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THE MYSTICAL COSMOLOGY OF THE LUTE GALLIARDS
OF VINCENZO GALILEI

In 1600, Jacopo Peri and Giulio Caccini, former protégés of Giovanni de' Bardi, engaged in a competition to attribute the invention of *recitar cantando* to themselves, seeking to displace Emilio de' Cavalieri, who, as the latest entrant, had laid claim to it in the Roman printing of his *Rappresentazione di Anima e Corpo*.¹ In reality, the true pioneer of this style of singing, meant to be as expressive as spoken word and heralding one of the most transformative revolutions in music history, was Vincenzo Galilei. Unfortunately, having passed away in 1591, he was unable to assert any primacy.²

Even in the most celebrated Florentine *feste* of the late sixteenth century – the wedding of Grand Duke Ferdinando and Christine of Lorraine – where Bardi played a pivotal role and music reigned supreme in the *Pellegrina* intermedi, Vincenzo Galilei's name is conspicuously absent.³ Nevertheless, there are compelling grounds to suspect that his contribution was not peripheral, particularly in the initial conception of those intermedi. Crucial evidence supporting this hypothesis lies in his second collection of lute tablatures never published.

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¹ As is well known, Cavalieri's *Rappresentazione* and the two *Euridices* by Caccini and Peri are dated 1600 in the prints, but only Cavalieri's work actually appeared that year, with Caccini and Peri following in 1601 and 1602 respectively. In reality, the order of composition is exactly the opposite (first Peri, then Caccini, and finally Cavalieri), and the editorial backdating functions as a priority claim in the invention of *recitar cantando*; see TIM CARTER – RICHARD A. GOLDTHWAITE, *Orpheus in the Marketplace: Jacopo Peri and the Economy of late Renaissance Florence*, Cambridge, Harvard University Press, 2013, pp. 109-113.

² A first attempt at emphasizing Galilei's key role in the 'camerata' is CLAUDE V. PALISCA, *The Camerata Fiorentina: A Reappraisal*, «Studi musicali», 1/2, 1972, pp. 203-236.

³ JAMES M. SASLOW, *The Medici Wedding of 1589: Florentine Festival as Theatrum Mundi*, New Haven, Yale University press 1996, p. 28.

1. ASTRONOMICAL PASSIONS

The debate on the configuration of the heavens was notably intense in the 1580s. The reform promoted by Pope Gregory XIII (†1585) with the bull *Inter gravissimas* of October 1582, subtracted ten days from the Julian calendar to account for the twenty-minute advancement of the tropical year (caused by the precession of the equinoxes) and aimed to rectify the sidereal year as calculated by the mathematicians of imperial Rome.

Science served religion, and even a very pious woman like Christine of Lorraine, Ferdinando's wife, could receive as a gift the table of the *Ruota perpetua* from the court astronomer Antonio Santucci, which calculated the calendar according to the new Gregorian system. For the Grand Ducal wedding in 1589, Santucci undertook the construction of what is considered the largest armillary sphere ever built, standing at almost four meters in height. This remarkable sphere had the capacity to replicate the movements of all the planets and the twelve signs of the zodiac.

This enthusiasm for the conformation of the heavens provides insight into why the first intermedio of *La Pellegrina* aims to represent the music of the universe. It bears the title *Harmony of the Spheres*, a phrase that would subsequently encapsulate the notion of the musical universe as the animating force of the cosmos.

Nevertheless, contemplating the melodic heavens was the interest of well-read scholars, and some of the intermedi credited to Bardi in the chronicles of Bastiano de' Rossi, particularly the first and the last, drew upon Platonic ideals. These put forth a body of knowledge known to only a select few; mastery in these matters demanded a profound understanding of music theory.

As Aby Warburg has previously observed, with the exception of Rossi, who likely had access to the scenario of the intermedi, other chroniclers merely saw clouds and choirs, failing to comprehend the allegorical elements.⁴ The *Diario* of Giuseppe Pavoni, a printer and music connoisseur who was beginning his activity in Genoa in those years,⁵ did not even iden-

⁴ ABY WARBURG, *I costumi teatrali per gli intermezzi del 1589: I disegni di Bernardo Buontalenti e il Libro di conti di Emilio de' Cavalieri*, «Atti dell'Accademia del R. Istituto Musicale di Firenze», XXXIII, 1895, pp. 103-146: 125; repr. in *Gesammelte Schriften. Studien Ausgaben*, ed. by G. Bing, 2 vols., Leipzig-Berlin, B. G. Teubner, 1932; Nendeln, Kraus Reprint, 1969, vol. I, pp. 259-300 (It.), 394-422 (Engl. trans.), 422-438 (orig. Germ. unpubl.).

⁵ GRAZIANO RUFFINI, *Note su Giuseppe Pavoni stampatore a Genova dal 1598 al 1641*, «La Bibliofilia», XCI/3, 1989, pp. 267-285: 272.

tify the personification of Harmony: «a woman sitting on a cloud holding a lute began to play and sing a madrigal very softly».⁶

The intermedi project, in fact, required expertise in the Greek musical tradition, a knowledge possessed amongst Bardi's closest collaborators only by Galilei senior. Why then was Galilei's name, which should have been a source of pride for the Florentine court, not mentioned by anyone?

2. INTERMEDI AND GREEK MUSIC THEORY

In 1587, following the mysterious demise of Francesco de' Medici, his brother Ferdinando assumed the title of Grand Duke after relinquishing his ecclesiastical pursuits. Francesco was the more intellectually inclined of the two, and though Ferdinando recognized the propaganda potential of culture, he viewed his brother's artistic pursuits as excessive. However, deeming it unwise to dismiss Bardi from his role as master of ceremonies, he appointed the pragmatic and shrewd Roman composer Emilio de' Cavalieri to work alongside him, granting him full organizational authority. Bardi felt marginalized and, a few months after the 1589 festivities, resigned from his position and departed the city. The intellectual circle subsequently relocated to the residence of Jacopo Corsi.⁷

Bardi had funded Galilei's musical education in Venice under the guidance of Gioseffo Zarlino. It was likely a sense of gratitude towards his patron that led the composer to abstain from participating in the project overseen by Cavalieri. One can surmise that Galilei deliberately distanced himself from Ferdinando's court, thereby missing out on the recognition during the marriage festivities. This is despite the fact that the intermedi of *La Pellegrina* were dedicated to the humanist revival of Greek music, a cause for which Galilei had published his *Dialogo della musica antica e della moderna* eight years prior.

Interest in Greek music theory had begun a century earlier with Franchino Gaffurio, who had advocated for the translation of Greek musical treatises⁸ and was familiar with Plato's work through Marsilio Ficino's Latin trans-

⁶ GIUSEPPE PAVONI, *Diario descritto... delle feste celebrate nelle solennissime nozze delli serenissimi sposi, il sig. don Ferdinando Medici et la sig. donna Christina di Loreno*, Bologna, Giovanni de' Rossi, 1589, p. 15: «una donna che stava a sedere sopra una nuvola, e con un liuto cominciò a suonare e cantare molto soavemente un madrigale».

⁷ ANGELO SOLERTI, *Gli albori del melodramma*, 3 vols., Milan, R. Sandron, 1904-1905, vol. I, p. 47.

⁸ ALBERTO GALLO, *Le traduzioni dal Greco per Franchino Gaffurio*, «Acta Musicologica», XXXV/4, 1963, pp. 172-174.

lation.⁹ Although the Platonic idea of a musical universe had resurfaced in the thirteenth century in Chartres with the rediscovery of Chalcidius' commentary on the *Timaecus*,¹⁰ it was not until the late fifteenth century that ancient music theory regained prominence.¹¹ Zarlino drew heavily on Gaffurio's work, although he refrained from explicit citations, except in minor instances. On the contrary, Galilei, a student of Zarlino, acknowledged Gaffurio's contributions on multiple occasions, while also benefiting from the research of Girolamo Mei, with whom he maintained a continuous correspondence.¹² It was Mei who transcribed three hymns for Galilei with Greek notation (currently attributed to Mesomedes) from a theoretical manuscript (also containing texts by Aristides Quintilianus and Manuel Bryennios) housed in Ranuccio Farnese's library. These hymns, constituting the first printed example of Greek music, were later published in Galilei's *Dialogo*.¹³

Gaffurio illustrated the music of the universe in a famous woodcut (Fig. 1a) printed without explanation in his *Practica musice* of 1496, and again in his *De harmonia* of 1500 (although not published until 1518), this time with a few accompanying explanatory pages.¹⁴ Given that such theories formed the basis of the *Festa del Paradiso* organized in Milan by Ludovico il Moro in 1490 for the marriage of his nephew Gian Galeazzo to Isabella of Aragon, Warburg's thesis proposing that the first Florentine intermedio was a Platonic reimagining of Gaffurio's woodcut seems compelling. However, I am inclined to believe that Gaffurio's illustration may have a role in the sixth and last intermedio, rather than the first, which reproduces Plato's harmonic vision as described in Er's myth from the *Republic*, and thus may not require us to turn to Gaffurio for an explanation.

3. THE MEANING OF TWO INTERMEDI

While considering the first intermedio as based on Plato, Warburg was convinced of a strong visual influence derived from Gaffurio's woodcut,

⁹ MARTINA PANTAROTTO, *Franchino Gaffurio e i suoi libri*, in *Ritratto di Gaffurio*, ed. by D. Daolmi, Lucca, Lim, 2017, pp. 49-72: 70.

¹⁰ GIAN CARLO GARFAGNINI, *Da Chartres a Firenze: Etica, politica e profezia fra XII e XV secolo*, Pisa, Edizioni della Normale, 2016.

¹¹ C.V. PALISCA, *Humanism in Italian Renaissance Musical Thought*, New Haven, Yale University, 1985.

¹² Girolamo Mei: *Letters on Ancient and Modern Music to Vincenzo Galilei and Giovanni Bardi*, ed. by C.V. Palisca, Rome, American Institute of Musicology, 1960 [1977²].

¹³ VINCENZO GALILEI, *Dialogo... della musica antica et della moderna*, Florence, Marescotti, 1581, p. 97.

¹⁴ DAVIDE DAOLMI, *Iconografia gaffuriana*, in *Ritratto di Gaffurio*, cit., pp. 143-211: 148-152.

albeit with some alterations: «Bardi, however, considering the general concept as a whole, changed it essentially, introducing Necessity and the Fates instead of Apolline, and the Sirens instead of the Muses».¹⁵

Actually, in Gaffurius, Ananke (Necessity) transforms into Apollo, the Fates become the Graces, and the Sirens are replaced by the Muses. Instead of being a mere variation of Plato's ideas, the Gaffurian illustration appears to depict a different concept – that of music as a divine bestowment upon humanity, a notion Plato discusses in his *Laws*.

Indeed, the most enigmatic aspect of the panel is the serpent, whose meaning is not immediately apparent. Just a few decades after the Gaffurian panel, Athanasius Kircher, when revisiting the same theme in his *Obeliscus Pamphilius* (Fig. 1b), misinterpreted the serpent as a metaphor for the fertilization of the Earth.¹⁶ For a more insightful interpretation, one should turn to Ficino's *Theologia Platonica* (1482), which Gaffurio was certainly familiar with, and which describes the universe made vivid by a soul that connects «what is only eternal and what is only temporal».¹⁷

In other words, here a distinction is drawn between an eternal divine sphere and matter, which reveals itself within the bounds of time. The soul, acting as an intermediary essence, permeates every aspect, regardless of the varying configurations of the universe: «the empyrean sky as being completely motionless [is] in eternity, while the other spheres [the planets] simultaneously in eternity and time, the compounds [i.e. the elements] only in time».¹⁸

According to Ficino, the connection between Heaven and Earth is not a movement in space. Instead, it is an action in space-time, anticipating the Theory of Relativity by half a millennium. As Edgar Wind elucidates, Gaffurio's serpent serves as a metaphor for eternity transitioning into measurable time.¹⁹ The serpent's tail, curved into a ring, symbolizes infinity while at the opposite end, time is represented by the three heads of the wolf, lion, and dog. Macrobius (*Saturnalia*, i.xx.15) had previously explained why the past is associated with the wolf, the present with the lion, and the future

¹⁵ A. WARBURG, *Costumi*, cit., p. 115, my translation.

¹⁶ ATHANASIUS KIRCHER, *Obeliscus Pamphilius, hoc est interpretatio nova et hucusque intentata obelisci hieroglyphici*, Rome, Ludovico Grignani, 1650, p. 244.

¹⁷ MARSILIO FICINO, *Theologia Platonica... de animorum immortalitate*, Florence, Antonio Mismocomini 1482, chap. III.2: «illa quae sunt aeterna solum atque illa quae solum sunt temporalia».

¹⁸ *Ibid.*: «caelum empyreum tamquam prorsus immobile in aeternitate [...] ceteras vero sphaeras in aeternitate simul et tempore, composita denique in tempore tantum».

¹⁹ EDGAR WIND, *Pagan mysteries in Renaissance* [1958], London, Faber and Faber, 1967², app. 6.

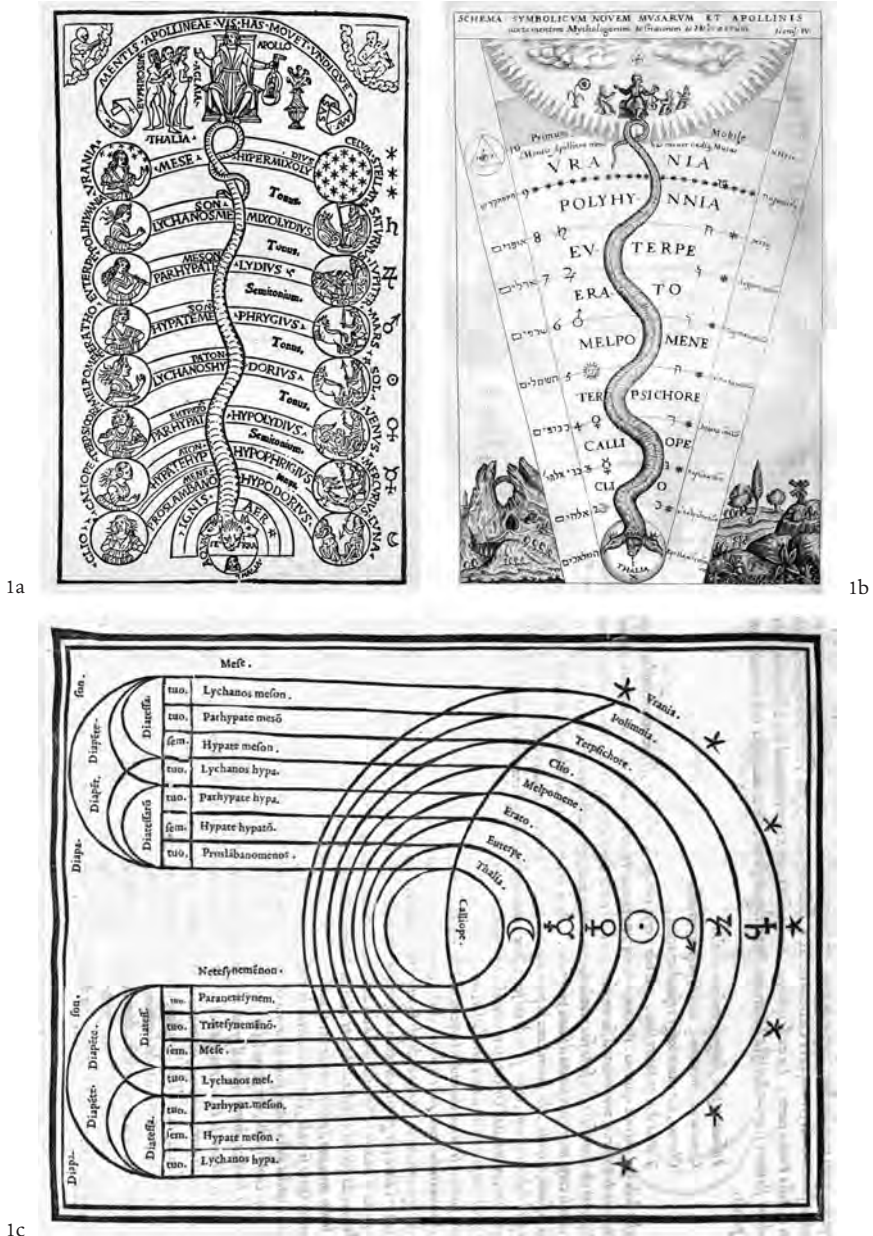


Fig. 1. a) Top left: Frontispiece in Franchino Gaffurio, *Practica* (1496); b) Top right: Engraving in Kircher, *Obeliscus* (1650), p. 244; c) Below: Engraving in Zarlino, *Istituzioni* (1558), cap. II. 29, p. 102.

with the dog. This symbolism of the triple head as an embodiment of the passage of time endured for a considerable period, evident in works such as Titian's *Allegory of Prudence* (1570).

If the serpent represents time, and the musical intervals symbolize harmony, then Gaffurio is not simply depicting musical expertise, but rather the bestowal of music by the gods to humanity. At the ends, we see God and Man, with music descending to Earth as a metaphor for a divine gift. However, this theme is not the focus of the first intermedio of *La Pellegrina*, but rather the last. In relation to the sixth intermedio, Bastiano de' Rossi's chronicle provides specific details: «the poet [...] wished to show what Plato writes in his *Laws*: Jupiter, having compassion for mankind's fatigue and distress, resolved, in order to relieve it, that Bacchus and the Muses should bring Harmony and Rhythm to the Earth».²⁰

The chronicle then recounts that Apollo and Bacchus, accompanied by the Graces and Muses appeared on seven clouds, five of which descended gradually. Rossi emphasizes an unusual element that envelops the entire scene, referred to as a 'steam' («vapore») depicted in Bernardo Buontalenti's drawing as a form of rainfall (Fig. 2). This is most likely a portrayal of the soul, which, as Ficino describes in his *Theologia Platonica*, is simultaneously «divided and undivided» and, «as air is intermediate between fire and water, which as heat agrees with fire, as humidity with water».²¹

That is, indeed, steam. Another element in this intermedio that alludes to Ficino is again suggested by Buontalenti's drawing, though it is absent from the chronicle. Rossi asserts that Apollo, Bacchus, Harmony, and Rhythm were all positioned on a single cloud in the center, but it's difficult to identify such a quartet in the illustration. It is more plausible that Harmony and Rhythm are symbolized jointly by the singing woman in the middle, surrounded by figures of musicians and twenty couples engaged in singing and dancing on the stage. The figures above are less discernible. We might imagine seeing Apollo accompanied by the Muses. However, the presence of both genders and the total count – eight men and eight women – contradicts such a hypothesis.

²⁰ BASTIANO DE' ROSSI, *Descrizione dell'apparato e degl'intermedi fatti per la commedia rappresentata in Firenze nelle nozze*, Florence, Anton Padovani, 1589, p. 61: «il poeta [...] volle quel fatto rappresentare che scrive Platone ne' libri delle sue Leggi. Ciò fu che Giove avendo compassione al legnaggio umano affaticato e ripieno d'affanni, deliberò, per dargli alcun refrigerio, che Apollo e Bacco e le Muse si prendessero egli questa cura e mandògli in terra a portare l'Armonia e il Ritmo».

²¹ M. FICINO, *Theologia*, cit., chap. III.2: «idem facit quod aer inter ignem aquamve medius, qui cum igne in calore, cum aqua convenit in humore».

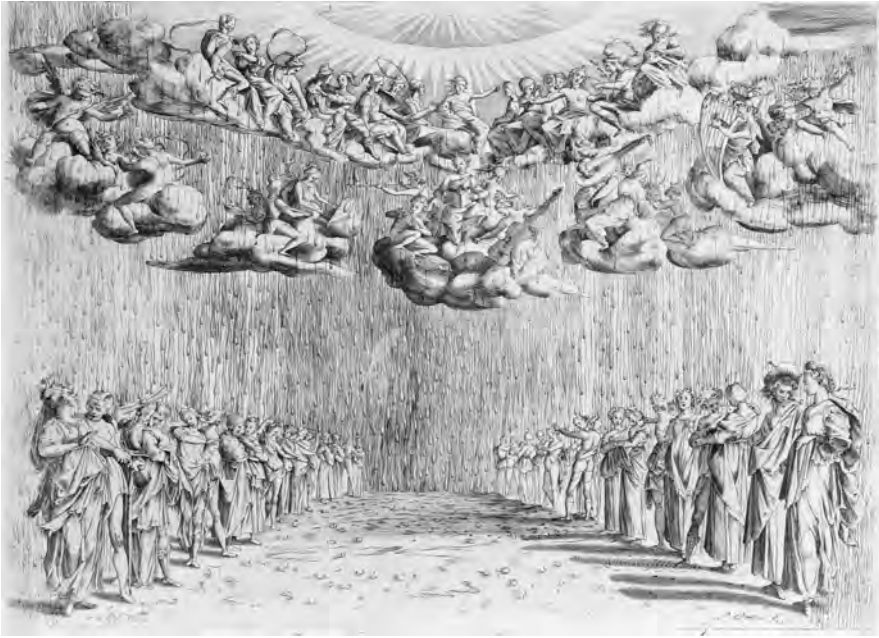


Fig. 2. *The Descent of Apollo and Bacchus with Rhythm and Harmony*, sketch for the sixth intermedio in *La Pellegrina*, engraving (from Bernardo Buontalenti's drawing) attributed to Agostino Carracci (ca. 1590).

According to Ficino, the process of acquiring knowledge, which flows from God to Man through the soul – where the gift of harmony and rhythm plays a part – is not a strictly rational process. Pico della Mirandola reiterated this in his *Conclusiones philosophicae* (1486): the truth of the world is not comprehended through reason alone, but is grasped in the moment when one is 'intoxicated' by the divine ecstasy stemming from the fusion of the Apollonian and Dionysian, that is, when the nine Bacchi are reunited with their respective nine Muses (the Muses embodying Apollo, and hence, the Apollonian).²² This theory, which Pico derives from the *Orphic Hymns*,

²² PICO DELLA MIRANDOLA, *Conclusiones sive theses DCCCC publice disputandae*, Rome, Eucharis Silber 1486: «Qui sciverit quid est vinum purissimum apud Cabalistas sciet cur dixerit David: "Inebriabor ab ubertate domus tuae" [...] et quid significant tot Bacchi apud Orpheus» (§ 5.11.17) [Those who know what pure wine is to the Kabbalists will know why David said: "I will become intoxicated with the riches of your house" (Ps 35.9) [...] and what the many Bacchi meant to Orpheus]. And he goes on: «Non inebriabitur per aliquem Bacchum, qui sue Muse prius copulatus non fuerit» (§ 5.10.24) [You will not be intoxicated by any Bacchus who has not first joined his Muse].

is explicitly restated by Ficino in *Theologia Platonica*.²³ Here we encounter a universe comprising three temporal stages – the chronological (Real Time), the intermediate (Transition), and the infinite time (Eternity) – aligning with the elements, the spheres and the empyrean. Each realm is inhabited by divine lovers:

			BACCHI	MUSES
Eternity	Empyrean	—	Eribromus	Calliope
Transition	Spheres	Stars	Pericionius	Urania
		Saturn	Amphietus	Polyhymnia
		Jupiter	Sabazius	Terpsichore
		Mars	Bassareus	Clio
		Sun	Trietericus	Melpomene
		Venus	Lysius	Erato
		Mercury	Silenus	Euterpe
		Moon	Liknitis	Thalia
Real time	Elements	Earth	Pluto	Proserpine
		Water	Ocean	Thetys
		Air	Jove	Juno
		Fire	Phanes	Aurora

According to the diagram, the celestial spheres correspond to eight pairs, each comprising a Bacchus and a Muse. These pairs might be represented by the sixteen male and female figures depicted in the upper part of Buontalenti's drawing. This could clarify why Rossi mentions the presence of the Muses, also alluding to Bacchus, and situates one *Amore Celeste* (Heavenly Love) on each cloud, symbolizing the alchemical union of the masculine and feminine. According to Ficino, Love served as the means of union between Bacchus and the Muses. As I mentioned earlier, there is no direct correlation between Rossi's chronicle (where, for example, only one Bacchus is mentioned) and the scene illustrated by Buontalenti. However, it can be assumed that the drawings supported an earlier concept, which was later realized differently for various reasons, possibly including Galilei's lack of oversight.²⁴ And indeed, Galilei appears to be the only indi-

²³ M. FICINO, *Theologia*, cit., conclusion of chap. IV.1.

²⁴ Moreover, among the surviving drawings (Florence, Biblioteca Nazionale Centrale, Palatino C.B.3.53/II) there is also a depiction of Jupiter-Eagle that Warburg (*Costumi*, cit., p. 107) already considered a preliminary sketch for the first intermezzo, later discarded.

individual who could have comprehensively grasped the meaning of Gaffurio's image. In fact, there are clues indicating that the ancient ideal of musical philosophy depicted in the Florentine intermedii serves as an explanation of Gaffurio's cosmogony through the philosophical perspective of Ficino.

4. GALILEI'S GALLIARDS

The first nine folders of *Fondo Galileiano* – a collection of the National Library of Florence dedicated to Vincenzo's son, Galileo – contain the autographs of Galilei senior and other «Anteriori di Galileo» (predecessors of Galileo), as stated in the catalogue description. Number 6 corresponds to the *Libro d'intavolatura di liuto* that Galilei compiled in 1584. Having already published an earlier book for lute in 1563, known to be his first, we can designate this one as the second. The book is divided into three parts, the first two each containing 12 suites comprised of three dances (passamezzo, romanesca and salterello) distributed on the 12 degrees of the scale. Initially, they are in a minor key, then in major key,²⁵ employing an equal temperament method that predates Bach's *Wohltemperierte Klavier* by a century and a half.

The third part presents approximately sixty galliards, each titled with a female name, a customary practice for naming instrumental dances. In line with the convention of pairing a slow dance with a faster one, the galliard typically followed the pavana, serving as a rhythmic conclusion. However, in the sixteenth century, especially in courtly settings, it was more commonly performed in isolation and at a moderate tempo. Its defining characteristic lies in the 6/8 time signature (often in hemiola), not necessarily linked to the use of a pre-determined bass.

²⁵ Whichever lute intonation is realised: for example, Chilesotti and Possiedi consider the lute in E, while Gasser and Perni in G. The editions, all partial, of the *Secondo libro d'intavolatura* are: OSCAR CHILESOTTI, *Trascrizioni da un codice musicale di Vincenzo Galilei*, in *Atti del Congresso internazionale di scienze storiche: Roma 1903*, Rome, Lincei, 1905, pp. 135-138, with mus. appendix (pp. 1-18); FABIO FANO, *La Camerata fiorentina: Vincenzo Galilei 1520?-1591: La sua opera d'artista e di teorico come espressione di nuove idealità musicali*, Milan, Ricordi, 1934; PAOLO POSSIEDI, *Il manoscritto Galileiano 6 della Nazionale di Firenze*, «Il Fronimo», VIII/30-31, 1980, pp. 5-13, 5-19; MEINOLF FRITZEN, *Vincentio Galilei: Libro d'intavolatura: 16 Gagliarden mit mythologischen Titeln und andere Stück*, München, Ricordi, 1982; LUIS GASSER, *Vincenzo Galilei's manuscript "Libro d'intavolatura di Liuto" (1584): An introductory study*, PhD diss., Stanford University, 1991; GIULIA PERNI, *Vincenzo Galilei. Le gagliarde dal Libro d'intavolatura di liuto (Gal. 6)*, Pisa, ETS, 2000; CARIN ZWILLING, *To the Muses: Nine Galliards*, «Lute Society of America Quarterly», XLII/2, 2007, pp. 20-32; PHIL GOLDENBERG, *Nine Galliards from Libro di Intavolature de Lauto by Vincenzo Galilei*, Decatur, Guitar Chamber Music Press, 2009.

The *Libro d'intavolatura* has been under scrutiny since 1903, when Oscar Chilesotti transcribed a dozen pieces. In 1992 an anastatic edition was published,²⁶ but this autograph has yet to receive a comprehensive modern edition. This is a curious circumstance, especially considering that it represents one of the earliest practical implementations of the modern tempered system.²⁷ Even among lutenists, Galilei does not seem to enjoy particular favor; his compositions are scarcely performed, and more often lutenists prefer to play examples from *Fronimo*, the theory book of Galilei, rather than his tablature books. Hyperion's project for a complete recording of the «secondo libro» (*The Well-Tempered Lute*, 2016) halted after the first CD.

The series of galliards in the third part does not seem complete: although numbered from 1 to 56, no. 14 is copied twice, no. 54 is missing, nos. 51, 52, 55 and 56 have no names, and one title is repeated twice (nos. 10 and 50). While all of them bear names of women from Greek historical-mythological tradition, only the first nine form a coherent sequence. This first group in fact lists the nine Muses, all in the key of F (assuming the lute in G). It is then followed by ten galliards in D (nos. 10-19) and ten in G (nos. 20-29), whose names – *Clorinda*, *Ariadne*, *Phyllis*, *Syrinx* etc. – do not seem to make consistent groups (e.g. based on the character's identities). The following three galliards (nos. 30-32), still in G, evoke geographical places (*Carinthia*, *Moravia*, *Styria*). Finally, there are four groups of six galliards where the first three adopt, but not strictly, the tones of C (nos. 33-38), B flat (39-44) and D (45-50), while the last group, including four untitled galliards, has no consistency of tone.

5. A NEW ORDER IN THE MUSES

The series of galliards that has garnered the most attention is that of the Muses (the first nine pieces). The aspect that I would like to highlight here is the rather unconventional order chosen for the succession of the Muses. Given Gaffurio's influence, Galilei was likely aware that the Muses were traditionally linked to the eight celestial spheres, a sequence estab-

²⁶ Vincenzo Galilei: *Libro d'intavolatura di liuto: Firenze 1584*, ed. by O. Cristoforetti, Florence, Spes, 1992.

²⁷ There is, however, a lesser-known precedent, the *Libro de intabulatura di liuto nel quale si contengano 24 passamezi, 12 per bemolle et 12 per bequadro sopra 12 chiave... con alcune napollitanae* (München, Bayerische Staatsbibliothek, Mus. ms. 1511a) that Giacomo Gorzanis compiled in Trieste in 1567 and dedicated to «Odorico Erbert» (Ulrich Herwart, 1539-1586), perhaps a relative of the better-known musicophile Hans Heinrich Herwart.

lished as far back as Martian Capella's *Marriage of Mercury and Philology* (i.27-28). However, Galilei opts for a different arrangement:

1. Calliope | 2. Thalia | 3. Euterpe | 4. Erato | 5. Melpomene | 6. Clio |
7. Terpsichore | 8. Polyhymnia | 9. Urania

This series is not arbitrary, but rather directly alludes to the alchemical myth of the union between the Muses and Bacchus as mentioned by Ficino. Here, we encounter a precise alignment between the planets and the Muses – a concept later incorporated by Galilei and previously ‘musically’ formalized by Zarlino. In his *Istitutioni harmoniche* of 1558, Zarlino published an image of the musical cosmos [Fig. 1c] that expressly referred to Ficino. Speaking of the theory of the sound of the universe, he writes: «But Plato connected each sphere [...] with a siren, i.e. one of the nine Muses, who produces (as he says) voice or sound, from which the harmony of Heaven is born».²⁸

For Zarlino, the shift from Sirens to Muses is seamless, as it was already established in Gaffurio's work. What is novel here is the specific sequence of Muses that Zarlino elucidates:

And while [Plato] does not explicitly delineate the order [of the Muses], the erudite Marsilio Ficino delves into them in [his introduction] to Plato's *Furor Poetico*, aligning the first lunar sphere with Thalia, Mercury with Euterpe, Venus with Erato, the Sun with Melpomene, and so forth, as illustrated in the diagram.²⁹

However, unlike Ficino, Zarlino does not position Calliope beyond the Fixed Stars. While he acknowledges her paramount significance, he strategically places her within the framework of the theory of spheres, aligning her with the Earth. This, in fact, is the sequence adopted by Galilei.³⁰

Zarlino's depiction is highly syncretic, as it is not a wholly original creation but rather draws from Glareanus' *Dodekachordon* (1547), which itself was a reinterpretation of Gaffurio's panel (which, it's worth noting, originated from Ramos de Pareja). Glareanus had removed the Muses due to

²⁸ GIOSEFFO ZARLINO, *Le institutioni armoniche*, Venice, Pietro da Fino, 1558, chap. II, p. 29: «Ma Platone accomodò a ciascuna sfera [...] una sirena, cioè una delle nove Muse che manda fuori (come dice) la sua voce o suono, dal quale nasce l'armonia del Cielo».

²⁹ *Ibid.*: «Et benché [Platone] non ponga l'ordine loro, nondimeno il dottissimo Marsilio Ficino sopra quello del Furor poetico di Platone lo pone, et applica alla prima sfera lunare la Musa detta Talia, Euterpe a Mercurio, Erato a Venere, al Sole Melpomene, et così le altre per ordine, come nella figura si vede».

³⁰ For Ficino, the Earth was not associated with any Muse, because, due to its alleged immobility, it could not produce any sound.

his rationalistic approach, but Zarlino reintroduced them, albeit in the new order proposed by Ficino.

However, as Zarlino mentions, he drew his inspiration not from *Theologia Platonica*, but from Plato's *Ion*, which had been translated by Ficino as *Furor Poetico*.³¹ In the introductory notes to this Platonic dialogue, Ficino elucidates the reasoning behind each Muse's association with a specific planet:

Calliope	<i>Calliope musa vox est ex omnibus resultans spherarum vocibus</i> The muse Calliope is the voice resulting from the voices of all spheres
Urania (Fixed Stars)	<i>Urania caeli stelliferi per dignitatem sic dicta</i> Urania is named so due to the celestial eminence of the Fixed Stars
Polyhymnia (Saturn)	<i>Polymnia Saturni propter memoriam rerum antiquarum, quam Saturnus exhibet, et siccam frigidamque complexionem</i> Polyhymnia is linked with Saturn due to Saturn's association with the recollection of ancient knowledge and its characteristic dry and cold nature
Terpsichore (Jupiter)	<i>Terpsichore Iuppiter, salutifer enim choro hominum</i> Terpsichore is with Jupiter, who brings health to the chorus of humans
Clio (Mars)	<i>Clio Martis propter gloriae cupiditatem</i> Clio is with Mars because of her desire for glory
Melpomene (Sun)	<i>Melpomene Solis, quia totius mundi temperatio est</i> Melpomene is with the Sun because he is the one who tempers the entire universe
Erato (Venus)	<i>Erato Veneris propter amorem</i> Erato is with Venus for love
Euterpe (Mercury)	<i>Euterpe Mercurii propter honestam in gravibus rebus delectationem</i> Euterpe is with Mercury for his honourable delight in serious things
Thalia (Moon)	<i>Thalia Lunae propter viriditatem eius humore rebus exhibitam</i> Thalia is with the Moon for the fecundity she brings to the temperament of things

If the argument of *Ion* is the rejection of rationality in the knowledge transmitted through sung poems, inspired by God and not by experience, for Ficino, the direct connection with God assumed by the singers becomes an opportunity to celebrate the supreme value of the interpreter. Indeed,

³¹ Plato: *Opera*, ed. by M. Ficino, 2 vols., Florence, Laurentius de Alopa, 1485.

the ecstasy of knowledge that he will speak of in the *Theologia Platonica* finds a parallel here in the concept of *furor poetico* (poetic fury):

The levels therefore through which the fury descends are these: Jupiter dominates [*rapit*]³² Apollo; Apollo enlightens the Muses; the Muses arouse and excite the sweet and sublime souls of the prophets [*vatum*]; the inspired prophets in turn inspire the singers [*interpretes*]; and the singers influence their listeners.³³

This 'descent', initially present in Gaffurio's serpent and reflecting Ficino's influence on him, is then further developed by Zarlino through Ficino's new series of Muses. What Zarlino omits is the notion of *amor celeste*, crucial for the connection between God and Man. The inclusion of Amor Celeste, alongside the pairs of Muses and Bacchi, in the final intermedio of *La Pellegrina*, indicates that, in the conception of these intermedi, Ficino's philosophical ideas were also taken into account, in addition to the theoretical frameworks of Gaffurio and Zarlino.

6. HESIOD AND THE SINGING WOMEN

Elsewhere in his *Institutioni*, Zarlino revisits the concept of the harmony of the spheres and the Muses, particularly when he discusses the empyrean, symbolized by Calliope, as the «ninth heaven». Once again, he aligns with the Ficinian model, while also incorporating elements from Hesiod:

Furthermore, Hesiod in his *Theogony* [...] in order to show that the Ninth sphere is the one that generates great and concordant unity of sounds, named it Calliope, which means of excellent voice; in this way he declared that such harmony derives from the union of all the other spheres.³⁴

However, it is important to note that Hesiod does not specifically mention the theory of the harmony of the spheres; he simply says that the Muses bring joy to Olympus with their singing. Nonetheless, the notion

³² The unusual use of the verb *rapit* probably derives from Dante who, speaking of the last heaven, writes «Dunque costui [the 'first movable'] che tutto quanto rape | l'altro universo seco, corrisponde | al cerchio che più ama e che più sape» (*Paradiso*, XVIII, 70-72), i.e. the ninth circle or sphere of the Seraphim.

³³ M. FICINO, Introduction to *Furor poetico*, in *Plato: Opera*, cit., chap. XV, f. m viii^r: «Gradus autem quibus furor ille descendit hi sunt: Iuppiter rapit Apollinem, Apollo illuminat Musae; Musae suscitant et exagitant lenes et insuperabiles vatum animas; vates inspirati interpretes suos inspirant; interpretes autem auditores movent».

³⁴ G. ZARLINO, *Istitutioni*, cit., chap. I.6. p. 12: «Et medesimamente Esiodo nella sua Theogonia [...] per mostrare che la Nona sfera fusse quella che partorisce la grande e concordevole unità de suoni, la nominò Καλλιόπη che viene a significare di ottima voce; volendo mostrar per questo l'Armonia che risulta da tutte quell'altre sfere».

that Galilei might have come across Hesiod through Zarlino's influence is intriguing. In his *Theogony*, Hesiod illustrates how the Muses elevate humanity from simple shepherds to refined beings, endowed with memory and emotion. Essentially, he describes the same bestowal of harmony that Plato would later discuss. Following the mythological lineage, the poem concludes by beseeching the Muses to sing about the experiences of women, after having covered the tales of gods and heroes. This is something Hesiod later accomplishes in a separate poem known to us as the *Catalogue of Women*. While it remains a hypothesis, the idea that it was Hesiod who prompted Galilei to incorporate numerous divine female figures, as a manifestation of the Muses' song, is compelling. This hypothesis provides a possible explanation for the intriguing choice of titles for the galliards that follow the original core dedicated to the nine Muses.

7. FICINO AT THE BASIS OF 'RECITAR CANTANDO'

These nine galliards were likely composed in the 1560s, a period during which the young Vincenzo was starting to adopt Zarlino's theories. Later, as Galilei delved deeper into primary sources and collaborated with Girolamo Mei, he became, as we know, quite critical of Zarlino. Nonetheless, Ficino's theory regarding the divine significance of representation left a lasting imprint on Galilei's thinking, albeit in a more pragmatic sense. This concept resurfaces in his emphasis on the power of the recited word, ultimately culminating in the true innovation of *recitar cantando*. Lamenting the poor expressiveness of non-professional singers, Galilei urged in his *Dialogo* to imitate the actors:

When for amusement one attends tragedies and comedies performed by actors [...] it is useful to observe in what manner they act, with what high or low voice, with what amount of sound, with what accents and gestures, how they pronounce according to the speed or slowness [of the word].³⁵

He therefore asks the composers and performers to do the same:

Which narratives, first dressed by the poet with selected and appropriate words, were expressed by the musician with an appropriate intonation, accents

³⁵ V. GALILEI, *Dialogo*, cit., p. 89: «Quando per lor diporto vanno alle tragedie e comedie che recitano i zanni [...] osservino di grazia in qual maniera parla [l'attore], con qual voce circa l'acutezza e gravità, con che quantità di suono, con qual sorte d'accenti e di gesti, come profferire quanto alla velocità e tardità del moto».

and gestures, quantity and quality of sound and rhythm that was convenient on stage for that character.³⁶

This preference for the expressiveness of the actor, which elevated the performer's role above the creative act of the artist, found its philosophical underpinning in Ficino. He acknowledged the performer, particularly the singer, as the ultimate channel of divine wisdom: «the inspired prophets in turn inspire the singers; and the singers influence their listeners».³⁷

For Galilei, the intensity of emotion experienced in the theatre transforms it into an act of understanding the beauty of the universe and the knowledge of God. This notion, which from the sixteenth century onwards would spark fervor for performers – particularly musicians, who would henceforth be fittingly referred to as 'stars' – converges with the divine endowment of art, exemplified in all its revolutionary magnitude in the final intermedio of *La Pellegrina*.

8. THE TENTH SPHERE

The staging of the intermedio was not merely a literary exercise, but a tangible endeavour to fathom the underlying principles of the universe. This can be seen in Rossi's chronicle, which introduces the first intermedio with these words: «In this intermedio, the celestial Sirens, led by Harmony and as mentioned by Plato in the *Republic*, were portrayed. According to modern opinions, two more Sirens, corresponding to the ninth and tenth spheres, were also included».³⁸

The concept of the tenth sphere was not originated by Galilei or Bardi, but it was a subject of much discussion in this period due to its association with the Gregorian calendar reform. This wasn't a novel idea, and the fact that Rossi attributes it to the «opinion of the moderns» indicates that it was a contribution from Santucci, Ferdinand's astronomer who was involved in the creation of the monumental armillary sphere that would bear his name. It was Santucci who viewed the idea of the tenth heaven as a 'modern' the-

³⁶ *Ibid.*, p. 90: «I quali concetti – vestiti prima dal poeta di scelte parole a bisogno tale opportune – gli esprimeva poscia il musico in quel tuono, con quelli accenti e gesti, con quella quantità e qualità di suono, e con quel ritmo che conveniva in quell'azione a tal personaggio».

³⁷ See above note 33.

³⁸ B. DE' ROSSI, *Descrizione*, cit., p. 18: «Ci si rappresentò in questo intermedio le Sirene celesti guidate dall'Armonia, delle quali fa menzion Platone nei libri della 'Repubblica', e due [Sirene] oltre alle mentovate da lui vi se n'aggiunge secondo l'opinion de' moderni, cioè quelle della nona e decima sfera».

ory, and he described it as such in his *Trattato nuovo delle comete* (1611). Here, after attributing the ‘discovery’ of the ninth heaven to Ptolemy in order to justify the precession of the equinoxes, he concludes: «and since other modern scholars, having discerned another motion in the sky of the Fixed Stars [Eighth heaven] called ‘of trepidation’, the Eighth heaven having in this way three different motions [...] they introduced the Ninth and Tenth heavens».³⁹

The theory of trepidation was an error in ancient astronomy that persisted until the seventeenth century. It should not be confused with nutation, a movement that does indeed affect precession, but was only discovered in the eighteenth century. The theory of trepidation posited that precession did not follow a consistent pattern. In truth, this hypothesis emerged from the attempt to reconcile the precession calculations of the ancients with the more accurate ones made by modern astronomers. Given the lack of alignment, it was postulated that another force, termed the «tenth heaven», was at play.

The theory, as I recalled, has an even older origin. Theon of Alexandria (IV century) had already discussed it in his *Commentary* on Ptolemy. The theory made its way to Europe in the twelfth century with *De motu octavae sphaerae*, a Latin translation of an Arab treatise from the ninth century. It was subsequently incorporated into the *Alfonsine tables*, the astronomical charts commissioned by Alfonso X. By the fourteenth century, it had become a staple of quadrivium studies, to the extent that figures like Walter Odington and Johannes de Muris, who were more renowned for their musical writings, also wrote about it. In the late fifteenth century, the proliferation of the theory of trepidation even led an erudite commentator such as Cristoforo Landino to refer to Dante’s Empyrean as the «tenth heaven», although Dante himself recognized only nine heavens.⁴⁰

Tycho Brahe was among those who rejected the notion of trepidation. However, even before Brahe, Agostino Ricci, in 1513, was the first to challenge the validity of this theory. This skepticism was echoed by Tommaso Garzoni in his influential publication *La piazza universale di tutte le professioni del mondo* (1585). Despite these dissenting voices, the theory continued to find proponents, to the extent that even Galileo Galilei embraced it in his *Trattato della sfera*.

³⁹ ANTONIO SANTUCCI, *Trattato nuovo delle comete, che le siano prodotte in cielo e non nella regione dell’aria come alcuni dicono*, Florence, Gio. Antonio Caneò, 1611, pp. 101-102: «e poiché altri moderni, avendo scorto un altro moto nel detto cielo delle Stelle fisse detto ‘di trepidatione’, per la qual cosa avendo il detto Ottavo cielo tre diversi moti [...] posero il Nono et Decimo cielo».

⁴⁰ *Comento di Christophoro Landino fiorentino sopra la Comedia di Danthe*, Florence, Nicolaus Laurentii, 1481, commentary to the line «l’esser di tutto suo contento giace» (*Paradiso* II, 114).

9. THE POSITION OF VINCENZO GALILEI

The nine galliards dedicated to the Muses serve as a clear indication of Vincenzo Galilei's interest in astrological theories. While Gaffurio viewed the harmony of the spheres as the key to comprehending the universe, Zarlino focused on a theory with varying viewpoints, though it still allowed him to emphasize correspondences between planets and music. One might assume Galilei to be skeptical, given that his references to the sonic cosmos in his *Dialogo* mainly highlight the disagreements regarding the association of high-pitched sounds with the most distant planets, as opposed to preferring the reverse relationship.⁴¹ However, for Galilei the sonic cosmos not only attests to the divine essence of music, but also demonstrates its ability to penetrate the essence of things.

A case in point is his attempt to explain the word «trope», which Galilei understands as 'transposition', through astrological reasons. Zarlino, following Boethius' confusion between tone and mode, writes: «And such a way of singing with different pitch or intonation is called 'mode', and some call it 'trope' and some 'tone'». ⁴²

As is known, the concept of 'mode' is a medieval idea that involves points of emphasis within a scale. In contrast, for the Greeks, only 'tones' existed – meaning to transpose an intervallic series – a shift that could also be termed a 'trope' or a 'manner' («maniera»). Zarlino, confuses tone and mode and offers an ambiguous etymology for 'trope': «τροπος (*tropos*) is a Greek word meaning manner or reason [...]. And even if it were derived from τροπή (*tropè*), meaning conversion or mutation, it would be the same, since the one converts and mutates into the other». ⁴³

Galilei, on the other hand, more accurately employs the term 'trope' with the meaning of transposition, while also tracing it back to τροπή, thus rectifying Zarlino's usage: «*Tropos*, a Greek word wrongly explained [...] by Zarlino, in the end of chapter one of part IV of his *Institutioni*». ⁴⁴

Indeed, Galilei translates τροπή as 'revolution', not 'mutation', and links 'trope' to the astrological 'tropic', which shares the same root. He then ac-

⁴¹ Above all V. GALILEI, *Dialogo*, cit., pp. 66 and 115.

⁴² G. ZARLINO, *Institutioni*, cit., chap. IV.1, p. 297: «Et tale ordine di cantare con diversa maniera ovvero aria dimandano 'modo', et alcuni lo chiamano 'trope' et alcuni 'tuono'».

⁴³ *Ibid.*: «τροπος è parola greca che significa modo o ragione [...] E se fussero anco nominati da τροπή che vuol dire conversione o mutatione, staria medesimamente bene, essendo che l'uno si converte e muta nell'altro».

⁴⁴ V. GALILEI, *Dialogo*, cit., p. 66: «*Tropos*, voce greca mal dichiarata [...] dal Zarlino, nel fine del capo primo della IV parte dell'*Institutioni*».

knowledges that tropes, in the sense of planetary revolutions, were already cyclical in Ptolemy's understanding, and he identifies a similar pattern in music. Once the seven octave species are exhausted, the cycle repeats itself.⁴⁵ At this juncture, Galilei extends the concept of octave transposition to encompass the entire *systema téleion* (double octave). He accomplishes this by constructing a complex diagram, primarily aimed at illustrating the cyclical nature of transpositions (Fig. 3).

In short, Galilei seeks confirmation in astrology by likening the transposition process to a planetary system:

Hence, Ptolemy's [musical tropes/transpositions], in their endeavor to harmoniously link the beginning with the end, present themselves akin to celestial spheres perpetually rotating. This is exemplified by the table presented here, wherein each pitch recurs for three octaves. Therefore, it is quite apt that the tropes were named after the same two circles that, in the realm of the world, mark the longest and shortest days of the year.⁴⁶

By «longest/shortest day of the year», Galilei refers to the summer and winter solstices respectively, whose maximum or minimum duration is calculated in the tropics.⁴⁷ The purpose of his graph is thus to justify the cyclical nature of transpositions, akin to the cyclical nature of the universe. This is a process that he would have concretely applied through the transpositions of the lute suites on all twelve semitones of the scale.

This example illustrates how the cosmos remained an inevitable point of reference for musical speculation. It is clear that in the discussions focused on the harmony of the spheres that took place at the Camerata, Galilei was one of the individuals with the highest level of expertise in this matter.

⁴⁵ Indeed, Ptolemy uses the word 'trope' in both his *Almagest* and *Harmonics*.

⁴⁶ *Ibid.*: «Laonde per mirabile ordine quelli di Tolomeo [cioè i tropi], per congiungersi insieme il principio con la fine si vedono andare a guisa delle sfere celesti in un perpetuo giro camminando, come chiaramente dimostra la presente ruota, nella quale si annovera ugualmente ciascuna corda tre volte. Perloché con ragione grandissima [i tropi] furono detti con l'istesso nome di quelli due circoli che nella sfera del mondo son termini al più lungo et al più breve giorno dell'anno».

⁴⁷ See ALESSANDRO PICCOLOMINI, *De la sfera del mondo* [1540], Venice, Varisco, 1566, pp. 166-167 (the quoted sentence appears for the first time only in this edition): «Onde perché il circolo del tropico sostitiale della state si avvicina più al nostro zenith di tutti gli altri, di qui è che il sole quivi trovandosi causa il maggior giorno di tutti, dove che per il contrario, perché il circolo tropico sostitiale dell'inverno sta più lontano dal nostro zenith di tutti gli altri, il sole per questo trovandosi in esso ci causa la maggior notte dell'altre tutte» [«Since the circle of the Tropic of the Summer Solstice is closest to our zenith, this is why the Sun produces the longest day. Conversely, since the circle of the Tropic of the Winter Solstice is farthest from our zenith compared to the others, the Sun produces the longest night when it corresponds there»].

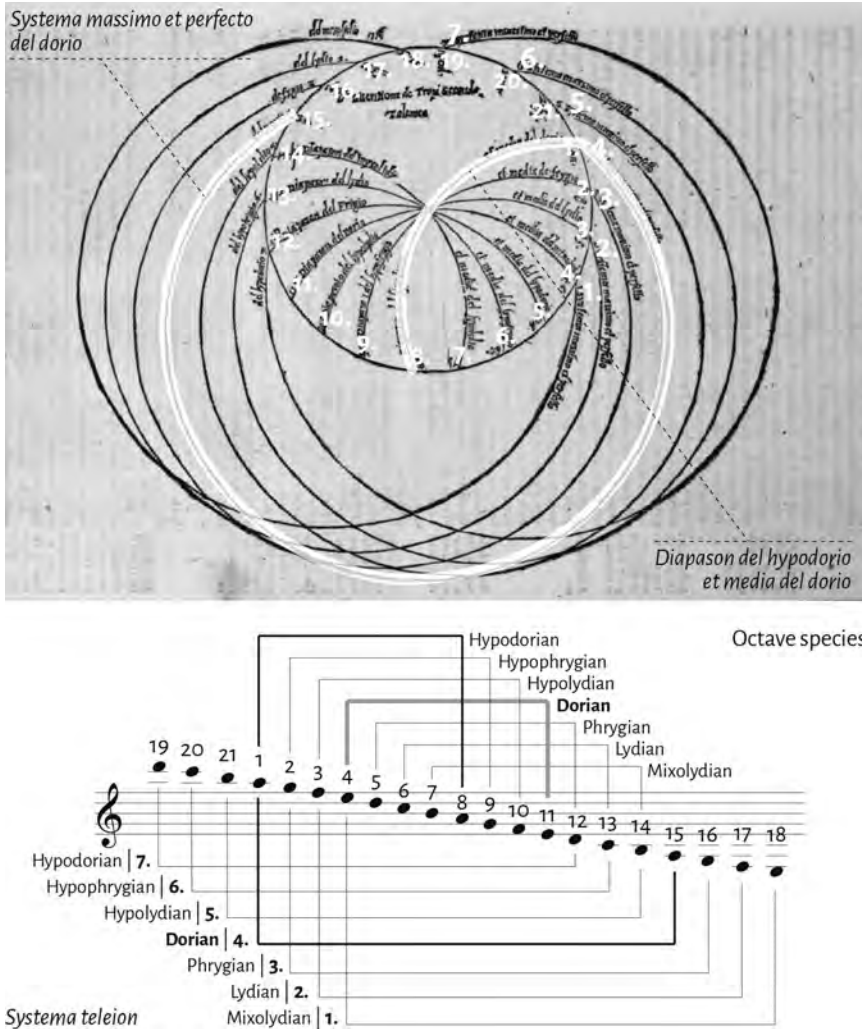


Fig. 3. Engraving in Galilei, *Dialogo* (1581), p. 67, with an adaptation to the modern musical staff. Galilei extends the concept of *tropo* (transposition) from the octave to the whole *systema teleion* (double octave, «systema massimo et perfectio»), seeking a correlation between the name of the double octave of the *systema* and the octave specie of the same name. He thus shows that the double octave of the *systema* (e.g. the Dorian, highlighted in the diagram) takes its name not from the corresponding octave (Hypodoric), but from the specie (Doric) that originates the Hypodoric in its arithmetic mean («media», the modern *a* note is the arithmetic mean of the octave *e-e*). Through this reasoning, albeit bizarre, Galilei shapes the relationship between octave species and systema in the form of an 'armillary sphere', assuming interchangeable explanations for music and cosmos.

Pietro de' Bardi, son of Giovanni, when reminiscing about those gatherings he attended as a teenager, recalls that the participants discussed «not only about music, but also debated on poetry, astrology and other sciences». ⁴⁸ And the young Bardi does not hesitate to regard Galilei himself as the primary theorist of those meetings, as well as a leading expert on Greek music: «he attempted to draw information from Greek, Latin and modern theorists, so Galilei became a good teacher of music theory of all kinds». ⁴⁹

Pietro, when speaking of his father Giovanni – whose education, though of a scholarly nature, was that of a soldier – only recalls his music composition being «held in some esteem». Today, Bardi's primary legacy to modernity resides in the thirty-three rules of Florentine football, still practiced when playing 'in livery' today. ⁵⁰ It is not surprising that Count Bardi might have been enthusiastic about ancient theories of a harmonious universe, especially in the years when so much attention was given to the configuration of the cosmos. However, at this juncture, it is challenging to believe that the script for the *Pellegrina* intermedi was solely Bardi's invention. Instead, it is more likely attributed to the musical and philosophical studies of Vincenzo Galilei.

⁴⁸ Letter to Giovanni Battista Doni (1634), in A. SOLERTI, *Le origini del melodramma: Testimonianze dei contemporanei*, Turin, Fratelli Bocca, 1903, p. 144: «non solo sulla musica, ma ancora in discorsi e insegnamenti di poesia, d'astrologia e d'altre scienze».

⁴⁹ *Ibid.*: «cercò egli di cavar il sugo de' greci scrittori, de' latini e de' più moderni, onde il Galilei divenne un buon maestro di teorica d'ogni sorta di musica».

⁵⁰ GIOVANNI DE' BARDI, *Discorso sopra il giuoco del calcio fiorentino del Puro Accademico Alterato*, Florence, Giunti, 1580.

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GALILÆANA

XII

VINCENZO GALILEI

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