructure of people, things and ideas was stretched too far it invariably snapped, depriving office managers of the phonograph's services and (eventually) phonograph companies of a revenue stream.

Distance took its toll on the local companies' operations from the very beginning, as companies far from centers of phonographic expertise in New York and Washington found it difficult to train their technicians. In the early 1890s the phonograph remained a particularly temperamental technology and its many quirks were best learned by first-hand training under an experienced mechanic. To that end, one of the very first maneuvers by the parent company was the scheduling of phonograph lessons at Menlo Park for sub-company employees. The Michigan Phonograph Company sent a man down for instruction and the Metropolitan Phonograph Company of New York made arrangements for a handful of their "operators" to visit the labs. George Dunham of the Ohio Phonograph Company wrote to say that, as he had experience with the old tinfoil phonograph, he did not believe a primer was in order. He would come to Menlo if Edison absolutely insisted, however.

While firms "out east" might (or might not) take Edison up on his phonograph lessons, phonographic expertise was difficult to achieve in those areas far removed from the phonograph

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[35] *The Phonogram*, January 1891, 25; *The Phonogram*, May 1891, 131.

and graphophone workshops, and provincial sub-companies struggled to adequately find and train technicians. In January of 1891, *The Phonogram* reported that applicants for positions as "company expert" with the various local companies would henceforth "require a certificate, signed by competent authority" attesting to their qualifications, in order to receive a recommendation from North American. To underscore the necessity of this measure, the *Phonogram* noted that "heretofore the class of men filling this important position have not been at all times fully up to the standard." By November, *The Phonogram* could remark that poorly-trained phonograph inspectors were becoming fewer, but the problem continued for years afterwards. In 1896 a *Phonoscope* reader—presumably a company expert—inadvertently illustrated the persistence of the problem in a letter to the magazine. "Talk about ignorance of operators" he began, before describing an encounter with a phonographic novice who, in attempting to adjust his machine, misused the "speed—regulating thumbscrew of the phonograph standard speaker." The writer adjusted the phonograph himself but the novice "remonstrated with me for interfering with the machine." The writer revealed his credentials and "received his thanks afterwards." Unfortunately for the smug interloper, his pretensions to expertise were deflated in front of the entire industry by the editor who responded to his letter: "We do not know what the 'speed regulating thumb screw of the phonograph standard speaker' is, but trust Mr. D.'S views will interest, or amuse some of our readers." The low level of expertise achieved by phonograph inspectors wrought havoc on the phonograph and its commercial prospects. In late 1891 the *Phonogram* described vividly an office serviced by substandard phonograph "experts":

> [The phonographs] are besmeared with oil and grease, the cylinders are left unpared or covered with shavings, and the whole aspect of the once polished surface and delicately neat fittings and appurtenances are neglected and forlorn. Along comes the inspector,

> whose exterior is in keeping with the instrument which he has charge of; he seats himself, takes a whack at the phonograph, gives a prolonged roar into the funnel, and pronounces the machine ready for use. A repetition of this hurried and simple proceeding is continued from week to week, until reports are sent in and pay-day arrives. The trustful company, not having been informed as to the quality of work furnished, rates it as good and pays accordingly.

Not only were company repairmen poorly trained, the *Phonogram* indicates, but the dispersed nature of their work also made it exceedingly difficult for the various sub-companies to police their employees' work in the field.[36]

In the country's rural districts, the negative effects of distance were felt on sub-companies' bottom lines in other ways. Though an occasional party rented dozens of phonographs the majority of customers had use for a handful or fewer. In addition to the vast distances which separated them from the sources of phonographic competence at NAPC headquarters, then, the sub-companies were also forced to cultivate relationships with customers scattered all over their assigned districts. While Columbia's inspectors and battery crews traveled quickly and efficiently between customers' offices over D.C.'s well-paved streets, their colleagues in thinly-settled Texas faced "a vast expanse of thinly settled country," and "in some cases, phonographs have been placed by [The Texas Phonograph Company] at a distance of eight hundred miles from each other." *The Phonogram* added grimly "the expense and difficulty of maintaining machines at such distances can easily be imagined." Similarly, as of the beginning of 1892, the Florida Phonograph Company, had "never yet met with any marked success, owing to the sparsity of large towns." Even if provincial sub-companies managed to secure the help of

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[36] Michigan Phonograph Co. and John L. Butterfield to Thomas Alva Edison, February 15, 1889 (TAED D8963);Alfred Ord Tate to Metropolitan Phonograph Co and Charles Augustus Cheever, March 4, 1889, General Letterbook Series, LB-028 (Jan-Apr 1889): (Thomas A. Edison Papers Microfilm Edition, 138:967); Michigan Phonograph Co and John L Butterfield to Thomas Alva Edison, February 15, 1889 (TAED D8963); *The Phonogram*, January 1891, 23; *The Phonogram*, October 1891, 212; *Phonoscope*, December 1896, 7.

adequately trained repairmen, maintenance calls were necessarily rare under these circumstances, and the full range of mechanical deficiencies endemic to the new phonographs took bloom.[37]

The Improved Phonograph was capable of far more than Edison's original tin-foil model, but its increased technological sophistication came bundled with a similarly diversified range of mechanical infrastructure failures. One problem in this vein—one of the least intractable— was the set of practices necessitated by the phonograph's wax cylinder records. North American and its sub-companies made much of the wax cylinders' reusability and phonographs were outfitted with "knives"— attachments which scraped a layer of wax off used cylinders, leaving them smooth and ready for another recording. These knives, however, proved a constant source of customer dissatisfaction. Artemas Ward of New York wrote that "nine out of ten of the difficulties or mishaps in connection with the phonograph are directly connected with the knife. It does not cut evenly, or it does not cut deeply enough; it drops down by accident and cuts a nasty groove in the blank; or, indirectly it is at fault, because it is not used at the right time or in the right way." "Why could not the company," he asked, "employ a man to call regularly and deliver clean blanks to all regular customers, taking up the used ones and cleaning them at home?" Mrs. A.W. Evans, a transcriber for the Metropolitan Phonograph Company believed the process of paring cylinders too time-consuming and she wrote to Edison, urging him to develop a thinner cylinder that could be economically disposed of after one use. The range of frustrations associated with the shaving knife were suggested by an ad in *Phonoscope* run by one Samuel O. Paul, who cryptically promised readers the secret of shaving cylinders without a knife. His technique, he claimed "will not make any dust or dirt; will not clog up your Phonograph with

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[37] *The Phonogram*, November-December 1891, 244; *The Phonogram*, November-December 1891, 245.

wax; will not wear out your blanks, as it takes off no wax; will not need a man, any child can work it; will not take the time a knife does; will no[sic] cost half a cent per record; will not need any electric power." Paul's technique, whatever it was, apparently failed to take the industry by storm and no record exists of its particulars. Even if one could get a company maintenance man to come have a look at the machine, he might not be much help in matters pertaining to the shaving knife. In a letter published in *The Phonogram* W.M. Benner of Chicago called the calibration of the phonograph's knife "a study" and informed readers that "of the many phonograph men I have known, not one in six knew how to set a knife." Indeed, learning how to do it was a matter of embodied knowledge, needing "experience, nice judgment and a keen eye."[38]

By far the most damning mechanical limitation of the new phonograph, however, was its lack of a reliable power source, and it was the NAPC's grappling with this problem that throws into greatest relief its situated-ness within concrete networks of infrastructure. Having deemed hand-power unreliable, the Graphophone interests mounted their machines on treadle-equipped sewing machine chassis and treadles powered some of Edison's early Improved Phonographs as well. In some quarters the treadle machine was warmly received. Louis Glass of the Pacific Phonograph Company wrote Edison in March 1889 to inform him that "all our people here are greatly pleased with the treadle" and to express his belief "that we will have more call for these machines than those actuated by electric power." Apparently, however, Edison thought of the treadle machine as a stopgap measure and shifted production over to battery-operated models as quickly as he could.

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[38] *The Phonogram*, November and December 1891, 250; A.W. Evans to Thomas Alva Edison, October 28, 1889 (TAED D8955); *The Phonoscope*, January 1898, 13; *The Phonogram*, March 1892, 66-67, 87.

Domestic and commercial electrification, however, was still rare and these motors had to be powered by batteries. Dissatisfied with those then available, Edison developed his own primary cell, an improvement on an older design by Felix Lalande. In a primary cell, electricity is derived from the reaction of electrodes immersed in acid and once the latent energy in these components has been discharged, they must be tossed out and replaced. An NAPC price list from May 1889, listed components for the Edison battery ($7.25,) chromic acid (200 lbs for .30) and replacement zinc electrodes (.30.) Sub-companies complained bitterly about these prices and disputed Edison's claim that they were good for 100 hours of work. Richard Townley Haines wrote North American to tell him that his had not even worked when brand new. He had set up the battery himself, being "careful in every way," but had gotten only a half hour of electricity out of it before it went dead and "has not run since." Edison had sent an employee out to set up the battery with even less luck, proof that "their not going is not due to want of cleaning or anything of the kind." The New Jersey Phonograph Company informed Edison that "the batteries have not met their guarantee. They have both failed several times after use of not longer than three or four days." Even the Edison General Electric Company of Harrison N.J. Expressed dissatisfaction with Edison's batteries, which they were using to power 30 phonographs and a dozen clocks. Around the time they had re-charged their batteries with new acid, the company began experiencing "little troubles daily" and could ill-afford them as "it is a serious matter with us when we are stopped on the phonographs for two or three hours."

Most alarmingly, the primary cells demonstrated a tendency to leak acid and damage their surroundings. The Western Pennsylvania Phonograph Company informed *The Phonogram* that the firm had so much carpeting (presumably that of customers) ruined in this way that they

eventually placed their batteries in "a japanned pan, made similar to a bread pan." The acid made quick work of these pans until the company started coating them with acid-proof paint obtained from a New York firm, thereby achieving "satisfactory results." Similarly, the Colorado & Utah Company of Denver were especially distraught over the their customers' failing batteries and wrote to North American to recount their travails. The company paid $26.50 to have two of the Edison-Lalande batteries delivered express, one arriving damaged and utterly useless and the other only working after 48 hours of preparation. The "good" one produced current for two and a half hours over the course of the next week before going dead entirely. The sub-company's patrons were "disgusted" with this performance and returned the phonographs altogether, and the company despaired that "this hurts our reputation as others were waiting to see how this battery would work."[39]

The shortcomings of primary cell batteries weighed heavily on the industry, and in some cases, local companies even urged a renewed focus on treadle machines. In May of 1889 Henry Goodwin informed Edison that the batteries were so useless as to prevent him from even marketing the phonograph until an improved model was discovered. Until then he would like some of the Edison treadle machines. Louis Glass, who had earlier encouraged Edison to pursue treadle-power, grew irritated with Edison as it became clear his interest lay in battery power. Glass wrote to Edison, "You seem to disparage the use of treadle machines" and reminded him

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[39] Pacific Phonograph Co and Louis Glass to Thomas Alva Edison, March 13, 1889 (TAED D8963); North American Phonograph Co -- Lists and Inventories, May 28, 1889 (TAEM 128:7); Jesse H. Lippincott to Edison Phonograph Works and Charles Batchelor, September 19, 1889 (TAED D8962); New York Phonograph Co and Richard Townley Haines to North American Phonograph Co., October 11, 1889 (TAED D8963); New Jersey Phonograph Co and W.L. Smith to Edison Phonograph Works, October 18, 1889 (TAED D8963); Edison General Electric Co. Lamp Works and Francis Robbins Upton to Alfred Ord Tate, September 26, 1890 (TAED D9051); *The Phonogram*, October 1891, 234; Thomas R Lombard to Thomas Alva Edison, October 24, 1889 (TAED D8962).

that the Pacific Phonograph Company already had a large number of outstanding orders for treadle-powered phonographs. Most importantly, Glass emphasized the spatial limitations imposed on the trade by Edison's neglect of the non-electrified machines. Many of his customers, he informed the inventor, were "parties who are located in the mountains of California where battery material would be unusually expensive and unless we could supply treadles, we would, in our opinion, be shut out of this territory." As far as Edison was concerned, however, the treadle phonograph was a dead issue.[40]

Another solution to the power problem lay in "storage cells," the late nineteenth century's version of a rechargeable battery. Most batteries were built as primary cells which could be recharged chemically with supplies sent through the mails. The cheapness of this method made primary cells convenient for the vast distances involved in many of the sub-companies' territories. As we have seen, though, primary batteries, were dangerous and destructive, given to regular acid spills. Storage batteries—the very same employed to great effect by the Columbia Phonograph Company—spared users the effort (and risk) of handling battery acid but had to be recharged through one of four labor and time-intensive methods. Some customers (like those in Washington) entrusted the periodic recharging of their batteries to their local sub-company, but in those circumstances where this was impossible the battery could be taken to an "electric light" plant. A third option entailed shipping one's batteries to out-of-town electric companies for re-charging. While this option allowed the use of storage batteries in places far away from town, it was by far the most risky as batteries were regularly damaged in transit. The Ohio Phonograph

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[40] Wisconsin Phonograph Co and Henry D. Goodwin to North American Phonograph Co. [supplied or conjectured], May 15, 1889 (TAED D8963); Pacific Phonograph Co and Louis Glass to Thomas Alva Edison, June 8, 1889 (TAED D8963).

Company advised its colleagues, when shipping batteries to out-of-town clients to "put them in a crate, taking the handles off of the sides of the batteries and putting one handle on the top of the crate, so that the expressmen are not tempted to take hold of a side handle and tip the battery up and thus perhaps spill the acid which it contains." On the other hand, two batteries shipped to the same address were best crated together rather than separate "as they are less likely, on account of their weight, to be thrown carelessly on their sides or handled improperly." Finally, those phonograph users in the deepest pockets of geographic isolation re-charged their storage batteries with primary cells, capitalizing on the reliability of storage batteries while retaining the infrastructural independence (and hassle) of primary cells. In nearly all cases, the convenience and safety of storage batteries were purchased by local companies at a steep price. The necessity of re-charging storage cell batteries intensified the phonograph's reliance on the notoriously untrustworthy material infrastructure surrounding the late nineteenth century phonograph industry. It increased sub-companies' labor costs as well as the likelihood of infrastructure failure, eventualities sure to damage an already precarious profit margin.[41]

All of the foregoing limitations of the phonograph pressed heavily on those sub-companies whose far-flung networks of customers precluded regular maintenance, and under such circumstances broken down phonographs remained broken down for days or weeks. Of course, it was reasonable to expect phonograph lessees to perform some of the preventative maintenance and cleaning themselves. "The subscriber should," argued the Western Pennsylvania Phonograph Company's Henry F. Gilg, "make it a rule for his operator to keep the phonograph clean at all times, and to see that blank cylinders are at hand for dictation." He

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[41] *The Phonogram*, October 1891, 218-219; *The Phonogram*, November-December 1891, 251.

conceded, however, that "even in the best regulated business houses the 'tail sometimes wags the dog,' and the operator will do as he pleases about the phonograph" in which case "the phonograph can never be shown as a perfect success." Far away from the headquarters of the leasing company and with its representatives only occasionally darkening their office door, provincial phonograph renters were unlikely to take good care of their machines. At the same time, leaving too much of the upkeep to lessees might undermine the technology's claims to save labor. In fall of 1891 one office manager allowed that "considering the time required to keep [the phonograph] clean and in order and the cylinders ready for use… I can better expedite my correspondence by direct dictation to the typewriter." The lesson was clear: poorly maintained machines represented liabilities, not assets, and if the sub-companies wished to rent phonographs to businessmen, they would have to take care of much of the machines' upkeep themselves. This was an impossibility outside of most urban areas. The geographic obstacles to the office phonograph industry were expressed plainly by a St. Louis lawyer: "the phonograph can not be successfully used at a place remote from the main office, except by one who is sufficiently expert to keep it in repair…[42]"

These obstacles hobbled not only the local companies, but also North American Phonograph itself, with debt and hard luck moving as if by capillary action from the provinces to

[42] *The Phonogram*, June-July 1891, 136-137; *The Phonogram*, October, 1891, 220.

the corporate center.[43] To address these problems, North American moved in late 1890 to abandon the "rental only" policy and begin selling phonographs and graphophones outright. At the local level, these sales would take rental machines off company books, pushing maintenance costs onto their new owners and allowing the sub-companies to charge for the endless rounds of maintenance, tune-ups, battery-charging and the like. Unfortunately, legal troubles brought the plan to a halt and North American was not able to carry on an unrestricted sale of phonographs and graphophones until 1892. By then it was too late. Through all of these setbacks North

[43] At the national level the North American Phonograph Company also struggled to cope with the demands of a geographically-expansive market and a bewildering number of market actors and transactions. As early as 1889, production delays set off financial dysfunction across the entire North American commercial network as local companies found themselves unable to generate revenue and pay bills. One of them, New York's Metropolitan Phonograph Company, threatened the parent company with damages amounting to $10,000, before a cessation of production problems brought a timely end to the crisis. No sooner had the production shortages abated, however, than another problem altogether materialized. Lippincott had agreed to take from the American Graphophone Company a minimum of 5000 graphophones every year but customers developed an overwhelming preference for Edison's phonograph. By 1891, the imbalance between the two machines had reached a crisis stage with only sixty-five graphophones placed with customers against 2000 phonographs. American Graphophone agreed to release Lippincott from the obligation to purchase 5000 units a year, but only if he paid the royalty fee due on all undelivered graphophones. Thomas R. Lombard to Metcalf, James B Metcalf, March 6, 1889 (TAED D8962); Metropolitan Phonograph Co and James B. Metcalf to Jesse H. Lippincott, August 1, 1889 (TAED D8962); Jesse H. Lippincott to Metropolitan Phonograph Co. and James B Metcalf, August 9, 1889 (TAED D8962); Welch, Burt, Read, *From Tinfoil to Stereo: The Acoustic Years of the Recording Industry, 1877-1929*, 36; Wile, "The North American Phonograph Company: Part I (1888-1892)," 14-15.

American hemorrhaged funds and the company only remained solvent because of generous infusions of capital from Lippincott's own pocket.[44]

When he died in April 1894, it signaled an end to his financial support of the company and the necessity for immediate action on the part of Edison who sought to regain control of his patents. In August of that year, he and three other North American bondholders called in the principal on their loans, a sum of $300,000, pushing the company into receivership and presenting Edison with the opportunity to buy the entire operation outright. After a protracted legal conflict between Edison and a handful of NAPC shareholders, the courts allowed the sale to proceed, and on February 8 1896 Edison formally bid on and won the assets of the NAPC. He then assigned them to a newly-created and un-creatively named entity called the National Phonograph Company, bringing an end to the great North American Phonograph Company, and with it, the second phase of the phonograph industry.[45]

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[44] Months before North American had concluded an agreement with Automatic, in which the former promised to use its influence over the sub-companies to get the Automatic mechanism adopted across the country. Phonographs sold to the general public, however, could be used for anything, including public commercial use with one of Automatic's competitors' nickel-in-slot designs. This, said Automatic, represented an abrogation of their agreement with North American. The courts agreed and imposed a temporary injunction against sales which was extended to a permanent injunction a month later. After months of back-and-forth between the two companies Automatic consented to a limited sale of 1000 machines in July of 1891. On condition that every machine thus circulated be fitted with a plate reading: "This machine constructed under U.S. Letters Patent as specified thereon, has been sold with the restriction that it is not to be used or exhibited in connection with any coin slot machine; the right to such use is expressly reserved to The North American Phonograph Company and its assigns; and also with the further restriction that said machine shall [be] used only within the State of _____, and a bill of sale shall contain among other things a reference to such provision." Almost another year passed before Automatic was conciliated and the door was opened to unrestricted sale of phonographs and graphophones. Raymond R. Wile, "The North American Phonograph Company: Part I (1888-1892)," 11-36; Raymond R. Wile, "The North American Phonograph Company: Part II (1893-1898)" *Association for Recorded Sound Collections* Journal 35, No. 2 (2004): 206-216; Sherburne Blake Eaton to Thomas Alva Edison, January 2, 1891 (TAED D9144).

[45] Wile, "The North American Phonograph Company: Part II (1893-1898)," 216-231.

**Conclusion**

In a 1906 lecture before the Lowell Institute of Boston, philosopher and psychologist William James outlined a new conception of truth, one that drew on the era's instrumentalist turn of mind and which challenge long-established and comfortable articles of epistemological faith:

> The possession of truth, so far from being an end in itself is only a preliminary means toward other vital satisfactions.... True ideas would never have been singled out as such, would never have acquired a class name, least of all a name suggesting value, unless they had been useful from the outset in this way .... Our account of truth is an account of truths in the plural, of processes of leading; realized in rebus, and having only this quality in common, that they pay.

Truth, James tells us, is what pays. By saying as much, however, he never meant anything so crude as a conflation of what is true and what makes money. Rather, his was a *general* case for the instrumentality of belief. Still, James' account of truth suggests a relationship between the pragmatism (and Pragmatism) of late nineteenth century thought and the psychology of the market. As Habermas has argued, the market has always represented a sphere of human activity peculiarly characterized by means-ends logic. It is not surprising, then, that as the mechanisms of corporate and consumer capitalism expanded into public and private life with breathtaking rapidity, some late nineteenth century thinkers considered seriously the possibility that all knowledge was instrumental.[46]

At the exact historical moment that James and others were reconsidering the relationship between truth and utility, agents of the North American Phonograph Company and its subsidiaries were working unsuccessfully to wring profit from the office phonograph business model. Their failure to make it pay— especially in the hyper-instrumental intellectual milieu of

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[46] William James, "Pragmatism's Conception of Truth," *The Journal of Philosophy, Psychology and Scientific Methods* 4, No. 6 (1907): 148; Jürgen Habermas, *The Theory of Communicative Action* (London: Heinemann Educational, 1984).

the late nineteenth century— exercised a profound influence on the viability of the truth claims associated with that business model. Thinking of phonographs as sonic scribes was economically unprofitable, so it was also psychologically unsustainable. The mechanics of this reciprocal relationship are two-fold. Most obviously phonograph capitalists were themselves more likely to commit themselves to sonic ontologies whose implications for the phonograph proved more rather than less remunerative. But profit and un-profit exercised another systemic and largely hidden influence over the range of imaginable possibilities within nineteenth century American culture. Because office phonographs could not generate sufficient revenue they soon disappeared from social reality taking the metaphysics of sonic textuality with them. Edison and others might (and did) cling to the conviction that the phonograph was properly destined for dictation purposes. The social efficacy of that idea remained fettered by its unprofitability, however, and like the phonograph-as-talking-machine before it, disappeared from the fund of imaginable ontologies for the technology of sound recording.

The death of the sonic scribe was a necessary precondition for the birth of sonic modernity. Like the phonograph-as-talking machine before it, the phonograph-as-sonic-scribe gave wide berth to the idea that the sound recording apparatus was itself an agent. Sonic scribes were active participants in the transmission of recorded sounds, literally writing them down and then reading them aloud for the benefit of human users. Sonic modernity, as we will see, evolved after 1900 and consistently occluded the role of machines and human labor in facilitating phonographic playback. It presented media and commerce as passive conduits for sonic events which happened elsewhere and at other times, and forwarded the recorded subject as the locus of

agency. It purported to provide unmediated access to the lives and labor of distant people in a way the sonic scribe did and could not.

Another key difference between the sonic scribe and the later paradigm of sonic modernity lay in these paradigms' effects on existing social structures. The sonic scribe absorbed and even intensified tendencies already at play in the deployment and management of human labor, contributing, for example, to the ongoing project of separating "hand work" from "brain work." It also facilitated the gendering of space and of labor within the office, drawing on and, in turn, reaffirming and strengthening the assumptions on which those distinctions were built. The sonic scribe's compatibility with existing forms of social organization lay in sharp contrast to the protean, consumption-oriented patterns of identification which sonic modernity encouraged beginning after 1900. While arguments for the liberatory potential of popular culture have nearly certainly been oversold, it is also the case that under the regime of sonic modernity, interactions with recorded sound have contributed to the rise of a protean subjectivity unimaginable from the vantage point of the late nineteenth century.

By the late 1890s nearly all industry participants had abandoned their unprofitable preoccupation with phonographic dictation and had moved to cash in on the application of sound recording to a new kind of commercial amusement— the coin-in-slot phonograph. In the next chapter, we turn to the evolution of this, the third phase of the phonograph industry. We pay particular attention to how this business model, like those preceding it, implicated the phonograph in new infrastructures of human and mechanical agents and how these infrastructures, in turn, represented new contexts in which subjects had to make sense of the phonograph and its labors. Concretely, the advent of the coin-slot phonograph business model

brought in its train a novel set of relationships later generations came to call a "recording industry." As the coin-slot phonograph business model coalesced in the 1890s, however, subjects had not yet fully abandoned the textual biases in their understandings of sound. In this context, understandings of the centralized production and distribution of recorded sounds undertaken by this new recording industry borrowed liberally from an earlier moment in the evolution of mass media. The phonograph became a sonic printing press.

# CHAPTER III

## The Sonic Printing Press

Beginning in the late 1880s, something like a "recording industry" coalesced in the United States, with firms of various sizes producing records of sound and distributing them nationally. Profound differences existed, however, between the structure of that recording industry and the one which eventually emerged after 1900. These differences in technology and commerce, furthermore, came entangled with different conceptions of recorded sound. In the twentieth century audiences came to understand their favorite recordings as moments captured in time— pieces of the artist's personality, soul, or essence sealed in wax. According to this understanding, the singer or instrumentalist is an author. In the recording studio, he or she creates something indelibly unique and noteworthy— something giving listeners access to the time, labor, personality, and sociability of another human being. A twentieth century consumer, for example, would not likely disregard a Beatles recording on the grounds that he already owned a record of the same song by Chuck Berry. Purchasers (and manufacturers) of the earliest musical recordings, however, did generally think in such terms. Drawing on earlier discourses of the sovereignty of the "musical work," they assessed recordings in terms that emphasized the text, melody and the harmony of the song itself, and they expected the singer or instrumentalist to render these pre-existing works with virtuosic accuracy. The recorded subject appeared to these audiences, not as a sovereign author of a moment in time, but as a publisher, mass-reproducing a

musical text. And one excellent rendition of "Roll Over Beethoven," they would tell us, is enough for anyone. It is easy to overstate the prevalence of this discourse. Elements of "personality" began creeping into discussion of recordings almost from the beginning, especially as regards comedic songs and character sketches. At the same time, the "talking machine" trope of the 1870s and 1880s persisted throughout this era as well and even into the 20th Century. The transformation under investigation here is subtle. It is one of emphasis and it takes place over several decades.[1]

In this chapter, we sketch the industrial and commercial relationships which formed the basis of the first recording industry, and examine the connections between it and contemporary understandings of recording and records. Through the 1890s phonograph makers, sellers and boosters shifted their aspirations from building an industry founded on "serious" business applications to one embracing amusement as the primary role for recorded sound. This undertaking, however, involved more than marketing and selling machines to another, less serious, variety of sound consumer. It required a wholesale reorganization of the industry, and the perfection of a new species of "manufacturing"— that of musical records. Owing in part to the peculiarities of the technologies, processes and relationships mobilized in early recording industry, the manufacture and sale of recordings remained a competitive arena throughout the 1890s. These circumstances pushed recording companies to thrust themselves forward into discussions of recording for two reasons. First, in competitive markets, branding is central to viability. If one's competitors market a more-or-less identical commodity to one's own (say, a recording of a given singer singing a specific song), then, it is crucial that the public can identify

[1] For more on the evolution of the idea of musical works see Lydia Goehr, *The Imaginary Museum of Musical Works: an Essay In the Philosophy of Music*. Oxford: Clarendon Press, 1992.

your brand and know to ask for it by name. Secondly, competitive circumstances meant that small (and sometimes disreputable) concerns could survive in the recording industry while economies of scale laid waste to their counterparts in other industries. While this was good news for the "mom and pops" of the record business, it also meant a less legible commercial environment—one characterized by anonymity where recordings' origins and quality were always suspect and where the pervasive anxieties of nineteenth century capitalism were given fertile soil in which to grow. Because of this, a company's prestige and industrial acumen mattered greatly in consumers' estimation of their sound recordings.

Finally, a word about "consumer" as the term works in the context of this chapter. In the 1890s record companies did not generally market their wares toward the general public. Because the home phonograph remained relatively rare until the very end of the decade, purchases of phonograph records were overwhelmingly made by the proprietors of phonograph arcades and exhibitions. The concerns of middlemen, merchants, and jobbers, then, are those that dominated talk of recording. In some measure the discursive evolutions which took place in the years around 1900 stem from a change of audience in the extant documentation. As the market for recorded sound evolved toward a more single-minded orientation to the "final consumer," manufacturers jettisoned advertising language emphasizing industrial processes for that emphasizing refinement, culture, and transcendence. But this change of focus mapped onto wider cultural currents, marking the ascendancy of a new consumerist ethos. It is not merely the case that the existing documentation reflects the interests of one class and, then later, another, but rather, that the dominant tropes of society at large came increasingly to reflect the interests and anxieties of consumers rather than those of producers and distributors.

**Coin Slot Machines**

When Edison returned to work on the phonograph in 1887, one of the very first applications to which his mind turned was that of automated exhibition. Albert T. Keller, an employee of Edison's associate, Ezra Gilliland, had developed a coin-in-slot mechanism for the new talking machine, but with the sale of the Edison rights to North American, the attention of all had turned squarely toward business applications. The company had operated for scarcely a year, however, when the systemic shortcomings of the office phonograph business model pushed North American's local companies to seek alternative sources for income. When North American signaled that it would allow its local subsidiaries to pursue nickel-in-slot exhibition, Keller resumed work on his mechanism, perfecting it and selling the rights to the nascent Automatic Phonograph Exhibition Company of New York, which was incorporated on February 9, 1890. Automatic's connections with Ezra T. Gilliland and Charles Cheever— both Edison associates whom the inventor had come to suspect of shady dealings— worried heads at Menlo Park, and Edison anxiously sought to box them out of the market. He directed his personal secretary Alfred O. Tate to inform all of the local phonograph companies that "in the course of a month I shall be able to furnish nickel in slot attachment at factory prices, and they need not pay large price to outside parties, if they desire such a device." At first Edison had hoped to have Lippincott use his influence over the local companies to prohibit dealings with Automatic. When this strategy failed, he sought—and was awarded— a manufacturing contract for Automatic's coin-slot mechanisms. The Automatic Company, however, believed they were vulnerable to lawsuit, and the agreement may have only been a measure to conciliate Edison. They continued to produce

and market nickel-in-slot mechanisms while Edison worked on a prototype, at least one version of which they rejected as unworkable.[2]

Meanwhile, other firms stepped forward to try their hand at nickel-in-slot machines. In the summer of 1890, the Denver Phonograph Company announced that it had developed a workable coin-in-slot mechanism and were besieged with letters of inquiry by their cash-strapped colleagues. The Hartford Model Company of Connecticut developed a coin-slot mechanism in the fall and about the same time, the Nebraska Phonograph Company began marketing an improvement facilitating multiple hearing tubes on coin-in-slot machines—each set, of course, requiring another nickel to work. Within a year, even the poor Texas Phonograph Company had a model to offer.[3]

The exhibition trade lay at the origins of the phonograph industry in the late 1870s and traveling talking machine exhibitions formed an important part of the economy of recorded sound well into the twentieth century. But the advent of the coin-in-slot phonograph in the 1890s

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[2]The Automatic Phonograph Company also signed an agreement with Louis Glass of the Pacific Phonograph Company who had earlier developed a working (and profitable) nickel-in-slot machine on the west coast. *The Washington Post,* Feb 10, 1890, 1; Thomas Alva Edison to Alfred Ord Tate-- Telegrams and Cables, February 13, 1890, (TAEM D9052AAA); Alfred Ord Tate [supplied or conjectured] to Thomas Alva Edison, October 17, 1890 (TAEM D9052AAG1); Felix Gottschalk to Thomas Alva Edison, December 3, 1890 (TAEM D9052ABC). See also Raymond Wile, "The Automatic Phonograph Exhibition Company and the Beginnings of the Nickel-in-the-Slot Phonograph," *Association for Recorded Sound Collections Journal* 33, No. 1 (spring 2002).

[3] Lacey Bros and South Dakota Phonograph Co. to Denver Phonograph Co., July 15, 1890, (TAEM D9059AAI1); Missouri Phonograph Co. and G.L. Wood. to Denver Phonograph Co., July 18, 1890, (TAEM D9059AAI2); Kentucky Phonograph Co. to Colorado and Utah Phonograph Co., August 14, 1890 (TAEM D9059AAP1; 130:389); Kansas Phonograph Co. and S.S. Ott to Coin Controlled Mechanism Co., September 15, 1890 (TAEM D9059AAS1); Spokane Phonograph Co. and J.W. Wilson to Colorado and Utah Phonograph Co. [supplied or conjectured] (TAEM D9059AAT1); Kansas Phonograph Co. and S.S. Ott to Coin Controlled Mechanism Co., December 1, 1890 (TAEM D9059AAS4); Felix Gottschalk to Thomas Alva Edison, October 29, 1890, (TAEM D9052AAM); Felix Gottschalk to Alfred Ord Tate, October 23, 1890, (TAEM D9052AAH); Nebraska Phonograph Co. and Erastus A. Benson--Circulars and Brochures, October 24, 1890, (TAEM D9052AAO); Erastus A. Benson to W. Sim Cantril, October 13, 1890, (TAEM D9059AAS2); *The Phonogram*, February 1891, 52.

provided an automated (and lucrative) outlet for recorded sound. Here as elsewhere, specific conjunctures of commerce and technology shaped the subjective experience of recorded sound, and contributed to an overall vision of what it is that happens when one puts the "needle in the groove." In the case of the coin-in-slot phonograph, the most salient aspect of this overall vision lay in a cluster of anxieties about the technology's disregard for foundational social boundaries. Sound, much like the leveling tendency of the price mechanism itself, invisibly colonizes spaces and like the Greeks who ceremonially cordoned off the agora to rein in its invisible corrosion of established order, the men and women of the 1890s sometimes took measures to control the "externalities" of their neighbors' phonograph consumption. On the other hand, spaces of phonograph consumption themselves upset distinctions between public and private, and self and other.

It is common to speak of the shift in phonograph industry marketing in the 1890s as one driven entirely by demand. In this understanding, consumers did not want phonographs for dictation, but they did want phonographs for amusement. Perspicacious men of means read this writing on the wall and acted on it. This telling avoids a naive belief in the power of industry insiders to "force" their wares on an unwilling public. But in itself, it ignores basic insights of economic science and in doing so, makes a travesty of cultural history. There is a decidedly "supply side" undercurrent to this story. However much the American public would have liked talking machines to sing songs for them or to tell them jokes, their desire would have remained un-sated were it not for a conducive set of commercial, mechanical and social technologies. The amusement phonograph had to be profitable for it to command the attention of men of means,

and profitability relied on a raft of considerations outside the inherent attractiveness of the phonograph itself.

First, the economic logics at play in the coin-op business proved more promising for the "amusement" trade than for office rentals. The most important difference between the office phonograph and amusement phonograph businesses obtained in the structures of commercial relationships created under each system. The business phonograph served at the pleasure of skeptical office managers, keen to wring their $40 a year worth of goods and services from the company. The sub-company was already on the hook for maintenance and repairs, so no incentive existed for lessees to take care of the phonograph. Even worse, the device was often placed under the care of the office stenographer, for whom its success was a decidedly uncomfortable possibility. Conversely, the amusement phonograph produced profit directly and could therefore be kept "in house." Under those circumstances, the mechanism need only draw enough nickels to pay its upkeep and the parent company's rental fee of $20.

In addition to these conducive economic considerations, the nickel-in-slot phonograph also avoided altogether some of the technological and logistical problems confronted in office use. As we have seen, the business phonographs of the 1890s were delicate in the extreme, needing constant tuning-up and cleaning and re-charging. But coin-in-slot phonographs were not intended for recording and therefore did not produce the mechanism-wrecking wax dust or shavings of the office phonograph. These machines were for "playback" only. Because of this narrowed range of users' engagements, access to the mechanism was unnecessary and, in fact, represented a liability. Coin-in-slot phonographs, were placed in cabinets, shielding them from the curious (or malicious) tinkering of the general public. Thus "black boxed," the amusement

phonograph required substantially less upkeep than its business phonograph counterpart. Capitalizing on the nickel-in-slot model, firms like the Spokane Phonograph Company of Washington managed to wring profit from a far-flung fleet of phonographs, surpassing anything feasible in the office dictation business. When fire gutted the company's headquarters and most of Spokane Falls in 1889 North American sent out expert J.W. Wilson to help get the company on its feet. The young mechanic did just that, fixing up the company's four remaining phonographs and placing them in popular resort areas in the territory. Making headway against the company's debts, he ordered more phonographs from out east and "then placed machines in the mining towns of Cœur d'Alene, Wallace, and Wardner, in Idaho and shortly thereafter in Moscow, Walla Walla, Dayton, Pomeroy, and Colfax." In Wilson's case a generous apportionment of mechanical ingenuity contributed to his ability to overcome distance, and he habitually shored up the intransigent human and non-human elements of his infrastructure with technological workarounds. The storage cell batteries used to power the company's phonographs required periodic shipment to Spokane for recharging. To reduce these costs, Wilson inaugurated a policy of shipping with every storage battery a galvanic cell capable of keeping it charged for six months. Wilson faced "another trouble and source of considerable annoyance" in "the persistent and pernicious practice of slugging"-- the use of fake coins to cheat the phonograph. These "slugs" sometimes amounted to 25 to 30 percent of a machine's take and often jammed the mechanism up, preventing its operation for legitimate customers. To combat this variety of mischief, Wilson developed a "patent slug ejector" and after installing them on the Spokane Company's machines reported a 100 percent decrease in slugs. Wilson's most interesting innovation, though, belonged to the realm of discipline and surveillance. Though he had placed

his phonographs "in the hands of responsible agents" the weaknesses of the flesh invariably worked on these agents' minds. To discourage the inevitable temptation to pilfer, Wilson developed an automatic register that recorded every nickel placed into the machine. With the register dutifully recording the phonograph's take, he could trust the agents to empty the phonograph's coin box without skimming.[4]

While the closed nature of the nickel-in-slot mechanism—particularly when bolstered with new innovations— allowed it to labor semi-autonomously in the provinces, rural exhibition remained far from a "sure thing." In an 1891 article for the *Phonogram*, "a local agent" wrote that "the question as to the practicability of placing the phonograph in small towns is, apparently, not yet settled." While allowing that "the small country places present a field (ripe with nickels) for the phonograph agents to work in with their slot cases," he cautioned that "the proper place for gathering the harvest does not seem to have been discovered." In 1891, August Sampson of the New England Phonograph Company reported that his fifty coin-slot phonographs were "reaping a harvest," and that this was the case "especially in the country towns." Several months later, however, it was revealed that much of the company's extra-urban success had not occurred in lonely rural whistle-stops, but in seaside resort towns. They had so infiltrated the public areas of "The Pines, Nantucket Beach, Downer's Landing, "Willows," and numerous other places," said the *Phonogram*, "that the New England beaches fairly ring with melody…" Many of the local companies resisted altogether the impulse to invade the American hinterland with coin-slot phonographs. The Louisiana Phonograph Company shrewdly avoided spreading themselves thin through their territory, and instead leased phonographs to independent exhibitors in the areas

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[4] *Phonogram*, June 1891, 140-141.

outside of New Orleans. The Georgia Phonograph Company and the Missouri Phonograph Company also pursued policies of renting out coin-in-slot machines in territories outside of their immediate metropolitan infrastructures. This policy, in short, allowed local companies to offset onto intermediary parties the expense and risk of operating the phonograph, while collecting a steady revenue all the same.[5]

Where the nickel-in-slot business truly paid dividends, however, was in those areas where the robustness of the mechanism combined with the efficiencies of urban density. By the summer of 1891, for example, the Missouri Phonograph Company had placed somewhere between fifty and one hundred phonographs in the "large saloons and restaurants" of its territory, and several of them regularly netted $100 or more a week. The company employed two operatives to visit the machines twice daily, fixing any mechanical problems that may arise, emptying their coin vaults and changing out records. Columbia's 140 coin-slot phonographs were employed "principally in Washington and Baltimore," while the Manhattan Phonograph Company's urban coin-slot machines proved so profitable, that by 1896 the firm was willing to pay $1000 per annum to the Union Ferry Company for the privilege of placing its machines in their ferry houses. The Louisiana Phonograph Company, however, represented one of the most successful of the sub-companies engaging in the coin-slot business in the 1890s. Just as Columbia had done for the office phonograph business, the Louisiana Company brought an enormous amount of company discipline to bear on the problem of space and intransigent mechanism. While a natural inclination existed to place "automatic" phonographs by the score, the Louisiana Company

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[5] *Phonogram*, October, 1891, 221-223; *Phonogram*, February 1891, 52; *Phonogram*, June 1891, 155; *Phonogram*, January 1892, 9-10; *Phonogram*, January 1892, 28-29; *The Atlanta Constitution*; November 24, 1890, 7.

resolved that "comparatively few machines should be placed in the city on public exhibition." Further, "such a close watch should be kept upon the machines that the disgust and loss of prestige, consequent upon failure to operate, should be avoided." To achieve this high level of maintenance, the company employed highly-competent inspectors and each was assigned fewer than ten machines, though they were personally accountable for the sound operation and profitability of each of those machines.[6]

Since any given office seldom had use for more than a pair of phonographs, the local companies had devoted enormous amounts of time and money to servicing their widely-dispersed business phonographs. The advent of the nickel-in-slot phonograph, however, allowed the local companies to do something new. The local companies could now place machines in larger groupings, driving down the cost of maintenance and "customer service." While exhibiting at a fair in Dallas, the Texas Phonograph Company discovered that "the most successful manner of conducting the exhibit at an occasion like that, to be, to group the machines and have one or two assistants when the crowd was greatest to watch machines, make change, and otherwise accommodate the visitors." Where circumstances allowed (which was very seldom in places like Texas) phonograph companies soon capitalized on these economies of scale, placing together a dozen coin-in-slot phonographs or more, pioneering that late nineteenth century forerunner of the movie theater— the "phonograph parlor." The Ohio Phonograph Company opened what might have been the first such parlor in Cleveland on September 15, 1890, and followed it with another in Cincinnati's Emery Arcade six weeks later. Very often, and especially on weekends and holidays, these rooms were filled to capacity as the public thronged to hear each parlor's twelve

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[6] *Phonogram*, June 1891, 139; *Phonogram*, November-December 1891, 242; *Phonoscope*, November 1896, 9; *Phonogram*, January 1892, 9-10.

coin-in-slot phonographs playing popular selections. The managers of the Louisiana Phonograph Company also took notice of the Ohioans success with phonograph parlors. Though they were raking in profits from their own nickel-in-slot machines dispersed through New Orleans, they admitted in a letter "the best way of exhibiting the phonograph for profit is to do as the Ohio Phonograph Company has done…Have a large parlor fitted up, with fifteen or twenty nickel-in-the-slot machines, and have a polite and gentlemanly attendant to assist, and make change for its patrons." In fact it had only been the "utter impossibility of securing a suitable location," which had prevented them from establishing their own parlor in New Orleans rather than pursuing their present course.[7]

For all its benefit, the coin-slot business had its detractors and well-positioned voices within the industry immediately recognized the automatic phonograph as a threat to the trade's ascendancy to respectability. In January 1891, the *Phonogram* ran un attributed piece called "An Important Suggestion," cautioning the local companies against the coin-slot trade:

> I have always been of the opinion that the exhibition of the phonograph for amusement purposes was liable to create a wrong impression in the minds of the public as to its actual merits for other purposes… those companies who fail to take advantage of every opportunity of pushing the legitimate side of their business, relying only upon the profits derived from the "coin-in-the-slot," will find too late that they have made a fatal mistake. I think, also, that the "coin-in-the-slot" device is calculated to injure the phonograph in the opinion of those seeing it only in that form, as it has the appearance of being nothing more than a mere toy, and no one would comprehend its value or appreciate its utility as an aid to business men and others for dictation purposes when seeing it only in that form…

But the coin-slot phonograph had its supporters as well. In a *Phonogram* article entitled "The Nickel-in-the-Slot Machine Defended," W. Conyngton rejected the logic of "respectability

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[7]*The Phonogram*, November-December 1891, 262; *The Phonogram*, November-December 1891, 248; *The Phonogram*, January 1892, 9-10.

economics," juxtaposing the ambiguous financial calculus supporting the "office phonograph" with the "bird in the hand" certainty of the coin-operated phonograph. The piece narrates a conversation between a business phonograph and its amusement trade counterpart. After conceding that amusement phonographs now purveyed some of the best music available, the business phonograph insisted "still it is acknowledged that business is our chief use, and your work… has a tendency to cause people to regard the phonograph as a mere toy, with no practical application in the real business of the world." The amusement phonograph calls the business phonograph's bluff and asks him "how much have you earned to-day for the frail bundles of flesh and bone for whom we work?" "Just how much I cannot tell" the dignified office machine responded, "but in a single letter references were made that may result in gains of hundreds of dollars, while other letters were of much importance, and may secure large profits." The amusement phonograph pressed his case: "these letters could have been taken by a stenographer, and by your own admission you cannot tell just what they will result in… To-day I have taken in fourteen dollars, thirty-five cents. Its seems to me this is a very practical application of the phonograph, and a decidedly business one to boot. I earn money absolutely, while you only aid in business operations that would be carried on had there never been a phonograph under heaven's broad canopy."[8]

**The Coin-Slot Phonograph and its Public**

In the 1890s, the coin-in-slot phonograph served as the most conspicuous representation of the recording industry and would have been the form of recorded sound most familiar to the public-at-large. Early experiences of the coin-in-slot phonograph are difficult to excavate, and

[8] *Phonogram,* January 1891, 6; *Phonogram*, March 1891, 60-61.

one of the few extant "first-hand" accounts comes to us by way of fiction. In Charles Stevens's *Uncle Jeremiah and Family at the Great Fair,* a Midwestern farmer and his family travel to the 1893 Columbian Exhibition where, in addition to a great many other adventures, they find themselves in the phonograph gallery of the Manufacturers and Liberal Arts Building. The episode (like the rest of the work) trades in stereotypes of rural naivety, and for this reason must be read carefully. All the same Stevens' own preoccupations and assumptions peek through the interstices of the text:

> Some nickles[sic] were soon in the slots and the family for the first time listening to music coming from some where by singers unseen. Johnny had a face covered with smiles as he listened to some loud-mouthed artist singing "Throw him down McClosky." Between each verse Johnny told the boy who stood in open-mouthed wonder near him that the "feller is a singer from way back." He could not realize that he was not in a concert hall and that all standing about were not hearing what he heard. When the music ceased and he withdrew the tubes from his ears he said to the boy, "Wasn't that out of sight?" "Sure and out of my hearing too, but I guess I got a nickle[sic] to try it on" and his nickle[sic] disappeared in the slot and the unwearied singer hid away in the machine told again his story of the great fight."

True, the recording represents to Johnny (and Stevens) a "loud-mouthed singer"— not a performance by a talking machine— but the singer remains anonymous. The indeterminacy of phonographic identity is re-emphasized when Jeremiah removes his hearing tubes and is crying. He explains to his granddaughter: "Well, you see, I heard something I used to hear long time ago, and I couldn't tell just who was a singin' it to me. It was some woman, though, and I let myself think it was somebody else, and I was a thankin' God for lettin' me hear her once more." Uncle Jeremiah has imagined that the singer is his deceased daughter Mary.[9]

Another theme reiterated through the excerpt is that of the strange interiority created by the phonograph's hearing tubes. Johnny converses with the boy next to him as though both can hear the recording pouring from the hearing tubes because he forgets he is "not in a concert hall

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[9] *The Adventures of Uncle Jeremiah and Family at the Great Fair* (Chicago: Laird Lee, 1893), 52-55.

and that all standing about were not hearing what he heard." The account, of course, draws on a long American narrative tradition about country rubes' engagement with popular culture— from backwoodsmen threatening to throttle theatrical villains to moviegoing farmers' fear of oncoming locomotives. But Stevens does draw on a collective experience, an impulse apparent to anyone who has ever accidentally yelled to overcome the din created by one's own earbuds, to reflexively treat sound as a collective phenomenon. Uncle Jeremiah's emotional reaction to the phonograph also suggests a break with the continuity of collective experience, as he believes that the voice he hears is *his* daughter, singing *to him.* Like an Old Testament prophet, eyes fixed in ecstatic rapture, Jeremiah has been momentarily separated from the mass of humanity and spoken to. He weeps and thanks God for the experience.

This experience of an enforced interiority would have been particularly jarring in the context of the phonograph parlor. An undated photograph [Figure 1] held by the Edison National Historical Site depicts a somewhat cavernous looking room where a dozen or more tall cabinet nickel-in-slot machines are stood against the walls. One is struck by the publicness of the room. Close to twenty people pose for the camera, the majority of them connected to a phonograph cabinet by a pair of rubber listening tubes. The crowd is predominately male, though a number of women are in attendance. Similarly, most of the subjects in the photograph appear in middle class attire, but several are more than likely working class. Especially given the implied domesticity of the "parlor" (with its carpeted floors, and framed portraits, and ornamentally-plastered ceilings) the promiscuous mixing of strangers must have struck contemporaries as incongruous. The sensory isolation enforced by the hearing tubes may have made the social

promiscuity of these spaces particularly unnerving as one could not hear the approach of a stranger.[10]

Stevens's account of the Columbian Exhibition also draws into focus the mercenary logic of the coin-in-slot business as first the family and then Johnny's unnamed interlocutor place their "nickles" into the mechanisms. But there is evidence that such tawdry business of collecting the spare change of passersby fit poorly with the industry's preferred self-presentation. In November, 1896, the *Phonoscope* offered an illustration [Figure 2] and article describing the ideal coin-op parlor (which by now featured Edison's moving picture mechanism, the kinetoscope, in addition to phonographs.) "In all exhibitions," the article begins, "the neater and the more attractive the show, the greater is also the financial success." This rule of thumb, said the *Phonoscope,* is even more important in the exhibition of phonographs and kinetoscopes, "where it is desired to attract all classes of society, even the most fastidious." The parlor depicted in the attached illustration presents a thoroughly bourgeois space. Attendees perambulate about the room on a runner carpet, laid over a polished (marble?) floor and potted plants sit atop Greek pedestals and fold their fronds against wainscoted walls. All are very smartly dressed, including the pair of attendants who tend the ten coin-slot machines at the center of the room. Curiously, a brass or wooden rail encircles the outward facing machines, cordoning off a space of mechanism and coin from the milieu of refinement and consumption without. All told, the phonograph parlor depicted here evokes the bourgeois valorization of transcendence. It is a space that denies the material, economic, and social foundations of its own existence, in favor of a vision of the Victorian Parlor

[10] *The Adventures of Uncle Jeremiah and Family,* 52-55. Image provided by Thomas Edison, National Historical Park.

made “public.” Everyone is (upper) middle class and women outnumber men (discounting the quarantined attendants) three to two.[11]

If the phonograph parlor represented the *avant garde* of a new hedonistic (yet still refined) culture, in reality it also still bore the tool-marks of work and industry and very seldom presented the image of transcendence prescribed by the *Phonoscope*. In Figure 1, the phonographs are nearly indistinguishable from one another, save for the written placards placed over each machine announcing the musical selection it contains. They suggest industrial production, both in the commodity-esque indistinguishability of their appearance, but also in their arrangement around the room like presses in a workshop. Covering the floor, a shoddily lain carpet—covered with stains from acid spills and shoes— bears the evidence of machines and workmen, giving the lie to Victorian connotations of the “parlor.” Edison presides over the scene by way of a photographic portrait hanging on the otherwise barren walls of the room, a fitting patron saint (with his preference for perspiration over inspiration) for this most sober and mechanical of carnivals. A depiction of Edison appears, as well, in the *Phonoscope’s* ideal parlor but here, the plebeian medium of photography has been spurned for a marble bust of the Wizard, who has also doffed his jacket and tie in favor of evening wear.

A second photograph [Figure 3] held by the Edison National Historic Site evidences much the same tone in its depiction of a phonograph parlor in Longport, New Jersey. Around fifteen nickel-in-slot phonographs ring the room and stand atop a similarly filthy, though uncarpeted, floor. Like the first photograph the second image comes suffused with an attitude toward amusement anchored in the optics of economic reality but if the first image suggested

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[11] *Phonoscope*, November 1896, 13.

industrial dreariness, the New Jersey parlor reflects a transient and dynamic *commercial* space. The room is longer than the first phonograph parlor and may even be open at both ends reflecting a kind of expanded "hallway." Large black letters on the left wall announce "Pennsylvania Railroad Time Tables," suggesting that the men and women who plied the room's bare floorboards were likely "passing through," possibly stopping in Longport for a seaside respite. The mercenary and commercial nature of the amusement on offer is kept in constant sight by placards reading "ATTENDANT IN CHARGE WILL PROVIDE CHANGE." At least seven of these notices festoon the beaded walls of the parlor, encouraging patrons to keep the exchange of coin for sound rolling along with the uninterrupted efficiency of the railroad.[12]

**The Anxieties of Buying and Selling Sound**

Among industry personnel as well as the public at large, phonograph parlors spurred anxious comment ranging from worries about getting one's "money's worth" to concerns over the phonograph's possible health effects. Abstractly, these apprehensions grew out of two closely related aspects of the parlor's status as a commercialized and industrialized space. First, the interactions and transactions one entered into as a phonograph patron were profoundly anonymous, and as such, encouraged many of the same kinds of anxieties precipitated by the wider ascendance of urbanization and market relations. Secondly, the phonograph and the phonograph parlor violated boundaries foundational to the bourgeois worldview— some more "ancient" than others. Like its anonymity, the phonograph parlor's transgression of boundaries grew partially out of its role as a thoroughly commercialized space, but it also came about because of characteristics peculiar to the trade and its technology.

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[12] Image provided by Thomas Edison, National Historical Park.

The problems presented by phonograph parlors were sometimes quite mundane. For a great many of those committing nickels to the phonograph, for example, the investment was not a negligible one and it often came with none of the assurances of a yearly rental. One local agent wrote that "a good machine is an absolute necessity in a town or village, as country-people think more of a nickel than city folks." Should a phonograph take their nickel and give nothing in return, "even once," he predicted, "it is doubtful if they would ever risk another." Even in urban areas, however, the public evidenced little patience for unreliable machines. Commenting on the Ohio Phonograph Company's experience with the coin-slot phonograph, the *Phonogram* announced that "one secret of the great success of these Arcade parlors lies in the fact that persons always get a good return for their nickels, as the cylinders are kept in adjustment by the attendant, the automatic machinery is well looked after, and there is plenty of change to be had in the shape of nickels, a supply being always ready when asked for." The consequences of violating the sacred trust between seller and buyer could be draconian for phonographs. When a phonograph cheated a man in Peak's Island, Maine, he "smashed the deceitful phonograph into bits to recover his money." "Nickels" noted the *Wichita Daily Eagle* dryly, "are highly esteemed in the outlying neighborhoods of Portland." The "point of sale" was just as anxious for the industry, owing to the public's penchant for cheating nickel-in-slot machines. In March, 1892, detectives for the Edison Phonograph Company of New York tracked down three "crooks" in New Haven Connecticut who had been manufacturing fake nickels for the purpose of cheating coin-in-slot phonographs. Similarly, in Leavenworth, Kansas, a young coal miner had a "circus all to himself" with the coin-slot phonographs thanks to a pocketful of fake nickels. The fun was cut short when he was caught by the phonograph company manager, who summarily handed him

over to the police. Whether a "seller" or a "buyer," transacting business by way of the coin-slot phonograph was disconcertingly anonymous.[13]

Anonymity, however, characterized the phonograph trade at many junctures besides the fateful dropping of change into the slot. The phonograph parlor itself, owing to its traffic in anonymous persons, could serve as a conduit for criminal enterprises. Such was the (alleged) case when one of the employees of Tally's Phonograph Parlor in Los Angeles found himself accused of receiving stolen property from Harry Croft, "the diminutive boy burglar." Even acquiring a phonograph slot machine could be a fraught undertaking. In December of 1898, the *Phonoscope* reported that "Baron and Baroness de Bara" had been apprehended in St. Augustine, Florida, and were being charged with "using the United States mails in an alleged scheme to defraud." Setting up office in Chicago the year before, the couple advertised non-existent nickel-in-slot machines in English and Scottish newspapers, promising very favorable terms in exchange for a share of the proceeds. Would-be phonograph moguls had only to send along a deposit and wait for their machines. The machines never came, and it was estimated that the perpetrators had taken in over $50,000 in deposits. Several months later, it was reported that Edison himself had provided much of the impetus for the arrest and his motivation for doing so sheds light on his own anxieties regarding the murky optics of the phonograph infrastructure. The criminals, it turns out, had operated under the name the "Edison Phonograph Company" and the inventor "bothered by the actions of irresponsible persons who organized Edison 'companies'

[13] *Phonogram*, October 1891, 221-223; *Phonogram*, November-December 1891, 248; *The Wichita Daily Eagle*, October 11, 1892, 7; *Boston Daily Globe,* March 2, 1892, 10; *The Phonogram*, March 1892, 86.

or established themselves as 'agents' of the inventor without authority" resolved to make an example of the Baron and Baroness.[14]

Anonymity, however pervasive, represented only one-half of the causes for public distrust of the phonograph parlor. Closely related to the anonymity of commercial amusements was the persistent tendency for these new institutions to disrupt long-established and foundational social boundaries. This included, as we have seen, the boundary between the "public" and "private" as well as the gender and class boundaries implied in those two spheres. A phonograph parlor on Detroit's Woodward Avenue sought to capitalize on the possibility of a mixed clientele informing the public that "ladies and children as well as gentlemen can spend a very pleasant hour" at their facilities. Promiscuity of clientele proved as socially disruptive as it was economically conducive.[15]

But phonographic technology itself also presented challenges to established boundaries owing to the fugitive nature of sound. In 1898, the *Los Angeles Times* reported on a "lively discussion" taking place before the city's board of public works. Businesses in the vicinity of Tally's Phonograph Parlor complained that "the parlor was a nuisance, as there were emitted from the place sounds which were anything but musical, and which were calculated to disturb the nerves of persons who were compelled to hear the alleged music every day and all day." The problem, they claimed, was the parlor's use of a "megaphone" to broadcast music into the open air. A restauranteur "went after the parlors hammer and tongs," asserting that "the phonograph had almost reduced his wife to nervous prostration, and had caused many a customer to pass his

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[14] *Los Angeles Times,* Feb 2, 1900, 17; *Phonoscope*, December, 1898, 14; *Medical Times and Register,* March, 1899, 108.

[15] *Detroit Free Press*, Jul 14, 1897, 10.

place… In conclusion the restauranteur "strenuously objected to his place being 'bombarded,' as he expressed it, by the sound waves which came from the parlors." The phonograph proprietor responded with a petition—signed by a large number of local merchants— attesting to the fact that, though the music did resonate in their shops, it "was something of beauty and a joy forever." Not stopping there, he submitted another petition, signed by over 400 members of the general public, expressing approbation at the megaphone's daily declamations, and even brought along to the board meeting a large contingent of supportive customers. The board deferred the matter to a later date, but the withdrawal of several names from the original complaint pointed toward a likely victory for Tally's Phonograph Parlor. At stake in the episode was the status of sound itself and its relationship to established property norms. Lockean property presupposes the owners' security from trespassing, theft, and damage, and that structure of rights maps onto a decidedly materialist conception of contract and consent. One cannot touch another's property without his permission. But what claims did one have against a neighbor whose depredations came in the form of invisible waves?[16]

In 1899 the *San Francisco Call* fulminated against Peter Bacigalupi's phonograph parlor in an article headlined "[Chief of Police] Lees Indifferent to the Outrage: Moral Corruption Allowed to Flourish Unchecked." The language evokes a hidden and fetid infestation. As is very often the case, the phonograph parlor's flouting of established social boundaries encouraged some to worry that it might represent another kind of border transgression— a threat to the biological body in the form of disease. The *Los Angeles Times* pushed the rhetoric of contagion even further later that year when it referred to phonograph parlors as "plague spots" and insisted

[16] *Los Angeles Times*, November 26, 1898, 7.

"the city's moral health demands the immediate cleansing of the festering plague spots known as 'phonograph parlors.'" But there is also evidence that comparisons of the phonograph to disease drew on deeper motivations than the merely rhetorical. In 1898 a Philadelphia jeweler attributed a botched sale to a phonograph which sang "Get Your Money's Worth" just as the customer prepared to exchange cash for a diamond ring. The machine belonged to a "phonograph establishment" next door which had long been a nuisance but this was the last straw and the jeweler called on the authorities. But who did the "disgusted and nervously prostrated" merchant contact regarding this invisible contamination? None other but the city's Board of Health.[17]

In pursuing this course of action, the jeweler may have been influenced by local events of a few years prior. In 1890 the Philadelphia Park Commission "banished" all phonographs from Fairmount Park shortly after several local merchants had placed machines there for the purposes of paid exhibition. No less a medical expert than "a member of the Committee on Police" had deemed them a public health risk "not only on account of the liability to cause deafness," but because the hearing tubes could transmit diseases of both the ear and the blood. Here the phonograph not only threatened public safety with its invisible and germ-like sound waves, but also provoked fears of literal disease. The *New York Times*, derided the Philadelphians' fears as "a senseless objection" and sent a reporter to the New York Ophthalmic Hospital to enquire after the number of patients so far injured by the phonograph. "No cases of ear trouble arising from the use of the phonograph had ever been reported" though there was a minimal risk of infection "on a par with the cups at public drinking fountains, the use of the general brush and comb in hotels and barbers' shops, or the customs of handshaking and kissing." The City of Brotherly

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[17] *The San Francisco Call,* April 1, 1899, 9; *Los Angeles Times,* August 9, 1899, 5; *The Atlanta Constitution*, December 11, 1898, 27.

Love enjoyed vindication four years later when the *Medical Press* called attention to "several cases in which patients with catarrh and even suppuration of the external ear have dated the onset of the affection[sic] from their interview with the…phonograph."[18]

**Recording**

By January of 1891, the local subsidiaries of the North American Phonograph Company had placed 744 nickel-in-slot phonographs in the United States and that number was steadily growing. The spread of these machines now presented the local companies with a brand new obstacle to profit: a lack of musical records. In May 1889, North American had first announced the availability of these novelties supplied by Edison's Phonograph Works and in January of the next year published the first official catalog of these cylinders. The supply of records from Edison, however, soon dried up. In a letter dated January 25, 1890, Edison announced his decision to cease cylinder production at the Phonograph Works. The local companies had been keeping up quite a fuss about the poor quality of his records, and—since he had only launched the operation as a courtesy to the trade—determined that his facilities would be better employed in some other way. North American, scrambling to source cylinders, arranged for production to be carried on by the New York Phonograph Company as well as at their own facilities. Perhaps enticed by the increasing value of the business Edison re-commenced record production in spring of 1892, but by this time several of the sub-companies had initiated recording programs of their own. In June of 1891, the *Phonogram* already informed readers that "the securing of musical selections has grown to be quite an industry," and that "it is done mainly by the Columbia Phonograph Company, of Washington, D.C., the New Jersey Phonograph Company, of Newark,

[18] *Louisville Courier-Journal*, August 3, 1890, 15; *New York Times*, July 30, 1890, 8; *Medical Record,* March 31, 1894; 398.

N.J., the New York Phonograph Company and the Ohio Phonograph Company." The most durable of these local recording initiatives—that of Columbia—began prior to November 1889 when the company informed clients of their "musical records of orchestras, of brass bands of eight pieces, cornet solos, flute, piccolo, violin, organ, piano, banjo" in addition to recordings of artistic whistling and other types of performances.[19]

In characterizing the recording process, commenters both inside and outside the professional community of recording specialists consistently spoke and wrote of the phenomenon in terms which emphasized its continuity with more quotidian forms of production, and, in fact, muted the distinction between the physical fabrication of wax cylinders and the process of "filling them" with sound. The verb "to record" had not developed the close association with sound recording which now facilitates discussion, but for that same reason the term could not perpetrate the conceptual occlusions which it now gets away with; namely, the construction of an essence—distinct from any material quality of the record itself—which later generations have come to call "the recording."

In this section, we have dispensed with the language of "recording" whenever possible, in favor of a term borrowed from the nineteenth century— "cylinder making." As it is used here (and in the nineteenth century) the term denies the sharp distinction—suggested by "recording"—between manufacturing of wax cylinders and their inscription with sonic data. Similarly, "cylinder maker," will refer to such parties as sang, recited, or played an instrument

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[19] Thomas Alva Edison to Edison Phonograph Works, January 25, 1890 (TAEM LB036335); Mason Vander Lugt, "The First Book of Phonograph Records," *Blog of the Association for Recorded Sound Collections*, http://arsc-audio.org/blog/tag/edison-records/ *Phonogram*, June 1891, 139; Tim Brooks, "Columbia Records in the 1890s: Founding the Recording Industry," *Association for Recorded Sound Collections Journal* 10, No. 1 (1978).

for the benefit of this inscription process. That the term could (and did) sometimes refer to those specialists later called "recording engineers" or to the entities later called "record companies" illustrates one of this chapter's central arguments— that the industrial understanding of cylinder making reduced the "recording artist" to a kind of skilled artisan. He left in wax the evidence of his training and talent, but in ways differing in degree— not kind— from the operatives who chemically prepared the wax or poured it, still boiling, into cylindrical molds.

The public kept well-apprised of the particulars involved in recording, owing to interest in the process by newspapers and other media. But the phonograph companies themselves were also eager to use the curious ritual of recording to their advantage and often did everything they could to get it before the public. At the 1898 Pittsburgh Exhibition, for example, the Stieren Home and Commercial Phonograph Company sponsored an exhibit of phonographic wares for the public. Amidst the display of gold- and silver-plated exhibition phonographs, the company staged demonstrations of the recording process, about which Company treasurer, F.G. Stieren, had recently taken up "an exhaustive study" and was now quite an expert. And in that same year, a visitor to Columbia's phonograph parlor on Broadway would have found a piano sitting atop a riser next to three phonographs, all connected to tin horns and arrayed on a single rack. If she were fortunate enough to have stumbled onto this scene on a certain sweltering evening in late summer, she would have witnessed three of the era's most prolific recording specialists, Len Spencer, Billy Golden and Roger Harding, demonstrating their craft for curious onlookers, recording songs in the very room they would soon be consumed by the public. Finally, because the earliest phonographs were built both to record and play back, the question of successful home recording occupied manufacturers of talking machines as well as their customers. A number of

guides to the maintenance and operation of the phonograph and graphophone circulated in the 1890s and generally shared information on recording "best practices." Because of the coverage of the recording process through print media, its public demonstration by phonograph companies, and the circulation of phonograph handbooks, the recording process and descriptions of it directly shaped the semiotics of record consumption.[20]

Those who consumed demonstrations and descriptions of recording were rewarded with a bizarre and esoteric spectacle, one which began with the preparation of the room. For an especially "resonant" or "ringing" tone, the National Phonograph Company informed readers, one must strip the room of furniture, curtains and draperies, but if this produced a "blasting" recording, one could add just enough soft surface to "break up any echoes." The phonograph itself must be properly adjusted before recording begins, and this depended in large measure on selecting an appropriate diaphragm. These sensitive circular films vibrated in response to sounds, moving an attached recording stylus which registered these vibrations by cutting a groove in the wax cylinder record. To achieve maximum volume, the engineer used a thin (and therefore sensitive) diaphragm. If the recording was *too* loud, however, a sensitive diaphragm would over-vibrate, lifting the stylus from the wax surface altogether. This produced "blast," an unpleasant and raspy tone unsuitable for consumption. If a recording sounded "blasty," the engineer should replace his diaphragm with a thicker, less sensitive, one and try again. Having outfitted his phonograph with the appropriate diaphragm, the engineer placed it in the center of the room.

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[20] *Chicago Daily Tribune,* April 8, 1895, 5; *The San Francisco Call,* May 7, 1899, 32; *San Francisco Chronicle* February 21, 1891, 2; *Cincinnati Enquirer,* June 16, 1900, 13; *Detroit Free Press,* June 1, 1890, 3; *Scientific American,* December 22, 1900, 390; *Phonoscope*, September, 1898, 11; *Phonoscope*, August, 1898, 11; *Phonoscope*, September, 1898, 9.

The singer (if a solo vocal record was to be made) "should stand immediately in front of the recording horn, not more than three or four inches from the opening, and sing directly into it." If the song featured piano accompaniment, the piano was placed on a riser directly behind the singer, with its back facing the horn. The vocalist should be forewarned: the recording horn made demands on singers which no live audience would. Certain consonants could be recorded only with great effort so articulation must be impeccable. The technical limitations of the recording apparatus, on the other hand, required a constrained approach to delivery and one had to "avoid singing with too much expression." When the song called for a particularly high note "the singer should draw back the head, away from the horn, so as to equalize the vibrations." Similarly, when making band recordings, the proto-recording engineer should stand instrumentalists closer or further from the recording horn in consideration of their tonal range and volume. According to a guide issued by the National Phonograph Company, bass instruments including tubas, altos, and trombones sat in a semi-circle five feet from the phonograph. The cornets stood ten feet behind them and the rest of the band— piccolo, clarinet, snare drum, and so forth— were arrayed between these two extremes. The prescribed arrangements of instruments varied from source to source, but the principle remained the same— balance through distance. Similar techniques were employed to balance recordings of vocal ensembles.[21]

Especially in the years when mechanical record duplication remained an unrealized aspiration, cruder production methods were employed to pump out as many records as possible. The most efficient— and capital-intensive— of these methods entailed the capturing of a live

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[21] C.W. Noyes, *The C.W.N. Handbook: Containing Points Pertaining to the Use and Care of the Edison Phonograph and Instructions for Making Records,* (Cincinnati: Ilsen & Co, 1901); Mr. Openeer, *The Secret of Making Phonograph Records* (New York: National Phonograph Company, 1899), 8.

performance with as many separate phonographs as possible. In this manner, a single performance could produce several more-or-less identical recordings. In 1890 a *Detroit Free Press* reporter visited the recording facilities of the Michigan Phonograph Company. "In the center of the room," he reported, "stands a wooden frame, a sort of clothes-horse device, depending from which are five huge funnel-shaped arrangements." Connected to these were a like number of phonographs. Peter Bacigalupi's San Francisco recording operation employed eight phonographs, while I.W. Norcross of the Norcross Phonograph Company inaugurated his recording career with a bank of twelve. As the latter's recordings grew in popularity, he added more machines, and by the late 1890s Norcross's recording specialists bared heart and soul for forty phonographs with every take.

Most serious enterprises employed multiple recording phonographs in this way, but the purchase and maintenance of dozens of machines lay outside the reach of the majority of them. For all record companies (but especially for smaller operations) a second strategy proved a crucial element in augmenting the bottom line: working longer and harder. When Antonio Vargas visited Peter Bacigalupi's San Francisco establishment to record a song, he sang the selection for Bacigalupi's phonographs sixteen times. As of late 1898, George Gaskin was weekly singing "Break the News to Mother" thirty-six times; "She was Bred in old Kentucky" twenty; "On the Banks of the Wabash" thirty; and Sweet Savanna," fifteen times. This in addition to the time spent "supplying the regular demand for his large repertoire." For smaller recording operations, the regimen was even more grueling. At his recording room in Chicago, Silas Leachman played piano and sang over his shoulder toward the horns of three recording phonographs. "As soon as he has finished one song," reported the *Daily Chicago Tribune*, "he slips off the wax cylinders,

puts on three fresh ones without leaving his seat, and goes right on singing…" Leachman kept himself occupied in this manner for four or five hours every day and in four years had managed to place on the market nearly 250,000 records.[22]

The Taylorist ethos embodied in these processes encouraged observers to think of them in terms that conflated the industrial and the musical, folding everything from pouring hot wax into molds to pouring lyrics into a recording horn into a single process of "cylinder making." In December 1900 *Scientific American* carried an article which treated the fabrication of wax cylinders and the operations of recording as a single process.

> The first process in the manufacture of records takes place in the melting room, where the proper constituents to form the special grade of wax employed in making the records are brought together and melted in several large vats… The wax is taken from the melting vats in a can and poured into the moulds… the wax cylinders are removed… After they have cooled, the cylinders are first reamed out to gage, then edged and rough-turned, and finally given a finishing cut, the finish turning being done with a fine sapphire knife. The records are then given a final inspection.. The cylinders are now ready for the important work of making records.

After a brief aside concerning cylinder sizes, the article resumes its narrative of manufacturing in the "record room" where singers and instrumentalists record songs. "One of the first things that strikes a visitor to the record room," the author allows "is the rapidity with which the artists sing, the speed being much greater than that to which one is accustomed in a music hall or opera house." These electric age tempos were matched with an equally muscular attitude toward volume as "the songs are sung with the full power which would be used before a public audience." Finally, "as soon as the record is made it is taken off the mandrel and placed in a

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[22] *Detroit Free Press,* June 1, 1890, 3; *The San Francisco Call,* May 7, 1899, 32; *The Phonoscope*, September, 1898, 11; *The Phonoscope*, October, 1898, 14; *Chicago Daily Tribune,* April 8, 1895, 5.

phonograph and reproduced to test its quality. If there is the slightest defect, it is, of course, rejected." All of the foregoing, we are told in the article's title, are steps in the process of "The Manufacture of Edison Phonograph Records."

The "manufactual" logic of these discourses similarly shaped discussion of what we now call the "recording studio." In 1891, *The San Francisco Chronicle* described a Pine Street "music factory" under the supervision of Frank T. Canall, where brass band selections were committed to wax for the benefit of phonograph listeners. According to the *Phonogram* of January, 1891, the North American Phonograph Company "runs a music factory on an extensive scale at Jersey City, where thousands of fresh airs are turned out on wax every month." The *Washington Post* reported on a "song factory," while recording specialist Estella Mann undertook her recording operation, according to *The Phonogram,* in a "record-making plant." As late as 1898, the *Phonoscope* could report that the Excelsior Phonograph Co. Had relocated "their plant" to a location on 28th Street "where, with increased facilities, they will be able to supply the demand for records."[23]

Similarly, the laborious nature of the undertaking, together with its industrial pace and repetitiveness spurred writers to note how much like "work" the business of playing for the phonograph had become. *The Phonoscope* revealed to readers that "singers to the talking-machines occasionally tire of their work and at times it must seem monotonous." Why? "Over and over again the song must be rendered in order that the demand may be supplied." According to the same publication, Freddy Hylands, pianist for the Columbia Company, once gave vent to

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[23] *Phonoscope*, September, 1898, 11; *San Francisco Chronicle* February 21, 1891, 2; *Phonogram*, January 1891, 6-7; *Cincinnati Enquirer,* June 16, 1900, 13; *Phonoscope*, March, 1898, 11; *Phonoscope*, February 1898, 9.

his workaday frustration, exclaiming "I am hired to play and draw my salary for playing, but still this company insists on making me work." Those whose music and speech found their way onto commercial wax cylinders, then, were generally not understood as "performers" but rather as a peculiarly melodious species of artisan or industrial operative. In 1898, George J. Gaskin purchased ad space in *Phonoscope* in an attempt to generate interest in his services as a record maker. Next to a photograph of the singer rakishly slouched in a high-backed chair, the ad announced: "I wish to inform my friends in the phonograph business that I am at liberty to sing for any company desiring my services without restriction by any particular one. The thousands of cylinders that I have made speak for themselves as to my ability."[24]

Gaskin positions himself as an "independent contractor" for hire by larger firms. Others with more capital on hand sold their cylinders directly to the trade, but these cylinder makers also promoted themselves in terms which flout modern distinctions between business and art. The Lyric Phonograph Company of New York, for example, served as the primary sales outlet for the Original Lyric Trio, comprised of Estella Louise Mann, John C. Havens, and William F. Hooley. Mann operated the company herself, and at least at first, the firm carried only the trio's recordings, making the Trio and the Phonograph Company partially coterminous entities. Singer Roger Harding of New York advertised himself as a "manufacturer of musical records for the Phonograph and Graphopone" while Reed, Dawson & Company of Newark New Jersey trumpeted in one advertisement "We are surpassed by none for strictly first-class originals. We make everything. The most complete Laboratory in the country." The advertisement featured a photo of a mustached violinist, identified in the caption as "T. Herbert Reed, maker of the only

[24] *Phonoscope*, October, 1898, 14; *Phonoscope*, September, 1898, 9-11; *Phonoscope*, August, 1898, 11.

successful violin records…" Mr. Reed served both as co-owner of Reed, Dawson & Company and one of its record-makers.[25]

The industrial conception of recording also shaped ideas about records themselves, and there was a tendency to present the little wax cylinders as undifferentiated good—"commodities" in the strictly economic sense. A *Phonoscope* advertisement for G.E. Emerson's record company featured fourteen lines of the word "RECORDS" arranged in four vertical columns. No titles were mentioned but the "RECORDS" could be had for $5 a dozen. The practice of selling cylinders in large lots was common. The Norcross Phonograph Company not only offered records of the Metropolitan Band, twelve for $10.00, but even sold them by the barrel. The Lyric Phonograph Company also shipped records by the barrel and when a dispute erupted between that company and the Edison American Phonograph Company of Kansas City, one of these "barrels of music" found its way to the Justice of the Peace's office. A reporter for the *Kansas City Journal* remarked "unpretentious though it is in appearance, more suggestive of brown sugar, or buckwheat flour or potatoes than that which 'hath charms to soothe the savage beast,' yet this barrel contains within its basswood exterior melodies which have enchanted thousands."[26]

Similarly, the emphasis on records as a type of commodity, meant value would be tied to craftsmanship rather than the unique offerings of this or that "artist." One Columbia ad in *Phonoscope* informed would-be customers that the company's records had gained such renown "because they are made under the direction of the most expert record makers." Their superior

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[25] *Phonoscope*, March 1898, 14; *Phonoscope*, October 1897, 3; *Phonoscope*, November, 1898, 19.

[26] *Phonoscope*, March 1898, 14; *Phonoscope*, July, 1898, 17; *The Kansas City Journal,* February 8, 1899, 12.

facilities, the advertisement continued, allowed Columbia to "supply records unrivaled in quality at less than the cost at which others can make inferior ones." Similarly, Harms, Kaiser and Hagen informed readers of their advertisements that their wax cylinders were "original master records of the highest attainable quality made on the best Edison blanks by skilled artisans." In some cases, the emphasis on well-made (rather than unique) records was taken to the point of indifference as to their "contents." Roger Harding assured prospective record buyers "I do not substitute something that is just as good"— evidently, a common practice in the trade. At every turn, technique— in the sense embodied in technology— out-shined considerations of "technique" in the artistic sense.[27]

**Selling Records**

All together the industrial logics embedded in the early recording industry encouraged a specific understanding of the recording. Like his scribbling cousin at the fiction factories, the cylinder maker was not so much a creator in his own right but an industrial operative, and cylinder making was not performance or creation, but was rather a kind of "publishing." No one subscribed more fully to the conception of recording as a form of publishing than Edison, his employees and distributors. The inventor himself had always conceived of sound recordings as texts. In early 1878, for example, he informed the world (improbably) that he had "succeeded in putting 48,000 words on a sheet of tin foil about ten inches square." Edison's announcement elided completely the temporal character of the phenomenon and uses language suitable to the fitting of ink on page. And how else does one mass-produce texts but through "publishing." In March 1878 he told a reporter from the *New York World* "we're going to start a publication office

[27] *Phonoscope*, March 1898, 4; *Phonoscope*, July, 1898, 6; *Phonoscope*, October 1897, 3.

in New York when the phonograph is ready." The reporter asked him to elaborate and the inventor explained that all manner of works will be published and describes his plans for musical records. "We will phonograph orchestral concerts by brass and string bands, instrumental and vocal solos and part songs. The sheets bearing the sound impressions of this music will be removed from the phonograph and multiplied to any extent by electrotyping." Tellingly, the reporter asks "what will such a sheet of music cost?" A "sheet of music" could have as easily described sheet music— printed compositions to be performed by amateurs in the home. These early phonograph discourses also took root in the popular imagination as when *The Atlanta Constitution* reported that the Edison organization "proposed to print books upon the tin foil," explaining that "a single sheet of foil will take a book of 400 pages and it can be read off to a family instead of them having to read it." Similarly, the *Cincinnati Commercial* asked "what more agreeable home entertainment than a novel read aloud by the phonographic machine, which never tires, never is hoarse, never coughs, never grows husky, to the family circle."[28]

As we have seen, the sound-recording-as-text discourse fit particularly well with Edison's preferred strategy of marketing phonographs as stenographic aids, but it also inflected early understandings of recorded music. As with all publishing, the work of cylinder making meant— first and foremost— the clean and accurate reproduction of a pre-existing text. The text, rather than any idiosyncratic flourishes appended by the publisher (whether with printer's ink or instrumental improvisation) represented the ontological core of the publication. Even in the age

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[28] "Improving the Phonograph," *New York Evening Post*. Reprinted in the *Indianapolis News,* March 28, 1878; *Chicago Daily Tribune*, Apr 6, 1878, 11; *Scientific American Supplement*, April 20, 1878, 1904-5; Also related in "Edison: Perfecting the Phonograph Beyond Even the Dreams of the Caricaturists," *Chicago Tribune,* March 29, 1878; *The Daily Constitution*, Jun 22, 1878, 4; "Possibilities of the Phonograph," *Cincinnati Commercial*, reprinted in the *Indianapolis News*, March 30, 1878, 4.

of the recording industry writers could be quite explicit in their understanding of recordings as a kind of book. In 1900 *Scientific American* informed readers that "the great growth in popularity of the phonograph, and the necessity for keeping the owners supplied with fresh 'literature,' has caused the mere work of manufacturing the records to assume truly enormous proportions." Generally, however, text-centric understandings of sound recording manifested after 1890 in an emphasis on a particular kind of text— the "song." When George J. Gaskin returned to work after a "pleasant trip abroad," he arrived "prepared to supply the various phonograph companies with the very latest songs." Similarly, *Phonoscope's* monthly list of "New Records for Talking Machines" was printed the side-by-side with another monthly feature: "The Latest Popular Songs," comprising a "list of the very latest popular songs published by the leading music publishers of the United States." The relationship between recording and publishing was sometimes quite concrete. In 1897, Joseph W. Stern & Co., "well-known New York music publishers," incorporated the Universal Phonograph Company, in order to market records of talent hitherto unheard on recordings. The *Phonoscope* predicted "patrons of the talking machine will surely be benefitted by having the latest metropolitan successes offered to them by the publishers who will furnish them records of celebrities." This development—late in the coin-slot era—marks an intermediate step in the process of recording's evolution from a process of publishing to one of capturing performances.[29]

The emphasis on text also meant that descriptions of phonographic music very often did not name the cylinder maker at all, and here the close relationship between recordings-as-texts and recording-as-manufacturing becomes more clear. When North American first offered

[29] *Scientific American*, December 22, 1900, 390; *Phonoscope*, October 1897, 9; *Phonoscope*, December, 1898, 15.

prerecorded cylinders to the industry it merely included these new items in its usual price list like any other quotidian article for the phonograph. Next to "Battery, Complete, With Chord," and "Chromic Acid, In Original Packages of about 200 LBS" the company offered "Musical Phonograms." The price list made no mention of performers or even song titles, but informed would-be purchasers that the cylinders were sent in boxes of six or twelve and were "assorted." When North American published its first "Catalogue of Musical Phonograms" the following year, it provided more information about its wares— but not much. The catalog listings included song title and categorized records by the *type* of ensemble or instrumentation featured on them —"Brass Band," "Cornet," "Piccolo," or "Vocal Quartettes." Still, the catalog made no mention of the parties responsible for playing on the recordings.[30]

From the beginning, the Columbia Phonograph Company tended to emphasize the identity of its cylinder makers to a greater degree than Edison, but even here there were turns of thought setting the nineteenth century off from the twentieth. First, and especially early on, Columbia's promotional materials subtly interposed the musical work between the cylinder maker and the cylinder. In February of 1890, for example, the company announced it had "arranged with Mr. Henry Jaeger, the celebrated flute and piccolo soloist of the Marine Band, to keep us constantly supplied *with records of his best solos*." When Columbia secured the services of the rest of that ensemble in November, the company informed subscribers that "it is now ready to furnish promptly to users of the phonograph, *records of the music of* the celebrated United States Marine Band." Secondly, Columbia's early reliance on the U.S. Marine Band exercised influence in two directions. On one hand, it did represent an early instance of the eventually-

[30] North American Phonograph Co -- Lists and Inventories, May 28, 1889, (TAEM D8962AAG).

ubiquitous claims of sonic identity, and Columbia was ever ready to remind would-be customers of the Marine Band's prestigious role as the "President's Band." On the other hand, early Columbia materials positioned the ensemble as a kind of "house band," providing nearly all of the music for the company's recordings. House bands, as a matter of course, are subservient to the work and to the occasion. They vamp between acts, play "Hail to the Chief" or "Auld Lang Syne" as circumstances require, and provide rim shots for comedians. If variety theater—with its quick procession of performers—pushes identity to the very fore, the house band's sonic ubiquity ensures invisibility.[31]

One of Columbia's earliest record catalogs, a short document dated November 24, 1890, illustrates this effect. The "List of Records by the U.S. Marine Band" begins with a brief introduction of the catalog as a selection of records chosen for their "loudness and clearness," and consisting "of music of the celebrated United States Marine Band." Following this, the catalog presents the company's recorded offerings in numbered lists segregated by the style of the piece— "Marches," "Polkas," "Galops" and so forth. The catalog presents seventy-seven titles scattered across six "genres" and two pages of text before again mentioning an artist, John Y. AtLee, the "Famous Artistic Whistler." Like a house band tucked into the corner of the stage, the U.S. Marine Band's presence in the catalogue becomes attenuated by its own ubiquity. The catalog is overwhelmingly a list of songs— not of performers. The U.S. Marine Band's recorded oeuvre grew in the months to follow, intensifying the predominance of music over musician in the Columbia catalog, and the November 18, 1891, edition offered 184 Marine Band selections listed across four pages.

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[31] Tim Brooks, "Columbia Records in the 1890's: Founding the Record Industry," *Association for Recorded Sound Collections Journal* 10, no. 1 (1978), 3-36.

By this time, the company had also diversified its cylinder-making talent, offering seventeen selections from the United States Third Artillery Band, eighteen from the Brilliant Quartette, and a quickly expanding range of whistling and non-whistling selections from John AtLee. Most interestingly, two classes of records lack attribution altogether. Fourteen selections depicting "The Auctioneer" are listed with titles like "Sale of Pawnbroker's Goods," "Sale of the Old Slave," and "Sale of Drug Store." The Auctioneer is not identified though an earlier bit of promotional copy from the company had announced (just as cryptically) "we have arranged with a well known auctioneer to keep us supplied with auction record [sic] covering very many varieties of sales and interspersed in a humorous way with bids of mock purchasers." The catalog also announces the availability of recorded recitations, "carefully prepared by artists of unquestioned ability… clear and distinct, every word being easily understood." These featured dramatic recitations ("Opening Soliloquy from Hamlet," "Damon's Speech to the Syracusans," the "Quarrel Scene from Julius Caesar," Parts I-III) as well as humorous selections ("The Yankee Still Ahead," "The Railroad Crossing," "Kentucky Philosophy") but none are attributed to a cylinder maker.[32]

The framing of recorded music as "songs" rather than performances by performers also characterized communications to the general public. In 1896 Tally's Phonograph Parlor in Los Angeles enjoined consumers to come "Hear the new songs 'It Don't Seem Like the Same Old Smile,' 'Send Back the Picture and the Ring,' 'The New Bully,'" and "'I Want Yer, My Honey, Ma Angeline'" before adding that "the beautiful 'La Fiesta March' was played by the San

[32] Columbia Recording Corporation, "List of Records by the U.S. Marine Band," [microform]. [Bridgeport, Conn.?] : Columbia Recording Corporation, 1890 -1971 (Reel 1), November 18, 1891, New York Public Library for the Performing Arts, *ZPB-20.

Francisco Band for Mr. Tally and can now be heard in the phonograph." And when Professor William G. Porter appeared at Park Baptist Church, Brooklyn, in 1898 he presented to those gathered a "choice collection of pieces, as reproduced by the phonograph." *The Phonoscope* noted that "among those received with the greatest favor were the 'Stars and Stripes Forever,' 'TheStar Spangled Banner,' and the 'Anvil Chorus' from 'Il Trovatore.'" No performers were mentioned.[33]

**Consuming Records**

Addressing the changes to phonograph consumption wrought by the coin-slot mechanism, Edward Easton of Columbia wrote that "for a considerable time after the phonograph was invented it was only accessible to those who were able to pay the annual rent, or who were so fortunate as to have acquaintances possessing instruments. Now public automatic machines are located in drug-stores, hotels, depots and other places where people gather…" A nearly identical sentiment was expressed in an Edison brochure of 1906 which stated that "not everyone can afford to buy a Phonograph, but few there are who cannot spend a cent in a coin-slot Phonograph to hear some favorite selection." Prior to coin-slot technology it was impossible (or at least very difficult) to "socialize" the costs and benefits of phonograph consumption. Long-term commercial viability of the technology required that its handlers find parties able to supply the total sum of the machine's upkeep and profit for a year—and this generally meant parties interested in business applications. Some of the parties who rented a phonograph for themselves might occasionally turn them to "amusement" purposes. Having already rented the machine for a year, bought her own records and extracted a maintenance agreement from the phonograph

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[33] *Los Angeles Times,* May 3, 1896, 31; *Phonoscope*, March 1898, 11.

company, one could listen at leisure. When one owns a record, the logics of "sunken cost" encourage one to listen to it again and again. Under these circumstances, the listener might consume the same records hundreds or thousands of times, developing a connection to them and seeing them as timeless and permanent. He or she might *refrain* from listening to their records to preserve them, but the logic remains the same— the investment is a long term one. But that type of record consumption remained exceedingly rare in the 1890s and the leisurely and patrician culture of listening would not be democratized until after 1900 when new financial mechanisms allowed it. Until then, the coin-slot mechanism made it possible to massify the consumption of recorded sound, not through ownership, but through an escalation of *rental*: any man, woman, or child in possession of the requisite five-cent piece could "rent" the phonograph for two minutes at a time. This increasing commodification of phonographic time, however, intensified the mercenary semiosis of the technology: all the difference in the world obtains between renting 365 days for a $100 and renting two minutes for 5¢. Consequently, the coin-slot phonograph encouraged an attitude toward record listening which was quite different from the patrician attitude which spread to larger and larger swathes of the American public after 1900.[34]

Namely, coin-slot customers and the entrepreneurs who hunted down records for their amusement evolved a particular temporality vis a vis the cycle of record production and consumption— one that emphasized ephemerality. While coin-slot consumers certainly re-listened to favorite selections, they faced no "sunken cost" and could—with a clean conscienc— abandon a record for a new one just as often as he or she liked. At the Ohio Phonograph Company's arcades interest in the parlors' "handsome automatic cases and phonographs" was

[34] *Phonogram*, June 1891, 143; National Phonograph Company, *Edison Coin-Slot Phonographs* [promotional brochure] (Orange: National Phonograph Company, 1906), 3.

especially keen at those regular intervals when the "phonograph man" switched out old records for new ones. According to the *Chronicle*, "the airs in the public phonographs" in San Francisco, were "changed every day, a man being specially employed to look after them." Similarly, the Georgia Phonograph Company advertised that "the latest band and vocal music [could] be heard daily" at their nickel-in-slot parlors and the selections on the machines were daily changed,[35] and a Wichita parlor advertised in similar fashion a "change of program each day." Manufacturers and distributors, recognizing the short periodicity at play in record consumption, did all they could to accommodate their clients, most of whom were phonograph parlor managers. Roger Harding advertised to prospective customers "I advise my customers of the Newest, Latest and Best Records." While a Maine record supplier inaugurated a policy of giving 25¢ credit for exchanged records, a policy calculated to "enable you to keep up with the times and have the latest records without having a large number of ones that you do not use because they are out of date." That same year the Universal Phonograph Company of New York urged customers to "come and take the records off the rack as they are being made," a catchphrase sounding much like the baker's injunction to "get 'em while they're hot!"[36]

The perceived ephemerality of the recording came closely entwined with the material-economic determinants of its existence. First, the circumstances of records' production tied them to an ongoing and laborious cycle of manufacture and dissemination, one that was always running against the clock. By 1890 George Greim of the Michigan Phonograph Company could already characterize the demand for cylinders as "very considerable" and informed a reporter

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[35] *Atlanta Constitution,* Jun 13, 1891, 7.

[36] *Phonogram*, September 1891, 202; *San Francisco Chronicle* Feb 21, 1891, 2; *The Wichita Daily Eagle*, January 24, 1892, 8; *Phonoscope*, October 1897, 3; *Phonoscope*, December, 1898, 11; *Phonoscope*, December, 1898, 17.

from the *Detroit Free Press* that it was "increasing regularly." Indeed it was quickly becoming difficult to keep up with customer demand. In February, North American informed the sub-companies that "the demand for musical phonograms has been so unexpectedly large during the past few weeks, that it has found us unprepared to fill orders as promptly as we could wish." In October of that year, R.S. Boswell of the Old Dominion Phonograph Company wrote to Charles Cheever, hoping to enlist his help in securing more records from the Metropolitan Phonograph Company of New York. They were having the greatest difficulty getting records anywhere and asked Cheever to push the Company to provide "not only prompt shipments but good selections."[37]

At the same time that demand grew for records, the decentralized state of the industry (anyone owning a phonograph could enter the fray as a cylinder maker) prevented firms from establishing the economies of scale necessary to inundate the market. In February of 1891, the *Phonogram* informed its readers that Edison "can now make musical and other records …far superior to anything that has ever heretofore been produced," but in order to capitalize on the technological improvements he had in mind, he would have to "invest a large sum of money in a plant." Unfortunately, this expansion "would not be justified by the present condition of the musical-record business, owing to the fact that so many of the local companies are trying to make these records for themselves." The *Phonogram* followed with a plea for "cooperation" by the various sub-companies: hand Edison a monopoly on record production, it urged, and we will all benefit. Apparently, there were no takers. The decentralized and fiercely competitive set of

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[37] *Detroit Free Press*, June 1, 1890, 3; North American Phonograph Co and Lombard, Thomas R -- Circulars and Brochures, February 24, 1890 (TAEM D9058AAD); Old Dominion Phonograph Co. and Boswell, R. S. to Cheever, Charles Augustus, October 8, 1890 (TAEM D9052ABJ).

affairs would persist in the record industry for the rest of the 1890s, with cylinder makers always running behind schedule in trying to meet demand.[38]

In 1898 Estelle Mann, the proprietor of the Lyric Trio Company could "scarcely keep up with demand" in the months following the commencement of cylinder making operation. A year later a "severe attack of la grippe" prostrated her for several weeks and the operation fell behind in supplying its customers. When she returned from this miserable sabbatical she "work[ed] like a [Trojan] to fill large orders that have been accumulating since her sickness." By this time, some firms were making headway against the tide of orders, but success in the undertaking required system and discipline. "Promptness in business," according to Reed, Dawson & Company "is everything" and when a representative of the *Phonoscope* visited their facilities in Newark in 1899 he was shown just how the firm achieved it. The company "filled with choice stock from all their talent…" a gigantic cabinet "taking up the better part of a large room." Every recording in the company's catalog was "constantly on hand and ready to fill orders without delay."[39]

As difficult as it was to procure cylinders, it was just as hard to keep them, as wax records—as compared to later formats—were short-lived commodities, generally not outliving more than a few thousand plays. The above-mentioned Maine company with the policy of accepting records on exchange assured its would-be customers that "the old records may be played out and weak, but so long as they are not cracked they all be taken in exchange." So ingrained were assumptions about the ephemerality of sound recordings that by 1898, *Phonoscope* could inform its readers of a novel state of affairs: "old records are now in great

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[38] *Phonogram*, February 1891, 38.

[39] *Phonoscope*, March 1898, 11.

demand by enthusiasts who aim to possess valuable collections." These "old records" could only very rarely have been more than ten years old.[40]

The problems presented by the circulation of sound recordings, like those presented by the advent of the phonograph parlor, ranged from worries over the quality of purchased goods to the perennial battle over "boundaries." And just like the threats posed by the phonograph parlor, it is important to see the problems of the phonograph record as on a single surface, stretching from the realm we generally call "economic" to that designated "cultural." At the far end of that surface were relatively straightforward concerns about the material quality of records. In 1896, for example, one Boston customer paid an unidentified record company $25 for as many records. But within three weeks, sixteen of them were covered in a a "foggy scum" or "mouldy substance," as unfit for human consumption as the canned beef sent to American troops in Cuba two years later. Since the company in question did not manufacture the "blank" records (Edison did) they denied responsibility and left the Bostonian holding the bag. Like any mass produced commodity, cylinder records occasioned hand-wringing because of their embeddedness in impersonal long-distance commercial relationships, circumstances making it difficult to hold sellers accountable. The occluded social and material origins of the wax record were humorously (and tastelessly) alluded to by the *Phonogram* when it commented on a congratulatory record sent to Grover Cleveland, who had been "handed a small package by a messenger, which resembled in almost every particular one of those mysterious boxes that has caused so much wonder and fear to the recipients, bringing up visions of dynamite, gunpowder, etc."[41]

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[40] *Phonoscope*, December, 1898, 11.

[41] *Phonoscope*, November 1896, 9; *Phonogram*, April 1892, 241.

Along with the threat of anonymity the *Phonogram's* recounting of the episode hints at a potentially-nefarious interiority to the record. Beginning in 1895 there circulated across North America a number of cylinder records deemed "obscene" by state local and federal authorities. The subsequent string of prosecutions under anti-obscenity laws threw into stark relief the still-contested ontology of the sound recording. One of the first of these took place in Toronto when George and Mamie Barry were charged with "having exhibited… a phonograph containing immoral passages…" Their attorney moved to have the charges thrown out as "allowing people to listen to the phonograph was not 'exhibiting' a show," but the judge rejected the argument, as the broken statute in question "came under 'printing and publishing.'" In January, 1896, two phonograph men in Springfield Massachusetts were charged with "publishing selling and reproduction of human speech… said reproduction containing obscene language manifestly tending to the corruption of the morals of youth." One month later, Reverend Frederick Bruce Russell of Brooklyn, while making his rounds as a member of the Law Enforcement society, entered the saloon of August Viemeister and there chanced to hear a "wicked and depraved phonograph" emitting a lascivious song. Russell alerted the authorities and Viemeister was charged. Following an excruciating episode in which the saloonkeeper's lawyer forced the young minister to repeat what he heard that day (no doubt wagering that he would not,) Viemeister was found guilty and fined $50. For his part, Viemeister claimed to have had no knowledge of the record's contents as they had been insisted he would appeal the decision.

In February, a very similar scene unfolded in Jersey City, when Charles Fletcher and John Leon were arraigned before the General Sessions Court for "exhibiting a phonograph containing unlawful songs." Remarkably, the men were discharged because the judge "understood the

machine was controlled by some of the most eminent men in science and in the financial world" and that "this [recording] company manufactures such cylinders, without which the phonograph is useless." The court confiscated and destroyed the objectionable cylinders but, reported the *St. Louis Post-Dispatch,* "the cylinder matter will be investigated, and if possible the persons responsible for the manufacture and issuing of them will be reached." And when in October 1897, Anthony Comstock apprehended two Long Island men guilty of exhibiting an obscene phonograph, the *New York Times* was noted that "it is alleged that the man who sung into the phonographs the words composing the songs is in prison serving a term for doing so." Even as the question of attribution creeps into the foreground, writers continued to employ language suggesting more layers of mediation than modern understandings allow for.[42]

**Conclusion**

In the 1890s the phonograph record evoked a range of connotations that, superficially, fit poorly with one another. A constant focus on the recording process—with its Rube Golberg-esque congeries of processes—encouraged record companies, parlor managers, and their customers to think of the recording artist (as later generations designated that character) as a type of skilled artisan closely linked to the industrial process itself. He or she was a "cylinder maker." This emphasis on manufacturing, when combined with the era's preoccupation with "the musical work" as the ontological core of a performance contributed to a conception of recording as a kind of "publishing." Like idiosyncratically set book type, the peculiarities of any given "take" were less the cylinder-maker's stock-in-trade than her mistakes. At the same time that consumers were

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[42] *The Globe* (Toronto), September 19, 1895, 6; *The Globe* (Toronto), September 13, 1895, 8; *Boston Daily Globe,* January 17, 1896, 2; *The Boston Sun,* February 27, 1896, 7; *St. Louis Post - Dispatch,* March 6, 1896, 5; *New York Times,* October 14, 1897, 3.

encouraged to think of cylinder records as publications, the economics of coin-slot sound consumption pushed them to engage with them fleetingly.

The scriptive understanding of recording also dovetailed with a conception of the record as ephemeral. Advertisements for famed baritone J.W. Myers' recording company made explicit the centrality of the text as well as the up-to-date quality of its products when it advertised its wares as "All the Latest and Most Popular SONGS, carefully selected from all the Leading Music Publishers in the United States as Soon as Published" [Emphasis in original]. Similarly, when the United States Marine Band—house band of the Columbia Company—left Washington for a national tour in 1891, Edward Easton assured the trade "we are laying in a large stock of records previous to their departure." Here the ephemerality of the recordings meets with their status as commodities as Easton speaks of them in terms usually reserved for foods. Records were quasi-mass-produced texts, meant to be discarded (or recorded over) every few weeks. Like the unattributed columns of printed periodicals or the pseudonymously published "pulp" novels of the late nineteenth century, the ephemerality of the recording mitigated its status as an enduring document with a flesh-and-blood author. Because records were physically and conceptually ephemeral, few initially considered them "canned" performances. The cylinder did not represent a conduit to a timeless performance out there in the spaceless and timeless ether but seemed more like a script—a script with a distinct analog birth and a pre-ordained death-by-stylus on the near horizon.[43]

At the other end of the supply chain record manufacturers were keen to emphasize the status of cylinder-making as an author-less, industrial process. The late nineteenth century

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[43] *Phonoscope*, July, 1898, 5; *Phonogram*, March 1891, 80.

witnessed a valorization of capitalistic production, foregrounding the industrial and commercial might of firms as proof of their contribution to the public weal. The logos and advertisements of manufacturers regularly featured illustrations of the company's facilities, invariably long multi-storey structures ribbed with belching smokestacks. Capital, market share, output, efficiency, size—these were the guarantors of quality. These preoccupations, however, were not transhistorical standards, but were part and parcel of a peculiarly nineteenth century value regime, one that neared its expiration in the last decades of the nineteenth century. The labor theory of value—a mainstay of classical political economy, and the bedrock of Marxism—had posited a generic measure of economic value derived from the number of man-hours consumed in an article's production. While never so one-dimensional as its detractors have argued, the labor theory of value represented an industrial and producerist understanding of economic processes—one in which production's "ends" are pre-determined by the technological and economic necessities of reproducing capital. Barring "mistakes" in the production process, a railroad tie is a railroad tie. Competition between manufacturers of railroad ties necessarily takes place according to a quantifiable and objective measure— price. There is little in the way of metaphysical residue to stymy our calculations, here: low prices are preferred over high. As production shifted overwhelmingly toward supplying the demands of consumerism beginning in the 1890s, however, this objective understanding of value appeared increasingly anachronistic. Now, commodities became suffused with a new kind of value, irreducible to the amount of labor consumed in their production but dependent on the subjective valuations of consumers. This year's serviceable application of labor—boater hats, say—might next year command no attention whatsoever in the marketplace. This turn to subjective value came paired, as well, with a new

world of abundance and these circumstances of (apparent) post-scarcity reinforced the disjuncture between material processes on one hand and value on the other. It is in this context of shifting value regimes that the next phase of the cultural history of recording unfolded.[44]

Beginning in the early 1890s, cylinder makers achieved their own measure of industrial post-scarcity employing crude methods of record reproduction. Some of these methods were as crude as playing a record on one phonograph while others captured the sounds from the air, and through that decade the practice was increasingly blamed for many of the quality control issues faced by the industry. "I have a great deal of trouble," one record purchaser wrote in 1897, "getting uniform, good loud originals…" The problem, he believed, lay in the "tendency even on the part of the best and most reputable concerns to work off all the poor and duplicate records they can with each order as originals." When G.W.W. of St. Louis received a record catalog advertising "a number of original records at 50¢ each, $5 per dozen," he grew suspicious. He had "been 'swindled' so much lately by the different companies who advertise originals," he decided to ask advice from the editor of *Phonoscope.* The editor confirmed his suspicions: original records could not be marketed for 50¢. Similarly, a letter-writer identified only as "L" declared in the pages of *Phonoscope* that "it is our duty to put on guard all of our great phonograph and supply firms against filling the market with duplicate records called 'high grade,' while the original remains in their cabinets." Intensifying competition, he argued, had encouraged cylinder manufacturers not only to "duplicate" but also to use cheaper wax blanks in their recording. And while "amateurs will not perceive this at once," these slipshod methods will eventually come to light. "When they do, good-bye phonograph amusements." So pervasive were these problems

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[44] T. J. Jackson Lears. *Fables of Abundance: a Cultural History of Advertising In America,* New York: Basic Books, 1994.

that by 1896 one record purchaser resignedly informed *Phonoscope* readers that "the way things are being run now in the business, your [sic] going to get 'done' anyways, so we might as well take it easy and 'let nature take its course…'" For their part, record manufacturers insisted that they were engaging in no such debasement of the currency. Edison advertisements reserved for that company a designation as "The Only Company Selling First-class High-Grade Original Records at Fifty Cents Each." The Excelsior Phonograph Company announced "Guaranteed Original Records of the Highest Standard of Excellence" and explicated that they "handle no duplicates." The Norcross Phonograph Company of New York City also advertised their "high-grade originals" adding "we have no duplicates to sell at any price."[45]

Particularly in the earliest days of mechanical record reproduction, the negative attitude toward "duplicate" records undoubtedly reflected shortcomings in quality. But as methods for mechanical duplication were perfected, complaints about the practice continued, and "duplication" came to serve as a convenient explanation for all exhibitors' dissatisfactions with cylinders. One forward-thinking record consumer wrote the *Phonoscope* in 1896, urging a transvaluation of values with regards to cylinder records:

> "In visiting the different cities in different parts of the country, I am very much amused by the great wail that the exhibitors offer up in reference to duplicate records…Whenever the general run of exhibitors get a bad record they immediately cry, "Oh! That's a duplicate;" when they get a good one they say, "That's a fine record; it must be an original." Let me tell them it is just the other way. When they get a good, loud, clear record it is generally a duplicate, the bum ones originals. I'll tell you why. Most all of the phonograph singers sing to five or six horn[sic] at a time, and about two of the records are good; the rest are only fair… Why don't we run around to our printer and want the type he uses to print our circulars? Why don't we ask our photographers to give us all

[45] *Phonoscope*, March 1897, 13; *Phonoscope*, February 1898, 16; *Phonoscope*, January-February 1897, 14; *Phonoscope*, December 1896, 7; *Phonoscope*, May 1897, 19; *Phonoscope*, August-September 1897, 19.

> negatives when he furnishes us pictures? When I buy records, I buy them for the results they give, I don't care whether they made [sic] with a tack hammer or a steam engine.

The writer forcefully rejects the argument that a record's value bears any inherent relationship to the labor committed to its production. Whether cylinders are made painstakingly and one at a time by artisans ("a tack hammer") or spat out in torrents by industrial processes ("a steam engine,") makes little difference. What matters is the way the record sounds.[46]

The same author defined cylinder quality in explicit terms. Good cylinders, he said, "give a good, loud, clear and brilliant reproduction." His emphasis here, as it was for most record purchasers throughout the decade, lay in considerations of accuracy and clarity— the virtues of a competent printer. By the end of the nineties, however, there emerged the outline of a new sensibility, one which would eventually transcend the "publishing" paradigm altogether. In October of 1898, J.W. Of Providence, Rhode Island, reiterated many of the common anxieties regarding wax cylinder production and distribution in a letter to the *Phonoscope.* He had recently received a circular advertising phonographs, graphophones, and records at discounted prices, and was particularly interested in the offer of "original records" for 65¢. Could this be? He had been told original records could not be had for less than $1 apiece. The editor's response depicts a wholesale re-framing of the question of value as it relates to sound recordings:

> It is very difficult to answer your question in reference to original records. The fact that a record is an original does not add any value to it. The value is governed by the following question: "Who made the record?" An original record of such talent as Gaskin Spencer, Quinn, Myers, Hunting, Ossman, Emmet, etc., is a staple article with a recognized value. An original record of Bill Smith, Charley Brown, or Sam Simpson might be worth only the price of the blank it is on.

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[46] *Phonoscope*, December 1896, 7.

The author of these comments, Russell Hunting, was not only intellectually but financially interested in such a conceptual transformation. In February of 1897 he had cast his lot with a new firm, The Universal Phonograph Company of New York, which intended "to manufacture high-class records by celebrated artists of the vaudeville and dramatic stage." This, wrote the *Phonoscope* (likely Hunting himself) represented a "field that has been heretofore neglected[!]" An advertisement for Universal in the same issue commented on the old dispensation in recorded sound and pointed in a new direction. "The entire phonograph and graphophone world for the past six years," Universal said, "has had to satisfy itself with records which were limited to the product of about ten vocalists, three bands and a few instrumental soloists." This the company sought to remedy, and it would soon "offer to the patrons of the phonograph and graphophone a series of records by celebrated artists that command public attention at the leading theatres…" Additionally, it would "manufacture and keep in stock" records by those "cylinder makers" who had long been popular with the public "Spencer, Gaskin, Quinn, Golden, At Lee, Hunting Favor, etc." Several months later Roger Harding of New York City opened a phonograph parlor and announced his intentions to "place on the market high-class original records of celebrated artists." The idea was catching.[47]

Ironically, it was precisely the mass production of cylinder duplication that facilitated the evolution of the wax cylinder record from an impersonal (though artisanally-produced) artifact of human labor to a personality-laden stand-in for the laborer himself. First, cylinder makers' output increased dramatically in the years following the advent of mechanical record duplication and (as our perspicacious *Phonoscope* correspondent above argued,) the process exerted a Darwinian

[47] *Phonoscope*, December 1896, 7; *Phonoscope*, September, 1898, 8; *Phonoscope*, January-February 1897, 9, 19; *Phonoscope*, July 1897, 9.

influence on the quality of recordings. Since it only took one good "take" to get hundreds or even thousands of cylinders, cylinder makers could toss out all but the very best. As quality improved, exhibitors and coin-slot proprietors came to take for granted those printer's virtues of clarity and accuracy. Secondly, duplication facilitated the evolution of new constellations of relationships within the record industry. According to Russell Hunting, the advent of record duplication caused cylinder makers (specifically, those industrial operatives responsible for singing, playing and orating) to "rave and wail" believing that the "machines would ruin their income." But by late 1897 it had become clear that just the opposite was true. Recording talent, he claimed, was now busier than ever and were being paid around double what they had been paid a few years prior. A few months after Hunting narrated this tale of technological triumph it was announced that Columbia had made "exclusive contracts with the recognized 'star' record makers, for their exclusive services for one year" an arrangement deemed both "very expensive" and "very valuable" by *Phonoscope.* As Hunting suggested, duplication was, indeed, creating work for that select aristocracy of "star record makers" and increasing their fees. Eventually a single good "take" would produce millions of records and millions upon millions of dollars in profit, making it worthwhile for recording firms to pour funds into the marketing of a single star— or even just one of her records. Lesser talents— those hearty souls whose primary virtue lay in their ability to sing dozens of takes at top volume— fell by the wayside, replaced by the "recording star." At the same time, the conception of recordings as published material fell away, replaced by "performances" by those recording stars.[48]

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[48] *Phonoscope*, March 1898, 4.

The end of the nineteenth century, however, still found the popular conception of sound adrift in a tide of brackish discursive waters. Though some of the public began to entertain the notion that recordings were "of" the people who made them, older modes of speaking and writing persisted. A 1900 ad for the Ray Phonograph Company of Louisville, evoked the old "talking machine" discourse, informing readers that "the Phonograph talks, sings and plays for the entertainment of your family and friends. Similarly, *Phonoscope* reported that in the home of Peter Porter of Niagara Falls, Lord Kelvin and other "electricians" had been recently "interviewed by the phonograph…" Sometime before the year's end Mr. Porter hoped to host a party in which "his friends will be allowed to hear the phonograph tell what the great men said to it." Even when addressing the pioneering methods pursued by Columbia, the trade sometimes slipped into older modes of though. When in 1898 W.H. Smith, manager of American Graphophone, invited the company's "record-making force" to tour their Bridgeport facilities, it was Columbia's stable of "star" singers and instrumentalists who showed up— not workmen in rubber gloves and aprons (who were quite familiar with the company's factories, at any rate.)[49]

The Edison organization, ever conservative in matters of imagination, did absorb much of the new commercial ethos from its competitors after 1900 but continued to forward the scriptive understanding of musical records well into an era when others had abandoned it. An Edison catalog distributed sometime around 1907 by Chicago's Babson Brother's mail-order house encouraged consumers to make up their own musical "programmes" for home entertainments, and provided four sample programs to catalyze one's creativity. Each program offered a particular kind of entertainment—"An Afternoon Concert" or "An Evening's Fun"—and

[49] *Christian Observer*, October 17, 1900, 18; *Phonoscope*, August-September 1897, 09; *Phonoscope*, March 1898, 11.

helpfully listed relevant Edison records by list number and title. At first glance, the programmes also seem to describe the ensembles captured on each record: "Concert Band," "Military Band," "Symphony Orchestra," and so on. These phrases do not, however, describe the recording ensemble so much as the style of *song* published on each cylinder and other records on the programs are characterized in ways unambiguously referencing the selection itself: "Song," "Talking Sketch," "Sentimental Ballad," "Vaudeville," "Comic Song, or "Coon Ditty." Other records are characterized by the musical instrumentation employed in their manufacture: "Cello and Piano," "Banjo," and "Xylophone." Record makers are mentioned only twice in the entire list of programmes: once for the Vassar Girl's Quartette and once for John Philip Sousa. The latter's name, however, appears only in the context of a *song* description, in this case "Stars and Stripes Forever," a "Sousa March."[50]

The mode of thought we have characterized as "sonic modernity" crystallized only after 1900. And while we have gone to great lengths to argue that this mode of thought arose in response to a panoply of cultural, economic and technological forces, it is also true that "forces" are not the immediate agents of historical change. Individuals are. In the case of sonic modernity, the "cunning of history" employed the labor of many actors, but none as crucially as the group of men calling themselves the Victor Talking Machine Company of Camden New Jersey.

The phonograph industry induced many of the same anxieties spurred by other industries of the late nineteenth and these anxieties were partially attributable to a discursive disjuncture between the reassurances desired by the public and those stale guarantees offered by record manufacturers. The exponential growth of the industry, for example, presented its participants

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[50] F.K. Babson, "Edison Phonographs" (Chicago: F.K. Babson).

with a collective action problem: how to police quality and comportment among thousands upon thousands of strangers. Since commodities themselves no longer presented to the eye the proof of their own value, the misbehavior of a minority of industry participants could have dire consequences for all. This tendency was nowhere as threatening than among the phonograph exhibitor, an often itinerant variety of phonograph man whom the public held in generally low regard by the late 1890s. In 1896, an unidentified industry insider spoke to the *Chicago Daily Tribune*, regarding the value of the phonograph in electioneering efforts. "Though he may be regarded in the light of a 'faker,'" he began, the phonograph exhibitor "is nearly as valuable an adjunct to the campaign as the best of stump speakers…" The following year a phonograph exhibitor visited in prison one Frank Butler, the notorious "Murderer of the Blue Mountains," paying him to speak into the phonograph and to commit a few lines of his poetry to paper. When it was discovered that the verse was plagiarized, Butler protested that he had never claimed original authorship and that the phonograph exhibitor had chosen to market the poem to the public as such. Commenting on the dispute, the *San Francisco Chronicle* asked glibly, "between a phonograph man and Ashe [alias], murderer of the Blue Mountains, whom would you believe?" The writer admitted that "Ashe, or Bulter, may have slain Captain Lee Weller and young Osborn and robbed Frank Harwood—committed crimes that would have exhausted the angel to record…" but still, he wondered, "is his repute for veracity therefore lower than the status of the show man of the vocal cylinders?"[51]

Legitimate exhibitors, recognizing their poor reputation in the public's mind did all they could to enforce standards of decorum among themselves. William S. Wrote to the *Phonoscope*

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[51] *Chicago Daily Tribune,* September 27, 1896, 41; *San Francisco Chronicle,* Feb 22, 1897, 9.

to warn his co-laborers off of street exhibition as it degraded the enterprise in the minds of observers. C.F.D. Of Pottsville, Pennsylvania, responded to his missive with one of his own, arguing that street exhibitions had in no way impaired his reputation nor his machine, though he admitted "I do not expect the elite of the town nor society people to patronize me." In some cases, the conscientious exhibitor could expect the discerning consumer to separate wheat from chaff. Such was the case in Maine when audiences "criticized keenly" the low quality records carried by marginal exhibitors. On the other coast, however, the market for phonograph exhibitions proved vulnerable to a kind of sonic Gresham's Law.[52] John Monroe wrote to the *Phonoscope*:

> In regard to the business, I may say that up to the first of April it was fairly good, but since that it has been very light, though last week was a great improvement. There is no use in mincing the matter, the cheap machines and cheap records have knocked the life out of the business. When you see two great "lubbers"—big burly men—going around the country with a machine that costs $10.00—and records that cost 50 cents each and only about twelve records at that, surely the business is getting into a corner… Now what is a fellow to do that has a first-class machine that costs $100.00? With records that cost $12.00 per doz[en]…?"

Good records and phonographs looked an awful lot like bad records and phonographs. Any doubt over which was which was sure to multiply the legitimate exhibitor's troubles. Another problem occasioned by the rapid expansion of the industry and its attendant anonymity lay in the difficulty of procuring accurate information about the state of the business. In 1898, "J.K." Complained in a letter to the *Phonoscope* that "for some time an unknown person has been causing unpleasant rumors to travel among the talking-machine fraternity…" These "unpleasant rumors," he said, spuriously claim that "this or that concern… is going to suspend business or

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[52] A monetary principle formulated in the 19th century by Henry Dunning Macleod arguing that "bad money drives out good." Peter Bernholz and Hans Gersbach,"Gresham's Law: Theory," *The New Palgrave Dictionary of Money and Finance*, vol. 2. (London: Macmillan, 1992), 286–288.

they are on the verge of bankruptcy or are going to introduce some vast improvement on the machine which will revolutionize the business…" This irresponsible chatter had "reached various dealers and caused considerable anxiety and unpleasant feeling for the parties involved…"[53]

Columbia, owing to changes in the legal and technological structures of the recording industry, shifted dramatically toward sonic modernity beginning in 1893, increasingly conceptualizing records as captured performances by performers. Still, Columbia's approach remained distinct from the Twentieth Century paradigm, and would remain so until after the turn of the century when it absorbed the tactics of a new entrant to the industry— the Victor Talking Machine Company.

[53] *Phonoscope*, July 1897, 11; *Phonoscope*, November 1896, 14; *Phonoscope*, May 1898, 10; *Phonoscope*, December, 1898, 14.

# CHAPTER IV

## Victor

Beginning in the 1880s new organizational, legal, and mechanical technologies permitted manufacturers of consumables to capture hitherto undreamed-of economies of scale and to place their foods, drinks, and drugs in markets far-removed from their points of origin. In 1906 the United States Congress responded to an increasingly strident call on the part of their constituents to do something about the state of affairs elucidated by muckraking journalists. The muckrakers certainly did their part in galvanizing attention on the shortcomings of commercial food processing, but the behemoths of industry had hardly to be dragged kicking and screaming into the era of federal oversight. The new legislation promised to wipe away a welter of state and local policies inhibiting interstate commerce. It drove smaller, less economically-efficient competitors onto the shoals of increased costs, draining their coffers. Most importantly, the legislation served to protect food packagers' most ephemeral form of capital— the trust and good will of the American public. Rather than a unilateral victory over corporations by the democratic polis, the Pure Food and Drug Act of 1906 marked the ascendency of a new sensibility emphasizing cooperation over competition; long-term planning not only in the production of commodities but also of consumer demand; and a muted distinction between politics and commerce, state and corporation. Most importantly, this new sensibility entailed an

aestheticization of efficiency, system, and rationalization that elided the differences between mechanical and social technologies.

That same year The Victor Talking Machine Company of Camden New Jersey rolled out its new "price agreement," a complete overhaul of its distribution policies calculated to solve problems very much like those faced by food packagers. The gigantic scale of the phonograph industry had recently brought consumers into relationships and transactions made opaque by the fog of social and geographic distance as well as the accelerating pace of technological change. These consumers faced no perils directly parallel to sawdust-infused bread or poison patent medicines. But the purchase of a phonograph— just like that of processed foodstuffs—pushed before them the same anxious questions: am I receiving something valuable for my hard-earned money? Is this the "real thing?" The Victor Talking Machine Company, more so than any firm before it, seized on the problems of opacity and market value, expertly assuaging the anxieties introduced by the market to sell phonographs and records. Like the food packagers and their cronies in Washington, the strategies Victor enshrined in its 1906 price agreement drew on the cluster of political-economic-aesthetic notions constituting the Progressive Era sensibility. The firm sought to rationalize its supply chain, tamping down competition in favor of cooperation between dealers, distributors and the manufacturer and it worked mightily to keep prices for its goods consistent from one corner of the country to the other. It cultivated in Victor Dealers a kind of commercial virtuosity hiding the artistic "craft" of distribution and sales at the same time that it efficiently converted stock-on-hand into revenue.

The result of Victor's efforts in this direction was the semiotic concealment of the company's distribution infrastructure. As dealers and distributors more and more closely

approximated the behavior deemed ideal by the Company, so too disappeared the signs of mercenary mass commerce—market competition, supply and demand, anonymity, the uncertainness of value. Like an expertly-crafted machine, the infrastructure's silent and invisible operations underwrote a feeling of magical productivity. The Victor Talking Machine Company forwarded its brand as a placeless, timeless, transcendent and non-contingent guarantor of Quality (always capitalized in company communications.) In place of a multinational army of distributors and dealers and freely-floating prices and uncertain value the company offered its ubiquitous trademark—a phonograph-transfixed terrier known to the world as "Nipper." At the same time that these maneuvers concealed the fraught relationships of capitalism, they also capitalized on longstanding bourgeois notions of aesthetic excellence predicated on the transcendence of material determinants, and the rejection of the pragmatic or "useful." Here as elsewhere, the economic prerogatives of capital and the psychic needs of consumers came closely entwined with contemporary aesthetic ideals.

**The Victor Talking Machine Company**

The rise and fall of the North American Phonograph Company represented a joining and then parting of ways between two of the three major commercial-technical tributaries of the early phonograph industries. While the Edison and Columbia factions were mingling and then unmingling their money and manpower another stream in the corporate history of sound recording took shape under the hand of a man named Emile Berliner. While working as a dry-goods clerk in D.C. the German emigre had developed an early microphone design, sold it to the Telephone Company and then entered their employ as an inventor. In this capacity he became an expert in sound science and technology and soon directed his talents toward the phonograph. He came to

suspect that the sonic distortions of the Edison and Bell-Tainter designs were introduced by mechanical resistance of the medium to the stylus' vertical incising/indenting procedure and in 1886 he began experimenting with a laterally undulating stylus. To his great satisfaction, the process produced louder and more distinct recordings. Berliner secured a patent for his talking machine in November of 1887 and spent the rest of the 1880s working to perfect this new entry into the phonograph wars— the "gramophone." His design featured a rotating flat disc traced by an arm-mounted stylus guided by its own weight in the spiraling groove of the record— a setup which would eventually become the basis for all phonographs in the twentieth century. In late 1889 Berliner traveled to Germany in order to exploit his invention in the form of a talking doll and a small hand-powered toy phonograph but returned to the United States in 1890, determined to establish the gramophone as a serious reproducer of words and sounds. After trying unsuccessfully to sell the invention to Jesse Lippincott, Berliner endeavored to market his invention through a number of ephemeral companies, the last of which was the Berliner Gramophone Company incorporated in October of 1895. In the months that followed the Berliner Company established marketing agreements with at least two subsidiary companies, including the New England Gramophone Company and the New York Gramophone Company.[1]

Frank Seaman, proprietor of the New York Gramophone Company, proved adept at advertising and marketing the gramophone and in October, Berliner handed over to him the contract for the entire United States. Almost from the outset, however, the relationship between the two companies was fraught. Seaman complained incessantly about the quality of Berliner's

[1] Raymond Wile, "Etching the Human Voice: The Berliner Invention of the Gramophone," *Association for Recorded Sound Collections Journal* 21, no. 1, 2-22; Raymond Wile, "The Launching of the Gramophone in America 1890-1896" *Association for Recorded Sound Collections Journal* 24, no. 2, 176-192.

machines and pushed the company for new catalogue items including a coin-operated gramophone and a model to compete with cheap phonographs produced by their competitors. Most importantly, he believed that the company's supplier for spring motors, one Eldridge Reeves Johnson, was charging too much and came to suspect (correctly) that the Berliner Gramophone Company were in bed with Johnson, inflating the cost of his spring motors and passing those costs (and Berliner's 40% markup) onto him.

A distressingly capacious contract clause allowed Seaman to source machines or parts elsewhere if they could be produced at similar quality at lower cost. In late 1897 he contracted with another manufacturer to make 2000 spring motor gramophones and the Berliner Company — assured of their 40% royalty— allowed the transaction, but henceforth refused to honor Seaman's right to source machines elsewhere. Relations soured between Seaman and the Berliner faction. In February Seaman organized the Universal Talking Machine Company for two purposes: the legitimate outfitting of Berliner machines with coin-op mechanisms for sale; and the decidedly less-than-legitimate ambition of marketing gramophones in Belgium. Berliner had not licensed Seaman to sell in Belgium nor was the gramophone protected by patents there.

At the same time Seaman continued to push for a cheaper machine and initiated plans to construct one through his Universal Talking Machine Company. Berliner refused to allow it and in early 1900 Seaman's patience gave out. He secured a license from Columbia to manufacture his new disk talking machine, dubbed the "zonophone," under the Bell-Tainter patents. And then in May a pair of legal maneuvers by the Columbia Phonograph Company culminated in an injunction against Berliner, prohibiting the company from selling gramophones in the United States. The Berliner faction responded by shunting their operation into a new entity called the

Consolidated Talking Machine Company of America and handing marketing and sales over to Eldridge Reeves Johnson. Columbia, unfazed by Berliner's shell game sued Johnson in October for violation of the Bell-Tainter patents. Despite Columbia's backing, Seaman's run as a phonograph mogul was short-lived and National Gramophone Company dissolved in September 1901, a casualty of bad press and worse sales.[2]

The following month E.R. Johnson formally re-organized the gramophone interests under his own hand, incorporating the Victor Talking Machine Company. Until now Columbia's patent infringement suit against the Berliner faction loomed in the background but was laid to rest in January 1902 when E.R. Johnson purchased the Globe Record Company of Milburn, New Jersey —Columbia's sole disc record source. The company was forced to the table and within weeks had agreed to retire their suits against the Berliner faction. In exchange Johnson sold Globe to Columbia and foreswore any possible patent-infringement suits against Columbia's disc graphophone.[3]

**Disappearing Infrastructure**

The Victor Talking Machine Company represented a dramatic new approach to the business of selling sound. Before the relationship soured between Seaman and the graphophone faction, the former had done remarkable promotional work, most notably drawing on his friend George Eastman's half-tone Kodak advertisements for his own work. From the outset, the old Edison Speaking Phonograph Company had been hobbled by its inability to stabilize its infrastructures. Its suppliers missed deadlines; its products refused to work for customers in

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[2] Timothy Fabrizio and George F Paul, *The Talking Machine: an Illustrated Compendium, 1877-1929* (Atglen, PA: Schiffer Pub., 2005), 42, 73-78; Raymond Wile "The Gramophone Becomes a Success in America, 1896-1898," *Association for Recorded Sound Collections Journal* 27, no. 2, 139-170.

[3] Fabrizio, *The Talking Machine,* 78-79.

distant locales; and its agents proved inept or sometimes even mendacious. The ESPC's lack of resources—financial, technological and legal— ensured that these problems would remain insuperable. Similarly, the North American Phonograph Company had struggled to overcome geographic and social distance, but eventually collapsed under the strain. Victor set out to overcome these obstacles to profit by all means necessary.[4]

To begin with, Victor sought to overcome the informational bottlenecks which caused so much dysfunction in their forebears' operations. From 1906 on, Victor sent to all of its distributors, jobbers and salesman a trade journal called *The Voice of the Victor,* and used its pages to establish a kind of company "public sphere." On one hand, the Company presented this publication and other written communications as helpful guides to the niceties of phonograph and record sales, encouraging graders to "absorb from Victor literature all the information you possibly can concerning Victor Records," so that they might "get the Victor Record business right at your finger tips." But under the geographically-distended circumstances of corporate capitalism, dealers, jobbers and distributors shared relationships with their suppliers (and with each other) which were especially opaque and which could engender distrust. It was absolutely necessary, then, for the company to provide a platform for the dissemination of information and in order to establish a degree of transparency for its geographically-dispersed agents. One area well-sown with the seeds of discord was the question of advertising. If Victor failed to sufficiently advertise its products, the company's retailers would suffer. Further, the Company's continuous injunctions for dealers to run their own local advertising, in that case, would represent a particularly damaging "passing of the buck." In order to prevent this resentment and

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[4] Timothy C. Fabrizio and Paul F. George, *The Talking Machine: An Illustrated Compendium, 1877-1929* (Atglen: Schiffer Pub., 1997), 37.

reassure dealers that their advertising dollars were being matched and surpassed, *The Voice* regularly touted its advertising expenditures. In 1907 Victor installed at Broadway and Thirty-Seventh Street in New York a "great sign… 50 feet wide, by 40 feet high" featuring the company's trademark fox terrier listening to a Gramophone. In producing this, "the largest and most expensive sign in the world," *The Voice* informed readers, "the Victor Company…feels that it is advertising every Dealer in the United States, and there is no question but that the influence of this great sign reaches from Maine to California, from Canada to the Gulf, and in fact all over the world." In September a column heading in *The Voice* read "Victor Advertising, Covers the Country, Every Dealer Receiving Direct Benefits Therefrom…" The piece begins "do you realize what the Victor Company's advertising is doing to help you sell goods?…" before proceeding to an in-depth discussion of the company's advertising expenditures. Pointedly, *The Voice* reminded its readers "it only remains for you to *make yourself known in your community* to obtain your share of this splendid Victor business." Dealers could pitch in for local printer's ink, *The Voice* reassured them, secure in the knowledge that Victor was doing its part.[5]

Just as mysterious were the mechanisms by which Victor determined prices, and the company was ever vulnerable to dealers' accusations that factory cost figures had been inflated. In March 1907 *The Voice* published a table showing the increasing cost of raw materials over the past three years. Nearly all of the phonograph's constituent materials had become more expensive and *The Voice* "hoped that the struggle the Company is making to absorb these heavy

[5] *Voice of the Victor*, May, 1908, 8; *Voice of the Victor,* September 1907, 4.

advances in the cost of manufacture themselves…will cause Distributors and Dealers to be more loyal than ever to Victor goods."[6]

Victor's efforts to establish a "public sphere" highlights the cooperative and voluntaristic element at work in its approach to their infrastructure. But there were obstacles to these methods, none more intractable than the careless disregard of company communications by some dealers. Ironically, the reach of Victor's industrialized communications infrastructure proved a liability in some cases, such as when *The Voice* warned readers "our letters, even though printed, should not be carelessly passed over and classed as circular letters. The only reason they are printed is because it is absolutely impossible to simultaneously write ten thousand personal letters…" Victor's robust (if tendentious) traffic in information, then, had to be bolstered by elements of coercive control, the centerpiece of which was the 1906 Price Agreement. This set of contracts between Victor on one hand and their dealers and distributors on the other, formed the basis of the company's project of infrastructure maintenance for the better part of a decade. The most important element of the new Price Agreement was the establishment of set prices for all transactions. Every Victor product would be sold by the factory to all distributors at the same price. Distributors were to sell Victor goods at the same price to every dealer and dealers were obliged to do the same in retailing to the public. Prices were set by the Company itself and communicated to the trade via periodically-updated price lists.[7]

Victor employed a number of measures intended to prevent cheating. The 1906 contracts dictated that dealers and distributors "co-operate in absolute good faith with the Victor Talking

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[6] *Voice of the Victor,* March 1907, 7.

[7] *Voice of the Victor*, January 1910, 6.

Machine Company and inform them direct of any person, or persons… who, not being entitled to them, are enjoying our discounts." More generally, the contracts stipulated that signees "inform us direct of any dealer who is not living up to the contract system." Recalling the Edison Speaking Phonograph Company's earlier efforts to pit agents one against the other, Victor's efforts in this direction were generally successful, though not without their own liabilities. In January 1907 *The Voice* cautioned its readers "The Victor Company trusts that all Dealers will use discretion and be careful to enter only just complaints against their fellow Victor Dealers… an accusation against a Dealer on mere hearsay is unjust and unpleasant to all concerned." Given their position at the nodes of distribution, distributors were charged with policing duties. Not only were they responsible for signing their own agreements with the Company but were also charged with securing signed Victor dealers' contracts from their buyers and sending proof of the same along to the factory. For a time, it was necessary for dealers to send triplicate copies of their Victor contract to distributors who, in turn, remitted them to the factory. After undoubtedly losing many contracts in the mails, Victor began in 1907 issuing identification cards, to be presented with all first-time orders. Distributors' contracts further stipulated that they "must keep a register or list of the serial numbers of all machines sent to dealers and be in readiness to supply the Victor Talking Machine Company with information relative to the said goods at any time." Having built a network of legitimate, contractually-bound dealers, Victor was anxious that distributors sell to those dealers, and those alone.[8]

If these pre-emptive ounces of prevention failed to bring about salutary results, Victor stood at the ready with a—usually coercive—pound of "cure." Beginning in the September 1906

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[8] *Voice of the Victor,* January 1907, 7.

issue, *The Voice* published the names of dealers suspended for failure to abide by the terms of the agreement. The company and its network of dealers took the suspension list seriously, and in 1910 the Company suspended in one fell swoop nine dealerships on New York's East Side. In New York and elsewhere suspension served both as a humiliating deterrent to those who might cheat as well as a formal "blacklist," informing distributors that they were no longer permitted to sell to the parties named.

In particularly egregious cases of contract violation the company could (and did) sue. Such was the implicit threat of a September 1907 *The Voice* article warning "the Victor Company's position in this matter [of establishing sales prices] is beyond question, the Federal Courts having sustained them in their action, and Victor Dealers will either maintain the prices fixed by the Company, or suffer consequences." In 1908 Victor sued a price cutting New York dealer for patent infringement and was awarded an injunction against the dealer as well as damages amounting to $59.87. In September of the following year *The Voice* crowed with a headline reading "Price Cutting Suits from the Atlantic to the Pacific" before detailing the outcomes of suits filed in New York, Toledo and Portland. These, the magazine assured readers, were "only a few of the suits which have been instituted by the Victor Company for the benefit of Victor Dealers and Distributors." If any doubts lingered concerning Victor's commitment to the price agreement, they were dispelled in 1911, when an Eastside Victor Dealer was thrown in jail. He had earlier been fined $1500 for violating the Company's patent rights and had failed to pay.[9]

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[9] *Voice of the Victor,* September 1906, 8; *Voice of the Victor*, May-June 1910, 11; *Voice of the Victor,* September 1907, 6; *Voice of the Victor,* November, 1908, 16; *Voice of the Victor*, September, 1909, 18; *Voice of the Victor*, July-August, 1911, 12.

In the final reckoning, however, Victor relied less on policing, espionage and lawsuits than they did on appeals to their dealers' self-interest. In a 1906 *Talking Machine World* article reprinted in the May issue of *The Voice* the author conceded that some "new or ill-informed talking machine dealers, and even jobbers are wont to question the utility of the agreement" and that "many look upon it as being somewhat dictatorial or as a scheme of the strong manufacturer to coerce the dealer into doing something for the sole gain of the former." Fortunately, however, "the reputable dealer now sees the price agreement in an entirely different light and knows by practical demonstration that it is an instrument designed primarily for the good of the dealer, and that he is the greater gainer by its protection." "Where," asked the author, "is there a person who doubts that a manufacturer now selling his wares under price agreement principles could sell more goods (and get just as much for them wholesale) than if he should lay aside the price agreement?"[10]

Eldridge Reeves Johnson and his lieutenants were not merely trying to maximize short-term profit and they were not acting (necessarily) in the interests of their distributors and dealers. The company was, in fact, engaging in a more complex, more "twentieth century," calculation. One aspect of this more sophisticated economic calculus involved the semiotic value of prices themselves. In the same article quoted above, the *Voice* continued on, arguing that "the manufacturer gets comparatively little benefit, *except in so far as it prevents the wholesale cutting of prices which ultimately would destroy the reputation of his product…"* [emphasis added.] So much depends on this "except." Capitalizing on the circular semiosis so familiar to scholars of consumer capitalism, phonograph manufacturers (and especially Victor) recognized

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[10] *Voice of the Victor,* May, 1906, 7.

that the price of their goods were themselves commodities to be consumed. Consumers would grasp for any signal that might relay information about the worth of a prospective purchase and higher prices suggested higher worth. This semiotic quirk could be employed in any number of situations: one Cedar Rapids dealer, for instance informed *The Voice* that "two-cent stamps are used by the firm on all advertising matter," owing to the fact "that *the replies are 50% greater than when one-cent postage is used."* Elevated prices signaled value. On the other hand, the act of merely stabilizing prices imparted its own measure of perceived value. Drifting prices suggested the opaque and anxious set of processes and relationships that characterized capitalism of the old variety— the irrational, inhumane, and unrefined "Devil catch the hindmost" capitalism of the Gilded Age. In January 1907 *The Voice* published a letter from an unidentified (and probably fictitious)Victor customer, who allowed that "one great thing about a Victor is—it's the same price wherever you go. When you buy a Victor you know that you are paying just what each and every other Dealer in the United States would charge you. When bargains are offered, you immediately know that the original price permitted undue profits." Stable prices represented control. Rationality. Floating prices represented the irrational and inscrutable mechanisms of capitalism.[11]

The impetus to stabilize prices dovetailed with a contemporary preoccupation with high modernist "rationalization" of economies. The wasteful anarchy of open competition, in this understanding, should be supplanted with a new political economy of cooperation. In September of 1906, *The Voice of the Victor* praised one of its distributors who had recently "greatly developed Victor business in their territory by exploiting new avenues of trade without doing the

[11] *Voice of the Victor,* May, 1906, 7; *Voice of the Victor*, August, 1913, 17; *Voice of the Victor,* January, 1907, 7.

slightest injury to neighboring Victor Distributors, [and] In fact, their neighbors' Victor business has increased largely in the same time." Victor's tendency to view their supply infrastructure in cooperative rather than competitive terms escalated in the years to come. A 1908 meeting of the National Association of Talking Machine Jobbers elicited from *The Voice of the Victor* the opinion that "the concerted action of Jobber, Dealer and Manufacturer has eliminated many of the obstacles that retard healthy and satisfactory progress." In November of that year, the magazine expounded even more floridly on the same theme:

> The Victor Company is proud of its Dealers. Proud of the good work they are doing. Proud of the splendid organization that binds together in one great, harmonious working-body the Dealer, the Jobber, and the Victor Plant. The French people use a very expressive phrase-*esprit de corps… Esprit de corps* doesn't translate into English very well, but its essence is *co-operation, party spirit, enthusiastic action in a general undertaking.* Co-operation is acquired only by organization, and organization means—*Power.*

*The Voice*'s ecstatic praise of its collectivized sales force matches the most millenarian of high modernist rhetoric, whether of the democratic-capitalist or socialist variety. What was sought was a machine of flesh, steel, and information, conveying merchandise outward and profit inward.[12]

But just as in the case of maintaining prices, Victor's engineering endeavors in the realm of economic efficiency meshed with its semiotic project. At the 1913 meeting of the National Association of Talking Machine Jobbers at Niagara Falls, Victor's General Manager Louis F. Geissler expressed his desire that Victor dealers in all localities establish merchants associations among themselves, the object being simply to get acquainted and fraternize with your competitor; to eliminate hoggishness; to educate one another; to do away with unbusinesslike

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[12] *Voice of the Victor,* September, 1906, 7; *Voice of the Victor,* July, 1908, 2; *Voice of the Victor*, November, 1908.

methods, unbusinesslike and unprofitable offerings." Along with whatever other benefits might be derived from such associations, Geissler argued, "the entire community will notice the change in atmosphere, the courtesy of one Dealer towards another… The atmosphere of complaint, of doubt and of insinuation, which now permeates to the factory, will be well nigh removed…"[13]

Finally, the price agreement served to police Victor's distribution infrastructure—specifically its vast army of dealers—at two opposite margins. On one hand, the Company shunned the mass distributors much-loathed by the country's "mom and pop" businesses. *The Voice* reminded readers that "where there is no price agreement covering an article it is most often, if not always, sold by the stores at a reduction in price that the dealer cannot meet." A similar point was made by a dealer from Savannah, Georgia, who noted in his published letter to *The Voice* that mail-order houses generally will not handle a product which they cannot steeply discount. The pricing agreement kept such firms out of the market with the result that independent Victor dealers could successfully compete.

At the other extreme, the Company wished to exclude from the ranks of its dealerships such concerns as might be described as "fly by night." Under the 1906 agreement, distributors were prohibited from giving dealer's discounts to "anyone but a regularly established talking machine dealer in Victor goods." Even more importantly, they were to recognize as new dealers only those parties who owned a "regularly established store, or place of business," and who would "buy an initial order of three Victor machines, of different styles, and one hundred Victor records." "Small Dealers with ragged stock," *The Voice* informed its distributors, "can never be genuine Victor Dealers." The author conceded that "competition can generally [be] alluded to as

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[13] *Voice of the Victor*, October, 1913, 4.

'the life of the trade,'" but argued "it is no encouragement to a Dealer, nor is it good business on the part of Victor Distributors, to have a half-dozen little Dealers in a town or city that can only support or justify one or two, carrying a 'right' stock."[14]

By engineering infrastructure makeup in this way, Victor cultivated an army of middling proprietors. These men were neither soul-sucking national retailers driving honest businessmen into bankruptcy nor their counterparts, the proletarianized and precarious smalltime shopkeepers clinging to commercial life by methods degrading or immoral. By refusing to scatter their wares across legions of marginal dealerships, however, Victor also sought to achieve a critical density of merchandise within dealerships. Dealers with such superabundant stores were "in a position to display the goods to a better advantage, which in time has a tendency to promote their sales." The showroom, the Company believed, should appeal to the eye's love of abundance at the same time that it indicated the dealer's faith in Victor goods (dealer's paid for merchandise up front.) To incentivize them to pursue the Company's cornucopic ideal, special discounts were extended to any dealer who placed a one-time order of $500 or more.[15]

Intimately wound up in the aesthetic and economics of middling proprietorship pushed by the Victor Company, was a sense of bourgeois self-assuredness. During the rollout of the new price agreement in 1906 *The Voice* informed its readers that the Victor dealer would receive "the profit he is entitled to," allowing him to "prosecute his work of selling Victors without having to think about unfair competition." When in 1908 Victor once again tightened the rules on small-

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[14] *Voice of the Victor*, October, 1913, 4; *Voice of the Victor,* September, 1906, 7; *Voice of the Victor,* March, 1907, 8; *Voice of the Victor,* March, 1907, 8

[15] Victor Talking Machine Company 1906 Sales Agreement, reproduced in *Revision of Copyright Laws: Hearings Before the Committees on Patents of the Senate and House of Representatives* (Washington: Government Printing Office, 1908), 207-210.

time dealers *The Voice* justified the ratcheting down by expressing a desire that "those now handling our product may never be in fear of some poor representation being placed with some very weak merchant, a barber shop or other undesirable person." One letter—purportedly from a dealer—offered that "from the day the contract went into effect, the honest dealer has not been afraid to ask the full list price and stick to it, for the dishonest dealer is no longer getting the goods." Furthermore, the dealer need not worry about investing in a large amount of stock because "he knows that no one can undersell him and he can make a good straight legitimate profit with no trouble." The cultivation of middling proprietors not only looked good (to customers) but also felt good (to dealers.) Assured of their spot at the well of profit, Victor hoped, the dealers would spurn the mercenary behavior associated with the impersonal mail-order houses as well as the stench of proletarian necessity.[16]

Of course, all of this represented so much leading a horse to water and the intransigent equine in question might choose not to drink. The price agreement, therefore, also entailed a certain coercive tendency that helped ensure that dealers would seize the opportunities afforded them by the Company. Victor's emphasis on dealer cooperation was not meant to suggest the cessation of all competition. To the contrary, *The Voice* insisted that "no one has a right to complain of *legitimate* competition, and stimulating competition is the end sought by the Victor Company in the rulings sent out from time to time under the contract system." But what form did this "legitimate competition" take in the minds of Company management? In March 1909 *The Voice* informed readers "no other Dealer can sell Victors at a lower price than you—you are protected against price competition. But some Dealers outstrip others in their Victor enthusiasm.

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[16] *Voice of the Victor,* May, 1906, 1; *Voice of the Victor,* November, 1908, 5; *Voice of the Victor,* September, 1906, 5.

That's something the Victor Company can't protect you against— and you shouldn't need it." Price-cutting was illegitimate competition. With that option taken off the table, the Victor dealer had no choice but to cultivate enthusiasm for his job. If any dealers remained confused about the relationship between fixed prices and personal effort, Lewis Kean Cameron of Chicago's Wurlitzer Company expressed the point concretely, telling dealers that "your knowledge of Victrolas, your ability to print your selling arguments clearly, your power to impress your customers favorably, your personality, are all the 'inducements' you can offer as a Victor salesman to persuade your prospective purchasers to place his order with you. So it is up to every salesman to increase his personal efficiency to the utmost." The Victor dealer could not sell a cheaper phonograph than the dealer across town, but he could advertise more, learn his product line thoroughly, refine his sales pitch and make his store more appealing.[17]

The Company hoped that with these incentives and disincentives in mind, dealers would turn their attentions to the subtleties of sales and psychology, ultimately cultivating a kind of commercial virtuosity that replaced the mechanical aptitude demanded of an earlier generation of phonograph purveyors. In a prize-winning essay entitled "Four Elements of Success in Increasing Record Business," F. Hess of Cleveland, Ohio enjoined his fellow dealers to "be familiar with your stock, the names and numbers of records, especially the popular ones… When [a customer] calls for a record by name or by number, you should be able to wheel about, pick it out of the rack, and turn it loose at once…" Hess linked this need for competence to the demands of efficiency, but also recognizes a certain kinesthetic component to the art of selling: "It is a wonderful help in selling records if you can move along smoothly and swiftly, answering

[17] *Voice of the Victor,* January, 1907, 7; *Voice of the Victor,* March, 1909, 8; *Voice of the Victor*, March, 1913, 16.

questions as they are put instead of stammering and fingering through a catalogue." In October 1913 *The Voice* again emphasized the value of a refined comportment: "Almost every day, certainly every week, you meet some one whose way of doing things or saying them excites your admiration. Don't you suppose the same qualities which excite your admiration have the same effect on others?"[18]

Beyond expertly handling records, the dealer was expected to become adept at reading the customer, able to "study his tastes, and anticipate his wants" with the aim of being able to "sell him more than he intended to buy when he first came in your store." In a regular article entitled "If I were a Dealer," Victor customer F.W. Lawson made an impassioned plea for profiling, writing that "a great deal can be learned from a person's dress, from his, or her conversation, from the neighborhood in which they live, by approximating their apparent age." Further, in watching customers at his local Victor dealership, Lawson had discovered that "in eight cases out of ten, the people who wear the loudest clothes like the liveliest records." Victor sometimes went to great lengths to inculcate the values of commercial virtuosity called for in the pages of *The Voice.* In 1911 the Company offered to all dealers an index system consisting of 200 cards packed in a handsome oak case with alphabetized dividers for easy reference. Each card was to represent a dossier on a single customer, with space given at the top for name and address but also for the style of machine purchased and on what terms—cash down or payments. These final two pieces of information would assist later in determining what grade of records to try and sell him or her, with operatic and symphonic selections trotted out for those with plenty of money and more earthy fare for those with little. As the customer returned for record purchases

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[18] *Voice of the Victor,* May, 1906, 4; *Voice of the Victor*, October, 1913, 3.

in the months and years to follow these purchases too would be recorded, as would "information regarding names of her friends who enjoy the Victor, little characteristics, family history, etc., that have come under the observation of you or your salespeople…"[19]

Victor was also quick to offer dealers' advice on their showrooms and here, *The Voice* was just as eager to impress upon their reader's a disciplined middle-class aesthetic. The magazine praised Sol Bloom's Philadelphia dealership for its "handsome interior furnishings," "beautiful mural decorations," and its use of electricity, noting that these refinements served as "a source of admiration to the visitors who form the vanguard of fall patronage." In 1908, the Phillip Werlein Co. of New Orleans refurbished its Victor department and moved it from the fourth floor of its building to the ground floor. *The Voice* noted that these "arrangements for the comfort and convenience of patrons are said to be the finest and most complete in the South." And at the Pittsburgh showroom of McCreery & Co. "a delightfully hospitable appearance is presented by the deep luxurious chairs scattered about the studio, while the artistic atmosphere of the place is heightened by its beautiful pictures, statuary, tapestries and Oriental rugs." As if to underscore the domesticity of the space, the author noted that "the parlors are provided with all the comforts and conveniences of a private music room…"[20]

The politico-economic-aesthetic project undertaken by the Victor Talking Machine Company sought to conceal from view the mechanisms of corporate capitalism. Factory-set prices denied the primacy of the irrational "higgling of the market," while culling mail-order houses and "shoestring operators" from its sales network meant Victor could distance itself from

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[19] *Voice of the Victor*, May, 1908, 8; *Voice of the Victor*, July 1913, 8; *Voice of the Victor*, January-February, 1911, 4.

[20] *Voice of the Victor,* Sept, 1908, 2; *Voice of the Victor*, May, 1913, 5.

the sociological pathology represented by proletarianization as well as "the trusts." At the same time, the progressive ideal of cooperation over competition entailed a smooth interplay between manufacturer, distributors, and dealers, central to keeping the Company's mechanism humming along quietly under the hood where no one would notice it. Further, the price agreement ensured a kind of infrastructure transparency, reassuring individual dealers that their colleagues were not underselling them, and in turn, removing their own motivation to cut prices. The dealer could fill his store with Victor goods, ask full price for them, and cultivate a familiar easiness with his stock and his craft, replacing the old phonograph purveyor's mechanical aptitude with a virtuosity in salesmanship.

Within the dealership itself, the company encouraged its proxies to strive for a decidedly non-commercial presentation, with the intended effect being that of the bourgeois parlor. Even the salesman's comportment could come laden with disconcerting evidences of the wider commercial context, and he was instructed to avoid habits that might interrupt the unconscious set of psychological processes leading from unarticulated desire to consummated sale. Of the adept salesmen, *The Voice* said "he knows the exact place where each record can be found, so that he can hand it out the minute it is asked for" the reasoning being that "people who are patient enough at any other time are always in a hurry when they go to buy anything," and that "if you keep them waiting a few minutes they may change their minds." Whether intentional or not, however, *The Voice*'s advice on this count did more than capitalize on the impetuous psychology of consumerism. It also served to conceal the network of relationships standing back of the sale. In 1907 *The Voice* asked distributors to evaluate the quality of the dealers they worked with: "does he keep his stock up-to-date, and so arranged that he can fill 75 per cent of

his orders from hist stock on hand? Or must he give the stereotyped reply to the request for certain numbers: 'I haven't them in stock, but will send for them?'" The sales clerk who did not master his craft failed to produce for customers the drama of commercial abundance demanded by the Victor Company. He thrust in his customers' faces the exact reality that the magic of consumer capitalism sought to conceal: that the goods were not safe and familiar productions of the native soil, but rather mysterious fruits of indeterminate value, produced by distant and possibly dishonest hands. They had to be "sent for."[21]

**Quality**

When the magic was performed with due diligence however, the occlusion of labor and capital presented yet another problem—an "agency gap." Who was responsible for these machines and these records and these advertisements that arrived, as if by magic, in one's life? The phonograph would not foist on anyone fraught or opaque capitalistic relationships, but it was just as disconcerting to have no one to credit—or blame—for the machine's existence. To allay these anxieties the Victor Company offered itself as an omnipresent guarantor of "Quality." Victor's close association of the company, its products and its agents with a nearly reified conception of "Quality" was demonstrated by *The Voice* in 1907:

> …The success of the Victor is built on one idea, 'Quality.' No effort or expense has been spared in making the Victor a perfect exemplification of all that 'Quality' stands for. The markets of the world are sought and searched, and that which is 'best' is all that is good enough for the Victor. No single detail in the manufacture of the Victor is less important than another, be it Cabinet, Motor, Horn or Record. The Dog, and the word 'Victor,' wherever they appear, stand for 'Quality.'… Your store should look 'Quality'; your advertising talk 'Quality;' Your salesmen should so study the Victor and Victor Records as to become imbued with the full meaning of Victor 'Quality.' The Victor has 'Quality,' and 'Quality' sells.

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[21] *Voice of the Victor*, September, 1909, 14; *Voice of the Victor,* March, 1907, 8.

In its pursuit of this "Quality" the company grew increasingly anxious to control the optics of its infrastructure, replacing the anarchy of thousands of self-directed agents with a centrally-planned aesthetic uniformity.[22]

One of the most obvious manifestations of this effort was Victor's ever-evolving approach to advertising. While the Company was for a while content to handle its end of the bargain by running manufacturer's ads in national magazines, the years leading up to WWI found the company increasingly willing to lend its hand to the shaping of dealers' and distributors' advertising efforts. The Company stood at the ready with a line of "Ready-Made Newspaper Electrotypes." Expertly crafted by Victor's in-house marketing department, these mass-reproduced and uniform advertisements were sent to dealers for only the price of postage. Those agents who insisted on going their own way with their marketing efforts were encouraged to send in recently designed ads to the *Voice of the Victor.* These were made the subject of an occasional column called "Good Advertisements Made Better," in which their submissions were streamlined, de-cluttered, and amped up in conformity with the attention-grabbing advertising philosophy of the day. Starting in 1912, the Company intensified its efforts to place uniform promotional copy and illustrations before the public, instituting a number of innovative ad campaigns. In March, for example, *The Voice* informed readers that since "there is hardly any class of advertising more immediately profitable for Victor Dealers in cities than street-car advertising," the Company was offering to send to all dealers free ready-made placards for that purpose. Beginning the following month dealers could order from the Company lantern slides advertising their store as the local Victor agency, and "arrange to have them shown nightly at the

[22] *Voice of the Victor,* May, 1907, 7.

moving picture parlors." The dealerships themselves, as the brick-and-mortar instantiation of Victor's project of ubiquitous excellence, came in for especially intense branding. In June of 1912 *The Voice* announced that the Brilliant Manufacturing Company of Philadelphia had agreed to manufacture "Victor" signs for dealerships, 13 feet long by 3 1/2 feet tall and lighted by 14 electrical lamps. The Pennsylvania Rubber Company of Jeanette, Pennsylvania, could supply one with a sturdily-made door mat, whose center had been inlaid with the Victor fox terrier logo and "His Master's Voice."[23]

The provisions of the price agreement had done much to militate against the dealer's natural tendency to serve self-interest at the expense of the Company and the customer. Still, he or she presented a potential threat to the promises of unmediated "Quality" made by Victor. The solution to this dilemma lay in co-opting the Victor Dealer (always capitalized like a proper noun in company literature) into the brand itself. This could entail relatively straightforward marketing strategy, as when *The Voice* insisted that "it's right up to each Victor Dealer to associate his store so closely with the Victor and Victor advertising, that he will be turned to as the right place for the right kind of Victor service." Similarly the magazine urged its readers in October 1913, that "not only should your advertisements be coupled with ours in the daily papers…" but one should also "have your local sign painter or card-write prepare a series of cards using the same wording as the headlines of the advertisements, [and] place them in your windows and about your store." If these measures failed to assuage prospective buyers that the man before them was truly a "Victor Dealer" the salesman's body could even be colonized with the Victor logo. By 1912 the company had "completed arrangements with a leading manufacturer" to supply "His Master's

[23] *Voice of the Victor*, February, 1913, 15; *Voice of the Victor*, March, 1912, 15; *Voice of the Victor,* April, 1912, 13; *Voice of the Victor*, June, 1912, 13; *Voice of the Victor*, April, 1912, 9.

Voice" watch fobs (sterling silver) and scarf pins (sterling silver or 10-karat gold) to the trade. The following year, they made available to dealers a key ring of the same type.[24]

The most intensely scrutinized aspect of the dealership, however, was the store window. In Victor's evolving attitude and approach to window dressing lay clues to the complex relationships that obtained between Victor's aesthetic and economic prerogatives and the cultural and material contexts in which the Company pursued them. In the spring of 1906 the Company held a window-dressing competition between dealers with a purse of several $10 prizes and a $50 grand prize. Photographs of the winning entries, which ran in the May issue of *The Voice*, evidenced a decidedly earthy tone on the part of the dealers, many of whom had taken inspiration from the Easter holiday. The window of C.W. Hjort of Ottawa, Kansas, featured three Victor phonographs on a straw-strewn floor surrounded by chicks and rabbits. A banner above read "The Old and Young Chirp For The Victor." Ottawa evidently boasted more than one window-dressing prodigy and Hjort's competitor George Mauck, upped the stakes when he depicted his own clutch of Easter chicks in 'a typical Kansas chicken house'" with walls "made of old boards covered with newspapers, roughly patched with Victor signs." Similarly, the Grand Prize Winner featured "4 large rabbits and 50 small ones crowding up to hear the stunts" performed by a Victor No. 4 phonograph. The background "was made of green baize to carry out the forest effect and decorated with an arrangement of transparent trade-mark pictures," while "the floor of the window represent[ed] a hilly glen, entirely covered with natural moss."

Other windows depicted concrete scenes of phonograph consumption, often placing them in motion or outdoors as if to emphasize their readiness to move into the consumer's life. A

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[24] *Voice of the Victor,* October, 1911, 3; *Voice of the Victor*, October, 1913, 14; *Voice of the Victor*, May, 1912, 7; *Voice of the Victor*, November, 1913, 19.

Detroit window designed by Max Strassburg, for example, depicted a woman reclining with parasol in the stern of a canoe, serenaded by a large-horn Victor phonograph. In 1909, Lyon & Healy of Chicago developed a window depicting "a forest glade with realistic accessories in which a charming lady was entertaining her husband in hunter's costume before the flap of their tent with a Victor talking machine." *The Voice* added that "no effect of theatrical art was missed in making this picture the similitude of fact and the manikins were well disposed and lifelike."[25]

Victor was loath to discourage initiative on the part of its agents, but as the Company refined its own aesthetic sensibility it grew dissatisfied with the general quality of these window displays. A frustrated note published in the March 1909 issue of *The Voice* enjoined dealers to "get away from the idea that window display means jamming the whole window full of samples of everything you carry in stock. A few articles in a window will attract more attention than a window that is crowded; and the people will be more impressed by what they see because they are not confused by a multitude of articles." Two years prior, the magazine had praised as "beautiful," "very attractive," and "most appropriate to the season" a remarkably busy window by the Musical Echo Company oh Philadelphia. A variation on the canoe-woman-phonograph theme, it featured two female mannequins, a pair of crossed oars, fishing rods, polo equipment, tennis racquets, a life-size replica of Nipper and two Victor phonographs in addition to the aforementioned watercraft—all in front of a rough-hewn log pavilion.[26]

This kind of Victorian bric-a-brac would no longer pass muster, but fortunately, a solution to this anarchic state of affairs had been germinating for several years in the mind of one Ellis

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[25] *Voice of the Victor,* May, 1906, 5; *Voice of the Victor,* May, 1906, 2; *Voice of the Victor,* May, 1906, 3; *Voice of the Victor*, July, 1909, 9.

[26] *Voice of the Victor,* March, 1909, 2; *Voice of the Victor,* July, 1907, 9.

Hansen the window dresser for Victor dealer Sherman, Clay & Co. of San Francisco. In 1906 the San Francisco Earthquake destroyed Hansen's workplace and home, and he was forced with many thousands of others to set up camp outside the city. A week before the earthquake he had received news that his entry in *The Voice* window dressing competition had won a $10 prize, and as he tossed and turned with a hollow belly beneath the California stars, he clutched that thought like a talisman against his miseries. As Hansen told it, on the second night of his wilderness sojourn he dreamt that his prize window could be reproduced over and over and shipped to all Victor dealers in the country. He shared the idea in a letter to Victor's General Manager who politely declined Hansen's advice. Two years later, however, the Company concluded that their dealers did, in fact, need all the help they could get, and tapped Hansen to run their new "Ready-Made Victor Windows" department.[27]

At its inception, this "department" consisted of Hansen, an artist, and an errand boy, but quickly grew to a fifteen-person outfit when orders started pouring in for the windows. Notwithstanding this augmented workforce, the Company struggled to keep up with demand and was critically behind in the filling of orders by September of 1909. By April 1912, Victor claimed to have sent Ready-Made windows not only to every part of the United States but also to "England, France, Germany, Cuba, Porto Rico, Philippine Islands, China, Japan, Mexico and South America." In 1909, *The Voice* apprised readers of just how this business of Ready-Made Windows worked. After assembling a new window design at the factory "each display is photographed…and all the paraphernalia and parts are neatly marked for identification so that any one who gets the parts can easily arrange the same display…" The ready-made window

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[27] *Voice of the Victor,* December, 1911, 8.

display together with photograph and complete instructions were then packed for shipment and sent out to dealers. The displays themselves consisted of three elements the first of which was a range of heavy-duty "paraphernalia"— connecting rods, platforms, frames, record display easels, and the like. A complete set of this paraphernalia cost the dealer $18.50 but could be used with all subsequent Ready-Made designs. Secondly, most of the Ready-Made designs required the use of actual Victor products—machines and records—and these were to be taken, presumably, from the dealer's own stock. Finally, the focal point of each window display consisted of painted cardboard and paper elements which were to be mounted on the aforementioned paraphernalia.[28]

The manufacture of these elements entailed a Warhol-esque production process in which the initial design was created by artists and then handed over to teams of artisans whose job it was to turn one piece of art into hundreds or thousands. The paint shop replicated by hand copies of the artists' painted backgrounds and other elements, while a group of female employees was set the task of coloring enlarged photographs for use as cardboard cutouts. In another area employees—also mostly women—designed and cut out stencils and hand-lettered display cards. Having wended their way through these sub-departments the Ready-Made Window Displays were taken to the Packing and Shipping Room, where they were sent out to the nations Victor dealers. *The Voice* emphasized that by manufacturing these constituent parts in bulk and spreading the cost over hundreds or even thousands of dealers, materials costs were slashed. Even more importantly, the program "makes it possible for Victor Dealers everywhere to avail themselves of the services of a high-priced window designer at the very lowest cost." Victor, in

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[28] *Voice of the Victor*, September, 1909; *Voice of the Victor*, March, 1909, 3; *Voice of the Victor*, May, 1909, 5; *Voice of the Victor*, September, 1909, 4; *Voice of the Victor,* April, 1912, 6; *Voice of the Victor*, September, 1909, 7-9.

other words, had ingeniously massified the traditionally imaginative labor of window-dressing, driving down its cost by centralizing it and capitalizing on economies of scale. *The Voice* hit even more explicitly on the centralizing tendency of the Ready-Made windows in October 1910, informing readers that "their small cost enables even the smallest Dealer to take advantage of the original ideas of this biggest and best department of its kind in the world." [29]

Hansen emphasized the connection between the Ready-Made Windows and the ethos of virtuosity imposed on dealers by the price agreement, arguing that since "bargain sales, cut prices and other foolish inducements are out of the question for Victor Dealers, it becomes still more important to induce people to come to your store through well-dressed and interesting window displays." The aspiration of providing dealers with "well-dressed and interesting window displays" meant that Hansen's Ready-Mades dripped with a particular sensibility— one that tells us much about the project pursued by his employer, the Victor Talking Machine Company. First, they tended toward a highly-muted representationalism. Dealers' windows had often favored outdoor scenes with fake grass and animals— sometimes listening to a phonograph which was thereby situated as a concrete material presence within the imaginary world of the scene. Other dealers' windows employed mannequins grappling with the ready-to-hand world, camping or canoeing while enjoying their Victor machines. In the early Ready-Made Window displays, human beings have moved from depictions of flesh-and-blood human beings to depictions of gilt-framed portraits *of* human beings— now no longer consumers of the phonograph but the opera stars whose records the Company hoped to push. Phonographs in these

[29] *Voice of the Victor,* March, 1909, 3; *Voice of the Victor*, September-October, 1910, 14.

displays are turned outward at the "fourth wall" emphasizing the non-representational aspect of their presence and blurring the line between the display and its audience.[30]

The approach of the early Ready-Made Windows is geometric and the dominant motif here is the circle. Forward-facing phonographs presented viewers with a battery of circular horn mouths and in most designs this effect was compounded by dozens of easel-mounted disc records. These records, in turn, were displayed in sweeping curves, ovals, and circles, reiterating the radial logic of the horns and disc records at a wider angle of view. Further, an uncompromising symmetry pervaded the first catalogue of Ready-Made windows, pushing the eye toward the middle of the window and emphasizing the predominance of center over periphery. In some designs, the domination of center over periphery was made especially explicit. Victor Window No. 3, the "World's Greatest Singers Display" featured a circle of twelve disc records mounted on easels at the center of the field. To each was appended a white streamer running outward and connecting to a placard featuring a profile of the recording star associated with that record. The display is intensely radial in its symmetry, conjuring the octopus of "influence" so loathed by political cartoonists.[31]

The appearance of the Ready-Made Window displays represented a tightly wound chord of material and intellectual influences. One one hand, Victor sought to impose its taut conception of aesthetic refinement and to that end, the designs embodied the "weightless," ethereal, detached tone of much *fin-de-siècle* bourgeois culture. Artistry in this vein entailed denial of the day-to-day, the tawdry, and the instrumental. Chicks and bunnies (which may have come to

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[30] *Voice of the Victor,* April, 1912, 6.

[31] *Voice of the Victor*, September, 1909, 4-8.

Easter through a syncretic relationship with earlier pagan fertility rites) had to go. Folksy camping and canoeing mannequins had to go. In their place, Victor offered rarefied and abstract geometric motifs that denied the material circumstances of production— and reproduction. On the other hand, this aesthetic was partially dictated by the limitations of the medium. The Ready-Made displays had to be made cheaply and, above all, that meant simplicity. If the artists produced backdrops too finely wrought for the painters to duplicate at top speed they would be worthless—dealers could not afford to pay for the requisite labor. For the same reason, three-dimensional design elements were supplanted in large measure by flat cardboard cutouts, colorized photographs, and placards, which were far cheaper to make and ship through the mails. In any event, the first batch of designs ranged in price from $.80 to $10.05.

But here we have come full circle, because the material and economic constraints that shaped the materiality of the displays were also constituent elements of the social reality to which the bourgeois aesthetic was an *intellectual* response in the first place. The visual vocabulary of sparse, decontextualized abstraction stood as an aesthetic corollary to the rationalized and abstract notion of "value" embedded in the capitalist cash nexus. It is the same abstraction that Newton forwarded in his understanding of mathematics as the language of nature and which Descartes forwarded with his evacuated, context-less understanding of space. It is the same abstract and context-less metaphysics that underwrote the Early Modern faith in the equality of human beings, independent of accidents of birth or breeding. The Ready-Made Windows spoke in the language of the bourgeois aesthetic— a language meant to deny the mercenary and grasping implications of "art with a purpose." But this language of simple, iterated, geometric designs also owed its existence to the shaping power of these same

capitalistic productive forces. The aesthetic was a triangulation of these two influences—the strictures of economical fabrication and distribution on one hand, and the psychological impetus to deny those very circumstances of production, on the other.

The Early Modern world which had underwritten the faith in abstraction as the King's Road to understanding had also insisted on a theoretical, disembodied and neutral observer to epistemologically "center" the world. "Objectivity" in scientific representation required the natural philosopher to look past the accidental and create an image of nature that denied the specificities of this or that specimen and the interpretive quirks of the imperfect observer. The abstract equality of men found realization in the equal subjection of all to the laws of the superordinate state. Similarly, the intense symmetry of the Ready-Mades tended to direct the eye toward the center of the field and in many cases, the domination of center over periphery was made explicit. Another Ready-Made, Victor Window No. 7, the "Special Thanksgiving Window" conveys the same visual language of a dominant center and an ancillary periphery, but with one more semiotic valence. Here fourteen disc records form a circle at the center of the field. Radiating outward from them are 14 pennant shaped placards labeled with genres of recordings — vaudeville records, band records, minstrel records, and so forth— the assemblage strongly evoking a sun.[32] One of the most deeply resonant applications of solar imagery in modernity was that of France's Louis XIV who declared himself the "Sun King," a title which declared his supremacy and centrality in all affairs of state. Importantly, the title also emphasized the *unmediated* subjection of all parties to his authority. The feudal world had been built out of a universe of personalized relationships, suffused with local and contingent circumstances of

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[32] *Voice of the Victor*, September, 1909, 4-8.

tradition and prescription, the sovereign's authority exercised only through intermediaries. The Sun King concealed his network and insisted on unmediated authority over all his subjects. The promise of "Victor Quality" rested on a similar politico-economic-aesthetic mechanism. The Company—represented by its omnipresent trademarks—guaranteed Quality. The conception of "quality" which the Victor Company worked toward drew on nineteenth century ideas of artistic transcendence in which works denied the material circumstances of their production to attain something higher. This Progressive Era understanding of excellence lent to Victor's infrastructure-building project a peculiar tendency: infrastructure—whenever possible—had to be made invisible. The tawdry business of getting and spending; of supply and demand; of competition; and distribution chains had to be hidden from eye.

**Conclusion**

In early 1910 *The Voice of the Victor* announced a change of policy regarding their line of Ready-Made Windows. "Since issuing our first catalog of window displays" they informed the trade, they had "learned that a special window devoted to one particular artist, or in commemoration of national holidays like Thanksgiving Day or Christmas, is the true way to create strong and convincing advertising from show window display, and our future windows will be built accordingly."[33] As promised, the Company's window designs abandoned hardline abstraction in the months to follow and depicted concrete people and concrete events. The cautious first steps of this evolution can be seen in Ready-Made Windows erected at the National Association of Piano Dealers Convention in Richmond, Virginia, a few months later. The display belonging to the Cable Piano Company, recapitulated Hansen's earlier preoccupation with circles

[33] *Voice of the Victor*, January, 1910, 14.

and radial symmetry, but the rarefied geometrics of streamers and pennants have been replaced by a circle of outward-pointing brass and wind instruments. The window belonging to the Victor Company was overseen by Hansen himself, and retained the earlier radial orientation by placing disc records and portraits not on a floating (and inconspicuous) iron frame as earlier, but on the extravagantly fanned tail feathers of a peacock. In these two windows, recording stars are depicted, but in both cases they're penned up inside classical conventions of representation. In the first, the disembodied heads of John Philip Sousa and Arthur Pryor peer out from behind rings of laurel. Caruso and Melba[?] are corralled in like fashion in the second window, but a third Ready-Made display erected by the Walter D. Moses Company abandons the convention of containing recording stars, and features a not-quite-lifesize cardboard cutout of Enrico Caruso. The familiar ring of records persists in this design but encircles and focuses attention on Caruso. The ubiquitous Victor phonographs have been pared down to a duo of machines, while the musical instruments depicted in the first window are echoed by a pair of pianos.[34]

Representationalism proliferated in the months that followed. Window Display No. 24, featured a Fourth of July motif with cardboard cutouts of the "Spirit of '76" fifer and drummers. Victor Grand Opera Window Display No. 25 "the great proscenium arch of the Metropolitan Opera House…reproduced in exact miniature, as regards both design and colors." The five foot-wide stage was crowded with cardboard cutouts of Victor opera stars, each seventeen inches tall. A set of "magic lantern" slides offered in May jettisoned direct appeals to buy for images of Caruso, Melba and others performing scenes from *Faust.* Nipper persists in heeding His Master's Voice in these images and the Victrola remains. But both have diminished drastically in size and

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[34] *Voice of the Victor*, May-June, 1910, 14.

have moved out of the center of the images. The most dramatic development in aesthetic policy, however, happened in Victor's Ready-Made Windows Department, which unveiled its first motorized display October 1911. Three cutout figures from *Faust* stand interspersed with phonographs and records. "Faust hesitates to enter into the bargain proposed by Mephisto, who thereupon tempts him with the vision of the beautiful Marguerite at her spinning wheel…the right foot of Marguerite is treading the pedal, and the wheel is kept turning, just as though the figure were human and actually spinning." Another mechanical window prepared in time for the 1912 holiday season depicted a grand opera stage with glowing stage lights, raising and lowering curtains and six scenes which automatically changed between "acts."[35]

There had existed for several years indications that Victor's vision of rarefied and timeless "Quality" would have to be amended as dealers—intermediaries between factory and consumer—had long resisted the Company's totalizing vision. In 1913 L.K. Cameron described in a letter to the *Voice a* window display built by the Rudolph Wurlitzer Company:

> Everything in it is absolutely natural. We have real grass growing, live plants, a small lake with real water, in which young ducks are swimming, three large wild ducks and two live rabbits. There is also a real waterfall running continually…There is a small log cabin built in the background, and this also is built of real logs… The Victrola is placed, naturally, in the foreground, as if someone has been playing the machine and left a couple of records lying about. The folio for Victor records is conveniently attached, and a 'Book of the Opera' is laid where the owner of the cottage placed it as he went into the house."

That same year, the E.W. Owen Company of Mankato, Minnesota built a display window featuring "a background of green oak boughs, which it is necessary to replace every other day." A fire pit made of "common boulders, laid upon a bed of ashes, in which is imbedded an electric

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[35] *Voice of the Victor*, May-June, 1911, 12; *Voice of the Victor*, March-April, 1911, 12; *Voice of the Victor*, May, 1913, 6; *Voice of the Victor,* October, 1911, 10-11; *Voice of the Victor,* November, 1912, 10-11.

light bulb with a dark red paper covering" accompanied a Victrola "upon a natural stump sawed off just at the surface of the ground." Grass mats, wind-blown by an electric fan, lay scattered around a tent, inside of which the window dresser "carelessly threw an old pair of boots and a couple of blankets, and other articles which might be found in any camper's outfit." At the same time, the refined domesticity of the ideal Victor showroom seemed, for some dealers, unequal to the imaginative work of selling phonographs. True, the transformation of a commercial space into a residential space represented a kind of creative sleight-of-hand but some dealers seemed alive to more expansive possibilities for their showrooms. A year after Sol Bloom refurbished his Philadelphia location, he did the same for his dealership on Fifth Avenue. Among the "unique demonstrating apartments" he built in the basement was one built to look like "a ship's cabin, with the familiar port-holes and swimming fish in inclosure; a Japanese tea room, cool and restful;" and "a Greek room, in strictly classical style." He later added an "Egyptian Room" as well as a room decorated as a "rustic garden." Similarly, Wanamaker's Department Store in Philadelphia hosted regular phonograph concerts in their newly-built "Egyptian Hall," apparently "a veritable temple of music;" decorated with "allegorical figures symbolic of Music," "massive pillars," "huge Sphinxes"and richly-stained glass, wrought appropriately into mouths of the Egyptian lotus."[36]

The Victor Talking Machine Company discovered that in distributing phonographs and records, no less so than in building railroads or selling sausage, space is money. The torrents of production unleashed by late nineteenth century improvements in manufacturing, finance, accounting and labor management required a concomitant increase in the scope of distribution.

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[36] *Voice of the Victor*, September, 1913, 17; *Voice of the Victor*, October, 1913, 19; *Voice of the Victor*, September, 1909, 15; *The Voice of the Victor*, September 1908, supplement.

More products have to find more buyers. But while space holds out the promise of increased efficiency and profits it also provokes anxieties. For the consumer, the problem is one of value: Is this good… *good?* What is it worth? The very long distances and obscured relationships entailed in bringing a Victrola to Ottawa, Kansas, ensured that the price attached to it was difficult to assess. How much money did the cigar-smoking suits in Camden make off the sale? The varnishers, and carpenters, and mechanics? The railroads? The distributors? And that grinning, slick-haired wag at the dealership—what was his cut?

Further, how could all of this getting and spending produce anything of *artistic value*? Art is the province of magnanimous and aristocratic souls like Signor Caruso—not that of carpenters and porters and salesmen. In order to assuage these concerns, the company worked intensely to remove the phonograph from the semiotic taint of industrial capitalism. It strove first to conceal the tawdry and rapacious mechanisms of industrial capitalism and then sought to replace them with the optics of cooperative and fair petty bourgeois capitalism whose commitment to excellence was guaranteed by a monolithic mythical entity called "Victor," representing less the brick-and-mortar institution headquartered in New Jersey than a transcendent, timeless and placeless distillation of the Platonic ideal of quality. The obfuscating primacy of "quality" could help to further conceal the mercenary underpinnings of the sale. After all, *The Voice* informed readers, "price is the last consideration when you get the thing you really want."[37]

Victor sought to assure consumers that its products were worthy of their consideration, and to that end pursued a strategy very similar to that of its corporate contemporaries Nabisco and Quaker Oats. Under the geographically-distended circumstances of consumer capitalism,

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[37] *Voice of the Victor*, December, 1912, 10.

brandnames and trademarks provided some assurance of quality but they also helped to de-emphasize the troublingly un-coopted intermediaries between the factory and the breakfast table. The Victor brand assured customers that what they were buying was true "culture" and not some adulterated version thereof. But Victor mounted this campaign just as the discursive parameters of "culture" were changing. Starting around the turn of the twentieth century, the Arnoldian formulation of culture as "the best that has been thought and said," began to lose purchase in the popular mind. What replaced it was, in many ways, an exact inversion of the older bourgeois ideal. Instead of art as the capturing of placeless, timeless, abstract "truth" it became an arena for "authenticity." Rather than the refined and the perfected, audiences increasingly yearned for the "undiluted" and the "real." Roosevelt's injunction to embrace the Strenuous Life found middle class men (and women) leaving behind their parlors for weekends of camping and canoeing, but it also came as part of a larger complex of ideas about the real and the ideal, the beautiful and the ugly.

In removing from view their commercial infrastructure, Victor contributed unwittingly to a larger current of cultural transformation. With the social apparatus of distribution swept out of sight, a new understanding of sound recording capitalizing on and reinforcing the newfound valorization of "authenticity" was given breathing room. The effacement of commercial infrastructures, however, represented a necessary but not sufficient condition for the emergence of sonic modernity. In the next chapter we turn to the evolution of phonographic apparatus, and its implications for the perception of recorded sounds.

# CHAPTER V

## Not a Machine

By 1913 the modern trade in talking machines no longer relied on public exhibitions, business rentals, or even nickel-in-slot arcades but on domestic consumption. Victor, Columbia and Edison now manufactured phonographs principally for private domestic use and these machines and their ubiquitous cylinder and disc records had insinuated themselves into millions of middle class parlors in the United States and beyond. In that year Louis Jay Gerson, head of the Talking Machine Department at Wanamaker's Department Store of Philadelphia offered to readers of *The Voice* a few observations on the development of the trade. The modern business of "selling sound," said Gerson, lay in the phonograph parlors of the 1890s, but the parlors ultimately presented an obstacle on the road to massification because a great many people could not go to them. Gerson was correct; most Americans lived outside of the densely-inhabited regions where the phonograph parlor made "business sense," and even though single or paired coin-slot machines occasionally thrived in small towns or even rural outposts this was a game hardly worth the serious capitalist's candle. On the other hand, the phonograph parlor itself—owing to its social promiscuity and its association with commerce, transience, prurience and crime—would have discouraged the custom of many middle class consumers. No, the

phonograph parlor would never do. "As all the homes could not come to the amusement parlor," Gerson recalled," the phonograph had to go to the homes."[1]

Pursuing this tack, however, had required more than convincing Americans that they wanted a talking machine in their homes. Beginning around 1900, manufacturers and dealers had to build new infrastructures to make the phonograph a plausible and profitable home commodity and this entailed reconfiguring the material "infrastructure" of the phonographic apparatus itself, as well as the less-tangible web of information and money on which the apparatus relied. First, the phonograph of 1895 had been mechanically incompatible with domestic consumption as it relied on electric motors requiring either dangerous, messy and unreliable batteries or "wall current," a rarity in all but the wealthiest homes. Another source of power was required. At the same time, the phonograph industry had lacked the financial technologies necessary to move the phonograph into the home. In the 1890s, the nickel-in-slot attachment had facilitated a kind of free market "socialization," spreading the cost of recorded sound out over hundreds or even thousands of anonymous strangers. After 1900, the phonograph still cost more than most individuals could (or wanted to) put on the hogshead, but allowing the million into one's parlor to help subsidize a phonograph habit one nickel at a time was an unworkable solution. The financial relationships implicated in the phonograph purchase, no less so than the mechanical "infrastructure" of the apparatus itself, required a thoroughgoing reconfiguration.

Other peculiarities of the domestic phonograph market intensified the need to re-configure infrastructures. As phonograph consumption shifted from the arcade to the home, the industry also changed its focus from the sale of phonographs themselves to the marketing of

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[1] *Voice of the Victor*, September, 1913.

cylinder and disc recordings. Ranging in price from less than ten dollars up to several thousand dollars, the talking machine promised a healthy commission for the enterprising salesman and manufacturers were no less gratified to see their talking machines find takers. But manufacturers in particular came soon to recognize a potentiality embedded in recordings that was not matched in the talking machine itself, nor in any other commodity for that matter: Recordings held out to consumers the promise of infinite novelty. We discuss why that was in Chapter 6 but for now it is enough to say that the perception of unlimited variety among record consumers meant the possibility of infinite sales for the industry. Because of this enthusiasm for record sales, the sale and delivery of a home phonograph marked only the beginning of the dealer's relationship with the consumer. An ongoing commerce in information, money, material, and expertise was required to keep the phonograph and its owners regularly consuming new releases.

In other words, the industry's infrastructure of people and things had to be stretched to encompass not only the factory, the warehouse, and the salesroom but also the customer's home. To begin with, the mechanical infrastructure of springs and gears inside the phonograph could cease performing satisfactorily over time. If the phonograph stopped working or if it reproduced scratchy or "out of tune" music, consumers would have little incentive to rush out and buy new records every month. For this reason, manufacturers and dealers sought to control the use, maintenance, and repair of phonographs even after they were ensconced in consumers' homes. That ambition on their part implicated them in long-term and sometimes intimate relationships with their customers. But even with a perfectly functioning talking machine in the parlor the consumer might still lose interest in purchasing new records once the novelty of his or her phonograph had worn off. The industry responded to this threat by staying in regular contact

with talking machine owners through the mails, through personal visits and by engineering excuses to bring him or her back into the dealership.

Just as with other phases of the talking machine industry, the home phonograph required not only that the industry build sturdy infrastructure, but also that that infrastructure be streamlined, smooth, "noiseless" and, whenever possible, invisible. To begin with, this emphasis on streamlined efficiency was a natural implication of the network's *raison d'être.* The fewer problems with the transmission of money, material and information; the fewer occasions on which the phonograph stubbornly asserted its own mechanical "agency" (which in any event also disrupted the transmission of money,); the less likely the infrastructure would be noticed in the first place. But beyond this concern with operational efficiency, manufacturers paid special attention to the semiotics and materiality of their wares as elements of the home and worried that sonic, material or aesthetic obtrusiveness would disrupt the regular reciprocal flow of money and shellac. They worked, for example, to make the phonograph purchase one in which the customer "wouldn't even miss" the money spent, and they encouraged consumers to place phonographs and records in non-obtrusive places once they were inside the home. Finally, inconspicuous infrastructures also served the bourgeois aesthetic ideals on which the phonograph industry aspired to build a national industry—consumption dissociated from production. In the years following 1900 phonograph design evolved to conceal the mechanisms inside, and absorbed more and more of the trappings of respectable parlor furniture. Within the home, the phonograph and its attendant paraphernalia were expected to offer no reminders of the tawdry and unartistic market relations on which its existence actually depended. Similarly, manufacturers increasingly programmed consumers' interactions with the apparatus out of the machine itself, designing, for

example, phonographs that rendered longer and longer programmes of music without human intervention. Phonographic sound itself was subjected to this operational sleight-of-hand, with manufacturers striving to eradicate all traces of the mechanical from the sound of their talking machines. In this way was created and sustained the myth of sonic modernity— that of artistic achievement democratized without the intermediary agency of labor, commerce, or technology.

**Building the Domestic Phonograph Infrastructure**

Louis Jay Gerson's 1913 retrospective suggested another "wrinkle" in the history of the domestic phonograph: No facet of the phonograph's mechanical evolution proved as important for this new market than "…the equipping of machines with spring motors as an adjunct to electric motors with storage batteries." The possibility of a clockwork phonographs seems to have exercised Edison's mind almost from the beginning of his experiments in recorded sound. Very early in 1878, he began experimenting with motors and was certain by early February that the clockwork phonograph was just around the corner. Ten days later he conducted an experiment using "a very hard thick foil… a proper point agate and a good governor on the clockwork" and concluded "I can never hope to get it to speak plainer." Charles Cheever of the ESPC visited Edison and saw the clockwork motor in early March and reported that it appeared promising. By the end of March papers were reporting on Edison's clockwork phonograph motor as all but accomplished.[2]

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[2] Thomas Alva Edison to William Henry Preece, February 19, 1878 (TAEM Z005AP); *Voice of the Victor*, September, 1913, 13; Thomas Alva Edison to Clarence J. Blake February 9, 1878 [Supplied year, month, and day] (TAEMX011AA); Charles Augustus Cheever to Uriah Hunt Painter March 12, 1878 (TAEM X154A2AU); "Edison: Perfecting the Phonograph Beyond Even the Dreams of the Caricaturists," *New York World,* March 24, 1878; *Washington Post*, March 29, 1878, 1.

Edison associate Edward Johnson was conducting researches into clockwork motors around this same time, and, like Edison, believed that the talking machine would be successfully mechanized any day. Certain that a motorized phonograph would prove a boon to his own exhibiting career, he had contracted clockmaker Henry Loriot to construct a motor for his exhibitions. Unfortunately, Loriot "made a miscalculation as to power" and ended up creating "a beautiful piece of mechanism" that didn't function. Nonetheless, the clockmaker promised Johnson a working motor by the time of his exhibition in Rochester, New York, on February 12 and did in fact deliver such a mechanism into Johnson's hands before he left that morning. Unfortunately, it was insufficiently robust in construction and was "broken by N.Y. Central bag smashers"— most likely before Johnson had a chance to exhibit it. Despite these setbacks, it appeared to all interested parties that the project remained an achievable goal and in March the ESPC issued a circular promising exhibitors a clockwork motor in the near future. Characteristically, the assurances of Edison and his circle proved premature and the clockwork motor remained an elusive dream for the first generation of phonographers.[3]

A second key piece of the phonograph's evolution after 1900 entailed the development of a new technology—fiscal rather than mechanical—facilitating the movement of the technology into private homes *en masse*. Earlier, phonograph parlors had overcome a specific set of political-economic obstacles. Practically no one could afford the purchase and maintenance of a talking machine, but the coin-slot attachment facilitated a kind of free market "socialization" of

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[3] Edward Hibberd Johnson to Uriah Hunt Painter, March 8, 1878 (TAEM X154A2AS); Edward Hibberd Johnson to Thomas Alva Edison, February 27, 1878 [Supplied year, month, and day] (TAEM D7802ZBR); Henry Loriot to Thomas Alva Edison, March 12, 1878 [Supplied year] (TAEM D7830O); Edward Hibberd Johnson to Thomas Alva Edison, March 13, 1878 (TAEM D7802ZDJ); Edison Speaking Phonograph Co. and Edward Hibberd Johnson-- Circulars and Brochures, March 1878 [Supplied month] (TAEM X154A2AY).

the phonograph, allowing users to rent or buy its output in three-minute increments. But the phonograph was now set to move out of the public arena; away from the massed bodies on the sidewalks, and boardwalks and train depots; away from the staging ground of collectivized culture and economy. It was moving into the cloister of the middle class home, where it would labor for the nuclear family alone. The considerable cost of the phonograph could no longer be spread out laterally through social space but it *could* be spread out over time and this is the solution hit upon by the phonograph industry. The phonograph's birth as a piece of domestic technology came about and was intimately tied up with the proliferation of consumer credit in the form of the "installment plan."

For those unaccustomed to cash transactions, "buying on time" represented a strange modern innovation. To help assuage potential customers' anxieties on this count, phonograph dealers early on enveloped their installment plans in a social fiction— the "phonograph club." The purpose of this fiction is not entirely clear, but might have assured consumers that their relationship with the dealer (which smacked of irresponsible indulgence or even dishonesty) was no anonymous transaction. Rather, it was a part of a socially embedded institution, one of civil society's oldest intermediary organizations— the fraternity. In 1900 Murray, Blanchard, Young & Company announced to readers of the *Boston Globe* that, through their "Club Plan" one could take home an Edison phonograph, "complete with records, horns and all sundries." All phonographs could be had "on terms in proportion to the amount of purchase" with payments as low as $1 down and $1 a week. Most enticing of all, the phonograph purchaser would have "full benefit of its use and pleasure while paying for it." The "phonograph club" proved an intuitive way to sell consumers on credit and the idea proliferated in the coming years. In a circular sent

out by dealer Alfred K. Hobbs of Manchester, New Hampshire, the dealer informed prospective customers that by paying a small "membership fee" and promising to remit weekly "dues" amounting to between 75¢ and $3, club members could have their own phonograph. After a stipulated number of dues payments, the machine would belong to them, free and clear. J.B. Ashby's Rockdale, Texas, dealership developed an approach to credit that capitalized on customers' sense of chance and play. Every week, the twenty members of his "phonograph club" paid $1 into a general fund and then participated in a drawing, the winner to receive a phonograph. Every member promised to pay for 20 weeks but was excluded from future drawings once he or she had won a machine. The commercial fiction of the phonograph club, eventually gave way to the more mercenary language of "installments" familiar to later generations of consumers. By 1907, Cressy & Allen were selling phonograph outfits "on terms from $1 to $5 down and the balance in small payments." W.J. Dyer & Brother put out Victor products for "a small payment of $3, $4 or $5 and the balance in payments of $1 or $2 a week. D.A. Devinell informed his fellow Edison dealers that his terms were simply "$1.00 down and $1.00 per week on Phonographs…"[4]

At the same time that phonograph clubs were becoming installment plans, the practice of extending consumer credit to phonograph purchasers proliferated widely. In 1906 *Talking Machine World* remarked that "the installment business in all grades of talking machines has grown to enormous proportions" and cited one dealer to the effect that 60 percent of all talking machine sales were conducted on a credit basis. In 1907 E.E. Forbes Piano Company of

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[4] *Boston Daily Globe*; December 16, 1900, 9; *Edison Phonograph Monthly*, November, 1904, 6; *Edison Phonograph Monthly*, October, 1905, 5; *Voice of the Victor,* March, 1907; *Voice of the Victor,* May 1907, 4-5; *Edison Phonograph Monthly*, February 1906, 12-13.

Birmingham, Alabama, claimed that at least 90 percent of its talking machine business was done on installments. While dealers extended customers' credit from their own capital, the Big Three had begun to take notice of the practice of installment selling and and were actively encouraging it. In the summer of 1903, the National Phonograph Company had surveyed some of their dealers and found that the installment "method of doing business" was a winning proposition and that six of them, in particular, had "made a lot of money by selling our apparatus in this manner." *Edison Phonograph Monthly* assured dealers that if they too adopted an installment scheme they "would meet with unqualified success." The following May, the *Columbia Record* noted with approval that department stores carrying the company's products were doing "a great amount of instalment [sic] business." Victor proved uncharacteristically sluggish in its response to the growing craze for "paying on time," but by 1907 they too were encouraging dealers to institute installment plans. In May the *Voice*, informed its readers that "arguments in favor of the Installment Plan are convincing" and that "the Victor Company endorses everything that has been said in favor of this method."[5]

The institution of installment payments opened the wallets of consumers who could not afford the outlay required for a phonograph purchase. For example, the *Columbia Record* argued that while "selling goods on instalments [sic] is a radical departure from the old-time methods of doing business," the practice had allowed "graphophones as well as many other luxuries of life… [to find] their way into thousands of American homes where hitherto they were unknown." Similarly, Grinnell Bros.' Department Store emphasized the massive marketing potential of

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[5] *Talking Machine World*, February 1906, 11; *Voice of the Victor,* May 1907, 4; *Edison Phonograph Monthly*, July 1903, 4; "The Graphophone Departments in the Leading Department Stores of New York," *The Columbia Record,* May, 1904; *Voice of the Victor,* May 1907, 4-5.

selling phonographs on the installment plan: "there are thousands and thousands of people who want a talking machine, but cannot pay the full price in cash for it, while they could pay for it if given a chance, at the rate of from $1 to $2 a week or from $5 to $10 per month." The author knew what he was talking about. In the previous year his department had sold 5,000 talking machines, with 75 percent of those paid for in installments. An Indiana dealer made the ultimate claim for the democratizing tendencies of the installment plan, writing of the phonograph that "anyone who can afford it cannot afford to be without it. And anyone can afford it with our payment system."[6]

These advantages notwithstanding, many dealers, according to the December 1905 *Edison Phonograph Monthly,* had "not given the subject proper thought," and had developed a "considerable prejudice" against the idea of installment sales. A year and a half later the magazine still groused about those stiff-necked dealers refusing to offer payment plans and characterized them as provincials whose businesses were "usually in the smaller towns." But dealers' anxieties on this count were not entirely unfounded. In New York, an Edison jobber named Victor Rapke helped break up a "swindling gang" guilty of taking out talking machines on the installment plan, selling them at steeply discounted prices to the public and then disappearing without making payments to the dealership. With Rapke's help the police apprehended gang member Jack Greenfield but unfortunately, his accomplices had already fled the city, possibly to cause mischief in other jobbers' territories. Another dealer found that while the majority of credit customers honored the terms of the sale, "a very few proved what we would call bad pays; that is, paying about half to three-fourths, the balance being difficult to

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[6] "The Graphophone Departments in the Leading Department Stores of New York," *The Columbia Record* May, 1904; *Voice of the Victor,* March 1907, 4; *Edison Phonograph Monthly*, October 1906, 5.

clean up." Two to three percent of the machines put out were "entirely lost," presumably neither paid off nor retrieved. For a great many talking machine dealers, however, the dangers were well outweighed by the rewards, particularly when they were able to hedge their riskier bets. D.A. Devinell of Des Moines, Iowa, in addition to securing a signed "rent bill" and promissory note from installment customers, sometimes also required that they pay half the machine's price as a down payment. This measure, he generally reserved for customers from out of town.[7]

While some dealers required constant prodding in order to move into installment sales, others embraced the idea with over-enthusiasm, offering phonographs on *too* easy terms. "Why, oh why," asked the *Voice of the Victor* in 1914, "do Victor Dealers do an installment business without interest, and why, oh *why*, do some of them spend money to call attention of the world to this pet folly?" Dealers pursued this "foolish and profitless policy," the *Voice* believed, "… because others do." The magazine conceded as much but in a characteristic rhetorical gesture, brushed aside the importance of market forces, asking sarcastically "do you cut your throat 'because others do?'" Similarly, the *Columbia Record* inveighed against overly generous terms in the form of low down payments, arguing that "it is about as easy to get a deposit of five, eight or ten dollars down from any man you want to do business with as it is to get a smaller one." Gesturing to dealers' persisting anxieties about installment paying, the *Record* added "it is that mistaken 'dollar-down' idea that makes all the risk in the business, nothing else."[8]

Once a phonograph had been sold, the next task lay in putting it in the customer's home and setting it up, a task generally trusted to the dealership's own personnel. This arrangement

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[7] *Edison Phonograph Monthly*, December 1905, 4; *Edison Phonograph Monthly*, July 1907, 12; *Edison Phonograph Monthly*, June 1904, 7; *Voice of the Victor,* May 1907, 4-5; *Edison Phonograph Monthly*, February 1906, 12-13.

[8] *Voice of the Victor*, January, 1914, 5; *The Columbia Record,* August, 1908, 10-11.

became increasingly important in the years after 1906 when talking machines grew in size and as more and more dealerships purchased "delivery wagon" automobiles in which to haul them. A 1915 advertisement for Lyon & Healy of Chicago suggests the importance of this service to would-be customers: "Place? Your own parlor! Time? Within a few hours after you give us your order for a Victrola." An essay, "Delivering the Victrola," recounted one *Voice* writer's afternoon spent as part of a Victrola delivery crew:

> It was mighty cold on the front of that automobile delivery… the first stop made was at a cozy little home on a small side street, and to our surprise the instrument to be delivered was a XVI… When the khaki cover was first taken off the lady of the house fairly gasped with astonishment, which seemed to augur well for future record sales. Standing silently in the background we watched the chauffeur-repairman explain the mechanism…Then deftly slipping on "Ave Maria," by Caruso and Elman, he stood aside and urged the lady to set the brake, start the turntable and lower the sound-box. For a moment she hesitated, but nervously followed his instructions. At the first strain of the music a half-smile crept over her somewhat worn features.

After repeating the lesson for the benefit of the woman's husband, the deliveryman and his journalist sidekick departed, after adding a final warning "to be sure to wind the motor" and to carefully read the Victrola's instruction manual, "How to Get the Most Out of Your Victrola."[9]

This brief interaction marked only the beginning of the industry's efforts to keep in touch with the customer and to bridge the distance between the home and the dealership. The necessity of maintaining these relationships across time stemmed from a peculiarity of the phonograph as a consumer commodity—its value to consumers lay in the relatively cheap shellac and wax records made to play on it. In May 1907, the *Edison Phonograph Monthly* emphasized this peculiar facet of phonograph consumption to customers: "It is the Record that is new—not the Phonograph." Each recording in that month's catalogue, the copy read "is as entertaining as any

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[9] *Voice of the Victor*, June, 1915, 118; *Voice of the Victor*, February 1920, 27.

you ever heard when you heard it for the first time." To get the most out of one's Edison Phonograph, the advertisement continued, one should "hear the new Records and pick out those you like." Victor similarly urged its dealers to "make [the consumer] realize that her Victor is absolutely new every time she buys new records," and that it will "give her just as much if not more pleasure than it ever did before." For the diligent dealer in phonographic goods, of course, this universe of "unique" recordings held out the promise of indefinite sales. In 1911 *The Voice* explained the uniqueness of the phonograph in this regard:

> Just pick up any magazine or newspaper and search its every page, and see if you can find any single thing that even compares with the Victor as a source of perpetual profit. You will find full-page advertisements of automobiles, pianos, cash registers, razors, typewriters, sewing machines, vacuum cleaners, etc.; and granting (which we do not believe) that each and every one of these articles is as readily sold as a Victor—what is there to look forward to after consummation of the sale?… while you are sending Victors to new homes, bear in mind that all the Victors you have previously sold are (or certainly should be) returning to you a continuous stream of record profits…

But while the purchase of records should "more than treble" the revenue produced by equipment sales, dealers often neglected their record business in favor of big ticket machine purchases. The *Voice* allowed that "it is very natural to feel proud and enthusiastic when a big volume of business has been done," but warned dealers that "in the eagerness to make new customers it is a very serious mistake to disregard the old." To that end the *Voice* and other periodicals supplied the trade with an unending stream of advice on how to conduct a lively business in recordings. Invariably, their prescriptions enjoined dealers to maintain the tenuous bonds of the commercial infrastructure; to transmit information to customers; to engage with them face-to-face; and to even pursue policies aimed at shaping their home-life and their daily rhythms. In the pursuit of record sales, the Big Three pushed the logics of infrastructure building into the inner sanctum of

the domestic space and maintained these relationships long after the deliverymen had dusted off their hands.[10]

One of the more obvious strategies for maintaining the domestic phonograph infrastructure lay in the companies' regularly published record supplements. *Edison Phonograph Monthly* made the case for record supplements in a brief article entitled "See That All Phonograph Owners Get A Supplement." Edison saved shipping costs by transmitting the supplements through their own network, with the monthly publications going out to jobbers, who in turn passed them on to dealers. Ideally, dealers were then to "see that they are sent to all customers who have bought phonographs." Though cheaper than a direct mail campaign, the practice implicated the full breadth of the company's commercial network in the enterprise, with predictably "bureaucratic" results. "Dealers who do not get a supply [of the supplements]," said the *Edison Phonograph Monthly*, "should take the matter up with their Jobber, and if the latter is not getting a large enough supply to meet such demands, we desire that he shall increase his order with us." Sending out record supplements, however, marked only the beginning of the savvy dealers' efforts to "keep the conversation going" with his customers. J.D. Moore of the Lion Dry Goods Company of Toledo, Ohio, enclosed with every mailed supplement a "personalized" letter informing customers that his company "prompted by a sincere wish to keep bright the fire of interest in your Victrola" were sending along "a list of especially selected records." Of course, Moore's note emphasized to recipients that "upon the kind of records you buy, depends the amount of enjoyment your Victrola will give you."[11]

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[10] *Edison Phonograph Monthly*, May 1907, 23; *Voice of the Victor*, May-June 1910, 2; *Voice of the Victor*, January-February, 1911, 4; *Voice of the Victor*, January-February, 1911, 4; *Voice of the Victor*, February, 1915, 22.

[11] *Edison Phonograph Monthly*, June 1903, 10; *The Voice of the Victor*, August, 1915, 158.

As the Big Three came to recognize the centrality of record sales in their business, the matter of phonograph maintenance also took on grave importance in the pages of the industry's periodicals. If the talking machine's motor refused to turn or if its reproducer ceased registering the sonic information embedded in records, customers could hardly be expected to continue purchasing more. The phonograph, ensconced in the carpeted recess of the customer's parlor, remained the dealer's and the manufacturer's concern because on its satisfactory and uninterrupted operations depended their profits. "Every Victor," argued the March 1909 *Voice of the Victor*, "sells another Victor. It is its own best salesman; but if not running true, or the sound box is in need of repair, it does more harm than good." Nor was the threat of malfunctioning phonographs any less dire when the customer's own neglect had caused it. "When you let a Victor owner abuse his property through ignorance," the *Voice* informed dealers, "… he does it largely at your expense." *Edison Phonograph Monthly* argued as well that "many times the Phonograph is subject to unjust charges due only to the carelessness of the owner who perhaps has allowed oil to get on the belt or some equally trivial thing due to ignorance…" The disc and cylinder records also served as a vector for infrastructure failure insofar as poor reproduction always threatened to damage the companies' reputation and discourage more record sales. In 1906 the *Voice* noted the "habit for dealers and users of Victor records to handle and throw them around just the same as so many pieces of steel plate…" as though "Victor records are indestructible and need be given no particular care."[12]

For the edification of reckless dealers and consumers, the *Voice* offered some tips for the handling of disc records.

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[12] *Voice of the Victor,* March, 1909, 5; *Voice of the Victor*, September, 1909, 14; *Edison Phonograph Monthly*, October, 1907, 17;

1. Keep the records free from dust particles.
2. Do not expose the records to severe heat.
3. Brush dust off of records with a camel's hair brush or a piece of cotton before playing.
4. Keep records lying upon a flat surface or in a vertical file.
5. Do not throw records carelessly on hard surface.
6. Do not put edge of one record on the face of another.
7. When shipping, take care to have records so packed that no sliding of one upon another can take place.

Dealers also sometimes supplied consumers with instructional literature in order to combat the threat of phonograph abuse. St. Louis Edison jobber Marks Silverstone did just this, sending out pamphlets entitled "Phonographic Advice," to owners of talking machines.[13]

Even well-cared-for talking machines, however, wore out over time. To remedy this, one might convince customers to bring their phonographs into the dealership for regular maintenance, but as a writer for *Talking Machine World* noted "it is a good deal of nuisance for owners of machines to carry them to the dealer to have them adjusted." This "nuisance" would have only grown more discouraging as manufacturers produced larger and larger models of talking machine. To solve this problem, *Talking Machine World* proposed that dealers send repairmen on regular visits to customers' homes for the purposes of routine maintenance and repairs. Similarly the *Voice* argued that it might be a good idea for the dealer to pay "personal calls" to customers whose record purchases had tapered off. "You may find the instrument reproducing poorly owing to the need of oiling, adjustment or some other slight repair." Dealers and their employees would have to carry the project of infrastructure maintenance into the home itself.[14]

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[13] *Voice of the Victor,* November, 1906, 9.

[14] *Edison Phonograph Monthly*, October 1907, 17; *Voice of the Victor,* March 1908, 4; *Voice of the Victor*, May-June, 1910, 2.

As it turns out, some dealers had long been aware of these considerations and had been sending repairmen to customers' homes for several years. Further the practice was spreading across the country. Dealers Lyon and Healy of Chicago apprised owners of the relationship between talking machine maintenance and customer satisfaction: "Do you realize that, to get perfect reproduction from your records, your machine should always be in perfect playing condition? The motor should run smoothly and steadily; the tapering arm tube shaft should swing freely at all times; most important of all, the sound box should be free from any imperfection…" Fortunately, the company would service any machine bought from their showroom free of charge for thirty days, an offer which "kept two expert repair men busy" for the next month. Similarly, the firm of Cressy & Allen of Portland Maine informed customers "that a competent repair man will call at their homes to regulate their Victor and see that it is put in perfect order, provided no parts are broken." These regular maintenance calls also served as an opportunity to sell records. In addition to servicing customers' phonographs, Cressy & Allen's repairmen arrived "prepared to offer suggestions and take orders for records." Lyon & Healy's technicians "acted not only in the capacity of repairmen, but as salesmen, telling people about new records being made, the new process under which they are made, the beautifies of the Victrola, etc…" *Talking Machine World* even suggested that repairmen take with them "a few choice records, entirely new, of course," in order to whet the customers' appetites for new releases.[15]

Of course, as with every other initiative undertaken by phonograph manufacturers, the project of keeping America's talking machines mechanically-serviced proved easier said than done. Phonographs sent to Victor's factory for major repairs regularly evidenced all manner of

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[15] *Voice of the Victor*, January, 1910, 12; *Voice of the Victor,* January, 1909, 9; *Voice of the Victor*, January 1910, 12; *Voice of the Victor,* March, 1908, 4.

ineptitude on the part of repairmen--"springs put in backwards; the spring barrels filled with sticky, gluey substances intended to act as lubricators; …home-made parts or parts of other manufacture…," and so on. To shore up the tenuous infrastructures of expertise linking manufacturer to customer (and to keep records from gathering dust on dealers' shelves) manufacturers took it upon themselves to disseminate to dealerships as much information as possible regarding the maintenance of talking machines. The company's trade publications were themselves the most direct avenue for broadcasting this information and regularly featured articles on the maintenance and repair of spring motors, tone arms, reproducers and so on. When these efforts proved insufficient Victor sent their own factory-trained repairmen out into the hinterland to teach dealerships "how to best adjust the Victor mechanism when anything has gone wrong."

Even if local repairmen were adequately knowledgable they or their employers might cut corners in order to save money. In doing so they often employed cheaply-made replacement parts produced by third parties. When a western jobber complained that the phonographs in his district were performing poorly, the National Phonograph Company sent a factory expert to give the mechanisms a once-over. He found that in many cases the original mainspring driving the motor had been replaced with one of third-party manufacture. These springs were too “soft” and “not of the same quality” as those supplied by National. *Edison Phonograph Monthly* added that “in the same way complaints about belts, governor springs and balls, feed nuts, button arm hooks, sapphires and rubber gaskets have been found to be due to inferior parts manufactured by other concerns.” Third-party replacement parts failed to live up to manufacturer standards at Victor as

well. There, tests were performed on replacement springs and the company claimed over 75 percent of them performed more poorly than the average Victor spring.[16]

The use of replacement parts by dealers damaged the efforts of phonograph manufacturers on several fronts. Most obviously it deprived Victor, Columbia and Edison of a source of revenue, though this consideration alone is inadequate to explaining the companies' antipathy to replacement parts. In fact, the Victor Talking Machine Company even claimed willingness to *forego* profit in the name of quality control. In January of 1908 the *Voice* announced that the company would henceforth supply the trade with mainsprings at factory cost, so desperate were they to stamp out the use of cheap replacements. In addition to costing manufacturers lost sales revenue, replacement parts threatened to damage companies' prestige when they failed to perform adequately. The *Edison Phonograph Monthly* argued that the use of cheap replacement parts by dealers was a "transaction that is positively injurious to the Edison reputation," and declared that the company was "determined that it shall be stopped." But assaults on the Big Three's reputations or their corner on replacement parts probably vexed management less than a third problem presented by the cheaply made belts, screws, springs and governors. As we have seen, manufacturers were highly solicitous that their machines continue to function and provide musical entertainment for their owners. A phonograph that ran poorly or not at all served as poor inducement to buy more records, and this the Big Three sought to avoid.[17]

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[16] *Voice of the Victor*, March, 1913, 5; *Voice of the Victor*, May, 1914, 94; *Voice of the Victor*, June, 1914, 107; *Voice of the Victor*, July, 1914, 134-135; *Voice of the Victor*, July-August, 1910, 11; *Edison Phonograph Monthly*, April, 1907, 4; *Voice of the Victor,* January, 1908, 9.

[17] *Voice of the Victor,* January, 1908, 9; *Edison Phonograph Monthly*, April, 1907, 4.

Even if dealers sent out supplements and kept their customers' phonographs maintenanced, the infrastructure could always fray at the other end. The steady flow of profits from record sales necessitated that the industry shape the habits of the customer herself— to make the regular pilgrimage to the phonograph dealership part of her life. As we have seen, the general adoption of installment plans allowed dealers to place talking machines in homes they would have otherwise never entered. But extending credit to customers also served the purpose of enmeshing them more closely in the industry's commercial infrastructure and guiding their activities in ways conducive to its own interests. First, a onetime sale of several records was likely to accompany any phonograph purchase, and since, as the *Edison Phonograph Monthly* noted "Records are seldom sold on instalments [sic], the Dealer makes a nice cash sale of Records with every Phonograph put out.' But the practice of breaking up the sale into many small payments could itself serve the dealer's interests. Payments were generally made in person at the dealership, giving the dealer a chance to continue the commercial conversation, to firm up his relationship with the customer, to sound their musical preferences and ultimately, to sell them more records. The September, 1908, issue of the *Voice* carried a dealer's letter expressing the opinion that "installment buyers, as a rule, make generous cash outlays for records." Another Victor dealership, the Piano Player Company believed "there is not a machine sold on the installment plan that does not, on the average, secure more sales of records by the time it is paid for than do those sold for cash…" The cause of this discrepancy, the company believed, was obvious: "few payments are made without records are purchased at the same time." Edison's National Phonograph Company concurred, arguing that the dealer whose clients made regular payments "has a steady and profitable customer for Records for at least the time the payments

are being made…" and added that "it is worth while to get a Phonograph into a home for the Record business that will follow." Similarly the *Voice* enticed Victor dealers into credit sales by promising that "the weekly installment idea brings the customer to your store every week, and with this opportunity you sell ten records to every one sold by the mail order house."[18]

**Hiding the Domestic Phonograph Infrastructure**

Profitability in the phonograph industry depended, in large measure, on the willingness and ability of dealers to bring their customers and their customers' homes within the ambit of the commercial infrastructure. The home had to be made safe for the phonograph (industry.) But just as with their approach to the sales environment, the Big Three's efforts to build robust infrastructures often implicated them in a project of infrastructure concealment. This project proceeded along two routes. First, manufacturers labored to shield the domestic phonograph infrastructure (both its human and mechanical elements) from the semiotics of commerce, labor and mechanism—elements alien to the bourgeois conception of the home and parlor as respites from the means-ends logic of the public sphere. Secondly, just as manufacturers sought to insulate their larger infrastructure from the signs of commerce and capitalism, they performed a similar feat in acoustic design. Continuing a project that had commenced with Edison's first experiments in the late 1870s, the Big Three worked to remove all evidence of mechanism from the *sound* of the talking machine. Concretely, this entailed two measures. First, they insulated the playback apparatus of the phonograph (including the reproducer and horn) from the phonograph's power plant, the spring-driven motor inside which was always given to shaking and whirring. By so doing, manufacturers sought to engineer phonographic music as pure

[18] *Edison Phonograph Monthly*, December, 1905, 4; *Voice of the Victor,* Sept, 1908, 9; *Voice of the Victor,* May, 1907, 4-5.

artistry, stripped of the sonic evidence of the "means of production." Secondly, they sought to temporally rationalize phonographic playback, so that the record turned at a consistent speed during playback. Motors which sped up or slowed down shifted the pitches and tempos of music during playback. A phonograph that "improvised" like this could only serve to emphasize the role of the "talking machine" itself in the production of mechanical music, as it threw into relief the labor being performed right there in the home. Once the phonograph became capable of keeping more-or-less perfect time, the apparatus could "disappear" leaving the listener in his parlor with sounds ontologically identical to the voices of the singers he knew and loved.

Money

Installment plans facilitated the movement of phonographs into the American home by bringing them within reach of the cash-strapped masses. But another, more subtle, mechanism associated with installment purchasing also peaks through the historical record. One dealer found that while "not one customer in ten will pay cash for a Phonograph… many who are able to do so, prefer the installment plan." Many who "bought on time" might have just as easily paid in cash, but opted not to. A straightforward and economistic understanding of this preference is, of course, ready to hand in the guise of "liquidity." This is the underlying appeal of an Edison advertisement enjoining readers to "pay us a small amount down, and spend your Christmas money for those small articles necessary to purchase for cash." But the market virtue of liquidity is and was entwined root-and-branch with a more encompassing economic aesthetic emphasizing efficiency, regularity, and seamlessness. Installment payments allowed purchasers to keep cash on hand for other expenses. But it also promised to do away with the singular and traumatic one-time expenditure of the cash sale, spreading it out into innocuous and regularly-scheduled

payments. One Chicago distributor for Edison advertised that "these monthly payments are so very small that you will hardly notice them." Similarly, an advertisement in the April 1928 issue of *Good Housekeeping* presented testimony from a (fictional) Victor customer to the same effect: "Our local Victor dealer allowed us to pay so much down and so much a month on our Automatic Victrola. We never missed the little bit of money each month, and in the meantime, we had the use of the Victrola." Connecticut Victor dealer A.B. Clinton distributed to prospective customers a bank envelope printed with the following message: "Just see how easy it is to slip a few nickels, dimes or quarters now and then into this Victrola Dime saver. When it contains $5 bring it to us and select your Victrola. We will send it to your home at once and furnish you with another Victrola bank, and in this way *you will have a fine Victrola and not miss the money*." [Emphasis added][19]

Practice

Secondly, manufacturers hoped to minimize users' interactions with the phonograph. Constant fiddling with needles, and records and brakes threatened to undermine the phonograph's appeal as a leisure device and, again, to put a halt to the customers' record purchases. To combat the problem, manufacturers created phonographs and phonograph attachments that played longer and more records, stopped on their own, needed fewer windings and required new needles less often.

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[19] *Edison Phonograph Monthly*, February, 1906, 12-13; *Boston Daily Globe,* December 16, 1900, 9. "Edison Phonographs, For Cash or on Easy Payments," Edison Phonograph Distributors, Illinois. Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts. *Good Housekeeping*, April 1928, 1; *Voice of the Victor*, July, 1916, 138.

One of the first tasks manufacturers sought to automate was the stopping of the phonograph record. No mechanism existed on early phonographs to stop the record's rotation at the end of the music, nor to keep the needle from continuing to travel off the edge of the cylinder creating a racket and possibly damaging the record or playback equipment. Third party manufacturers quickly stepped forward to address the problem. An advertisement in the February 1908 *Talking Machine World* announced that the "Gibbs Attachment" for use on Edison Home and Standard phonographs "automatically stops the machine when the music is finished; thereby preventing the sapphire from being damaged in running over the end of the record." It was necessary to manually set the device for every record played. The Condon-Autostop, made for use on disc machines like the Victrola, promised to "[cut] out the disagreeable noises at the end of the record." Long the "bane of the talking machine" these noises often startled phonograph listeners who rushed to the phonograph to stop them and in the process "many records have become scratched, cracked and broken." This, the Condon-Autostop would prevent. Like the Gibbs stop, the Condon attachment required that users set the attachment for every record and this necessity persisted after phonograph manufacturers began installing automatic stops at the factory. The Aeolian Company's Vocalion phonograph required that one first place the machine's needle in one of the last three or four grooves of the record before pressing "the little metal button situated at the lower left hand of the turn-table. The record could then be played from the beginning, the user assured that the record would stop as soon as the needle reached the spot it had been when the button was pushed. The process had to be repeated for each record. The next round of automation in phonograph stops appears to have been an innovation by the Columbia Company, which by 1920 was advertising Grafonolas with "Non Set Automatic Stop." The only

such article available on the market, the Non Set Automatic Stop left users with "nothing to move or set or measure." One need only "start the Grafonola and it plays and stops itself." Non-set automatic stops soon thereafter became standard on higher end Victor products as well. Automatic stops did little to reduce users' physical interactions with the talking machine. They did, however, facilitate another kind of listening, one in which listeners could forget the mechanism entirely and focus on the musical event on offer. As a 1920 Grafonola advertisement emphasized to readers: "You'll never need to leave your favorite partner in the middle of a dance. With the Columbia Grafonola you can dance to the last lingering note and step." Without a peal of terrifying mechanical racket lying in wait at the end of every record, listeners could suspend momentarily their custodianship over the machine and believe they were dancing to the strains of Issler's band.[20]

The constant necessity of winding the home phonograph's motor, however, proved wearisome, and manufacturers very quickly moved to minimize its prominence in the ritual of phonographic music consumption. The first phonographs produced by the Victor Talking Machine Company, for example, relied on a simple single-spring motor not quite capable of playing two 7-inch disc records between windings, or enough music to entertain for nearly four minutes. Playtime could, however, be increased by adding more springs to the motor assembly, and manufacturers began pursuing this strategy very early. The double spring motor introduced by the company in 1901 played five 7-inch records or three 10-inch records, increasing playtime

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[20] *Talking Machine World*, Feb. 15, 1908, 6; *Talking Machine World*, May, 1912, 23; The Aeolian Company. "Instructions for the care and operation of the Aeolian Vocalion" (New York: The Aeolian Company). Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts, 9-13; *Good Housekeeping,* Nov 1920, 102; *Red Book Magazine*, October 1920, 129.

to around ten minutes. In 1902, Victor again pushed the envelope of music automation by releasing for public consumption a three-spring motor, capable of playing six 10-inch disc records— or around eighteen minutes of music. The truly dramatic break in this direction, however, occurred in 1915 when Victor introduced its domestic electric motor phonograph, forever dispensing with the need to hand-wind the device.[21]

As long as the phonograph had to be provisioned with more music manually, however, the revelry of playback would never last more than four and a half minutes at a time. Mitigating the tiresome ritual of putting records on the phonograph, then, also occupied the engineers at the Big Three and their competitors. Automatic repeater attachments provided one of the first methods by which phonograph users could avoid feeding the phonograph every few minutes. A necessary element of the commercial coin-slot phonograph, repeater attachments existed from the beginning of the domestic phonograph industry and allowed the mechanism to repeat the same recording without human intervention. They were limited in their appeal, of course, by the fact that the same selection was played over and over again. A workable solution to the problem had to wait for Victor's Automatic Orthophonic Victrola, released for public consumption in the late 1920s. A 1929 ad for the Automatic Orthophonic enjoined readers to "just think of having Orthophonic music without the labor of winding, putting in needles, or changing records!" All one need do is "put an arm-load of records in the Victrola and press a button." An uninterrupted hour of music followed. The following year, the Brunswick Company announced its Automatic

[21] See Robert Baumbach. *Look for the Dog: An Illustrated Guide to Victor Talking Machines* (Los Angeles: Mulholland, 2005).

Panatrope capable of playing up to 20 10-inch records without reloading, also about an hour's worth of music.[22]

In the 1910s, a number of phonograph manufacturers flouted the expectations of user passivity. The Pathephone, produced by Pathé Frères Phonograph Company of New York came with a "tone control" the use of which would allow users to "add their own interpretation of the volume, shading and expression to any reproduction." One of the most widely-advertised of these new devices was a selling feature of the Aeolian Company's "Vocalion" phonograph, introduced in 1915. An advertisement for Vocalion claimed that "as no other phonograph has been, the Aeolian-Vocalion *is a true musical instrument*—an instrument to control, to *play*, an instrument which anyone may use to exercise the natural instinct for musical expression with which everyone is gifted in some degree…" For its peculiar musicality the Vocalion was indebted to the Graduola, its hand-held volume control. "To take the Graduola" read the advertising copy, "and with slight, instinctive pressure to shade each tone or phrase, to make the music live with your own feeling and thought, is the test decisive." The Vocalion's instruction manual advised users on best practices for the Graduola. The phonograph's volume knob should be set to full volume, in order to allow the widest dynamic range. "For an easy and effective operation," the manual instructed users to "hold the tube of the Graduola in the left hand so that the thumb may remain on top and in position to push the knob outwardly." The Graduola should generally be "operated slowly rather than suddenly, as the greatest charm is imparted to the records by the crescendo and diminuendo effects thus achieved." Importantly, the operator

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[22] National Phonograph Co. "Edison Phonograph in the Home" (Orange: National Phonograph Co., 1906). NYPL Performing Arts, Recorded Sound Research Collection, 28; *Talking Machine World*, January, 1908, 13; *Good Housekeeping*, May, 1929, 1.

should attempt to emphasize the dynamics of the selection, making loud passages louder and soft passages softer. “Care should be taken,” for example, “not to place the Graduola in the extremely soft position in passages of records which are of great force and power.”[23]

Of the established firms, none responded as unequivocally to the enthusiasm for attachments than Victor who rejected them outright. On one hand, the company’s antipathy toward attachments drew on its longstanding policy of disparaging aftermarket additions to its machines. “There is a certain moral effect produced,” said the March 1915 *Voice of the Victor, “*when attachments are fitted to our instruments. The public conceives the idea that we are responsible for it. So that we unconsciously and unwillingly are held responsible for hybrid products which, since they are not advantageous, are decidedly detrimental to our perfected instruments.” Victor’s opposition to devices such as the Graduola, however, drew on and reinforced a specific philosophy of recorded sound emphasizing the role of the phonograph as a passive conduit for earlier sonic events. A 1917 Victor ad insisted that “no instrument can be made to *improve* on Melba, Caruso and the other great artists. The true function of the Victrola is to reproduce faithfully the work of these artists….” The rhetoric of “personal expression” forwarded by the Aeolian Company and others amounted to patent nonsense when applied to the phonograph. “Your interpretation of a piece of music may be in itself a highly artistic achievement,” allowed a 1920 Victor ad, “but not if super-imposed on the interpretation of a master. It then would be neither one thing nor the other…”

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[23] Pathé Frères Phonograph Co. “Pathé Pathephone” (New York: Pathé Frères Phonograph Co.), 8. Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts. *McClure’s Magazine*, Oct, 1916, 44; The Aeolian Company. “Instructions for the care and operation of the Aeolian Vocalion” (New York: The Aeolian Company), 16-19. Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts.

One problem with this tack, however, was that Victor products had long facilitated the manipulation of playback. The Victrola cabinet's "tone doors," for example, could be opened and shut so that "the volume of tone may be regulated to suit varying conditions." The company insisted that the tone doors were "not intended to be used in imposing amateur 'interpretations' upon those of the world's greatest artists…" The company did not explain the distinction nor was it intuitive. A 1917 advertisement for Columbia's Grafonola talking machine had made very different claims for that machine's version of tone doors— "shutters." It compared them to the swell-box of the musical organ and informed would-be buyers that they would allow them "to play the world's great music with the depth of expression that it deserves." In a 1915 advertisement Victor had offered an even more confusing apologia for the tone doors as well as its volume-altering system of interchangeable needles. "The Victor Record…" said the company, "is perfect musically, *but*—it must be adapted to the acoustic limitations of any room, and that is accomplished by the Victor system of changeable needles and the modifying doors of the Victrola." Most importantly, this manipulation took place "without interfering in any way with the artists' interpretations."[24]

Victor's difficulties in delineating just what difference there was between manipulating the talking machine's tone "to suit varying conditions" and doing the same in such fashion as to interfere with "the artists' interpretations" are illustrative. The ontological equivalence of "original" and "copy," so important to the marketing strategies of the Big Three and, especially, Victor, was not a trans-historical technological fact. Rather it had to be constructed out of a heterogeneous assortment of material and discursive bits. In regards to gadgets like the

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[24] *Voice of the Victor*, March, 1915, 56; *Vogue*, September, 1917, 1; *Vogue*, June, 1920, 32; *Ladies' Home Journal*, November,1917, 59; *Ladies Home Journal,* November, 1915, 90.

"graduola" Victor executives, as was often the case, recognized what many of their competitors did not. Sonic manipulation by phonograph users upset the founding myth of the sonic identity of "copy" and "original." The industry's general drift, however, pointed directly to user passivity. Aeolian, Pathé Frères, and Columbia might occasionally encourage users to take an active hand in the sonic event of playback. But Victor carried the day. Phonographs became, not musical instruments or talking machines making sounds in the parlor, but conduits to personalities and sonic events elsewhere.

Records

The goal of the phonograph industry consisted largely in maintaining a two-way traffic with their customers, money coming in and records going out. This constant flow of records, however, threatened to fill the consumer's home with unsightly stacks of shellac which could very easily become a nuisance and sour enthusiasm for further record purchases. They cluttered the home, posing an obstacle to housekeeping but they also made the very act of record-listening a chore. The phonograph owner who stored his records "in bunches on the table, chairs and window-sills, where he must look through the whole lot the find the record he wants…" would not likely keep at the habit long, nor would he be inclined to spend money on new records. The size of a customer's collection could also contribute to the mishandling of his or her records. The *Voice of the Victor* informed Victor dealers that when a consumer accumulates a sizable number of records, "say fifty or more," he very often has to rifle through the entire collection to find the one he wants, thus damaging them "…through constant handling and rubbing…" These damaged records would, of course, play miserably and discourage their owner from investing in more. Even more telling, however, is another worry expressed by the *Voice*. When the customer thumbs

through all these records, Victor's organ argued, he or she "is often impressed with the amount of money he has invested in a lot of records he has tired of and don't [sic] want to hear." When a record spun on the phonograph's turntable, the magic of infinitely reproducible labor cast a haze over the collector's assessment of his expenditures. As piles of black, silent and dead shellac on one's window sill, however, phonograph records presented a discouraging record of foregone opportunities.[25]

To address this problem manufacturers produced and sold albums for the storage of records. *The Voice* urged salesmen to "forcibly impress" upon phonograph purchasers "the necessity of properly filing and caring for their records" and in order to facilitate that project supplied albums for ten-inch and twelve-inch records. The company advised dealers to place them in every home in which a Victor phonograph had been purchased. These albums, said the *Voice,* would allow the phonograph enthusiast to find whichever of her records she wished to hear at any given time without having to thumb through her entire collection. As collections grew to encompass hundreds or even thousands of records, however, these albums could themselves become a confused maze of aural data. In January of 1914, Victor company redesigned their record label, broadening the gold band at its edge. This change, the *Voice* informed readers, had not been intended as a merely decorative innovation, but was designed "to provide a space in which people might put their own catalog number and so simplify the process of returning each record to its proper album."[26]

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[25] *Voice of the Victor*, September-October, 1910, 4.

[26] *Voice of the Victor*, March-April, 1911, 9.

Even if manufacturers and dealers of phonographic equipment managed to discipline their customers' handling of records, they might still grow weary of the phonograph's presence in the house. This was especially true if owners put them in inconvenient places. Victor, for example, fretted over the placement of its smaller models and enjoined its dealers to guide every purchaser of such an instrument into buying a stand on which to place it. *The Voice* added "by all means keep the Victor off the centre table where it positively does not belong and where if it does find a resting place it is soon discovered to be in the way." *The Columbia Record* shared its own cautionary tale about poorly-placed talking machines:

> Of course, it is going to be set on the table in the parlor first. Oh! What joy and pleasure that machine affords the first two or three days! The recipient can barely keep away from it; in fact, is playing it every spare minute… Saturday comes, the day when the house is cleared, and the machine is lifted off the beautifully polished parlor table, and, to the utter astonishment and dismay of its owner, the table is found all scratched up… So the lady removes the machine from the parlor into the living room and leaves it there for a week until she finds out that the library table has been as badly scratched up as the parlor table.

At the same time that the talking machine damages her furniture, the fictional homemaker is confronted with that problem familiar to all record collectors: stacks of unsightly records. "They are on the window-sill, they are on the tables, they are on top of the chairs, they are on the bureaus and on the chiffoniers." To make matters worse, the baby breaks a few by pulling them off a table, and she fears her husband will find out and become angry. Columbia's fictional homemaker finally has enough of the inconvenience, removes the talking machine's horn and stashes the entire assemblage in a corner of the room on the floor. Most alarmingly for the *Record's* readers, she resolves "to tell my husband not to buy any more records; we have got enough." In case the parable had not spelled out explicitly enough its intended message, the

*Record* addressed its readers directly. "Now, Mr. Salesman, that is about the end of your record sales."[27]

This unfortunate set of circumstances could have been averted, the *Columbia Record* assured, if the salesman had sold the new phonograph enthusiasts on one more piece of equipment—a record cabinet. In an alternative scenario in which the salesman has attended to this detail, the "cabinet is put in a convenient corner, the machine is put on top of the cabinet and the records placed inside." The parlor table is spared and clutter eliminated, and the lady of the house realizes "we have got to buy more records yet, for the cabinet is pretty nearly empty!" Her husband makes his way back to the dealership, where, "in a feverish haste" he "buys all the records he can possibly carry in order to fill his cabinet." Whether or not record cabinets proved as conducive to sales as Columbia projected, the years after 1900 saw a quickly proliferating trade in the new articles. By 1905, many furniture companies advertised cabinets for both cylinder and disc records in the industry's trade magazines.[28]

Machines

Unlike their counterparts in America's business offices, parlor phonographs of the 1890s were totally enclosed. Edison's 1897 Class 'M' coin-slot model, for example, came in an imposing-looking rectangular cabinet which sat on four ball-and-claw legs. Users had no access to the mechanism itself aside from listening tubes which protruded through the top of the cabinet. This hermetically sealed case, however, served primarily to keep customers from tinkering with the mechanism, and was not intended to block the view of the mechanism. The top segment of

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[27] *Voice of the Victor*, March-April, 1911, 2; *The Columbia Record*, July, 1908, 6.

[28] *The Columbia Record*, July, 1908, 6; *Talking Machine World,* April, 1905, 3; *Talking Machine World,* April, 1905, 7; *Talking Machine World,* April, 1905, 21; *Talking Machine World,* May, 1905, 8; *Talking Machine World*, June, 1905, 15; *Talking Machine World*, August, 1905, 12.

the cabinet housing the phonographic apparatus featured four glass panels providing easy viewing of the mechanism. Most, if not all, of the Edison coin-slot models of the period used similar glass panels. The use of glass in these cabinets did not merely provide a transparent panel through which users could peek to sate a natural curiosity. Like the jeweler's display or the heterogeneous accumulations of the centuries exhibited in a cabinet of curiosities, the phonograph appeared under its glass case as an artifact, eminently worthy of close examination. Glass paneling worked to construct the talking machine as a spectacle, providing a view to the mechanism at the same time that the hermetically sealed cabinet around it suggested that something of value—something worth looking at—lay inside. In this sense, the coin-in-slot phonograph of the 1890s and beyond represented a continuation of the exhibitionary logic of the earliest phonographs of the 1870s.

If an amusement-seeker looked through the glass case of a Class 'M' coin-slot phonograph while the device was in action, she would have found a decidedly mechanical spectacle. The wax cylinder record lay mounted on the phonograph's mandrel which rotated at a rapid rate of speed while drifting slowly across the body of the phonograph, guiding the wax record under the needle of the reproducer. Next to this assembly, she would have noticed a peculiar contrivance called a "governor" consisting of a pair of weighted spheres attached to a rapidly turning shaft. Both the mandrel and the governor were driven by a series of exposed belts and pulleys drawing power from the phonograph's battery-operated motor, concealed below. That the attraction of the coin-slot talking machine lay as much in looking as in listening was not lost on proprietors of the nation's phonograph parlors and some even worked to augment their machine's visual appeal. In late 1891 the *Phonogram* noted that "on the automatic phonographs

at the permanent Musee Theatre in Buffalo incandescent lamps have been placed on the cabinets, lighting up the machine and calling a person's attention thereto." As it turned out, the enterprising New Yorkers had acted wisely and saw the receipts from these machines "nearly double."[29]

As a public amusement the phonograph's mechanical complexity redounded to its popularity by presenting a spectacle—one that the consumer could enjoy without knowing how to operate, maintain or repair it. In the office, the phonograph presented the image of a serious aid to business, and might be forgiven (or even valued) for the byzantine complexity of its various moving and exposed parts. As early as 1890, however, it occurred to some interested parties that a larger future lay open to the talking machine if it could clean up its act. In that year, Edward D. Easton of Columbia wrote to a counterpart at the Edison Company that "on the present phonograph, the motor and governor mechanism are in sight and give an appearance of complication to the machine which it does not deserve. It might be well to conceal this mechanism…" Easton had argued along similar lines in a letter written several days earlier. "The present instrument…" he had written, "would live forever in the business world." But "a much larger field can be taken, and with much less intelligent effort on the part of the Phonograph Companies, if the mechanism is simplified and improved." It is not entirely clear where Easton understood this "much larger field" to be, but he was very likely thinking of the home market.[30]

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[29] George Frow and Albert F. Sefl, *The Edison Cylinder Phonographs: A Detailed Account of the Entertainment Models Until 1929* (Sevenoaks: G.L. Frow, 1978), 16-20, 114-126; *Phonogram*, November-December, 1891, 263.

[30] Columbia Phonograph Co. and Edward Denison Easton to Samuel Insull July 26, 1890 (TAEM D9059AAK); Columbia Phonograph Co. and Edward Denison Easton to Samuel Insull, August 1, 1890 (TAEM D9059AAM).

Some of the earliest phonographs intended for the home market were the "residence outfit" Edison machines supplied by the North American Phonograph Company beginning in 1893. Elaborately cabineted and intended to look like office desks, these ponderous and expensive articles found few takers and within two years were replaced with more manageable "domestic outfits." The class 'M' and class 'E' domestic outfits presented users with the same mechanical spectacle of mandrel, governor, belts and pulleys as the coin-slot phonograph, now liberated from the parlor's glass case. These persisted on the U.S. Market until 1909, but by that time had largely been superseded by other models developed by the company, including the Triumph, Home and Standard Phonographs. On all of these models, Edison's engineers managed to fit the governor and its confusing array of belts and pulleys inside the cabinet, which on many models now featured a slightly more refined facade than had been the case with the M and E models. With the entrance of Victor Talking Machine Company into the home market after 1901, the concealment of phonographic apparatus intensified. Excepting one "toy" model, the company's earliest phonographs concealed nearly all of their mechanism inside of compact round or square cabinets, while the company's flat disk records required a less conspicuous mounting apparatus than that of cylinder machines. The cabinets of Victor phonographs were themselves representative of a move away from utilitarianism in phonograph design and toward polite aestheticization, and nowhere was this clearer than in the company's "De Luxe Monarch" model, which was covered in finely wrought hand-carved figures including animals' heads.[31]

Methods of sound amplification were also in flux during the early years of sound recording technology and these evolutions, too, carried implications for the experience of

[31] Frow, *Edison Cylinder Machines*, 16-20, 114-126; Robert Baumbach. *Look for the Dog: An Illustrated Guide to Victor Talking Machines* (Woodland Hills: Stationary X-Press, 1996), 1-30.

recorded sound consumption. In the earliest days of the home market, manufacturers supplied their domestic customers with hearing tubes, hollow rubber conduits which ran directly from the reproducer or "speaker" into the ears of the listener. Especially necessary in the nation's noisy public phonograph parlors, hearing tubes helped mute outside sounds and directed the remarkably quiet sounds of early recordings directly into the ear. In the less noisy environment of the home, however, hearing tubes lost much of their appeal. Beginning in 1893 Edison offered 14 inch funnel-shaped horns for use on their home phonographs but by around 1900 the public had made known its overwhelming preference for horns over hearing tubes and the company began outfitting most home models with horns. Demand soon arose for louder horns and by 1907 the company was outfitting some home models with a horn 33 inches long and two feet across at its bell.[32]

Superficially, the shift from hearing tubes to horns and then to larger and larger specimens of horn appears to counter the general trajectory of home phonograph design in these years. While Edison, Victor and Columbia worked to conceal their instruments' unseemly mechanisms behind polished wood, the public's desire for volume necessitated that the phonograph's horn cut a more and more imposing figure in the home outfit's profile. Indeed, the talking machine's horn did come to be viewed as an eyesore within a few years and designers eventually bent their talents to eradicating it from the visual landscape of the parlor. But the shift toward horns effected a subtle change in the phenomenology of phonograph-listening by facilitating a drift away from the phonographic apparatus as the locus of the sonic event. With hearing tubes, the phonograph's audience must stand or sit closely the instrument, and because of

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[32] Frow, *Edison Cylinder Phonographs,* 16-37.

this, they constituted an intuitive phenomenological "bundle" with the phonograph-as-spectacle. Where to rest one's eyes while standing at attention before the phonograph but on the mechanical carnival of belts and pulleys and governors unfolding before you? With the spread of horns and their increasing size over the first decade of the twentieth century, listeners came untethered from the phonograph. This was, one can assume, one of the primary reasons users desired more volume in the first place, particularly where phonographs were desired for background music for social occasions or household chores.

However functional these giant horns, they still threatened to disrupt the domesticity and refinement of the middle class home, and manufacturers minimized to the best of their ability the horn's profile. On the earlier Victor models, the horn projected directly outward into the parlor from the front of the phonograph, putting the full length of the horn in the family's living space. In 1902, Victor introduced a new a line of phonographs with rear-mounted horn assemblies. On these a "tone arm" led from the phonograph's needle toward the back of the cabinet. There it fed into the base of the horn proper which doubled back toward the front of the phonograph before flaring open in a morning glory-shaped bell. The result was that the new Victor models retained a substantial amplifying horn which just barely pushed out from the front of the machine. Edison's engineers also worked toward a solution to the problem of horns, though at their own pace. In 1909, the company unveiled a new horn, the "Cygnet" which preserved much of the straight horn's tone-enriching length, but which saved space by angling sharply upward before flaring forward at the bell. The effect, as suggested by the device's name, was of a swan's neck.[33]

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[33] Baumbach, *Look for the Dog*. Frow, *Edison Cylinder Phonographs,* 32-35.

Sound and Time

Louis Jay Gerson linked the movement of phonographs into domestic spaces to the development of the reliable spring motor. It is true that few middle class homes would have tolerated the inconvenience attending the electrical storage battery, including its need of constant recharging and its propensity to spill acid. At the same time, domestic electrification remained in its infancy and there were few places where one could "plug in" a model run on wall current. But the role of the motor in the evolution of domestic phonograph proved more complex and circuitous than Gerson suggests. The first phonographs placed before the public in 1877 and 1878, after all, had run on perfectly clean and renewable hand power and could have easily made their way into middle class homes. This broaches a question: why motorize the phonograph in the first place? If necessity is the mother of invention laziness enjoys a strong claim to paternity, and convenience certainly played a role in the birth of the spring-wound phonograph. The hand-powered models of 1877 proved tiresome in the extreme, with early exhibitors constantly toiling away at the machine's hand-crank. If he or she stopped working, so did the phonograph and this was hardly the kind of pastime one could expect middle class consumers to spend thousands of hours at. More pointedly, this was hardly the kind of machine for which they could be expected to amass voluminous libraries of expensive records.

Convenience, however, only goes so far in explaining the mechanization of the phonograph, because Edison and others who worked toward the phonograph's automation very often did so with other aims in mind: They were driven by a techno-scientific preoccupation with exactitude. From a more pedestrian standpoint, (the one most observers would have assumed) phonographs with well-regulated motors, just "sounded better." But here too, the standard of

"good" phonographic sound would have been predicated on the machine's ability to exactly replicate the sounds which had been recorded earlier and this was particularly true in those cases when audiences brought to bear on the problem well-established standards of what constituted a good sound— such as in singing. Even if defined in less exacting terms, then, audiences expected accuracy in sound reproduction no less so than Edison.

As we have seen, the successful application of clockwork to the problem of driving phonographs evaded the industry until the middle of the 1890s. This engineering failure was in some ways surprising, as the motive power necessary to turn a cylinder at a steady rate of speed lay well within the technological affordances of the day. But the specific limitations and requirements of the phonograph industry placed obstacles before them not faced in other applications of clockwork technology. In a letter dated July 16, 1878, Edison's lab assistant laid bare the true crux of the clockwork problem: "It is easy to make a good clockwork," he wrote, "but it is difficult to make one without extra vibrations." A decade later Edison disgustedly registered the same frustration with clockwork and spring motors calling them "untrustworthy and noisy." As efficient and as steady as these motors were by the late nineteenth century, phonography placed a new demand on the clockmaker's shoulders: absolute silence. This desideratum was difficult enough to achieve even in those simpler models without motors to contend with. In a letter to Clarence J. Blake, Edison revealed that in the cheaply made ESPC phonographs "the shake and grinding noise in the gearing are recorded…" Edison himself had attempted to dampen the mechanical vibrations of the phonograph by wrapping the cylinder in paper and in gutta percha while Blake had done the same with rubber. Edison's ambition to purge the sonic evidence of mechanization from his recordings pushed him to indulge some unlikely

solutions. Even as he toiled away at a clockwork mechanism, Edison experimented with steam engines and around February 12 he successfully powered a phonograph with the same. Though the steam engine was noisy, the additional horsepower it commanded allowed Edison to connect it to the phonograph via a long belt and to place it at a distance from the recording apparatus—perhaps even in another room. At least in theory, then, the steam engine could power phonographs with less acoustic interference than that caused by clockwork. Edison found the results of his steam engine experiment "astonishing," but in a letter to Alfred Marshall Mayer, he admitted that acoustic interference was still a problem as "there is a light chattering in the pulley yet."[34]

E.R. Johnson and other innovators in spring-driven motors seem to have greatly reduced the amount of extraneous noise produced by these mechanisms in the 1890s but the noise had not disappeared entirely. The mechanical sonic signature of the spring motor remained a part of phonographic playback throughout the early years of the century, and the literature of the period is rife with complaints about the spring motor's sonic intrusion into users' lives. One of the first efforts to combat this problem lay in a 1904 decision by Edison to place "strong springs between the motor frame and the body box," on some phonograph models, in the process greatly increasing the sonic insulation previously provided by rubber washers. Through this measure, the *New Phonogram* informed readers "all humming noises were eliminated." Similar efforts to insulate the phonograph from the vibrations of its motor were undertaken by home tinkerers. One English phonograph enthusiast, perhaps driven to desperation by his machine's clangorousness

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[34]Charles Batchelor to Frank McLaughlin, July 16, 1878 (TAEM MBLB2001); *Scientific American*, October 29, 1887, 273; Thomas Alva Edison to Clarence J. Blake, May 1, 1878 (TAEM X011AC); Thomas Alva Edison to Alfred Marshall Mayer, February 12, 1878 [supplied year] (TAEM X095AB); Thomas Alva Edison to Theodore Puskas, February 13, 1878 [supplied day](TAEM Z400AG).

wrote to a London paper to describe the phonograph modifications he had undertaken in the name of pure tone: “The [phonograph’s]motor is entirely insulated from the rest of the machine, the only connection between the two being the leather belt. The carrier arm is insulated from the feed screw and the replacer tube is insulated from the clamp.” These efforts by amateurs and professionals notwithstanding, dissatisfaction with phonograph motors persisted into the years leading up to the First World War, and this was reflected in the claims of upstart talking machine manufacturers. A 1907 ad for the Star Talking Machine, for example, claimed for that device the “only absolutely noiseless spring motor, running or winding on the market.” The Star motor very likely was not noiseless, but the implication is clear: consumers believed that all other makes were noisy. By 1910, claims of noiselessness had been tamped down a bit with the U.S. Phonograph Company assuring consumers only that its “new type” motors offered “the closest approach to absolute noiselessness yet reached in phonograph construction.” Edison phonographs were particularly vulnerable to complaints in this vein and by 1911 the company’s customers still reported “that their machines run with considerable noise and that the springs of them release with a jump and thud.” Particularly in the home where electrically-driven models were for a long time infeasible, engineers found themselves pinned between two mutually contradictory ambitions. One one hand, they sought to remove from sonic playback the uncertainties of the human-powered hand crank, handing those duties over to clockwork mechanisms which could keep perfect, Newtonian, time. On the other hand, the addition of this

complex clockwork motor to the phonographic apparatus injected into playback mechanical noises which interfered with the mechanism's claims to accuracy.[35]

The persisting problems with phonographic "accuracy," whether caused by irregular playback or noisy motors, brought with them specific phenomenological consequences. To understand some of what might have entailed it pays to revisit the earliest perceptions of the phonograph by the general public, particularly in those cases when the machine was *not* well-regulated. In 1878, the *Chicago Tribune*, explained the newly-unveiled technology to readers, arguing that "to prevent flats, sharps, and unfortunate naturals, the cylinder must be revolved at precisely the same rate of speed in producing as it was in the original taking of the impression." Failing to do so, the paper said, "would involve utter ruin of effect, and would result in such discord as not infrequently gets the better of some of our theatrical orchestras." Three months later Edison staged an exhibition for the benefit of the New York Public and according to the *Times* "the clear notes and intricate variations" of famed cornetist Jules Levy were "repeated by the magical instrument so distinctly as to be audible in the remotest portions of the hall." At one point, however, an operator's [Edison's] error altered the pitches of Levy's notes during playback and "the key was changed, and many discords and false intonations were introduced that caused Levy to writhe in his chair, and sent shudders through the audience."[36]

In both of the foregoing examples, the unpredictability of the hand-powered phonograph encouraged witnesses to speak of phonographic playback as a kind of musical performance —"flats," "sharps," "discord," "key," "false intonations"— going on right before their eyes.

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[35] *New Phonogram*, October 1904, 13; *New Phonogram*, September 1904, 13; *Talking Machine World*, February, 1906, 27; *Talking Machine World*, October, 1907, cover. *Talking Machine World*, August, 1910, 12; *New Phonogram*, August 1911, 19.

[36]*Chicago Daily Tribune*, March 10, 1878, 16; *New York Times*, June 4, 1878, 5.

While the perception of playback as autonomous might implicate the person turning the crank as a musician, it could just as easily point toward the agency of the phonograph itself—the "talking machine" discussed in Chapter One. In June of 1878 *Scientific American* reported on the same New York demonstration as that covered by the *Times* above. While the account differs slightly in that Edison has now purposefully manipulated the playback, the agential locus of the performance has counterintuitively shifted onto the machine itself.

> …the bell of the cornet was placed near the mouth piece, and Yankee Doodle, first plain, and then garnished with variations of the most decorative character, assumed the form of dots on the foil. Without the loss of a note, the phonograph repeated it, and not only this, but even the peculiar expression imparted by the player, and the triumphant kind of a flourish which brought the tune to a conclusion, were reproduced with wonderful accuracy… After several other popular airs had been similarly replayed, Mr. Edison showed the effect of turning the cylinder at different degrees of speed, and then the phonograph proceeded utterly to rout Levy by playing his tunes in pitches and octaves of astonishing variety… Then it delivered the variations on Yankee Doodle with a celerity that no human fingering of the cornet could rival, interspersing new notes, which it seemed probable were neither in the cornet nor on any other instrument—fortunately.

In either case, erratic, aleatory, or improvisational phonograph playback had the effect of situating (in the minds of observers) the sonic event in the here and now. Rather than a "copy" of an earlier moment (like the cornet-playing of the famous Jules Levy) playback appeared to be the work of a mischievous mechanical imp named "Mr. Phonograph" or his inept human handler.[37]

**The Victrola**

Edison and his engineers remained doggedly committed to the pursuit of sonic accuracy throughout the entirety of the phonograph's early history. The Victor Talking Machine Company, however, committed itself to a similar path in acoustic engineering, but for slightly different reasons. Rather than techno-scientific pretensions to accuracy, Victor's drive for sonic purity was

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[37] *Scientific American,* June 22, 1878, 384.

driven by a more explicitly aesthetic set of considerations, closely linked to the company's ambition of stripping from its public presentation all signs of mechanism and commerce. Just as they sought to hide stacks of expensive records from the potentially pennywise collector and oily moving parts from fastidious homemakers, Victor worked diligently to channel the sounds of mechanism away from the ears of the budding connoisseur of recorded music. Fittingly, it was from the facilities of the Victor Talking Machine Company that there emerged in 1906 a single phonograph which served as the solution to nearly all of these aesthetic projects—the Victor Victrola.

In 1906, Leon F. Douglass, sales manager for the Victor Talking Machine Company told company president, Eldridge Reeves Johnson, that something had to be done regarding the talking machine's aesthetic shortcomings. "It was my opinion," he later recalled "that ladies did not like mechanical looking things in their parlors." To address the problem Johnson worked to improve on earlier cabinet designs pioneered by Douglass himself and "the result was the Victrola, an instrument fully enclosed in a cabinet which was an attractive piece of furniture." Despairing of selling a large number of these expensive new phonographs, Johnson authorized production of 200 units. Douglass, even though he had championed the Victrola, found no cause to argue with this small run and both men waited anxiously to hear of their performance as sellers. As Douglass recounted in his autobiography, Victor not only sold those 200 machines but went on to place millions more in American homes.[38]

This first run of Victrolas (actually produced outside the Victor plant by Philadelphia's Pooley Furniture Company) contained all of the elements which would come to characterize the

[38]Tim Gracyk, *Leon F. Douglass: Inventor & Victor's First Vice-President,* Retrieved at https://phonojack.com/Edison_files/Leon%20F%20Douglass.htm

entire line. The most immediately recognized difference between the Victrola and its predecessors was the new phonograph's considerable size. Nearly every model of phonograph produced prior to the Victrola had been designed to sit on top of a table or, more ideally, a record cabinet but the Victrola stood four feet tall and was intended to rest directly on the floor. Unlike earlier phonographs, the Victrola did not clutter up or damage one's furniture. It *was* furniture and had the heft and copious woodwork to prove it. Further highlighting the Victrola's shift toward "furniturization" were the design innovations apparent in the machine's amplifying horn, or more specifically, the apparent lack thereof. While manufacturers had earlier sought to minimize the horn's obtrusiveness, Victor engineers hid the Victrola's amplifying horn altogether, running it under the turntable and through the hollow body of the machine's cabinet, thus addressing one of the detractors' most damning criticisms. Finally, a hinged lid covered the top compartment of the cabinet where sat the turntable itself. The complete concealment of the Victrola's mechanism very quickly attracted attention, and shortly after its unveiling the magazine *Talking Machine World* noted that "every mechanical part is concealed when not in actual use." In truth, the Victrola's mechanism was concealed even when being played if its lid had been closed, and one need only open it when putting on a new record.[39]

The success of the Victrola convinced Victor's competitors of the need to launch their own versions of the popular phonograph and these imitations were not long in coming. Columbia's "Symphony Grand Graphophone," which went to market in 1908, attempted to satisfy two home markets by concealing a phonographic apparatus inside a cabinet designed to look like a player piano. In a piece of marketing directed toward dealers, Columbia pointed out

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[39]Baumbach, *Look for the Dog*, 82-84; *Talking Machine World*, September 1906, 44.

that with the Symphony Grand Graphophone there was "no horn in sight." But it also attempted to cash in on the contemporary cache of the player piano, informing its dealers that "every man in your town who has bought a Pianola is ready right now to have the Symphony Grand Graphophone demonstrated to him." That a buyer might be hesitant to purchase a second piano-style piece of furniture for the same home seems not to have occurred to the company. The company soon settled on a more Victrola-esque presentation with their famous Grafonola concealed-horn graphophone. In 1909, Edison entered the fray with its amberola, which like the Victrola, featured a substantial 48" cabinet, a concealed horn and a top lid for concealing the mandrel and reproducer. So successful were these new phonograph models that by World War I, fully-cabineted phonographs had all but completely eclipsed the once-popular exposed horn talking machine.[40]

If the complete occlusion of the phonographic mechanism had not been enough to convince prospective customers that the Victrola, the Grafonola and Edison's "Amberola" could be trusted in the parlor, their manufacturers were more than willing to push the logic of furniturization even further. In 1908 Victor offered its flagship model in new styles including "satin-finish Circassian walnut, the most beautifully figured of all woods," as well as "weathered oak" in "dead flat finish." This marked only the beginning of the company's attention to facade. In 1909 the company offered for sale a Victrola XVI with a cabinet in Moorish Marquetry, inlaid with mother-of-pearl and made in Morocco. Its $750 price tag meant very few were ever produced and it lasted only a few years before disappearing from the company's catalogs. Another opulently designed Victor product was the Vernis-Martin Victrola XVI, which featured a

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[40]*The Columbia Record,* November, 1907, 8; Frow, *Edison Cylinder Phonographs*, 88-109.

cabinet with hand-painted scenes on the sides and front, emulating a furniture style popular during the reign of Louis XV. The Vernis-Martin sold for $400 presenting a more "affordable" alternative to the Moorish Marquetry model.

In the years following, most of the major (and some of the minor) makers of phonographic equipment rushed to fill the popular demand for higher-end furniture grade phonographs only whetted by Victor's early forays into the market. In a brochure for its Vocalion phonograph, the Aeolian company boasted "a special series of models designed by such world-famous decorators of this country and Europe as: Wm. Baumgarten & Co., Huber & Co., W. & J. Sloane, Wm. Pierre Stymus, Jr., inc." By 1916, all of Edison's standard model phonographs were housed in imitations of period style furniture, but the company decided in that year to push the stakes even higher, commissioning Minneapolis firm W.A. French to produce eight "New Period Models" later called "Art Models." Two of these designs featured gigantic gothic cabinets modeled on actual specimens of antique French furniture and the whole line ranged in price from $1000 to $6000.

In 1917, never willing to be upstaged in the pursuit of good taste, Victrola released a catalog of 46 new Victrolas in such historical styles as William and Mary, Gothic, Jacobean, Chippendale, Empire, Adam, Queen Anne, Louis XV, Louis XVI and Chinese Chippendale. Victor, like its competitors, sold few of these opulently-made phonographs. The aim was not, however, to capture the minuscule sliver of the market which could bear traffic in such expensive instruments, but rather to signal the prestige of the company's brand to the mass market. The

mere existence of the Chinese Chippendale Victrola redounded to the perceived value of all of Victor's products because it distinguished the company as a serious arbiter of taste.[41]

Victor's flagship line of talking machines very obviously reshaped the visual semiotics of the home phonograph, transforming the awkward talking machine into a respectable piece of furniture. Often under-appreciated, however, is the extent to which the Victrola and the knock-offs it inspired represented a departure in the semiotics of phonographic sound, as well. A 1906 piece in the *Talking Machine World* describing the recently-unveiled Victrola suggested just what an informed observer might have found noteworthy in the new talking machine:

> The Victor-Victrola, a description of which will be found elsewhere in this issue, made its appearance in Chicago last week. Everybody is talking, not simply about the beauty of the cabinet, and the perfect concealment of the mechanism and the facilities for record "albums," but principally about the tonal effects produced by means of the lid over the turntable by which departing sounds are eliminated…

A bit of promotional copy released by Victor around the same time informed the trade that "when the [Victrola's] lid is closed down it shuts out all sound of operation." The lids of phonograph cabinets trapped such noise as might escape from the top of the machine. But by concealing the motor and other parts of the drive mechanism behind a wooden facade, it was possible to eradicate much of the mechanical sound from phonographic playback altogether.[42]

Drawings for a new type of phonograph cabinet designed by Stephen M. Wirts around 1910 illustrated the sonic logic at play in the new phonograph cabinets by exaggerating it. In Wirts' drawing the mechanism is ensconced in a cabinet designed like a desk except that one of

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[41] *Voice of the Victor,* September, 1908, 8; The Aeolian Company. "Aeolian Vocalion: The Phonograph Supreme," (New York: The Aeolian Company), 1. Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts. George Frow. *The Edison Disc Phonographs and the Diamond Discs: A History with Illustrations* (Sevenoaks: G.L. Frow, 1982), 49-52; Baumbach, *Look for the Dog,* 48-53, 52-53.

[42] *Talking Machine World*, September, 1906, 15, 44.

its narrow sides is intended to face outward into the room. The motor and turn table are situated far in the back of the cabinet and a long horn runs from the turntable all the way to the other end of the enclosure where it delivers the phonograph's sounds into the open air. A secondary object of the new cabinet is aesthetic, but its primary aim is sonic: "to eliminate as far as possible all noises arising from the movements of the motor and to amplify sound waves from the diaphragm without destroying their effect." The more cabinetry one could place between the listener and the phonograph's motor, the less noise would reach her ears. Provided that recorded sounds were conducted through the labyrinth of wood by a suitable amplifying horn, the signal-to-noise ratio would be increased dramatically. Three years later descriptions of a new device patented by one Alfred R. Cunnius, spelled out the sonic effects of enclosed-horn cabinets even more explicitly. "…The cabinet type of machine," readers of *Talking Machine World* were informed, "is provided with a cover for inclosing the revolving table, the sound box and tone arm," the result being "that machine noises and the noise of the reproducing stylus upon the record tablet as well as such sounds as are caused by the reproducing diaphragm on the exposed face are all hushed." This, together with the fact that "the motor mechanism for driving the revolving table is housed in the body of the cabinet" meant that "only such sounds as travel through the sound conduit [horn] and are emitted through the large end of the sound amplifier are observable by the listener."[43]

**Conclusion**

In a 1912-1913 catalogue of the company's Disc Model Phonograph's, the Edison Company employed a brilliant rhetorical trope to distinguish its wares from those of the competition. The unnamed author begins by first insulating the Edison Disc Models from the

[43]*Talking Machine World*, August, 1910, 56-57; *Talking Machine World*, February, 1913, 52.

business of buying and selling. True, he or she has been hired to compile a catalog for the instrument, but one might as well attempt "to write commercially of a Stradivarius violin." The author concludes "I shall not attempt to prepare a catalogue for the Edison Disc Phonograph," (it *is* a catalogue) opting instead to relate "what I have witnessed in the past two years as Thomas A. Edison approached and finally reached the successful culmination of thirty-five years of endeavor to perfectly reproduce sound."[44]

This rejection of commerce for the language of artistry and technical achievement represents only the first step in the catalogue's infrastructure-hiding sleight-of-hand. Assuming a familiar tone, the author pursues a curious approach to talking machine marketing: "Perhaps you are prejudiced against talking machines. I confess a very strong dislike for talking machine music." As the reader soon discovers, however, the Edison disc phonograph—according to the unnamed author—is not a talking machine! "Any talking machine" the catalogue states, "can and does reproduce the fundamental tone of the original music, but the quality and beauty of music are in the overtones or tone colors." Instruments incapable of reproducing musical *overtones,* on the other hand, are incapable of true music and "that is why you and I dislike talking machine music— or at most are merely tolerant of it." In creating his new Disc Phonograph, however, Edison had sought "the reproduction of every tone color." The distinction between Edison products and "talking machines" becomes more explicit when the author asks rhetorically "how can I best compare the new Edisonian reproduction of music with talking machines?" The

[44] Thomas A. Edison, Inc. "Edison Phonographs: Disc Types,1912-1913" (Orange: Thomas A. Edison, Inc.). Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts.

narrative ends with an injunction to readers: "Listen to talking machines. Then listen to the Edison Disc Phonograph. Then tell me if I have overstated the facts."[45]

In the same years Victor also moved to insulate its brand from the taint of mechanism. The October 1913 issue of the *Voice of the Victor* advised its salesman on "a very vital point which should never be lost sight of…": "records and Victors are only the *means to an end.* What the public wants is *music*— not mechanism." By way of illustration, the *Voice* narrated a story, reprinted from the *Musical Times*, in which piano player salesman confronts a prospective customer with a laundry list of technical questions regarding the salesman's models. From experience, the salesman knows that the customer does not really care about these matters and that they will likely only confuse and discourage him from purchasing. He moves swiftly to reframe the conversation:

> If you really want to know those things… I will take the player mechanism out and show you just how everything works and explain the reasons. But, am I wrong in supposing that you are interested in the music the player will produce, or perhaps you are more interested in the mechanism?
>
> Why no… I want a player for the family—of course.
>
> That's all I want to know, and all you should care about either. What do you care about whether the player is built out of sheet iron or lignum vitae, so long as it plays to suit you? We guarantee it—that's sufficient. You can easily find out whether we are reliable or not and you will find that there is no stronger guarantee than we can give you. If music is what you want, this player will suit exactly. But just plain mechanism—you can get all of that you want by taking an alarm clock apart. We are selling music, not mechanism.

Rather than becoming bogged down in technical discussions which can only serve to damage the magical aura of the device, it was far better to "blackbox" the mechanism, to insist that no

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[45] Thomas A. Edison, Inc. "Edison Phonographs: Disc Types,1912-1913" (Orange: Thomas A. Edison, Inc.). Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts.

knowledge of its workings are necessary because the whole assemblage had been wrapped in the good faith and credit of a reputable firm.[46]

Unfortunately for Victor, the new strategy of discursively concealing mechanism would prove challenging. The firm, after all, had cast its lot with the decidedly mechanical name the Victor Talking Machine Company. In a promotional pamphlet entitled "What have you got in a Victor Talking Machine?" the company addressed just this embarrassing detail. "Who knows what the King of England's family name is?" it asked before reminding readers that it was "Wettin." "But" the pamphlet cautioned, "he has outgrown everything but 'Edward,' long ago," and so too had Victor outgrown the designation of a "talking machine" company. The Victrola, to be sure *was* a machine "but we are forgetting this and many of the Victor's enthusiastic owners are doing likewise, because it's so lifelike.[47]"

Manufacturers' growing uneasiness with the designation "talking machine" brought together in one trope the many discursive and mechanical strands of the phonograph's evolution in the years after 1900. The apparatus itself had become an increasingly opaque signifier with more and more of its works hidden behind finely-wrought cabinetry. Superficially, the impulse to hide the phonograph's mechanism owed to a belief, like that expressed by Leon F. Douglass, that women did not like "mechanical looking things." But this rather superficial line of reasoning left unquestioned the historical foundations of middle class women's determination to keep machines out of the parlor. Simply put, the bourgeois parlor was itself intended as a respite from the means-end logic of the workaday world. Money, machines, labor, and anything redolent of

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[46] *Voice of the Victor*, October, 1913, 15.

[47] Victor Talking Machine Company, "What have you got in a Victor Talking Machine?" (Camden: Victor Talking Machine Company). Playback Advertising Ephemera Collection, Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts.

necessity had no place there. Women, as the appointed guardians of that sanctified space, recoiled (or at least were expected to recoil) from any such intrusion.

The same set of cultural dynamics demanded that art— including music—disentangle itself from and transcend the material circumstances of its production. For the phonograph industry and its customers, then, the ideal consumption of recorded sound took on a decidedly passive character, valorizing longer playtimes, automatic braking, and fewer changes of records and needles. Phonographic sound, too, had to be stripped of all evidence of mechanism. This entailed, in the first instance, the development of high-quality spring and then electric motors which could reproduce recordings accurately enough that their own role in the sonic event of playback could disappear from view. As Edison's phonograph exhibition in New York demonstrated, the talking machine was capable of musical feats unparalleled in the annals of human performance, and, while this sort of thing might prove entertaining for a season, it was manifestly not art. The phonograph would have to be tamed and its operations rationalized and brought into accordance with abstract Newtonian time. This emphasis on clocklike consistency, however, was offset by a countervailing sonic desideratum: the necessity of removing from playback the tell-tale sounds of machinery at work. As it happened, the spring and electric motors best able to "keep time" were noisy affairs. The job of separating sonic wheat from chaff, then, relied largely on creative use of cabinetry.

Victrolas, Amberolas, and Grafonolas, as well as the various cabinet phonographs offered by lesser competitors represented a two-fold coup in manufacturers' war against the semiotics of mechanism. They concealed belts and gears from the eye at the same time they redirected

fugitive whirrs and clicks from the ear. By World War I the industry had largely achieved its goal of removing phonographic mechanism from the semiotics of playback.

# CHAPTER VI

## Sonic Modernity

In March 1908 the *Voice of the Victor*, ran an article by music critic Marc A. Blumenberg, originally published in the *Musical Courier*. In the piece, Blumenberg meditates on the nature of recorded music, attempting to reconcile Romantic notions of musical ephemerality with the permanence of the recorded medium:

> The performance of great works of music are transient, because music is motion. It passes forever when once it has been uttered. To hear an artist sing a song is to hear it once and never again just as it was sung then, because no great artists can always be in the same mood and no artists can repeat exactly. The same applies to a symphony or piano performance. To perpetuate, therefore, a song sung by a great artist, a symphony played by a great orchestra, is to place on record, like the human voice can be placed on record in Victor, in perpetuity, an artistic event representing the time and the moment itself only and nothing else, because it is impossible of duplication.[1]

Musical performances, Blumenberg asserted, cannot be "duplicated" because their very essence lay in their ephemerality. In this he drew on older Romantic notions of music as an untranslatable sphere of human experience, one irreducible to anything other than itself. One could not simply "write down" musical performance as one could a poem or a speech because the musical moment consists of exactly that what which evades representation. For Blumenberg then, only one interpretation of the phonographic art remained: Recorded music was ontologically identity to

[1] *Voice of the Victor*, March, 1908, 5.

the original performance. That really was Caruso, Gluck, or Melba pouring forth from the phonograph's horn.

Until just a few years before Blumenberg's commentary, however, observers had understood the phonograph as a talking machine. The ontological relationship between the original performance and its phonographic echo spurred little comment as the matter was largely settled—the phonograph, observers believed, merely mimicked the sounds it "heard." That it did so with preternatural accuracy surprised and delighted, but it caused little trouble for the "talking machine" interpretation. What, then, had changed by 1908? How could Blumenberg so emphatically assert that phonographic music was no duplicate of the original performance, but the thing itself?

Previous chapters have offered part of the answer to this question. By 1908, phonographic playback had become a completely different kind of event from the phonograph exhibitions of the 1870s and 1880s and even the nickel-in-slot parlor machines of the previous decade. To begin with, the phonograph itself now bore few outward signs of human or mechanical labor. Its gears, pulleys, motors, belts and other various bits of mechanism had been hidden behind polished cabinetry. The sonic signals of the machine's presence—shakes, whirrs, or grinding sounds—had also been removed, swallowed by the machine's spacious cabinetry or muffled with springs and rubber washers. Listening tubes, which in the 1890s had anchored listeners to the phonograph and centered their focus on the mechanical origins of its sounds, had come and gone. They were replaced with projecting horns that allowed listeners to range away from the apparatus. The signs of human labor, too, had been winnowed from the phonograph's performance. The simple hand-powered cylinder phonograph had given way to a procession of

alternative power sources from water-powered motors to alternating and direct current electrical motors. The earliest home phonographs relied on a spring motor that, while hand-cranked, stored increasing amounts of potential energy and allowed listeners longer and longer periods during which to forget that the phonograph was human-powered. By the twenties, home phonographs not only included electric motors which used wall current to run (seemingly) indefinitely, but also automated most of the labor of phonograph-listening. Some home units could play as many as twenty records without the slightest intervention on the part of their owners.

While phonographic apparatuses were slowly disappearing from view in the years after 1900, however, another material-semiotic revolution was taking place in the production of records, and in this lies the last piece of the puzzle of sonic modernity. In the 1890s performers who made their livings from singing for the phonograph appeared to the public as a special breed of artisan—the "cylinder maker." His or her work was not understood as artistic achievement, but rather as a form of repetitive, industrial labor, and observers thought of the etching of sonic information onto records as a process very much like pouring wax into molds or shaving the finished blanks to size. Those who recorded their performances for the phonograph, then, were thought of as a class of printers who produced duplicates of sonic texts just as traditional printers churned out copies of the *Bible* or the *New York Times.* As with printed scripts, sound recordings produced in this era were valued for their success in clearly and accurately reproducing a pre-existing text.

After 1900 all of this changed, when Edison, Columbia and Victor engineered new and improved processes for the duplication of phonograph recordings. These new processes brought in their wake two closely-related consequences for the public face of recording. First, they drove

a material and conceptual wedge right through the practice of recording, separating the rote labor of mass-production from the rarefied realm of "high art." This, in itself, tended to undermine the earlier conception of phonograph records as labor-soaked sonic "scripts" produced by relatively impersonal "cylinder makers." Secondly (and more importantly,) the new duplicating technologies opened the field of phonograph recording up to a new class of performer—the established performance star. On one hand, the entrance of Enrico Caruso, Nellie Melba and other practitioners of art music reinforced the conception of the performance as a thing apart from the record on which it was captured. "Good music," in the sense in which early twentieth century Americans were accustomed to thinking of it, had little to do with the mundane and the material and was sheathed in a metaphysics of transcendence. On the other hand were the mechanics of celebrity. Cylinder makers were known *as* cylinder makers, and they existed in the public mind by dint of the industry and the machines which they served. Not so with the new recording stars. These were men and women of established repute whose names preceded chronologically and conceptually their involvement with the industry. Further, as celebrities the new recording stars cast a long and conspicuous shadow across public consciousness and their appearances in other forms of media like the press allowed the industry to capitalize on every facet of recording artists' identities for the selling of records. In the same years that the phonographic apparatus and its operational infrastructure were becoming difficult to see and imagine recordings themselves were being purged of the semiotics of labor.

**Records**

Some of the earliest prognostications for the future of phonography—including those of Edison—envisioned an endless and nearly effortless duplication of recordings along the lines of

modern printing. The earliest efforts in this direction began in the 1870s when the Edison Speaking Phonograph Company sought a method to electrotype the crude foil records of the first phonograph. Several parties turned their attention to the problem but to no avail and by June 1878 Charles Cheever of the ESPC had grown sufficiently desperate to propose distributing free phonographs to inventors and giving a prize of $1000 to the first to electrotype a record. It does not appear that the scheme was ever tried and in any event, would have only been a case of throwing good money after bad. The tinfoil phonograph suffered limitations more damning than the lack of a duplicating process, and as we have seen, it had largely disappeared from the attention of the public within a couple years.[2]

With the phonograph's rebirth after 1886 the search for a mechanical duplicating technology recommenced. "Cylinder makers" of the 1890s industrialized the production of phonograph records and even approached the output of the primitive printing press by multiplying the number of recording devices and by pouring take after take into their attentive horns. Theirs was a decidedly labor-intensive business. The earliest successful record duplications by cylinder makers likely relied on an acoustic method in which an original wax master was taken of a musical performance and then played on a phonograph while one or more recording phonographs captured its sounds from the open air. Acoustic duplications, however, suffered enormous loss of fidelity and the first patent awarded for phonographic duplication represented an improvement on this approach. By connecting the diaphragms of two phonographs with a hollow tube, inventor and phonograph industry mainstay Leon F. Douglass

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[2] Henry J. Davies to Thomas Alva Edison, March 13, 1878 (TAEM D7802ZDH) Charles B Harris to Edison, Thomas Alva Edison, May 8, 1878 (TAEM D7830ZAB). Charles Augustus Cheever to Gardiner Greene Hubbard, June 10, 1878 (TAEM X012G1CC).

was able to more forcefully channel sound waves from a playing record into the recording stylus of a recording phonograph, thereby achieving greatly improved sound quality in his duplicate records. He assigned the patent, filed on March 7, 1892, to Columbia who promised Douglass a two cent royalty on each duplicated record.[3]

By the 1890s, however, Edison and others had already been long in search of a method for mass-duplicating records—a method more truly analogous to printing. Edison's duplication technology, known as "pantography," relied on a single diaphragm with a reproducing stylus on one side and a recording stylus on the other, allowing vibrations to pass directly from one cylinder to the other without the loss of energy entailed in acoustic transmission. Vastly superior to acoustic methods of duplication, pantography became the industry standard within a few years. Inventor and phonograph entrepreneur Gianni Bettini filed a patent for a pantograph in 1892 and soon after sold interests in the patent to Columbia as well as the New York Phonograph Company, one of North American's local subsidiaries. In 1895 Columbia's T.H. MacDonald filed a patent for his own pantographic duplication method.[4]

By the middle of the 1890s, then, pantographic duplication had replaced acoustic methods at Columbia and Edison. For the most part, major industry players managed to keep a lid on their duplication methods. Edison chose the route of secrecy, and a January, 1893, letter from A.O. Tate to Edison suggests the seriousness with which the company took the project of concealing its duplicating secrets:

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[3] Allen Koenigsberg, *The Patent History of the Phonograph, 1877-1912* (Brooklyn: APM Press, 1990), xxxii. Walter L. Welch and Leah Burt, *From Tinfoil to Stereo: The Acoustic Years of the Recording Industry, 1877-1929* (Gainesville: University of Florida Press, 1995), 74-75.

[4] Koenigsberg, *Patent History*, xxxii-xxxiii. Raymond Wile, "The Local Phonograph Companies, 1888-1920," *Association for Recorded Sound Collections Journal* 36, no. 1, 15.

> Following your suggestion I have placed Walter Miller in charge of our Musical Record Department. He is going to send Hagen down to see me and I will engage Hagen as an Assistant to Miller. I am satisfied that we can keep the Duplicating process secret at the Phonograph Works, in the Toy building. We will adopt every precaution to effect this end.

While Edison sought to prevent loose lips from sinking his ship, Columbia turned to the courts, claiming control of all duplication techniques on the basis of the Douglass patent. When apprised of Columbia's claim, Edison waved it off, arguing that "four years ago [I] made 40 special machines to do what is described in this patent, and in the same way." Additionally, Edison claimed, "the whole thing was set out in caveats long before the machines referred to were even made" and that "these caveats must be ten years old..." Unshaken by Columbia's bluster or the prospect of litigation, Edison's Phonograph Works continued to turn out duplicated records. Columbia was, however, able to discourage lesser concerns from entering the waters of cylinder duplication, and with the duplication market cornered, Edison and Columbia provided duplication services for smaller companies engaged in cylinder production. Edison lobbied aggressively to have all of North American's subsidiaries contract with him for record duplication.[5]

Despite its marked superiority over acoustic duplication, pantography suffered from serious limitations of its own. As with the earlier method, pantography required that the record be played for duplication, adding costly minutes to production time. Further the earliest pantographs employed at Edison's factory and elsewhere likely produced only one duplicate at a time, and original master records wore out after so many runs through the pantograph. Edison

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[5] *Phonoscope*, October 1897, 9; Tim Brooks, "Columbia Records in the 1890s: Founding the Recording Industry," *Association for Recorded Sound Collections Journal* 10, No. 1 (1978); Raymond Wile, "Duplicates in the Nineties and the National Phonograph Company's Bloc Numbered Series," *Association for Recorded Sound Collections Journal*, 32, no. 2, 177-184; Wile, "Duplicates," 183; *Phonoscope*, November, 1897, 12.

claimed to get anywhere from 200 to 300 duplicates from a single "master" record before it had worn out. Scholar Allen Koenigsberg believes the figure to have been much lower, citing 30. Pantography, then, hardly represented the route to post-scarcity sound dreamt of by industry personnel, a fact borne out by the scattered production data afforded by the archive. An October 1891 report prepared by Edison's National Phonograph Company tabulated the output of duplicated cylinders for several months prior:[6]

**Table 6.1. National Phonograph Company Weekly Shipments of [Duplicate] Cylinders**

| **Week Ending** | **Duplicates Shipped** |
|---|---|
| August 8, 1891 | 50 |
| August 15, 1891 | 0 |
| August 22, 1891 | 79 |
| August 29, 1891 | 0 |
| September 5, 1891 | 24 |
| September 12, 1891 | 254 |
| September 19, 1891 | 266 |
| September 26, 1891 | 112 |
| October 3, 1891 | 200 |
| October 10, 1891 | 160 |
| October 17, 1891 | 60 |
| **Total** | **1205** |

[6] This description is based on an early pantograph owned by collector Charles Hummel. See Timothy C. Fabrizio and Paul F. George, *The Talking Machine: An Illustrated Compendium, 1877-1929* (Atglen: Schiffer Pub., 1997), 31; *The Phonogram*, April, 1892, 243; "Proceedings of the Second Annual Convention of Local Phonograph Companies of the United States," in *The Conventions of the Local Phonograph Companies, 1890-1893*, ed. Patrick Feaster (Bloomington: Phonozoic, 2009), B89 Koenigsberg, *Patent History*, xxxii. John F. Randolph [supplied or conjectured] and Thomas Alva Edison [supplied or conjectured] -- Reports and Statements, October 1, 1891 (TAEM LB053006).

These numbers reflect the earliest days of the Edison cylinder duplication service. Best practices had yet to evolve and many eventual customers had not placed their first orders. By September of 1893 the Phonograph Works had made 18,626 duplicate records, suggesting a drastic improvement in production in the two years since the first report, but still a far cry from the river of wax characteristic of the later recording industry. Despite these underwhelming production figures, the Edison plant managed to stay ahead of orders. In January 1892 Edison's secretary A.O. Tate informed his employer that enough cylinders were on hand to satisfy orders for the time being and Edison called a moratorium on production. In the coming years, the paltry output of the pantograph continued to outpace demand and of the 18,626 duplicates produced by September 1893, 11,517 remained in the Phonograph Works' warehouse.[7]

The relatively small traffic in mechanically-duplicated cylinders, however, should not be construed as a general lack of demand. Edison's phonograph works supplied the blank cylinders to most of the industry—including the many "music factories" great and small who had taken as their business to supply the trade with pre-recorded music. Consequently, the company could gather fairly accurate data regarding the market for musical records. In the autumn of 1893 A.O. Tate estimated that between 150,000 and 200,000 musical records were purchased annually. Unless Columbia had shipped substantially more duplicates than Edison's total of 7,109, these figures suggest that the manufacture of musical cylinders remained, at least for a while, a remarkably de-centralized industry. Some music factories probably employed crude acoustic methods of duplication or even—despite the best efforts of Columbia's lawyers—their own pantograph devices. The great majority of recorded music, however, found its way onto wax by

[7] Wile, "Duplicates," 180; Alfred Ord Tate to Thomas Alva Edison, September 30, 1893 (TAEM D9343ABZ).

the methods outlined in Chapter 3, with singers and instrumentalists gathered before batteries of recording horns, churning out dozens of performances per session.[8]

The demand for musical records increased steadily throughout the 1890s and by the end of the decade cylinder manufacturers were proving unequal to the task of keeping up with demand. Improvements had been made in pantography, and at least one firm, Columbia, eventually developed a pantograph which could make three duplicates at a time. Similar advances in the art of cylinder manufacture were undoubtedly made in other corners of the industry but the demand for records spurred by the burgeoning home phonograph market outstripped these production improvements.

Around 1900 the cylinder record industry reached its next quantum leap in duplicating technology: molding. With the limitations of pantography so obvious Edison had always hoped to introduce a more efficient system. At the Second Annual Convention of the Local Phonograph Companies in 1892 Edison representative Walter Miller announced to the assembled industry representatives that in addition to his present (pantographic) method of duplication Edison had developed a second. However, while this second method yielded much better copies, it was more expensive. To even consider this second duplication method, Edison would require the local companies to commit to a substantial number of records ahead of time. Given the fiscal constraints of the local companies they predictably opted for the cheaper pantographic method and the matter was laid to rest. The second duplication method was molding.[9]

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[8] Alfred Ord Tate to Thomas Alva Edison, September 30, 1893 (TAEM D9343ABZ).

[9] Fabrizio and George, *The Talking Machine*, 84; "Proceedings of the Second Annual Convention of Local Phonograph Companies of the United States," in *The Conventions of the Local Phonograph Companies, 1890-1893*, ed. Patrick Feaster (Bloomington: Phonozoic, 2009), B89.

To mold a phonography record a newly-recorded master cylinder was coated with an ultra-fine layer of gold dust so that it would conduct electricity, after which it was electro-plated with copper. The copper-coated cylinder was then, in turn, placed in a more durable brass shell. The entire assembly was then cooled, causing the wax master to shrink inside of its copper casing and allowing the mold-maker to remove it from the mold. If the procedure had been conducted correctly a perfect "negative" of the record and its spiraling hill-and-dale sound groove would be preserved in the copper sheath lining the inside of the mold. To make a duplicate, Edison employees reversed the process. First, they shaved a fresh blank cylinder down to a size just a bit larger than the mold and shrank it with cool water. In this state it easily slid inside the mold where it was then heated causing it to expand and push against the copper lining. Once more, the blank was shrank by cooling and removed from the mold. If *this* stage of the procedure had been conducted properly the wax blank would now contain a perfect copy of the original record's sound groove.[10]

Around the beginning of 1902 both Edison and Columbia introduced molded cylinder records and the new technology almost immediately revolutionized the industry. In 1900, the United States Census of Manufacturers estimated the total output of all American cylinder record manufacturers to be 2.2 million for the previous year. By 1904, that number had grown nearly tenfold with approximately 21 million cylinder records issuing from the factories of the nation's record makers that year. The explosive growth of cylinder manufacture in the years around 1900, however, should not distract from a crucial fact. Edison and those who followed in his wake had dreamt of a way to "print" sound— a nearly costless and phenomenally profitable method of

[10] Wile, "Duplicates," 194.

reproducing sonic texts. But printing was a fundamentally two-dimensional art while cylinder records complicated matters immensely by the introduction of the third dimension. First and most obvious is the matter of the recording medium itself: paper is flat but wax records are cylindrical. Written text stretches across the paper page in orderly flat lines while phonographic "writing" wound around its wax cylinder in tight spirals that resembled a spring.[11]

Even if the recording medium could be stretched out flat (such was the case with Edison's earlier tinfoil records,) the data on cylinder recordings would have remained fundamentally three-dimensional. Printed text depends for legibility on the correct placement of ink on the two dimensional plane of the page, and with the exception of Braille, does not rely on depth or texture. The recording and playback technologies on which wax cylinder recordings relied, however, did. The recording stylus registered sound waves by cutting a line which undulated *perpendicularly* to the surface of the record. When the sounds on a wax cylinder were played back, the reproducing stylus did not zig-zag left and right over the surface of the record, but rode over a bumpy up-and-down pattern etched in the bottom of the record's wax groove—the famous "hill and dale" groove of the Edison recording technology. Because of the complex, three-dimensional spatial orientation of their data, cylinder records could not (in the early twentieth century) be printed, and their duplication would always rely on relatively involved operations like those involved in molding.

While Edison and Columbia struggled with nineteenth century 3D printing, a competitor had slowly but surely been perfecting a system of recording in two dimensions which could be duplicated through methods truly analogous to printing. Emile Berliner's gramophone utilized

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[11] Tim Brooks, "High Drama in the Record Industry: Columbia Records, 1901-1934," *Association for Recorded Sound Collections Journal* 33, no. 1, 21-23, 39.

round and flat records— the discs so familiar as "records" to children of the twentieth and twenty-first centuries. But Berliner's records departed from those of Columbia and Edison in one other, crucial, way. Instead of incising sonic data in a hill-and-dale pattern perpendicular to the plane of the record's surface, Berliner's recording method produced a laterally zig-zagging incision *parallel* to the plane of the recording surface. Like hand-written script, the gramophone's "writing" presented entirely in two dimensions and its sonic data could be "read" without regard to depth.

After experimenting with several techniques, Berliner hit upon an ingenious method. He covered a zinc disc with a thin waxy film of beeswax and gasoline, a concoction which was extraordinarily soft and which yielded to the slightest movement of the recording stylus. Even more importantly, it was acid resistant. Berliner then used the zinc disc to make a master recording, with the stylus etching a long undulating groove into the beeswax/gasoline, exposing the zinc disc below. He then placed the recorded master into an acid bath and waited while its corrosive action ate a fine groove of even depth into the exposed portion of the disc. Removing the wax film, Berliner discovered a perfect copy of the original groove etched by acid into the zinc disc beneath. Utilizing an electrotyping technique similar to Edison's, he then produced a steel or iron negative which could then be used to stamp perfect copies of the original recording into heated and pliable India Rubber blanks.[12]

The preparation of these flat disc matrices, was, to be sure, an involved process. But once made, they facilitated duplication which was dramatically more efficient than molding techniques. In his 1942 memoir *The Music Goes Round*, industry veteran Fred Gaisberg, argued

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[12] Fabulous Phonograph, 58; Raymond Wile, "Etching the Human Voice: The Berliner Invention of the Gramophone," *Association for Recorded Sound Collections Journal* 21, no. 1, 8-9, 14.

for the centrality of Berliner's duplicating process to the success of the Victor Talking Machine Company, arguing that "the stumbling-block to the rapid development of the old phonograph was the difficulty of duplicating record cylinders." He believed "simple stamping of endless copies from one master" to be "one of the two great advantages of the gramophone process" and went so far as to attribute the eventual triumph of disc records over cylinders to Berliner's stamping technique.[13]

1904 proved to be the high-point of the cylinder's popularity as a recording medium, and had, in fact, already been surpassed by the disc in total production figures. By the early 1920s the total output of American record manufacturers reached 107 million, but the once-mighty cylinder accounted for fewer that 4 million of that figure. Discs accounted for over 105 million.[14]

**Table 6.2. Annual Production of Disc and Cylinder Records in the U.S. (millions)**

| Year | Cylinder Records | Disc Records | Total |
|---|---|---|---|
| **1904** | 21.0 | 4.0 | 25 |
| **1909** | 18.6 | 8.6 | 27.2 |
| **1914** | 3.9 | 23.3 | 27.2 |
| **1919** | 5.9 | 101.1 | 107.0 |
| **1921** | 1.8 | 103.4 | 105.2 |

[13] In 1901, the Victor Talking Machine replaced Berliner's ingenious, if byzantine, zinc disc method with one utilizing a simpler hard wax recording medium. Fred Gaisberg, *The Music Goes Round* (New York: Macmillan, 1942), 19-20, 44. The other great innovation produced by the company, he argued, was that the gramophone's reproducing stylus was guided by the record's groove. Edison's machine tracked across the surface of the record mechanically.

[14] Table taken from Brooks, "High Drama in the Record Industry," 39.

Much more than cheap duplication techniques lay at the heart of the disc's conquest of the market. The Victor Talking Machine Company, inheritor of Berliner's gramophone patents, championed the cause of disc records and did much to create a market where one had not existed. Its management, led by president Eldridge Reeves Johnson, was a remarkably imaginative cohort whose work established templates not only for the recording industry but for the emerging culture of marketing and consumption in twentieth century America. Without the deliberate and concerted efforts of Victor the disc record would never have inundated the world. It is equally true, however, that the wide profit margins afforded by flat disc recording made Victor a very lucrative enterprise. The robust stream of revenue generated by record sales allowed the company to experiment in all directions, producing novel and epoch-making consumables like the Victrola. It also provided the company with the financial resources necessary to pursue one of the most innovative marketing campaigns in history and company president E.R. Johnson was noted for his nearly fanatical faith in (and outlays for) print and outdoor advertising.

In that sense, the flat disc record proved a particularly effective oil with which to prime the pump of American consumer culture. At Victor, Columbia and a quickly-proliferating cohort of smaller competitors, record output exploded in the first decades of the twentieth century. Retail prices dropped, encouraging higher consumption. Skyrocketing corporate profits facilitated higher and higher expenditures on advertising which in turned stimulated consumer enthusiasm for the phonograph and its records.

The second major shift in the consumption of recorded sound after 1900 obtained in the piles of shellac discs and wax cylinders that accumulated in the parlor of every phonograph owner. In June 1903 it was reported in the pages of *Edison Phonograph Monthly* that a Chicago

enthusiast had accumulated a total of 404 Edison Standard Records, intelligence which was received by the phonograph community as a declaration of war. The following month a west coast dealer apprised readers of the same publication that one of his customers owned "upwards of 500 records." Unfortunately, the Californian's reign as world champion record collector was short-lived. The same issue of *Phonograph Monthly* reported on a Kewanee, Illinois, man in possession of over 1,900 records, while O.R. Looker, President of the Michigan Mutual Life Insurance Company, owned over 3000. These early high-water marks were seldom surpassed, but dealers and consumers continued to write the trade journals for years, trumpeting their prowess as record collectors. In 1912 W.N. Moulton of Danvers, Massachusetts, informed the *New Phonogram* that his record collection numbered 1558 and "issue[d] a challenge to any and all Edison owners to match his list, in point of numbers." Apparently no one bothered to inform Moulton that collectors had surpassed his achievement a decade prior. The same issue of the *New Phonogram* did, however, carry word of a 3,000 record collection, deflating Moulton's grandiose pretensions as a collector.[15]

Collections of all kinds had existed since antiquity, but the hobby had almost always focused on oddities, valuables, works of art and other singular or very rare items. Even collectors of books—some of the world's first mechanically reproduced commodities—gravitated toward manuscripts, first editions and other rarities. What to make, then, of the phonograph enthusiast's compulsion to pile up hordes of mass-produced commodities? Consumers and even industry personnel occasionally described the impulse to hoard sound in terms that evoked an epidemic. A Cincinnati man wrote to the *Edison Phonograph Monthly* that "our folks have got the craze in all

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[15] *Edison Phonograph Monthly*, June, 1903, 11; *Edison Phonograph Monthly*, July, 1903, 7; *New Phonogram*, June, 1912, 13-14.

its stages, and we have Records for breakfast, dinner and supper. It's phonograph from morn till night, and we're all broke buying Records. We always talk, speak and recommend the Edison Phonograph to our friends." One Roseburg, Oregon, phonograph dealer ran a newspaper advertisement declaring "Phonographitis Still Spreading" prompting the *Edison Phonograph Monthly* to note with satisfaction that, though the dealer offered many makes of talking machine as "temporary reliefs," his advertising had insisted "the only permanent cure is an Edison, put up in $20, $30 and $50 packages." According to the jobber responsible for supplying this dealer, the metaphor was working. "We think our man, one of our best Edison Dealers, has coined a new word," the jobber wrote to the *Edison Phonograph Monthly,* adding that "he has procured business on the strength of it as we are shipping him stacks of machines, Records and horns every day."[16]

An even more bizarre attempt to link recorded sound and disease took place in 1914 when the Memphis Prosperity League ran an ad entitled "Wanted: A Good Samaritan" which began with a quite lengthy "windup":

> Doctors say that our bodies are filled with good and bad germs. When the good germs predominate, they drive out the bad ones and we enjoy perfect health. Among the new good germs and, in fact, the best that has ever been discovered, is the Victor-Victrola germ. This germ may be caught through the eyes, the nose, the mouth, the ears or in the summer it may be absorbed through the pores of the skin… Just as soon as this germ becomes full grown, then there can never be any permanent happiness for that individual until he possess or has the use of a Victor-Victrola.

And the pitch:

> We are informed that the Victor-Victrola germ has become almost an epidemic among the Sisters of the Good Shepherd, and the object of this advertisement is to locate a "Good Samaritan" who is willing to supply this most worthy institution with a Victor-Victrola and a suitable selection of records as a Christmas present.

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[16] *Edison Phonograph Monthly*, March, 1904, 9; *Edison Phonograph Monthly*, June, 1907, 18.

The League's acting president at the time of this advertisement was O.K. Houck who, not incidentally, also ran a phonograph dealership in Memphis. Undoubtedly, Houck hoped to generate a sale for himself as well as a little public goodwill while at it, but the advertising copy is itself evocative. Houck would very much like readers to believe in the inexorable spread of the "Victor-Victrola germ" and maybe even to rush out and buy a talking machine as an inoculation against it.[17]

Through the language of epidemic observers attempted to describe (and cultivate) a cultural phenomenon evolving before their eyes. The trope relied on external agencies in the form of disease to explain why some were enthusiastically adopting a habit—hoarding—which had hitherto represented a marginal aspect of human existence. The comparisons, of course, were intended less to explain than to evoke. Consumers were not crazy or diseased, though their grandparents might have thought so.

The post-1900 entry of phonographs and records into American homes also precipitated a shift in the temporality of record consumption. In the previous decade owners of nickel-in-slot phonographs monetized recorded sound one listen at a time, and in so doing encouraged a very rapid turnover in consumer demand. Some particularly popular cylinders undoubtedly encouraged repeat business, but the constant outlay of five-cent pieces kept consumers ever-ready to head for new sonic pastures. How much better, after all, was it to spend one's nickels on different selections, rather than on repetitions of the same? Phonograph proprietors serious about their bottom line, then, switched out records once or even several times a day. Proprietors operating phonographs in different neighborhoods or cities could rotate their stock, but even

[17] *Voice of the Victor*, January, 1914, 18.

here, the limited durability of the decade's wax cylinder records militated against prolonged consumption.

After 1900, consumers increasingly paid for their recorded sounds up front, purchasing cylinders and discs for private home consumption. Now, the money spent on a record represented a sunken cost and every whirl on the phonograph brought the per-listen cost of the record down a little more. While few record purchasers ever expressed the logic of listening in such baldly economistic terms, they certainly knew that their money was gone and that the black discs stacked in their parlor had taken its place. Best to listen to each of them as many times as one could in order to get one's "money's worth." At the same time that these economic incentives were realigning to favor long-term listening, the technology of recording was evolving to facilitate the same. In the first decade of the twentieth century, manufacturers began employing new harder plastics like celluloid for records and these records lasted substantially longer than those of the parlor era. For the first time in history it became possible and even common to consume the same musical performance not just once, but hundreds or thousands of times. These shifting patterns of consumption, when joined with transformations taking place in the labor of record *production,* encouraged consumers to think of (and interact with) their record collections in new ways.

**From Cylinder Makers to Recording Stars**

The new record-duplicating technologies which emerged after 1900 transformed the political economy and consumption of phonograph recordings but the new methods also contributed to a wide-scale reconfiguration of the labor of recording. Edison, Columbia, Victor and other manufacturers of musical records could now produce nearly limitless copies from a

single original recording, meaning studio performers need only produce one good "take" of any given selection. With the responsibility for mass duplication taken off performers' shoulders, the business of singing for the horn became dramatically less taxing. Anna Case, a soprano who made her recording debut in 1914 with the National Phonograph Company later recalled the relatively relaxed atmosphere of the studio in those years. "The minute you said 'oh my, I don't feel I can do it well the next time,' they'd say, 'Well, that's all for today,' or something like that." Soprano Rosa Ponselle's recording career began in 1919 for Columbia. Recording sessions, she told an interviewer, "didn't start too early, because I never started too early. The later they started for me, the better." Similarly, legendary jazz clarinetist and bandleader Benny Goodman recalled of his early recording career in the 1920s that "sometimes if things didn't come off the way they were supposed to right away, we would go home. (Laughs) I mean it wasn't life or death whether we stayed there and made those records or not, we'd just go home and say, 'We'll be back tomorrow; nothing's happening today.'"[18]

While reliable and efficient record duplication relieved singers and instrumentalists of the labor of mass production, it did not eliminate all craft knowledge from the process of recording. To begin with, the acoustic recording methods of the day required that performers engage very conscientiously with the recording equipment itself. High or loud notes always ran the risk of ruining a recording, so singers were forced to turn their heads away from the horn or to even move several feet away to prevent this from happening. Conversely, the crude recording equipment sometimes did not register low or quiet sounds at all, so performers sometimes had to rush forward, almost placing their heads in the machine's horn to sing in more restrained tones.

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[18] John Harvith & Susan Edith Harvith (eds.), *Edison, Musicians, and the Phonograph: a Century in Retrospect* (New York: Greenwood Press, 1987), 41-45, 81, 161.

To achieve a good recording, then, musicians were forced into constant movement about the room. Singer Lotte Lehmann, later recalled that the process "was really like dancing the whole time," and characterized it as "very difficult." Singer Rosa Ponselle sang with such intensity that the studio prescribed her movements with chalk lines drawn on the studio floor. For high C's, she said, "I'd run way back. It was something!" The recording horn itself proved obtrusive in some cases. Violinist Samuel Gardner recalled the days of acoustic recording: "Oh, it was horrible. I'll never forget that. You had to stand right on top of the horn… We had to stand sideways so that the sound went into the horn…" For a violinist, however, this presented a new problem as one's elbow always threatened to bump the apparatus, and Gardner recalled that one had to be careful not to strike the horn. Violinist Arcadia Birkenholz similarly recalled that the studio staff would urge violinists to get as close to the horn as possible, but that "when you did that, sometimes your bow or your arm hit the horn, and that ended it—you had to make the record over."[19]

The advent of electrical recording in 1925, however, resulted in another substantial reduction in the labor and specialized knowledge required for recording. Microphones used electrical impulses to register and transmit sonic information and were therefore much more sensitive to the subtleties of musical performance than the old acoustic recording horn. No longer was it necessary to belt at top volume to push the recording stylus, nor did performers rush frantically across the studio floor in order to control the recording's dynamics. Singer Franklyn Baur registered these changes when he argued that "the invention of the electrical process was of greater significance than the average layman realizes. Not only are the finished records incomparably better from every standpoint," he argued, "but the strain on the singer is

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[19] Harvith & Harvith, *Edison, Musicians, and the Phonograph*, 50, 65-67, 71, 81.

immeasurably eased. A record can be made in exactly one-third the time it used to take, and no longer is it necessary for us to nearly crack our throats singing into that hated horn…" Electrical recording lightened the workload of recording artists but it also reduced the necessity for technical competence.

As recording became more like the musician's traditional craft of stage performance some singers and instrumentalists came to hardly register a difference between the two arts. Benny Goodman recalled a studio experience when he began recording in the 1920s. "I don't remember exactly what happened as far as microphones and equipment. We just played, and I guess there was a microphone." Orchestra conductor Eugene Ormandy began his recording career in the early 1930s after the rise of electric recording. When later asked if he had any say in the placement of microphones he recalled "There was no such question then. As a matter of fact, I had nothing to say about microphone placement. That's the producer's and the engineer's job." Electrical recording intensified the distinction between the technical and musical labor of sound recording. As the job of studio performance became disentangled from the technical knowledge of the "engineer" it came more to resemble that privileged sphere of human labor known as "art."[20]

The changes which took place in the technology of record manufacture after 1900 did not just increase the output of music factories. Mass duplication and later electrical recording opened the field up to a new class of artist for whom the practice had hitherto made little economic sense. Established singers and instrumentalists whose talent and reputations commanded substantial performance fees could now consider recording a viable alternative to the stage—at

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[20] Tim Gracyk and Frank W. Hoffmann, *Popular American Recording Pioneers, 1895-1925* (New York: Haworth Press, 2000), 41; Harvith & Harvith, *Edison, Musicians, and the Phonograph*, 145, 160.

least occasionally. Through the 1890s, the art and science of cylinder-making had appealed to performers who could devote long and arduous hours to the business of making records, "unburdened" by the opportunity costs associated with well-paying concert performances. With the introduction of molding and stamping techniques after 1900, however, one could commit to wax enough song to flood the country and even the world in a single afternoon—and earn a fee commensurate with that miracle. One need not spend months in the studio feeding popular demand for a hit record nor forego performances in the world's prestigious opera houses. As time went by, one need not even learn much about the recording studio at all but could walk in and perform for the microphone, much like how one performed in concert.

The era of the recording star began in early 1902 when agents of the Victor Talking Machine Company's European subsidiary, the Gramophone Company, attended a performance of Baron Franchetti's opera *Germania* at Milan's Teatro La Scala. There they witnessed a performance by one of the era's most promising young tenors—Enrico Caruso—and, impressed with the thirty year old opera singer, contracted with him to record ten sides for the company on March 18. For this service Caruso was paid £100. The records sold well and in September of that year the Gramophone Company published its first Red Label record catalogue, which featured selections of high tone art music. The Gramophone Company's agents soon criss-crossed the continent finding and recording respected singers and, occasionally, instrumentalists. Warsaw's Bastia Battistini, Milan's Fernando De Lucia, Rome's Alessandro Moreschi, Felia Litvinne and Victor Maurel of Paris and the Londoner Charles Santley—all recorded for the company in the months to follow. As the phonograph's role in European art music came to be normalized, the most prestigious names of the stage agreed to sing for the Gramophone Company's recording

horn. In 1903 superstar opera singer Francesco Tamagno recorded for the Company, followed in 1904 by Australian soprano Nellie Melba and, in 1905, by the era's great diva Adelina Patti.[21]

In the United States, interest in art music recordings remained muted at first but in 1903 Columbia released its new series of Grand Opera Records, featuring selections by Edouard de Reszke, Marcella Sembrich, Ernestine Schumann-Heink and others. Victor countered with its own art music selections, acquired by the company from the European Gramophone Company and now called "Red Seal Records." Columbia's first foray into art music proved disastrous. The public paid little attention to their $2 records and the company retreated from the market conceding it to Victor for several years thereafter. The Red Seal Records, however, proved highly successful and by 1912 Victor boasted six hundred selections in its Red Seal Catalog.[22]

That operatic singers could now profitably perform for the recording horn, of course, in no way dictated that anyone would want them to. Given the era's enthusiasm for brass band selections and "coon songs" there was every reason to leave Caruso on the opera stage where European audiences had put him. As it turned out, the impetus to record such material owed much to long-standing and long-evolving discourses which valorized opera and symphonic

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[21] Roland Gelatt, *The Fabulous Phonograph: From Edison to Stereo* (New York: Appleton-Century, 1965), 114-121. For more on the history of celebrity, see Fred Inglis, *A Short History of Celebrity* (Princeton: Princeton University Press, 2010); Chris Rojek, *Celebrity, Focus on Contemporary Issues* (London: Reaktion Books, 2001); Joshua Gamson, *Claims to Fame: Celebrity in Contemporary America*(Berkeley: University of California Press, 1994); Richard DeCordova, *Picture Personalities: The Emergence of the Star System in America* (Urbana: University of Illinois Press, 1990); Felicity Nussbaum, *Rival Queens: Actresses, Performance, and the Eighteenth-Century British Theater* (Philadelphia: University of Pennsylvania Press, 2010); Sharon Marcus, "Salomé!! Sarah Bernhardt, Oscar Wilde, and the Drama of Celebrity," *PMLA* 126, no. 4 (2011): 999–1021; Charles L. Ponce de Leon, *Self-Exposure: Human-Interest Journalism and the Emergence of Celebrity in America, 1890-1940* (Chapel Hill: University of North Carolina Press, 2002), Leo Braudy, *The Frenzy of Renown: Fame & Its History* (New York: Oxford University Press, 1986); Daniel J. Boorstin, *The Image: A Guide to Pseudo-Events in America* (New York: Atheneum, 1972); Sara Babcox First, "The Mechanics of Renown; or, the Rise of a Celebrity Culture in Early America" (PhD diss., University of Michigan, 2009); and Graeme Turner, *Understanding Celebrity* (London: SAGE, 2004).

[22] Gelatt, *The Fabulous Phonograph*, 135-149

music as components of "high culture." In the eighteenth century Americans understood culture in terms defined by the aristocratic gentry, and a close affinity existed between notions of "refinement" and the material wealth necessary to express it through ornately-constructed homes, ballrooms and expensive silverware. In the nineteenth century, an expanding middle class capitalized on increasing opportunities for consumption to lay claim to refinement for themselves, and in response, elite arbiters of taste redefined refinement in terms hostile to the new upstarts. Refinement could not be bought, they now argued, but must be cultivated through long and disinterested pursuit of the beautiful and the tawdry getting-and-spending of the middle classes even stood as an obstacle to true refinement. Over the course of the century, the focus on internal refinement gave rise to an emphasis on self-cultivation or "culture," terms with long association with the growth of the soil. The emphasis remained the same, however: Excellence in all things derived from transcending the base and the self-interested. Refinement flouted the means-ends logics of the market and of technology and pursued the beautiful for its own sake.[23]

The emphasis on transcendence also provided the conceptual glue for a broader, trans-Atlantic understanding of art, which in its most fully-articulated form joined criticism to German idealism. Particularly in the hands of the Romantics, the idea of artistic transcendence had come to deny not only commerciality and other aspects of day-to-day existence but even the possibility of rational description. Artistry captured absolute, supra-sensible reality, and for that reason, it lay beyond human categories of description. Within this schema, music assumed pride of place. Because of its non-representational character, it was believed, music best conveyed the abstract

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[23] Richard L. Bushman, *The Refinement of America: Persons, Houses, Cities* (New York: Knopf, 1992). For more on the evolution of middlebrow culture see John Tomsich, *A Genteel Endeavor: American Culture And Politics In the Gilded Age* (Stanford.: Stanford University Press, 1971) and Joan Shelley Rubin, *The Making of Middle/brow Culture* (Chapel Hill: University of North Carolina Press, 1992).

truths which lay beyond words and pictures and other corrupted facsimiles of outward reality. Furthermore, music most successfully achieved this aim when it was lifted from the historically-specific contexts of folk practice and placed in the hands of solitary geniuses who concerned themselves only with the demands of eternal beauty. Composed musics, then, came to represent the apogee of art.[24]

In the years after 1900 phonograph manufacturers struggled to transform perceptions of their wares from denizens of train depots and "phonograph parlors" to respectable additions to the bourgeois home. In order to do this, they capitalized on the existing prestige of art music, and it was in this context that the Victor Talking Machine Company offered recordings by Enrico Caruso and other art music virtuosi. "High culture" promised to remove the stain of cheap public amusements from the phonograph's reputation, but it also implied (counter to its own non-commercial ethos) that the purchase of a phonograph was a wise expenditure. Even when recordings of the world's virtuosi failed to produce large profits, then, they still paid massive dividends in prestige for the firms which produced them.

**Both are Caruso**

The joining of "high art" and techno-scientific capitalism' represented to the men of the phonograph industry an unambiguous coup in their pursuit for profit, but there was at least one serious cultural problem left to resolve. Under the old regime of the genteel tradition—the very system of value under which Victor's appropriation of opera made sense in the first place—conceptions of art tended to winnow the number of worthwhile books, poems, compositions and

[24] Stefan Lorenz Sorgner. *Music In German Philosophy: an Introduction* (Chicago: University of Chicago Press, 2010); Férdia Stone-Davis J., *Music And Transcendence* (Farnham, Surrey: Ashgate Publishing Limited, 2015).

paintings. While no reason existed that the canon should not evolve and expand over time, Matthew Arnold's formulation of "the best which has been thought and said" stood as a check to that growth and as an obstacle to the inculcation of endless sonic accumulation among consumers. Some pioneers in the realm of conspicuous sonic consumption took up the call to amass records as early as 1903 but the buying habits of a few well-off "phonograph cranks" do not an industry make, and manufacturers of phonographs and records committed their ample creative energies to the project of generalizing the record-collecting habit. What they helped to create was a horizontal rather than vertical system of aesthetics, one in which new forms of artistic value could be discovered, or even manufactured, on a quarterly basis. Rather than positioning their wares as the "best," then, the recording industry increasingly focused on the charm, the personality and the idiosyncrasies of their products.

To do so, however, the companies of the early twentieth century were forced to grapple with some thorny ontological problems. To return to an earlier metaphor: if recordings are printed texts, then little more can be asked of the printer than that he or she render the reproduction as excellently as possible. To the extent that a printing job is done idiosyncratically it is usually (though not always) bad, while well-executed printings of a given work are likely to be nearly identical. If the recording, however, is understood as an extension of a *person*—intimately tied to his or her body, mind and comportment—then free rein is given to novelty. The phonograph can become an agent of "personality."

To address this problem, record companies mounted increasingly explicit denials of the recording's status as a "copy," arguing that it represented the performance itself. In 1908 the *Voice of the Victor* informed its dealers that "the mere notes of a musical composition can be

passed on from one generation to another through the medium of sheet music, enabling others to sing or play it; or they can be reproduced on a piano roll or a music box." With the advent of the Victor Phonograph, however, it had become "possible to perpetuate the actual living voice of a great singer or the art of a noted musician." Victor was not content to let dealers and the public believe that this was a mere rhetorical gesture, and the company consistently emphasized and expounded on the difference between a phonographic copy and the real thing, the latter, of course, being the purview of Victor alone. "The difference between the Victor and all other musical instruments," the Voice argued, "is the difference between an original masterpiece of art and a print. The original is the product of a Rubens or Raphael or a Millet, glowing with the color and imagery put there by inspired genius. The other is a copy similar to the original." The musical performances captured on the company's Red Seal Records were not, the *Voice* assured its readers, analogous to the mass-produced prints of famous paintings. They were analogous to the paintings themselves.[25]

Sculptures and paintings are material artifacts, evidence of artists' labor but not themselves labor. But musical art, as understood by Victor, its dealers and the public, was performance. It was labor—not its material instantiation in paint or clay but evidence of a human presence. It would be strange enough to claim that a handful (or a thousand) copies of a painting were all originals. To say that a recording presented the actual art of a singer or instrumentalist, however, introduced metaphysical implications beyond those of the post-scarcity plastic arts. The claims of Victor and its competitors that their recordings represented the actual sounds recorded

[25] *Voice of the Victor*, July, 1908, 8.

in their studios strongly suggested that they had managed to capture in wax or shellac something fundamentally human. The phonograph companies took this suggestion and ran with it.

One of the more quotidian manifestations of this tendency was a rhetorical emphasis on singers' breath. The Pathé Frères Company of New York informed prospective customers, for example, that with their signature phonograph, the Pathephone, they would experience music "so natural that critics have said it should not be called a reproduction, but an actual living duplication of the artist's breathing voice." Another approach was to claim that the phonograph or its records actually had a soul. In 1908 the Victor Talking Machine Company argued that its phonograph "is more than a perfect musical instrument—more than a song—more, even than a voice. It is the soul of the singer." Edison's National Phonograph Company, although generally conservative in matters of marketing, also pursued this tack and by 1921 was advertising the New Edison Phonograph as "The Phonograph with a Soul."[26]

The Victor Talking Machine Company, however, forwarded another exhilarating possibility. Phonographs and records made by Victor conveyed not just the voices, souls or breath of recording stars, but the stars themselves. A 1913 Victor advertisement that ran in Good Housekeeping, for example, depicted an opulent ballroom scene with well-dressed men and women before a Victrola. The host and hostess greet a late-arriving group of guests who turn out to be a dozen of Victor's prestigious Red Seal recording artists. "Thanks to the Victrola," the advertisement reads, "they are here to perform." In another Victor advertisement from 1916 a couple in evening attire sit before a Victrola in the parlor. Again, they are surrounded by dozens

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[26]Pathé Frères Phonograph Company, "Pathé Pathephone" [advertising pamphlet] (Playback Advertising Ephemera Collection). Rodgers and Hammerstein Archival Collection, New York Public Library for the Performing Arts, New York, NY, 6-7; *Voice of the Victor*, July, 1908, 8; *Ladies home journal,* March, 1921 52.

of Red Seal recording stars, but the assembled virtuosi now appear as a host of imp-sized personages standing about the room. Presumably, their size now facilitates entrance and exit from the Victrola's opened doors. The image is captioned "At home with the world's greatest artists."[27]

Of Victor's competitors, Columbia proved most alert to the benefits of this approach and they wasted little time in appropriating it for their own ends. An advertisement in the September 1916 *Ladies' Home Journal* informed readers that the Columbia phonograph "presents the artists themselves to you—in voice and playing, in charm and temperament, in art and personality." A 1920 Columbia advertisement informed readers that with the company's Grafonola talking machine and Columbia Records "right at your fireside you will find such famous exclusive Columbia popular artists as Al Jolson, Bert Williams, Frank Crumit, Harry Fox, Marion Harris, Nora Bayes, Ted Lewis' jazz Band and Van and Schenck…" An illustration depicted Santa and his reindeer on their way to a home with the aforementioned Columbia recording stars packed into his sleigh. Columbia was not alone, however, in following Victor's lead. A 1917 advertisement for the Aeolion-Vocalion emphasized to prospective customers both the channeling of live artists as well as the phonograph owner's mastery over these sonic persons. "Great masters of the violin," it informed readers, will be "standing ready, instruments in hand, to do your bidding…" while "the mighty host of all the world's best singers [will stand] at your door, and only [wait] your behest to enter and pour forth the beauty that is theirs for you and yours."[28]

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[27] *Good Housekeeping Magazine,* December, 1913, 18-19; *Red Book Magazine,* September, 1916, 829.

[28] *Ladies' Home Journal,* September, 1916*,* 53; *Good Housekeeping,* December, 1920, 87; *Vogue*, Dec 1, 1917, 49.

In their most extreme forms, record manufacturers' advertisements explicitly denied the distinction between reality and representation. A Columbia ad in the May 1917 issue of *Redbook* declared "The record played on the Columbia Grafonola is more than a record—it is *reality*... Only *one* word can truly tell all that 'Columbia tone' implies—and that single word is: LIFE!" Not surprisingly the Victor Talking Machine Company proved particularly adept at forwarding such aggressive ontological claims for its wares. "There is only one great master who paints 'Celeste Aida' in perfect tone colors—and with a soul" Victor informed its sales force. "That master is Caruso. And the Victor is Caruso." A 1919 Victor ad presented a type-written "Christmas Message from the World's Greatest Artists," listing the names of 24 Red Seal recording artists. Alda, Calvé, Elman, Gluck, Melba, Caruso and others could not, unfortunately, "be with you on Christmas Day." But, the ad continued, "they can visit you through the Victrola —their "other self."" The most attention-grabbing and hyperbolic version of this argument, however appeared in a Victor advertisement from the mid-teens. Enrico Caruso stands, arms akimbo, in full costume as Rhadames from the Opera Aida. Next to him is a giant Victrola record, helpfully captioned "Victor Record of "Celeste Aida" by Caruso." In large text the advertisement informs readers: "**Both are Caruso**" before explicating further on the same theme: "The Victor Record of Caruso's voice," the advertisement insisted, "is just as truly Caruso as Caruso himself. It actually *is* Caruso… Every one of the hundred and six Caruso records brings you not only his art, but his personality." The "Both are Caruso" ads apparently

achieved their intended effect because the company employed the trope in advertisements for other recording artists, including the famed violinists Mischa Elman and Fritz Kreisler.[29]

It is not the case that the phonograph industry unilaterally embraced sonic modernity in the years after 1900. In its early years even the eminently forward-looking and imaginative Victor Talking Machine Company vacillated between the new discursive dispensation and decidedly old-fashioned appeals to the public. In the July 1906 issue of the *Voice,* for example, the Victor Talking Machine Company announced the newest addition to its catalog, the Victor Junior Gramophone. The attached illustration featured the seven available Victor models arranged in a semi-circle. Spindly black arms and legs stick out from each and burnt-cork faces peer out from inside their horns. The *Voice* imagined the mechanical minstrels' dialogue: "TAMBO (Victor III) to BONES (Victor VI)--"Say Bones, who's dat dar li'l chap down dar to t'odder end of de line? I never see him before." The Victor VI responded "Dat dar's our li'l new end man, Li'l Victor Junior Gramophone. He's new in de bus'ness, but he's bound to make er hit, jes de same as we all." This grotesque testimony on behalf of the company's wares hardly conformed to the trends examined in this chapter. Similarly, a 1918 Columbia advertisement referred to the company's Grafonola model phonograph as a "a big, handsome musical friend with a voice that is sweet and clear and strong, bringing good cheer to every home he enters. You need his cheerful voice in yours."[30]

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[29] *Red Book Magazine*, May, 1917, 6; *Voice of the Victor,* July, 1908; *Red Book Magazine*, Dec, 1919, 1; Victor Talking Machine Company, "Both are Caruso" [advertisement], RCA Corporate Records, B.L. Aldridge Papers: Box 2, Folder 20, Hagley Museum and Library. Victor Talking Machine Company (1927) Kreisler is actually Kreisler on the new Orthophonic Victrola [advertisement] (General Products and Services—Small Format, 1871-2009, Box 7, Folder: RCA Victor [six folders]), Roy Lightner Collection of Antique Advertisements, 1871-2009, David M. Rubenstein Rare Book and Manuscript Library, Duke University, Durham, NC.

[30] *Voice of the Victor*, July, 1906, 3; *Ladies' Home Journal*, November, 1918, 98.

Thomas Edison's National Phonograph Company also never quite subscribed to the package of assumptions embedded in sonic modernity. To begin with, Edison himself (to the consternation of his lieutenants) continued to insist that phonograph records represented sonic texts, and continued to pursue fidelity at the expense of other considerations. By 1911 Victor had long since proven the profitability of selling sonic persons rather than sonic texts. In that year, however, the inventor wrote to the managing director of the Edison phonograph division in Berlin saying that "I propose to depend upon the *quality of the records* and not on the reputation of the singers." Understandings of sound recording remained, just as they always had been, multi-vocal, and record manufacturers and their customers continued to occasionally speak of the technology in terms established in the prior century. Still, the general trajectory was fairly unambiguous and it traced an arc from mechanistic nineteenth century descriptions of "talking machines" to a vitalistic theory of phonographic presence.[31]

**Conclusion**

This chapter has foregrounded the role of the early phonograph industry in consolidating sonic modernity, but this transformation depended as well on the understandings and practices cultivated around the phonograph by the consuming public. The durable and privately-owned phonograph recordings of the early twentieth century allowed and even encouraged consumers to listen to their records over and over, often for years or even decades. The long-term relationships listeners cultivated with their records bred an intimacy of their contents. Musicologist Mark Katz, has recalled his youthful fascination with a 1951 recording of the piece "Zigeunerweisen," by violinist Jascha Heifetz, a record he listened to "until every nuance of the performance was

[31] Harvith & Harvith, *Edison, Musicians, and the Phonograph*, 3-4.

ingrained in my musical memory." So exacting was his familiarity with the record that Heifetz's mistakes—including an accidentally plucked E string at the the 00:34 mark—became *part* of the piece in his mind. This in spite of his own musical training and his familiarity with the score. "I came to expect it," he writes, "not only when listening to Heifetz's recording but whenever hearing the work, even in concert. In fact, I would be a bit surprised and even disappointed when I did not hear that E."[32]

Repeated exposure to musical recordings, however, often led not just to a familiarity, but also to intense affective responses. When Edison dealer W.T. Geltz played a recording of "The Battle Cry of Freedom," for one Civil War veteran, he noted that the old man "weeps and great hot tears roll down the furrows which the years have laid into his cheeks…His lips again move with the prayers that were murmured before the charge, and then… carried forward in the irresistible current of the strife, he swears terrible oaths invoking the war god's vengeance upon the heads of his country's enemies." Geltz, is aware that the story might read like hyperbolic advertising copy and even admits he ran it in the local paper as an "ad." He attests, however, that the events actually took place and that the account is not in the least "over-drawn:" "He actually wept, prayed and swore." He even provides the veterans name— Uncle Dan Frankhouser—to lend further credence to the story. In 1908 a Nebraska Edison dealer sold "an old gentleman" a phonograph and a parcel of records including the sacred piece "Safe in the Arms of Jesus." A month later the man's son-in-law informed the dealer that the old man had taken to playing the record over and over, "tears running down his cheeks," saying "I ain't there boys, I ain't there; I ought to be but I ain't." The dealer considered sending out one of the local ministers to talk with

[32] Mark Katz, *Capturing Sound: How Technology Has Changed Music* (Berkeley: University of California Press, 2010), 30.

the old man, "but on reflection concluded that they had had their chance and the Phonograph was doing the work better than they had done it."[33]

Affective response to a sound recording could, and often did, draw listeners bodily into the sonic moment. Bandleader and composer Alton Adams remembered his own emotional reaction to the recordings of John Philip Sousa when he was a young man in the Virgin Islands, recalling "the many hours I spent in rhapsodic ecstasy listening outside the residence of . . . a kindred spirit who was playing Sousa marches on his phonograph player." Those recordings "were not mere musical treats to me. They were like manna from on high, feeding a hungry, searching musical soul." Interestingly, after these phonograph concerts Adams often retired to his room where he lay on his bed, fantasizing about conducting Sousa's band. Father of musicologist Richard Crawford—no musician himself—enjoyed a similarly imaginative and embodied relationship with his musical records. After shutting himself up alone in a room in his home, the elder Crawford would often set a record spinning on the turntable so that he could pace about the room conducting the invisible ensemble. Though the future musicologist could hear the music and see shadows moving through the room's frosted glass windows, he remained ignorant of his father's hobby until he saw him carry a baton into the room with him one day. The old Yankee veteran who visited W.T. Geltz's phonograph showroom in 1905 listened to a second record that day, Harlan and Stanley's "Marching Through Georgia," and could not help but join in the march to the sea. "Ah!" Geltz recalled in his letter to *Edison Phonograph Monthly,* "you should see the old warrior's nostrils dilate and his eye take on the fire of battle…His arms swing and his feet

[33] *Edison Phonograph Monthly*, February, 1905, 12; *Edison Phonograph Monthly*, December, 1903, 12.

beat time to the inspiring rhythm of the song while his entire being is aquiver with the thrill which soldiers alone can feel."[34]

As anthropologist Alfred Gell pointed out in his 1998 *Art and Agency*, there exists an apparent (and apparently powerful) impulse in human beings to attribute agency to artifacts. How much stronger this tendency must be when the actual sources of the object's agency are purposely hidden—when the hundreds or even thousands of human and non-human agents responsible for the object's operations are nowhere to be found? Quite naturally, the consuming public fills this agency gap with the only one of those thousands of laborers who he or she knows the name of—Kreisler, Patti, or Melba. Journalist A.J. Liebling recalled his childhood experiences with the recordings of Enrico Caruso. "Mostly… [Caruso] sang 'E Lucevan le Stelle.' I can identify it, at fifty years' distance, by the place where Cavaradossi sobs. Caruso sobbed louder than any other tenor, and when he did, my father would say, 'That's art. You can tell a real artist by touches like that.'" Much of the work of building sonic modernity, then, took place in consumers' homes, and it was a job which Americans generally signed up for enthusiastically.[35]

The Devil's advocate, of course, must point out a glaring truth buried in all this celebration of consumer sovereignty: At every turn, the kinds of practices cultivated around record listening by the consuming public were shaped by the maneuvers of corporate capital. It was manufacturers who decided to sell phonographs outright for consumption in the private home. It was Victor, Columbia and Edison who undertook to extend the life of the phonograph

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[34] Katz, *Capturing Sound,* 18, 67; *Edison Phonograph Monthly*, February, 1905, 12.

[35] David Suisman, *Selling Sounds: the Commercial Revolution In American Music* (Cambridge, Mass.: Harvard University Press, 2009) 125.

record and make it a long-term member of the consumer's home. These two decisions alone profoundly shaped the kinds of phonograph-listening practices which Americans could enter into. Further, our infernal defense attorney would no doubt argue, even if record-listening practices had evolved completely independent of the material maneuvers of the Big Three, their *meanings* would be subject to their manipulation. Phonograph corporations molded the commercial semiotics of competition and cooperation and dictated the terms on which dealers carried their products. They motorized the phonograph, displacing human labor from the optics of phonographic playback. They hid the device's workings from the eye, its mechanical din from the ear and created the material circumstances of the "agency gap." Most importantly, Victor, Edison, and Columbia and thousands of their local dealers and distributors filled the public sphere with advertisements which shaped what consumers thought and felt about the apparatus in their parlor.

All of these responses, the prosecution admits, are true. Capital is enormously powerful in its capacity to shape behavior and meanings, and the untold millions spent by the Big Three to shape public thinking certainly attest to *their* faith in their own influence. Two qualifications, however, are in order. The first of these is that consumers did not *have* to engage in any of these practices and as a long train of failed technologies can attest, there are limits to the power of corporate prescription. One need not indulge any illusions of complete consumer rationality to reject the equally dubious vision of commercial "brainwashing." Worthless products are worthless and while advertising creates consumer demand it seldom does so (notwithstanding the occasional pet rock or fidget spinner) *ex nihilo.*

In the hoary cultural history debate between corporate domination and consumer sovereignty, then, this chapter takes up a conciliatory, if unsatisfying, position in the middle. Everyone is right (or wrong.) There is a sense, however, in which the question of consumer versus producer is the wrong one—not because it is not interesting (it is,) and not because it has not been productive for past scholars (it has been.) Rather, it is the wrong question because it is incomplete. This dissertation has argued that struggles over meaning are not the purview of producers and consumers alone, but also that of a third faction—things themselves. When the phonograph broke down or performed horribly at a distant exhibition, it damaged the commercial prospects of the technology and reinforced conceptions of itself as a "talking machine." When motors refused to run silently they pushed forward the sonic evidence of the phonograph's machine-ness. When the wax used in early cylinder records refused to yield amicably to the needs of mass production, it forced reliance on a crude semi-industrial process of reproduction incompatible with the semiotics of sonic modernity. At every turn, the phonograph industry's material and discursive projects were subject to a kind of gremlin's veto. The things which consumers *and* producers believed about sound recording, then, were profoundly shaped by the material realities of the technology itself.

At the same time, there is little reason to believe that the industry aimed, or even *could* have aimed, for sonic modernity itself. Until nearly the eleventh hour of this story, the Big Three pursued aims only tangentially tied to the belief that recordings were people. The concealment of the phonographic apparatus, originally, came as a kind of byproduct of hardening the technology against the vicissitudes of the material world. In order to ensure proper functioning of their wares, manufacturers outfitted the phonograph with increasingly robust mechanisms further and

further out of reach of tampering and tinkering hands. These machines ran more and more (though never perfectly) flawlessly, providing decreasing opportunities for users to ruminate on their machine-ness. As the phonograph moved into the home, manufacturers added new reasons to old for why the phonograph should conceal its mechanical secrets. The parlor, everyone knew, was a space reserved for respite from the wearing realities of the workaday world. If the phonograph were to pass muster with the guardians of the domestic sanctuary it would have to straighten its act up and become a proper piece of furniture.

So too did the project of de-mechanizing the phonograph's sound aim at quarry different from sonic modernity. On one hand, the preoccupation with non-mechanical sound stemmed from the same impulse that pushed the visual occlusion of the phonograph's workings: machines did not belong in the parlor and neither did their sounds. On the other hand, the impulse to strain mechanism from phonographic sound drew from historically deeper attitudes about what "sounded good." Whirrs and clicks, subjects believed, are not music and are, in fact, grating and off-putting. On that much early twenty first century and early twentieth century listeners generally agree. But however longstanding this sentiment's appeal to commonsense, it is, in large measure, an artifact of historical construction. In the twentieth century composers and musicians in the musical avant garde assumed as one of their prime objectives the disruption of easy distinctions between music and noise, and unsurprisingly mechanical or "industrial" sounds figured prominently in this project. While such explorations have fallen and continue to fall outside the scope of public taste, the slow but steady intrusion of other machine noises into popular music attests to the historicity of "good sound." Distortion, reverb, turntablism and a

range of other stage and studio techniques demonstrate just how easily the sounds of machines themselves can ingratiate themselves with the modern ear.

Finally, The decision to associate performing stars with recordings owed much more to a desire on the part of the Big Three to link the manufacturers' brands with the prestige of European art music. Consistent with that aim, many of Victor's advertisements drew substantially on an older marketing ploy: the endorsement. One 1918 advertisement, for example, informed readers that "no master record shall be considered as satisfactory and complete and perfect until it has been approved not only by an authorized representative of the Victor Company, but also by the artist." In addition to borrowing from their recording stars' charisma, then, the Big Three sought to enlist these virtuosi as expert witnesses in their field. Like physicians endorsing soap, they could assure the public that these recordings satisfied the demands of high art. They were not just records of great singers. They were great recordings. They represented "quality."[36]

Victor, followed by Columbia and Edison pushed forward their recording stars in an attempt to capitalize on longstanding beliefs about art music as *quality*. Almost immediately, however, they became aware that the public's listening habits encouraged a more thoroughgoing kind of anthropomorphization. Phonograph enthusiasts listened to their recordings over and over. They learned every jot and tittle of the sonic script and darted around their rooms dancing and conducting and singing along with them. Most importantly, they developed close affective

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[36] *Red Book Magazine*, May, 1918, 1. It should also be kept in mind that there was nothing self-evident about the decision to link singers and instrumentalists to the records they made and one counter-argument even held that boosting performers served only to distract the public from the manufacturer and undermine brand loyalty. The National Phonograph Company, in fact, never quite shook the conviction that they should be selling technological superiority in the name of Thomas A. Edison, rather than beauty, fun, romance and adventure in the name of recording stars.

relationships with their recordings, feelings which were invariably directed toward the only agency left in sight after the industry concealed the machine and human labor of phonographic playback. Unforeseen by the industry, listeners began to understand recordings in terms of the actual presence of recording stars.

# CONCLUSION

In its introduction, this dissertation discussed the wealth of evidence provided in historical literature that recorded sound has served as a shaper of American culture and identity. This dissertation has concerned itself, first and foremost, with the question "how?" How did the phonograph operate as a shaper of individual and collective subjectivities? I have argued throughout that the phonograph and its records have operated in ways very similar to any other circulating commodity—that what I have called "sonic modernity" shares much (though not everything) with Marx's notion of commodity fetishism. By way of conclusion, I want to push this point slightly further to argue that the phonograph did not represent just one more opportunity for consumeristic self-fashioning. Rather it offered a dynamic new variation on the theme quite unlike anything before it. Recorded sound, like any commodity, has often reinforced age-old social distinctions of race, class and region and underwrote projects of empire and exclusion, but while the technology thus added a sonic gloss to older categories of difference, the novelty of these phonographic effects should not be overstated. Consumer goods have long been brought to bear on the project of marking insiders and excluding outsiders. Where recorded sound *was* truly revolutionary, however, was in its capacity to mobilize brand new geographies of self and other, which, though never totally independent of older categories of difference could not be simplistically reduced to them.

One of the first and most important examples of sound recordings' roles in crystallizing new ways of being was the reaction of interwar youth to the circulation of recorded jazz, one aspect of which was the explosion of interest in *playing* jazz. There is evidence that phonographic music had already been inspiring Americans to pick up instruments for decades. From 1890 to 1910, the period during which coin-slot phonographs entered American life *en masse*, the number of music teachers per capita in the United States increased 25 percent. Whatever the initial causes of this early spike in amateur music-making, interest continued to grow and by the late 1910s had become closely associated with phonograph listening and jazz.[1]

The story of Leon Bismarck Beiderbecke is instructive in this regard. Leon first discovered jazz as a teenager in Davenport, Iowa, in 1918 when an older brother brought home a handful of records by the Original Dixieland Jazz Band. The sounds of that band (though not the "original" expressions of New Orleans jazz by a long shot) captivated the impressionable young man who soon secured a cornet and taught himself how to play it—with virtuosity. For the rest of his short, rambling and alcohol-soaked life, "Bix" Beiderbecke lived as an archetypal jazzman. He ate, breathed and slept jazz and when he died he left a body of his own recordings, some of them masterpieces in their own right. Jazz enthusiasts' relationship to their records could become quite intense and listeners often developed loyalty to particular artists. Cornetist Jimmy Maxwell, for example, recalled of his early life in San Joaquin Valley, California, that "there wasn't that much jazz coming out to California…but about once a month one Armstrong record would come

[1] Mark Katz, *Capturing Sound: How Technology Has Changed Music* (Berkeley: University of California Press, 2010), 77

out and one Duke Ellington record would come out. And some way I would beg, borrow or even steal, truthfully, for one of those records."[2]

The enthusiasm for records led some listeners to imagine new identities for themselves as active participants in the world of jazz. Bud Freeman, saxophonist and Chicago jazz pioneer recounted how the chance discovery of recorded jazz transformed a group of white suburbanites into something brand new: a jazz band.

> "There was a soda parlor called the Spoon and Straw that we used to frequent in 1922 during my sophomore year. It had a little wind-up Victrola and stacks of records and we would play them while we had our sodas and shakes. One day we found a record by the New Orleans Rhythm Kings in the stack and we put it on, not knowing what kind of band we were about to hear. Were we excited by it! We were used to hearing commercial dance music, but this sound was something else. We were so excited by that first record that we decided that afternoon to become jazz musicians and form our own band, which Dick later named the Blue Friars… Little did we know that we were all to become world renowned. I picked saxophone, Jimmy McPartland cornet, Dick McPartland banjo, Jim Lannigan bass tuba, Frank Teschemacher clarinet, and Dave North piano. The McPartlands convinced my father to buy me a saxophone and he took me downtown to Lyon and Healy, a music store on Wabash Avenue…"

The "Austin High Gang," as this group of white jazzmen came to be known, experience an abrupt transformation through phonograph listening. Not only did their consumption of recorded sound transform them individually into "jazzmen" but it also brought them together around a shared identity as a jazz *band*. Tellingly, the band's name also gestured outward, signaling a

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[2] Katz, *Capturing Sound,* 81-82; For more on Beiderbecke, see Brendan Wolfe, *Finding Bix: the Life And Afterlife of a Jazz Legend* (Iowa City: University of Iowa Press, 2017); Jean Pierre Lion, *Bix: the Definitive Biography of a Jazz Legend : Leon "Bix" Beiderbecke (1903-1931)* (New York: Continuum, 2005).

connection to the New Orleans Rhythm Kings who sometimes recorded under the name the Friar's Society Orchestra.[3]

The sub-culture of jazz fans and musicians which sprung up around the circulation of recorded sound is a template which was copied many times over throughout the twentieth century. With some variations in emphasis, youth culture has time and again drifted toward semi-coherent conceptions of the self and collectivity which assume the consumption of recorded sound as its primary organizing principle. In the late twentieth century, for example, recorded punk rock, heavy metal, and hip-hop provided a sonic spine around which the consumption of leather jackets, bondage pants, patches, band t-shirts, baseball caps, jewelry and a million other articles of self-fashioning could be organized. Throughout the twentieth century, then, recorded

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[3] Bud Freeman and Robert Wolf, *Crazeology: the Autobiography of a Chicago Jazzman* (Urbana: University of Illinois Press, 1989), 4. White appropriation of black culture, of course, was hardly a twentieth century innovation. The defining genre of nineteenth century American stage performance had been the minstrel show, a grotesque performance tradition in which white performers blackened their faces with "burnt cork" and caricatured the music, speech and dance of Southern African Americans for mostly white audiences. There are certainly continuities between the minstrel tradition and the appropriation of black musical styles which took place across the twentieth century. These continuities include the persistence of stereotypes of the exoticized, inherently musical, black subject. In his autobiography, *Really the Blues*, for example, pioneering white jazzman Mezz Mezzrow railed against anti-black animus and detailed a life spent, in large measure, among African Americans and in African American cultural spaces. Notwithstanding his obvious admiration for black culture, his praise of the same very often slid into tropes of inherent black musicality and expressiveness consistent with longstanding racist stereotypes. Mezz Mezzrow and Bernard Wolfe *Really the Blues* (London: Jazz Book Club, 1959).There were, however, important distinctions between the new sonic identities constructed by postwar American youth and the nineteenth century appropriations of black culture and identity which masqueraded under the banner of minstrelsy. Minstrelsy, for example, had never aspired to create *real* worlds and stars of the minstrel stage were often quite explicit in quarantining their "blackness" to the job as entertainers. In that sense minstrelsy represented a form of "performance" in the narrow sense of staged spectacle. By the early twentieth century, blackface minstrelsy had become ubiquitous and performers regularly donned the burnt cork for talent contests, parades and charity performances in small towns and rural outposts across the country. The democratization of minstrelsy, however, in no way disturbed the hermetically-sealed character of spectacle, and minstrelsy never leaked out into "real life." Beginning with the jazz generation, however, phonograph listeners demonstrated thought of themselves, not just as performers of an exoticized other, but as participants in a way of life that existed on *and* off the stage. Of course, the difference is even more pronounced if one considers the fact that the great majority of twentieth century Americans who adopted musicalized identities—beats, hippies, punks, metalheads and the like—never performed on a stage of any kind. Eric Lott, *Love And Theft: Blackface Minstrelsy And the American Working Class,* (New York: Oxford University Press, 2013); W. T. Lhamon, *Raising Cain: Blackface Performance From Jim Crow to Hip Hop* (Cambridge: Harvard University Press, 1998).

sounds have often served as a kind of ur-commodity—one which structures the consumption of other commodities and which provides direction to the panoply of sub-cultures characteristic of late-modern consumer culture.

On one hand, the efficacy of the phonograph in this regard owed a great deal to its being at the right place at the right time. The nineteenth century economic transformations which facilitated the explosion in consumer goods (like phonographs) also called into being an army of white collared and salaried workers. The necessity of coordinating the activities of massive corporate entities required middle-managers, administrators, clerks, typists and others who found themselves immersed in interminable and tedious work of the most abstract character. Reports, receipts, bills, accounts, letters, telegrams, counting, accounting and every imaginable variety of paper-pushing created among this New Middle Class a feeling of "weightlessness," or detachment from material reality. Their consequent search for genuine experience led them from medievalism and esotericism, to depth psychology and spiritualism. Ironically, this flight from modernity precipitated middle class men and women into a consumeristic "therapeutic ethos" even more ethereal and strange than the lives they were trying to escape. Beginning in the 1890s, department stores dazzled shoppers and gawkers alike with a new visual language emphasizing color, glass and light. They offered a vision of consumption divorced from production, a mythos taken up with sometimes stunning skill by the era's advertising firms.[4]

This *fin-de-siecle* cultural milieu of weightlessness, unreality, escape and consumeristic self-searching was the immediate context for the reception of recorded sound. The young men

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[4] T. J. Jackson Lears, *No Place of Grace: Antimodernism And the Transformation of American Culture, 1880-1920* (New York: Pantheon Books, 1981); William Leach, *Land of Desire: Merchants, Power, And the Rise of a New American Culture* (New York: Pantheon Books, 1993); T. J. Jackson Lears, *Fables of Abundance: a Cultural History of Advertising In America* (New York: Basic Books, 1994).

and women born in the years immediately following the turn-of-the-century were primed for a lifelong search for the "real," and it is little surprise that as they came of age they carried that search out within the ever-expanding realm of consumption. This general cultural milieu of weightlessness, however, represents only one-half of the story, because though the Lost Generation and their descendants have certainly busied themselves with a hunt for the "real" it leaves to be explained why recorded sound should take a central part in the search. What follows is an attempt at an explanation of the power of recorded sound (and implicitly, other media forms) within the context of consumer capitalism. It is necessarily abstract. It is also necessarily speculative, but, I believe, plausible.

First, certain of its technological characteristics made the phonograph susceptible to construction, not only as media, but as a particularly powerful form of media conveying something more essentially human than mere information or texts. Human labor, in all of its manifold diversity of purposes and effects, is inherently a time-bound process. The labor poured into a more traditional commodity such as a mass-produced chair becomes temporally jumbled. Layers of labor (sawing, hammering, gluing, sanding, varnishing) sediment one over the other and partially obscure the evidence of human agency back of the commodity. The result is an object which represents the culmination of human labor, but which is not human labor itself.

The wax or shellac sound recording registers the labor of the singer or instrumentalist in a way fundamentally different from a chair or even a written text. It stores the "tool-marks" of the singer's labor sequentially across the surface of the commodity. These tool-marks remain largely hidden and—without a deliberate effort—will generally not even be noticed by the consuming subject. During playback the machine reads these tool-marks sequentially, replicating the

original labor and allowing it to unfurl over the course of three minutes like the swinging of a hammer or the tilling of a field. That the craftsman's tool marks are hidden and then sequentially and sonically "read" gives the illusion that labor itself (and not just its material product) has been brought into the home. This, of course, is an illusion. The recorded cylinder "contains" no time. The peculiar characteristics of the cylinder—its registry of musical tool marks—are fundamentally spatial as they are arranged across the surface of the purchased commodity. The diachronic facet of phonographic playback exists *only* in the home. It is a property of the phonograph itself, which is the actual laborer (in the immediate sense) behind the sounds thus emitted into the parlor.

One final observation, lifted from Marx, is necessary to understand why the (apparent) direct consumption of human labor was a revolutionary shift in consumer culture. The entire history of consumeristic self-fashioning up to the twentieth century had been anchored in the semiotics of purchasable *goods* and for Marx, much of the power of these goods obtained in their passage through the cash nexus. Goods in their pre-modern state, he argues, present men and women with specific use values. They do particular things and fulfill specific needs or wants on the part of their users. Hoes extricate weeds from fields, potatoes satisfy hunger and so on. It is only through the sleight-of-hand of the market that so many hoes can come to "equal" so many potatoes. Through cash exchange diverse and incommensurable articles assume a universalistic quality called "value," through which they can be imagined as a discrete sphere of commensurable entities. If, as I have argued, sound recordings represent a quantum leap from purchasable goods to purchasable labor, then it follows that their passage through the cash nexus would represent an equally dramatic escalation of the logics of commodification. The

commodification of hats and horses and hay bales had signaled the interchangeability of objects. It facilitated and encouraged the acquisition of material articles which were no longer bound to specific social contexts but were subject only to the commanding power of value. With recorded sound, not only things but human labor itself appeared to pass through the cash nexus. Human activity in all its hitherto irreducible and sensuous specificity could now be imagined as "commensurable" with every other object or parcel of human activity. Sound recordings, in their passage through the market, signaled that something much more closely entwined with the human "essence" than the products of man's labor could be alienated in direct form. Being itself, the phonograph seemed to say, could be traded, cast off or plucked from the raging river of salable items around you.[5]

Sonic modernity evolved over time as a kind of negotiation between producers, consumers and phonographs. The industry's success in capitalizing on sonic modernity stemmed neither from its ability to unilaterally impose products and meanings on consumers, nor its ability to passively serve a pre-existing consumer demand. Phonographs, listeners and sonic modernity were all co-constructed over time by the actions of human and non-human parties. Capital's advantage in the matter lay in its ability to chase cultural logics where they may lead; to expend enormous sums of money in the search of the next big thing and to fail over and over while searching for it; and most importantly, to leap in front of it and divert it into profitable channels once it was discovered. Still, complicated interactions between people, things and signs make culture an exceedingly complex and unpredictable sphere of experience, much like an economy.

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[5] Karl Marx, "The Fetishism of the Commodity and its Secret," in *The Consumer Society Reader,* ed. Martyn Lee (Oxford: Blackwell, 2000), 10-18.

Just as people and things continue to frustrate states and corporations in their ambitions to engineer the political and economic spheres, so too do they get in the way of the culture industry. Sonic modernity was and is a surprise and it fully satisfied no one's ideal conditions. Its ramifying social effects are equally as dynamic and irreducible to any one set of determinants. It was the product of millions of negotiations, and as the Scottish philosopher Adam Ferguson wrote of a much broader sphere of human activity, sonic modernity was "the result of human action, but not the execution of any human design." It is far more interesting than that.[6]

[6] Adam Ferguson, *An Essay on the History of Civil Society* (Basil: J.J. Tourneisen, 1789), 187.

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