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Robert B. Craig

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THE GLASS ARMONICA
Its Development, Use,
and Misuse as a
Musical Instrument of
Social Change
in the
Eighteenth Century

Robert B. Craig

*This Armonica shall join the sacred choir
Fresh transports kindle, and new joys inspire.
Hark! The soft warblings, rolling smooth and clear,
Strike with celestial ravishment the ear,
Conveying inward, as they sweetly roll,
A tide of melting music to the soul.¹*



his begins Nathaniel Hale's (1763) epic poem, titled *Jewels for the Glass Armonica*, extolling the beauty and inspirational sounds that emanate from one of the

¹ Andrew Timar and John S. Kupiers, *Scientific American Frontiers: A Brief History of the Glass Armonica* (September 2000; <http://www.vex.net/GlassO/GOhistory.html>).

eighteenth-century's most controversial musical instruments. Developed during the Enlightenment, the armonica was played in many ways for the pleasure of its performers, enjoyment by their audiences, and the perceived healing of patients.

The use of glasses to provide elementary musical renditions was first recorded in Europe in the fifteenth century. Simple glass bowls or individual drinking glasses, wetted and filled with water or wine, were rubbed on their rims, creating piercing, wailing tones, both captivating and agitating the listeners. In the eighteenth Century, this method of "playing" the glasses was perfected by the composer Christoph Willibald Gluck, and was later institutionalized by Benjamin Franklin.

Within the three basic categories of musical instruments, stretched strings, stretched membranes, and columns of air, the glass armonica resides in none. It is rather a musical instrument classified as an idiophone, or a naturally sonorous type of instrument. An idiophone is a category of instrument that produces notes and sounds by the natural vibrations of the instrument's body and composition. Within this category are included various forms of wooden blocks, castañets, rattles, cymbals, brass plates, bells, and the triangle.² In the case of the glass armonica, discovered by Gluck and perfected by Franklin, the glass armonica's captivating, ethereal sounds, were made by the rubbing of fingers on the rotating crystal bowls. Franklin's contribution was taking individual crystal glasses and mounting several on a spindle. The original glass armonica was believed to have been built in 1761. One Charles James a glass blower in London assisted Franklin in designing the armonica. Individual glass bowls were constructed with a hole in the center such that each could be filed with a cork and bowls mounted on a metal rod. The bowls were constructed in size and thickness to give the desired pitch when rubbed with one's wetted fingers. A foot pedal turned this assembly of glass bowls and the musical notes produced from the finger pressure creating the vibrations desired. Tones produced by this instrument were soft but particularly penetrating with a flute-like quality, with a range of up to four octaves. Dr. Franklin traveled throughout Europe in the later years, giving musical performances and demonstrations of this novel musical instrument. In

² Deutsches Museum, *Music* (September 2000; http://www.deutsches-museum.de/ausstell/dauer/musik/e_musik5.htm).

1762, following his visit to Turin and conducting experiments on electricity, Franklin wrote to his friend Giambattista Beccari describing his working with the armonica. Franklin wrote,

Perhaps, however, it may be agreeable to you, as you live in a musical country, to have an account of the new instrument lately added here to the great number that charming science was before possessed of; As it is an instrument that seems peculiarly adapted to Italian music, especially that of the soft and plaintive kind....The glasses are blown as near as possible in the form of hemispheres, having each an open neck or socket in the middle....My largest glass is G a little below the reach of a common voice, and my highest G, including three completed octaves....The advantages of this instrument are, that the tones are incomparably sweet beyond those of any other; that they may be swelled and softened as pleasure by stronger or weaker pressure of the finger, and continued to any length; and that the instrument, being once tuned, never again wants tuning...In honor of your musical language, I have borrowed from it the name of this instrument calling it the Armonica.”³

By 1790 records indicate some 5000 glass armonicas had been built throughout Europe. By all accounts, the glass armonica had become one of the most celebrated musical instruments of the eighteenth century.

As a result of Franklin's travels and the popularity of “something new” in the artistic community, Mozart became aware of this unique device. While there is no specific account as to where and when Mozart first came to hear of this “ethereal sounding instrument,” he was reported to have listened to one in Milan and asked his father to buy it for him. This apparently never happened. It is also known he encountered it, later, in the home of Dr. Franz Mesmer, in Vienna. Mozart and his family were frequent visitors at the Mesmer home. In 1765, Mesmer purchased a glass armonica. The Davies sisters, for the

³ Benjamin Franklin, “The Glass Armonica” (Letter to Giambattista Beccaria) (London, 13 July 1762); <http://www.lclark.edu/~inent/anthology/Franklin.html>.

purpose of a concert for the Empress of Austria, had brought it to Vienna. Late in his life, Mozart composed three pieces for the armonica, specifically for the armonica's recognized expert player, Maria Kirchgessner. The first was Mozart's *Adagio in C* (K356); the second, *Adagio and Rondo for Armonica, Flute, Oboe, and Cello* (K617); the third work was left unfinished at his death. Beethoven also wrote for the armonica. His first was a brief *Melodrama*, for a play that was never produced, titled *Leonora Prohaska*. Other noted composers of music for the armonica included Johann Gottlieb Naumann, Johann Friedrich Reichardt, and Karl Leopold Röllig.

The musical reputation of the armonica spread throughout Europe in the later part of the century. The instrument was being manufactured and played in Paris, Prague, Turin, and Versailles. Testimonials as to its unique qualities and captivating sounds came from such notables as Paganini, who was quoted as having expressed, "Ah, what a celestial voice. That is for praying." Goethe called it "The heartblood of the world," and Thomas Jefferson, "the greatest present offered to the musical world in this century."

All, however, was not going well with this new addition to the musical fraternity. Several forces were emerging that would have a profound effect on the armonica's future use and acceptance in the musicological community. As described earlier, the glass armonica became a favorite of Dr. Franz Mesmer as a tool in his profession for curing patients with his use of "animal magnetism." The eerie sound that emanated from the device were believed by Mesmer—and his patients—to both relax the patients and to convey more effectively his mesmeric condition. Mesmer's detractors identified the glass armonica with Mesmer for both its perceived values and as an instrument of evil. It was during this period that the armonica was also addressed in certain medical texts. In one it was described as "sure to cure certain maladies of the blood."

Regardless of the enthusiasm of the glass armonica's supporters, the belief soon surfaced that the effects of the armonica might indeed be dangerous to one's health. In 1798, writing in the *Allgemeine Musikalische Zeitung*, Friedrich Rochlitz wrote,

There may be various reasons for the scarcity of armonica players, principally the almost shared opinion that playing it

is damaging to the health, that it excessively stimulates the nerves, plunges the player into a nagging depression and hence into a dark and melancholy mood, that it is an apt method for slow self-annihilation...Many physicians with whom I have discussed this matter say the sharp penetrating tone runs like a spark through the entire nervous system, forcibly shaking it up and causing nervous disorders.⁴

Rochlitz was at this time the founder and editor of this most esteemed and topical musicologist's publication. His writings, therefore, had a profound impact on the musicological community, when he provided the following specific warnings.

1. If you are suffering from any nervous disorder you should not play it.
2. If you are not yet ill you should not play it excessively.
3. If you are feeling melancholy you should not play it or else play uplifting pieces.
4. If tired, avoid playing it late at night.⁵

Earlier in 1788, one J. C. Muller warned,

If you have been upset by harmful novels, false friends, or perhaps a deceiving girl then abstain from playing the armonica—it will only upset you more. There are people of this kind—both sexes—who must be advised not to study the instrument, in order that their state of mind not be aggravated.”⁶

In addition to the purported psychological effects of the glass armonica, another reason for the illnesses caused by its playing was attributed by many to the content of the crystal dishes being used. Crystal at this point in time had a lead content of around 30 percent. Constant playing may have caused the lead to become absorbed from

⁴ William Wilde Zeitler, *About the Glass Armonica: The Armonica Disappears* (September 2000; <http://www.glassarmonica.com/armonica/disappears/index.html>).

⁵ See Zeitler.

⁶ Thomas Bloch, *The Glass Harmonica* (August 2000; <http://fikenbeiner.bcn.net//gh/html>).

the fingers into the player's nervous system, leading to various illnesses and physical disorders. This was never confirmed. Others believed the playing of the armonica was the cause of marital unhappiness, premature births, and convulsions in cats and dogs. The playing of the glass armonica was banned in several German states, following an incident in which a child died during a performance.

Throughout these many trials and tribulations of this interesting, novel musical instrument, its inventor, Benjamin Franklin continued with his performances using the glass armonica to entertain himself and many of his friends and acquaintances. Franklin, remembered primarily for his scholarly, diplomatic, and inventive talents, was very gifted musically. He played the violin, harp, and guitar as well.⁷

On his return to America, he set up his armonica in the attic of his home in Philadelphia. One morning while his wife remained sleeping, Franklin began to play the instrument. His wife had not heard it before and when she awoke to the sounds of its angelic strains floating down from the attic above, she related that her belief was she had died and gone to heaven and was listening to the music of angels.⁸

What happened to the glass armonica? Was its rise in social popularity destroyed by rumor and innuendo or were other apparent factors the cause? Will it ever be revealed? It is recorded that in the later eighteenth Century several movements in the musical world were occurring simultaneously. First was the gravitation to larger and larger orchestras playing in larger halls. This was noted in the replacement of the harpsichord by the pianoforte. Next was the fragility of the glass armonica itself. One destructive instance occurred as the result of an unhappy sow running loose in a concert hall. Few records were kept of the damage to many of those 5000 manufactured; transportation, mishandling, and accidents undoubtedly accounted for many losses. Together with the difficulty in learning to play the armonica, coupled with the creation of the harmonium, a much more simple instrument to play, undoubtedly had a combined effect to reduce the number of performers and eventually led to the armonica's demise.

⁷ Claude-Anne Lopez, *Mon Cher Papa: Franklin and the Ladies of Paris* (New Haven: Yale University Press, 1990), 25.

⁸ "Crystal Singing Bowls: Yatri's Glass Harmonica" (August 2000; <http://crystalmusic.com/glassarmonica.html>).

The armonica's rise and fall and its collective impact on social changes in the eighteenth century is difficult to quantify. One situation, however, remains as an example of what might have been, historically, in Paris, 1784. It was during this time that Dr. Franklin had been appointed by King Louis XVI to lead a commission to investigate the merits of Dr. Mesmer's "animal magnetism" practices. Through the instigation of Madame Brillion, a close confidant of Franklin, a meeting with him and Dr. Mesmer was arranged. While it was hoped that the two could come to some form of an understanding regarding the propriety of "animal magnetism" as a form of medical practice, the meeting in that regard failed. The only subject discussed at this one and only meeting of the two, was their mutual appreciation for and playing of the glass armonica.⁹ Had they become closer, the practice of "animal magnetism" may have survived and instead of Mesmer's rejection, his efforts may have been used to further the study hypnosis as we know it today.

For Dr. Mesmer, the use of the armonica was fundamental to his conduct and performance in the healing of patients. Though the practice of mesmerism and animal magnetism outlived Dr. Mesmer, the armonica did not. For Dr. Franklin, playing the armonica was both an individual pleasure and a means of entertaining. He described it as his most successful invention.

Hale ends his poem with these telling lines:

Apollo bids it, where such virtues shine, and
pours a graceful sweetness thro' each line;
Her country too responsive to the sound,
Swells the full note, and tells it all around.

Though the glass armonica fell from musical grace in the eighteenth century, its historical significance, ethereal notes, and memory have not.

⁹ Lopez, 170.