



Notes and Discussions

The Ocular Harpsichord ‘La Toilet’

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Abstract. The color organ with its modern interpretation is an electronic device representing sound in a visual configuration. The origins of the color organ inventions can be traced back to the hand-operated models based on harpsichord design promising the splash of colors upon pressing a key. In this perusal, the harpsichord appears as a tool of fashion with its unique interpretation taking place in a setting where the author got into the habit of calling the ocular harpsichord ‘la toilet’. The acquisition of a certain tendency made the author develop a habit of calling ornaments in general as ‘visible music’. Throughout the narrative incorporating romantic features, the concept of ornament in music manifests itself visibly on clothing and architectural decoration adhering to the philosophical fulcrum between the 18th-century decorative aesthetics and the inventiveness of the Lumières. As a logical consequence, a mathematical structure applied in architecture could turn into keyboard composition.

Keywords. Ornament, Embellishment, Keyboard Instruments, Style.

LITERATURE SURVEY ABOUT THE BOOKLET IN QUESTION

In 1800, a booklet written in French under the name of an anonymous author was published through the Imperial printing of the Foreign Affairs Department A. Pluchart, based in St. Petersburg¹. In fact, it belonged to an Italian stage designer famous in various theaters in Italy during the mid-18th century, who towards the end of the century left for St. Petersburg to further his career in the land of wonders.

Pietro Gonzaga (Longarone, 1751 – St. Petersburg, 1831) has been one of the most delightfully eccentric figures of fine and performing arts history. How I define Pietro – a genuine artist with a refined taste in art – in addition to being known as «the inventor of the scenes»² at Teatro La Scala and «the chief painter with authority over other painters scenes»³ in St. Petersburg,

¹ In the first edition, the author appears to be Thomas Witth: [P. di Gottardo Gonzaga] *La musique des yeux et l'optique théâtrale: opuscules tirés d'un plus grand ouvrage anglais de Sir Thomas Witth*, A. Pluchart, St. Petersburg 1800.

² L. Romani, *Teatro alla Scala. Cronologia di tutti gli spettacoli rappresentati in questo teatro [...]* con introduzione ed annotazioni, Luigi di Giacomo Pirola, Milano 1862, p. 8; refers to the chronology of all performances performed at the theatre La Scala.

³ Recorded at *L'Académie Impériale des Beaux-Arts à St. Petersbourg, depuis son origine jusqu'au Règne d'Alexandre I*, H. de Reimers, St. Petersburg 1807, pp. 121-124.

has also been an art writer whose little-known texts carry the attribute of a sort of manual about fine arts and their effects in general⁴.

If I were to talk briefly about the outline, the first original French version of the literary work in question appears as an anonymous author's work. In that first version signed by Sir Thomas Witth whom nothing is known about, Gonzaga doesn't appear. His name hadn't been appearing in the first booklet for seven years until it appeared as translator in the 1807 version⁵. Researchers concur that this was actually a trick which Gonzaga was hiding behind because he probably never had the courage to introduce himself as the author. It is claimed that it was conducted a lot of research in order to recover the text of Sir Thomas Witth or other possible authors with a similar name but any satisfactory solution to the riddle has not yet been given⁶.

So far, the original French version of the booklet has been translated alongside the other writings of Gonzaga from French into Italian under the curatorship of Maria Ida Biggi and Cini Foundation and published in 2006 by Leo S. Olschki publishing house⁷. Unlike a bound book there is a monographic study⁸ dating back to 1974, overall the Russian translation of his writings. In another study published in 2011, the Russian translation takes part alongside the letters by Gonzaga⁹.

The absence of an English translation of those writings, both individually and collectively, inspired me to undertake it with the intention of making the text more accessible to the public¹⁰. Being focused on the idea of visualizing music through architectural forms of the 18th century played on an imaginary instrument, has led me to offer my opinion about the "Thomas Witth" pseudonym which may be reflecting the Aristotelian

thought linked with Empiricism questioning how do our senses interact with our mind—a philosophy of mind enhanced in the British-Scottish intellectual circles¹¹ of the 18th century.

In the first place, readers encounter alongside the Newtonian optics and the ocular harpsichord of the scientist monk Louis Bertrand Castel, how the author got into the habit of calling that ocular harpsichord the 'toilet'.

DISCUSSION

Since the invention of the piano that traces back to Bartolomeo Cristofori (1655-1731) from Italy, the piano variants have been divided so far into three types as: grand pianos, upright pianos, and digital pianos, all having their own unique features designed for specific needs and environments. Cristofori, unsatisfied by the lack of control that musicians had over the volume level of the harpsichord, around 1700, was credited for switching out the plucking mechanism with a hammer to create the instrument named 'clavicembalo col piano e forte'.

The Harpsichord is known as an instrument that is the ancestor of the piano but while both instruments are keyboard instruments there are differences that differ them from each other in terms of mechanism, tone-color and playing technique. While the harpsichord pulls the strings with a plectrum, the hammers of the piano strike the strings. Since the hammer hits the string based on the intensity of the keystroke, the piano mechanism can control the sound intensity. In the harpsichord, no such feature exists, and the volume doesn't change regardless of how the key is pressed.

In 1703 the supporting idea that there is in all things a vibratory disposition awakened by the word and by the breath of the spirit in the mode of resonance, color and sound, led French Jesuit Mathematician Louis Bertrand Castel (1688–1757) to set forth an ocular harpsichord displaying sounds in the mode of resonance and color. According to this interpretation, the resonant body should have responded to the universal harmony of the deep and dark unity assigned to the world by the breath of the Spirit. This research of the Jesuit Castel led to the contribution of several scientific works as: *Traité de physique sur la pesanteur universelle des corps* (1724), *Mathématique universelle* (1728), *L'optique des couleurs* (1740)¹², and in 1743 a critique on

⁴ Pietro di Gottardo Gonzaga introducing the practice of his profession to the Prince Jusupov-the royal theater manager of that period. Cf. P. di Gottardo Gonzaga, *Information à mon chef ou éclaircissement convenable du décorateur-théâtral Pierre Gothard Gonzague sur l'exercice de sa profession*, Al. Pluchart, St. Petersburg 1807, p. 4.

⁵ In the second edition of the book, the phrase «sur le sens commun» appears before us: Id., *La musique des yeux et l'optique théâtral: opuscules tirés d'un plus grand ouvrage Anglais sur le sens commun*, Al. Pluchart, St. Petersburg 1807.

⁶ Cf. *La musica degli occhi. Scritti di Pietro Gonzaga*, a cura di M.I. Biggi, Leo S. Olschki, Firenze 2006, p. IX.

⁷ *Idem*. The volume has brought together all writings by Pietro Gonzaga. The *La musica degli occhi* part consists of 43 pages with 20 color plates.

⁸ Monographic research on Pietro Gonzaga's life and works carried out by F.Y. Syrkin, *Pietro di Gottardo Gonzaga. 1751-1831. Zhizn tvorcestvo*, Sochensnija Monograficeskoe issledovanie, Moskva 1974.

⁹ Writings and letters by Gonzaga compiled by A.G. Movshensovn and A.G. Obradovich, *Pietro Gonzaga Literaturnye Trudy, Pisma*, Baltiiskie sezony, Moskva 2011.

¹⁰ P. di Gottardo Gonzaga, *The Music of the Eyes and Theatrical Optics; Pamphlets Excerpted from an English Masterpiece on Common Sense*, engl. transl. by L. Berdeli, Meta Printing House, Izmir 2021.

¹¹ T. Reid, *An Inquiry into the Human Mind, On the Principles of Common Sense*, W. Falconer, Glasgow 1817.

¹² L.B. Castel, *L'optique des couleurs, fondée sur les simples observations, & tournée sur-tout à la pratique de la peinture, de la teinture & des autres arts coloristes*, Briasson, Paris 1740.

the color spectrum of Newton. Castel initially illustrated his optical theories with a proposal for *Clavecin pour les yeux* (1725):

*Castel admitted that the analogy between tones and colours was not perfect. A tone is in practice a fleeting thing, while a colour is something permanent. Moreover, in a musical piece the different tones merge into one whole, while in a painting the different colours stay clearly separated [...] Castel proposed to take an ordinary harpsichord, but to change the mechanism so that the pressing of the keys would bring out the colours with their combinations and their chords; in one word, with all their harmony, which would correspond exactly to that of any kind of music*¹³.

This inventiveness shook enlightened Europe. While some composers as Rameau supported, most scholars criticized the monk's idea. Physicists who considered highly unlikely to establish any correspondence between light waves and sound waves, criticized Castel for misunderstanding the operation of our sensory mechanism. One couldn't neither see sound nor hear color, since sight and hearing involve different organs not susceptible to cross-function. Traces of these stormy discussions survived not only in philosophical, natural- scientific but also in literary works of that and later times. Encyclopédistes described the accord in painting as the harmony that reigns in the light & colors of a painting¹⁴. While the accord, in music, is the union of two or more sounds heard at the same time, forming together a regular harmony. Accordingly, sound is not reducible to space, because it has its own medium of diffusion that is time. Since space has its own medium of diffusion, the sound is irreducible to color.

J.J. Rousseau, after having visited Castel's studio to get acquainted with the color harpsichord, strongly rejected the instrument in his role as a musicologist:

Les couleurs sont la parure des êtres inanimés; toute

*matière est colorée: mais les sons annoncent le mouvement; la voix annonce un être sensible; il n'y a que des corps animés qui chantent*¹⁵.

Rousseau's defense about the false analogy between colors and sounds argues that each sense has its own field. The field of music is time and that of the painting is space. A sound by itself has no absolute character which makes it recognizable: it is low or high, strong or soft compared to another. To multiply the sounds heard at the same time, or to develop the colors one after the other would mean to put the eye in the place of the ear, and the ear in the place of the eye. The colors are durable, the sounds fade away, each color is absolute, independent, whereas each sound is for us only relative, and can only be distinguished by comparison.

OVERVIEW OF THE NARRATIVE

In the middle of this circle, the Italian scenographer Pietro Gonzaga examines the idea of the visible music. Gonzaga in his treatise, recalls Castel's failure and suggests that painting is an art of imitation rather than embellishment and handles the same criticism of Rousseau¹⁶ made on Castel's inconsideration of the space-time analogy:

*This wise mathematician observed that colours and sounds appeal equally so they are both susceptible to the same gradations, the same nuances, and have very similar harmonic ratios to combine. Castel concluded that they could produce the same effects; but this reverend father has not considered that the field of colours is space and that of sounds is time; the ears love to hear sounds successively one after the other and the eyes on the contrary love seeing the colours spread at the same time, close to each other. It seems that Castel never understood that this fleeting operation is against the properties of glance which wants to stop on the object*¹⁷.

¹³ Id., *Clavecin pour les yeux, avec l'art de peindre les sons, et toutes sortes de pieces de musique*, Lettre écrite de Paris le 20 fevrier 1725 par le R.P. Castel, Jesuite, à M. Decourt, à Amiens, «Mercure de France», novembre 1725, pp. 2562-2573 (cit. in M. Franssen, *The Ocular Harpsichord of Louis-Bertrand Castel: The Science and Aesthetics of an Eighteenth-Century Cause Célèbre*, Rodopi, Amsterdam 1991, p. 21). «Le principal avantage de ce nouveau Clavecin, est donc de donner aux couleurs, outre l'ordre harmonique, une certaine pointe de vivacité & de legereté qu'elles n'ont jamais sur une toile immobile & inanimée», *idem*, p. 2573: refers to the ocular harpsichord's greatest advantage both to the harmonic order and to the colours, namely the touch of vitality and lightness that they could never have on a still canvas.

¹⁴ [P. Landois] *Accord, en Peinture, in Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, dir. D. Diderot et J. le Rond d'Alembert, I, Briasson, Paris 1751, p. 78.

¹⁵ J.J. Rousseau, *Essai sur l'origine des langues, où il est parlé de la Mélodie et de l'Imitation musicale* (1781), dans *Oeuvres*, 8 voll., A. Belin, Paris 1817, IV, pp. 501-543. Edition électronique par D. Banda: http://www.espace-rousseau.ch/f/textes/origine_des_langues.pdf (7/2022), ch. XVI, p. 58. It makes mention of the colors that are the adornment of inanimate beings, all matter is colored, yet the sounds announce movement, the voice announces a sentient being. Painting is often dead and inanimate. It is one of the great advantages of the musician to be able to paint things that can't be heard, while it is impossible for the painter to represent those that can't be seen. The art of the musician is to substitute the insensible image of the object for the movements elicited in the beholder by its mere presence.

¹⁶ In his music dictionary, J.J. Rousseau defines the *mélodie* as a succession of sounds ordered according to the rules of rhythm and modulation. Cf. Id., *Dictionnaire de musique*, Veuve Duchesne, Paris 1768, p. 29.

¹⁷ Gonzaga, *The Music of the Eyes*, cit., p. 17.

Consequently, Gonzaga leaves to Father Castel and sages of his time, to settle calculations and to carry out experiments to guess if colours have the same properties as sounds and if they can produce similar effects:

Although Father Castel's harpsichord failed, it is very clear that space and colour may mean to the eyes what time and sound mean to the ears. For the construction of this visible music a rhythm of space and modulation of colours are required. Colours are susceptible to the same ranges or gradations as sounds. We definitely have a colour scale with many shades, with the same proportions as the sound scale and we can divide and subdivide the space as time divides and subdivides. By artistically varying the intervals of the sounds and varying their duration, we obtain a song or, as the artists say, a melody. Thus, by correctly varying the shades and dimensions of colours, we will obtain shapes or, if you want, images¹⁸.

THE OCULAR HARPSICHORD «LA TOILET»

My intention is to illustrate the author's approach to the subject of embellishment both in music and architecture relating to 'physiognomical' features of rhythmic melodies of the contours and proportions. As inferences can be drawn from the following quotations, the author had a licentious habit of calling the ocular harpsichord, the 'toilet'. Here he tries the ocular harpsichord by trying to set a person to music:

Let's see if the experiment can work or not. Let's take a very presentable young person and let the person pass through the different degrees of operations of the 'toilet' and it will be well to observe the changes resulting. The physiognomical traits and the proportions will be altered and accentuated in the whole transformation and we will notice the same difference passing between the speeches of the peasants and the ariette sung between the person who arrives from the village and the person who comes out of the 'toilet'¹⁹.

Let's examine in detail how this change occurred:

She comes out of the 'toilet', with a combed head. What does this arrangement of head refer to? It is exactly the amplification of form and colours operated around a face. It's a physiognomy, a figure set to music, exaggerated by the natural disposition of features as colours, the musical rhythm, the syllabic accent of the words, nuances, and sound modulations, like a small poetic feeling becomes a breeze [...] Like sounds, colours have their tones, their characteristic modes [...] The most frequent and sharpest

divisions give liveliness and strength to sounds and colours, those which simply continue over tempo are sweet, sad, grave, etc. In the same order, we can move on to embellish the whole person to create a slightly more complex piece of music²⁰.

EVERY ORNATE BUILDING IS A PIECE OF MUSIC

The use of semantic similes as 'the division of space' and 'the division of time' in the paragraphs below, take us to support the analogy between music and architecture. In the same way, the traces of Rousseau's statement about the space-time analogy is clearly seen. Apparently, musical graphics and graphical architectonics seem to go hand-in-hand, therefore it shouldn't be surprising that various decorative styles appear as musical visualizations for the eyes: «it is clear that the division of space can operate in architecture, the same effects that the division of time produces in music»²¹.

Immediately after, the mention of some terms from the music terminology directs us to the theory of music, where an interval corresponds to the distance between two sounds. In the passage below, the concept of 'tempo' in music, corresponding to Italian terms such as: 'allegro vivace' and 'maestoso', is figuratively mentioned:

The system of architectural orders contains the seeds of every expression, as the mere division of space produces pleasant sensations and makes the appearance of the buildings cheerful, graceful, majestic, noble, etc. [...] The space divided into large intervals and not very varied, is sweet or sad to the eye. The most frequent divisions, more varied and sharper, mark more cheerful and lively. The medium proportions form the noble, the elegant, the majestic, etc. What makes the difference between the Doric order and the Corinthian order, if not the different dimensions in the same matter? For this unique division, the Doric order is majestic, the Corinthian order is elegant and graceful [...] Each tastefully decorated building therefore is a concert that has a melodious rhythm of contours, of forms, and a harmonic chord in its composition [...] So it could be said that every ornate building is a piece of music and a city is a collection; or if you like, it's like a composition composed of several ariette and different pieces, an in its totality it has a general character which distinguishes in serious, comic, half character, and when the clairvoyant stranger enters by the first time in a city, first realizes the dominant tone and the character of the city's music²².

According to Saussure :

¹⁸ *Ibidem*.

¹⁹ *Idem*, p. 19.

²⁰ *Idem*, pp. 19-21.

²¹ *Idem*, p. 24.

²² *Idem*, pp. 24-26.

*Language is a system of signs that express ideas, and is therefore comparable to a system of writing, the alphabet of deaf-mutes, military signals, etc. But it is the most important of all these systems. A science that studies the life of signs within society is conceivable; it would be part of social psychology and consequently of general psychology; I shall call it semiology from Greek, semeion sign*²³.

Saussure has used the term semiology to describe the science that would study «the life of signs within society», originally placing semiology within social psychology. He has suggested that «a sign is like a piece of paper: One side is the signifier and the other is the signified, and together they make the sign/sheet of paper»²⁴.

EVALUATION AND CONCLUSION

During the 18th century, several French styles were adopted by English, including that of the 'toilet'. As the name suggests, 'la toilet' refers to the French word for cloth, 'toile'. It additionally attributes to the whole complex of hairstyling and body care operations. In our case, the author associates musical modalities with all 'à la mode' forms arguing that all drawable forms could be described as visible music. Thus, there are similes used as well-combed people are like physiognomies placed into music; musicians-physiognomists are like hairdressers and the ocular harpsichord is the 'toilet'. The author had precisely referred to that is necessary to put well-dressed women into music. Let us remember the 'clavier à lumières' of Alexander Scriabin who has placed the Luce (light) into the score of Prometheus, in the same way, aforementioned forms 'à la mode' were meant to be embellished by the ocular harpsichord. As a consequence of the attempts to visualize music in favor of the sense of sight and hearing, emerged the concept of the music of appearances or in the author's words the "artificial visions" (*vision artificielles*).

WHAT MUST HAVE AFFECTED THE AUTHOR?

According to the writer who witnessed three different Imperial periods of his time and operated as an artist at that time when the Napoleonic wars and British politics were in demand, the musical sound served to unite men to animate the great passions, directed the

spirit and expressed an opinion. The signs, the mottos, the clothes, the formalities and the apparatus or decoration used as political instruments had a great potential for the effectiveness of their attractions and for the clarity of their meanings:

*Visions have been of great use in all nations of the world. Going through the history of all the peoples of Asia, that of the Egyptians, the Greeks, the Romans, etc. we see that ceremonies have always been an instrument of politics, and the most civilized nations used ceremonies, formalities, and visions the most. The antiquity dominated the public spirit by solemnizing the acts with monuments and decorations*²⁵.

At the end of the chapter, the visible music discourse concludes with fireworks – a representative of victory; according to the author's description, firework is an artifice that has the greatest resemblance to the visible music.

*The fireworks show the great advantage that nothing is permanent, the combinations of their shapes and colours pass in time; change and pass quickly as the sounds, the modulations and the musical rhythm. Here the successive progression and movement are essential by cooperating with the instant pleasure of variations. Finally, here is the ocular harpsichord, and the music of the eyes for excellence*²⁶.

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²³ F. Saussure, *Course in General Linguistics*, ed. by C. Bally, McGraw-Hill Book Co., New York 1966, p. 16.

²⁴ A.A. Berger, *Cultural Criticism: A Primer of Key Concepts*, SAGE Publications, Thousand Oaks (CA) 1995, p. 76. Cf. Saussure, *Course in General Linguistics*, cit., p. 66.

²⁵ Gonzaga, *The Music of the Eyes*, cit., p. 30.

²⁶ *Idem*, p. 33.

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Figure 1. François Boucher, *La Toilette*, 1742 (Oil on canvas. 52.5 x 66.5 cm; Museo Nacional Thyssen-Bornemisza, Madrid; Inv. no. 58 (1967.4); ROOM 24).