

# Influence of the Phonograph on Music, Culture, and History

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In 1877, Thomas Edison was searching for a means of recording and replaying telephone messages. Using his previous invention (the telegraph) as a model, Edison was able to use a small diaphragm to record vibrations into a tin cylinder using a stylus. Edison's invention, commonly known as a phonograph, became popular. With a phonograph, people could record events, and listen to them again. A few months after its patent and production for the market, Edison published an article for the *North American Review* in June 1878 that gave 10 ideas on some of the possible future uses of the phonograph including: "recording all kinds of dictation without the aid of a stenographer, ...phonographic books for the blind, ... teaching of elocution [or speaking manners], ... reproduction of music,... music boxes and toys, ... verbal clocks, ... preservation of languages,... educational purposes,... [or] in conjunction with the telephone."<sup>1</sup> All of Edison's ideas have come true, and other applications that were not applicable during his time have also emerged. This paper will focus on how usage of the first mass-produced phonograph and its limitations impacted music performance, and production. Overall, the phonograph fundamentally altered the world that it was intended to preserve.

In discussing the nature of the first phonograph's technological limitations and usages together, we will see how usage of the limitations affected musical development and distribution during the phonograph's early years. In 1889, the first "phonograph parlor" appeared in California where patrons could simply deposit a nickel to order a selection of music. Within a year, every major city in the United States had at least one phonograph parlor. By this time, "the phonograph was marketed as a purely musical device."<sup>2</sup> The size and speed of the cylinder for phonographs at that time set a standard of three minutes of recorded music. For example, Igor Stravinsky's *Serenade for Piano* (1925) was composed such that all four movements were able to fit within the three-minute limit of a phonograph record. In Igor Stravinsky's autobiography, he writes, "In America I had arranged with a gramophone<sup>3</sup> firm to make records of some of my music... this suggested the idea that I should compose something whose length should be

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<sup>1</sup> *The History of the Edison Cylinder Phonograph*. The Library of Congress, <http://memory.loc.gov/ammem/edhtml/edcylldr.html> (1999).

<sup>2</sup> Alex Ross, "The Record Effect," *New Yorker*, June 6, 2005, 28.

<sup>3</sup> Phonographs and Gramophones are essentially the same device when it comes to usage and purpose. They are names given to the products of two rival manufacturers. For more information, see Emile Berliner, "The Improved Gramophone," *Electrical Engineer* Vol. 10 (December 31, 1890): 724-726.

determined by the capacity of the record. And that is how my Serenade en LA pour Piano came to be written.”<sup>4</sup>

The early phonograph was unable to capture soft sounds since background noise and static overpowered them, so loud music had a distinct advantage over soft music when it came to phonograph marketing. “The phonograph favored ... whatever could best puncture surface noise.”<sup>5</sup> As engineers reduced the background static in phonographs, soft music could be recorded with more ease. In turn, this allowed the phonograph to be used as a device in which musicians could record and replay their own playing. It is observed that the phonograph initiated a behavioral “feedback loop” process where listening became a “mirror” where musicians were confronted with their true selves. “Musicians have, since the late twentieth century, become so used to hearing themselves in recordings, and analyzing what they hear, that they are self-conscious to an extent that was not possible in any earlier period in musical history... once a musician has had the experience of listening to playbacks and adjusting to them, it is not possible to go back to a state of innocence.”<sup>6</sup> For instance, “in 1905, the internationally renowned opera singer Adelina Patti ... [recorded her voice]... ‘My God!’ she reportedly exclaimed upon hearing herself sing back from the phonograph, ‘now I understand why I am Patti! What a voice!’...”<sup>7</sup> However, a more common reaction came from musicians such as the soprano Joan Morris, who “practically had a cow” upon hearing her insubstantial voice for the first time.<sup>8</sup> In this way, the phonograph altered the entire practice of music by allowing easy access for the “feedback loop” to occur.

Limitations of the phonograph also set limitations to musical groups of the late 1800’s and early 1900’s. The phonograph’s inability to capture soft sounds gave classical music a disadvantage in the recording and marketing world. In 1889 Johannes Brahms recorded his Hungarian Dance No. 1 on the phonograph. A replay of the recording showed an extremely inaudible piano overpowered by background noise and static. “It sounded as if [Brahm’s] were coming to us

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<sup>4</sup> Igor Stravinsky, *An Autobiography* (New York: Norton, 1962), 123-124.

<sup>5</sup> Alex Ross, “The Record Effect,” *New Yorker*, June 6, 2005, 31.

<sup>6</sup> Robert Philip, *Performing Music in the Age of Recording* (New Haven, Yale University Press, 2004), 25.

<sup>7</sup> Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley and Los Angeles, University of California Press, 2010), 33.

<sup>8</sup> William Bolcom and Joan Morris, interview with John Harvith and Susan Edwards Harvith, 24 June 1977, in Harvith and Harvith, *Edison, Musicians, and the Phonograph*, 302.

from a spacecraft disintegrating near Pluto.”<sup>9</sup> Pianos and strings were at a disadvantage. Brass and percussion, however, were powerful enough to be recorded and replayed by the phonograph. As the phonograph gave rise to early recording studios, “music was recorded mechanically, with the sound being gathered by one or more large horns... [where] the sound was transmitted to a machine which cut the wave-form into soft wax on a cylinder or disc.”<sup>10</sup> Before electrical amplification became available in 1925, “musicians had to be contained in a small room and within close range of the recording horn in order to be audible.”<sup>11</sup>

In the late 1800’s, phonographs were able to “[capture] the tonal variations and improvisations of jazz that sheet music missed.”<sup>12</sup> This advantage of the phonograph over sheet music “made jazz accessible not only to the listeners, but to aspiring jazz performer-composers as well.”<sup>13</sup> The usage of phonographs this early on in the jazz era led to standards in jazz music as a whole set by the limitations of the phonograph. “The [phonograph] ... allowed roughly three minutes of music [to be recorded]. A jazz band had the choice of either fitting a given number of choruses to the record or, more casually, watching for a studio light that signaled the end of the recording.”<sup>14</sup> The limitations of the phonograph limited jazz music to a three-minute time frame, and thus over time, this limit set most jazz pieces to approximately three minutes.

Instrumentation was also altered by the phonograph’s acoustical limitations. In recordings before 1926, for example, jazz bands often used the banjo and the tuba to replace the more difficult to record guitar and string bass. Additionally, the usage of the phonograph allowed jazz musicians from across the nation to learn from each other indirectly through phonograph recordings. “While slowing the hand-cranked phonograph below normal speed, instrumentalists learned to mimic and improvise upon the distinctive styles of noted jazzmen.”<sup>15</sup>

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<sup>9</sup> Alex Ross, “The Record Effect,” *New Yorker*, June 6, 2005, 31-32.

<sup>10</sup> Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley and Los Angeles, University of California Press, 2010), 27.

<sup>11</sup> Ibid.

<sup>12</sup> Scott DeVeaux, *Technology: Jazz Roots, 1890-1935. Jazz: Marking Time in American Culture*. <http://xroads.virginia.edu/~asi/musi212/brandi/btech.html> (February 2004).

<sup>13</sup> Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley and Los Angeles, University of California Press, 2010), 82.

<sup>14</sup> Barry Kernfeld, *What to Listen for in Jazz* (New Haven, Yale University Press, 1997), 42.

<sup>15</sup> Scott DeVeaux, *Technology: Jazz Roots, 1890-1935. Jazz: Marking Time in American Culture*. <http://xroads.virginia.edu/~asi/musi212/brandi/btech.html> (February 2004).

Although John Philip Sousa still noticed the power of phonograph recordings as a marketing tool to attract listeners to his concerts, he foresaw a “deterioration in American music and musical taste, an interruption in the musical development of the country, and a host of other injuries to music in its artistic manifestations, by virtue- or rather, by vice – of the multiplication of the various music-reproducing machines”.<sup>16</sup> Due to this despise of the phonograph, Sousa rarely conducted his band during recording sessions. Regardless, as the phonograph and the music spread across the world, people were influenced by music that they otherwise wouldn’t have had access to. For example, Alton Augustus Adams grew up in the U.S. Virgin Islands and had access to music only through phonographic recordings. Adams was influenced greatly by Sousa’s music and rose to become both a composer and the first black bandmaster of the United States Navy.<sup>17</sup> The phonograph through its uses was able to influence people who otherwise wouldn’t have had any other means of experiencing music in America, but due to its technological limitations, certain types of music were unable to be recorded until further improvements on the phonograph took place.

Although Sousa’s type of music was perfect for phonograph recording, many other composers interested in recording in the early 1900’s changed their composition style due to the phonograph’s inability to capture certain instruments and its limitation on the length of music. Early in the phonograph’s legacy, composers such as Elgar, Richard Strauss, and Rachmaninoff were some of the first to take the phonograph seriously. These composers were aware of the phonograph’s limitations, but were eager to use the new technology. For example, Elgar “wrote a new harp part to fill in the quiet textures... [and] reduced each movement of the Concerto to a fraction of its original length to fit on one side [of a phonographic disc]. [To show how] drastic these cuts are,... the slow movement lasts just over thirteen minutes ... [whereas] the cut version lasts just over four minutes. The recording amounts to little more than a ‘selection of themes’ from the Concerto.”<sup>18</sup>

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<sup>16</sup> John Phillip Sousa, “The Menace of Mechanical Music,” *Appleton’s Magazine* vol.10 (1906): 278-284.

<sup>17</sup> Alton Augustus Adams, *The Memoirs of Alton Augustus Adams, Sr., the First Black Bandmaster of the United States Navy*, ed. Mark Clague (Berkeley and Los Angeles: University of California Press, 2008): 173-187.

<sup>18</sup> Robert Philip. *Performing Music in the Age of Recording* (New Haven, Yale University Press, 2004), 29.

Other composers of that era such as Stravinsky, Hindemith, Weill, Toch, and Wolpe all experimented with the phonograph as a way of making music, particularly by overlaying multiple tracks of music above each other and by adjusting the speed of the record player. This type of experimental music, although short lived, became known as *Grammophomusik*. At a Dada concert in the 1920's, Wolpe put 8 phonographs on stage and played Beethoven's 5<sup>th</sup> at varying speeds.<sup>19</sup> Weill, in his 1927 opera *The Tsar Has Himself Phonographed*, included an interlude for solo record player. Both Hindemith and Toch also experimented with performances involving phonographs during the Gramophone concert at Neue Muik Berlin in 1930.<sup>20</sup> At this concert, "one of Hindemith's *Trickaufnahmen* (trick-recording) was labeled *Gesangüber 4 Oktaven* (four-octave song)... almost certainly sung by Hindemith himself... the other "trick recording"... may be thought of as etudes, but not in the traditional sense, for they explore the technical abilities not of the performer but of the instrument."<sup>21</sup> These compositions explored in particular two properties of the phonograph. First, if the speed of a phonograph is increased or decreased by two or one-half, the sound is respectively raised or lowered by an octave. Second, a phonograph is able to record sounds produced at different times "on top" each other. Hindemith's *Trickaufnahmen* "seems to be scored for three instruments: xylophone, violin and cello. Most likely, however, Hindemith used only a xylophone and viola (his own instrument) and changed the speed of the recording to create higher and lower string sounds."<sup>22</sup> Although *Grammophomusik* was short lived, these experiments on the creation of music using technology and performing it independent of traditional instruments was well ahead of its time. These experiments anticipated what came to be known in the 1960's as "live electronics", in which performers performed music by interacting with taped and computer-generated sound.

Similar to the works of Stravinsky, Hindemith, Weill, Toch, and Wolpe, who used the phonograph as instruments in their compositions, phonographs also started to be used as performance tools in the 1930's by so-called disc jockey's (DJs) to play music through radio or live performance. 1975 was the year the disc scratching technique was said to have been

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<sup>19</sup> Austin Clarkson, "Lecture on Dada by Stefan Wolpe," *The Musical Quarterly* 72.2 (January 2009): 202-215.

<sup>20</sup> Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley and Los Angeles, University of California Press, 2010), 119.

<sup>21</sup> Ibid 110.

<sup>22</sup> Ibid 110.

invented by accident to give disc jockey's another degree of expression.<sup>23 24</sup> "Nothing in the room looks like a traditional instrument. The machinery on stage was never intended to produce music, but to *reproduce* it: the performers use turntables, records, and a mixer. But instead of merely letting the machines play, these [performance DJ's, or turntablists], bend the equipment to their will, altering existing sounds and producing a wide range of new ones."<sup>25 26</sup> Ultimately, the turntable challenged the intended function of the phonograph and the disc by using the disc, which is usually treated as a finished product, as raw material to create another form of music. Thus, from early composers of *Grammophonmusik* to disc jockeys, the phonograph itself became a musical instrument for both professional and amateur performances.

Before the advent of the phonograph, "it was [common] ... for concert to be given with [little or] no rehearsal at all... This combination of limited practice and limited rehearsal often meant that the audience had to sit through a somewhat exploratory opening to the recital... with the occasional slip or uncertainty, and then the sense of the musician regaining mastery over the situation."<sup>27</sup> The relatively isolated orchestras and musicians that performed in the nineteenth century were extremely diverse compared to today. A combination of immigration and the introduction of the phonograph lead to faster globalization and ultimately homogenization of styles. This "[homogenized] and [globalized] sound of the modern orchestra is a synthesis of what used to be different styles. The beginnings of this trend towards compromise can already be heard in recordings of American orchestras in the 1920's and 1930's, in which European immigrants from different countries sat side by side adapting to each other and to the big orchestras and the big halls in which they found themselves playing."<sup>28</sup> Over time, continuous direct and indirect (phonograph) networking narrowed the differences between orchestral musicians around the world. With more widespread access to recordings, musicians are able to listen to not only other musicians but themselves play. Audiences also are able to listen to recordings of various different orchestras around the world. This in turn puts pressure on

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<sup>23</sup> *The Disc Jockey*. Brief History of DJ's in Music, <http://www.knights-entertainment.co.uk/index.html>.

<sup>24</sup> Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley and Los Angeles, University of California Press, 2010), 126

<sup>25</sup> *Ibid* 125.

<sup>26</sup> As a clarification for the rest of this paper, a DJ is one who selects and plays recordings on the radio or for social functions such as parties or meetings. Turntablists, however, is a performative DJ who manipulate recordings in live performance.

<sup>27</sup> Robert Philip, *Performing Music in the Age of Recording* (New Haven, Yale University Press, 2004), 17-22.

<sup>28</sup> *Ibid* 23.

orchestras everywhere to change and adapt to changing expectations from audiences. Today, “most modern performance tends to erase all evidence of the work that goes into playing.” If orchestras and other performance groups are to “recapture what has gone missing from the perfectionist style...[they will have to overcome] psychic barriers...[and] be unafraid of indulging mannerisms that will sound sloppy.”<sup>29</sup> Nevertheless, the phonograph was instrumental as a catalyst in narrowing the difference between instrumentalists and orchestras.

The cases presented in this paper were selected to present an overlaying understanding on how both limitations and usage of the phonograph have affected the history of music and music-making. Although it is one’s personal opinion on whether the phonograph’s legacy is good or bad, it is clear that all new technologies, just like the phonograph affect the world of music. Just like the phonograph, all other technologies are able to affect the world depending on its limitations and usage. In today’s world, limitations and usage to technology are becoming more and more limitless, opening a new path ahead for music. It is ultimately up to us, the makers of the music, who determine the future of music.

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<sup>29</sup> Alex Ross, “The Record Effect,” *New Yorker*, June 6, 2005, 41.



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