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**The traditional cosmology in the representation of
the musical instrument**

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THE TRADITIONAL COSMOLOGY IN THE REPRESENTATION OF THE MUSICAL INSTRUMENT

I. INTRODUCTION

1.1 Universe: the vision of the ancients

In ancient times, every creature, every object and every aspect of life was considered directly related and bounded to the sacred. Everything was seen as a tangible manifestation of God, or in other words, a *theophany*¹. All things were in fact in relation to the concept of *Analogia Entis*, which is the *analogy of being*, and *being*, is for excellence the attribute of God. The ancients believed that everything was permeated of divine essence, and therefore the universe and the human being were not dissimilar, but made of the same form and nature and dedicated to the same pattern. This correspondence of characteristics the universe and the human being shared, made the philosophers of that time see the human being as a smaller representation of the universe, and the universe as an anthropomorphic entity. Plato² developed this topic in the *Philebus*³ using the words *wide human* and *small human* for describing respectively the universe and the human being, while Aristotle called the universe *large world* and the human *small world* intended as a possible access to a vision of the Universe from the inside and the outside. This is the famous concept of *Macrocosm and Microcosm*, which not only interested the ancient Greek thinkers, but which also influenced the most important philosophers of the medieval and renaissance period, clearly shaping the whole western culture. The next two literary examples, respectively written by Hildegarda von Bingen⁴ and by Leonardo Da Vinci, describe the concepts of theophany and macrocosm and microcosm. On a letter, Hildegarda writes: “Man is a vessel which God fashioned for himself, which he imbued with his spirit, so that he might accomplish his works in him; for God does not work as man does but by the order of his command all things are carried out.” On the other hand, Leonardo describes the idea of macrocosm and microcosm in this very poetic way: “Se l’omo ha in sè l’osso che è l’armatura, il mondo ha in sè I sassi sostenitori della

¹ From the Greek word *theos* which means *God*, and *phania*, which means *to show*.

² Greek philosopher, 429-347 B.C.

³ Written in the 4th century, *Philebus* is one of the *Socratic Dialogues*.

⁴ Hildegard von Bingen, born around 1098 was German abbess and Christian mystic with visionary powers. She is remembered for her theological treatise and for her musical compositions. She died around 1179.

terra. Se l'omo ha in sè il laco del sangue dove cresce e discende il polmone nel respiro, il corpo della terra ha il suo Oceano mare, il quale cresce e discesce ogni sei ore con il respire del mondo⁵.”

Since it was common thought to believe in the divine and sacred aspect of all things (the concept of profane is in fact very recent), we can extend the idea of macrocosm and microcosm to objects as well. Everything that was built by human hands, had to follow specific canons and criteria in order to reflect God and his Universe. Thank to this concept, the ancients started to see the musical instrument not only as a tool able to raise the human being closer to God, but also as a cosmological representation of the Universe itself. The instrument was therefore considered the key for the comprehension of the world and of the human condition, and never the less, the instrument was the key, necessary to transcend it.

Numbers and proportions had a crucial role when coming upon the subject of the construction of objects (whatever they might be), when coming upon the subject of musical harmony, but also when talking about the proportions of a piece of art. Numbers, which are present in every aspect of life, were considered the substantial basis, or in other words the *matter*, of the manifested world. This is perhaps the concept San Tommaso d'Aquino⁶ was trying to express when he said: “numerous stat ex parte materiae”. The famous Italian philosopher Pico della Mirandola⁷ (Mirandola 1463 – Firenze 1494) talks about a *divine arithmetic*, which is very different, he affirms, from the *arithmetic of the merchants*. He points out in this way the divine and symbolical power of numbers, characteristic, which refers consequently also to the concepts of *quality* and *quantity*. Quality was considered the *essence* of all things. With the term quantity, on the other hand, the ancient philosophers were not referring to a measurable amount, but instead they were referring to the *purity* or *divine quantity* of the number generator of the matter. What they were trying to express with this concept, is that complex things, structures and meanings can be contained in small objects. For example, a seed, which is *small in quantity*, contains the heritage to make a plant grow, which makes it *big in quality*.

⁵ “If the man has in itself the bone, which is his armour, the world has in itself the stones to bear the earth. If the man has in itself the blood, where the breathing lung increases and decreases, the earth has its own ocean, which increases and decreases every six hours with the breath of the world”

⁶ San Tommaso d'Aquino was an Italian philosopher, theologian and priest born around 1225.

⁷ Pico della Mirandola, whose full name was Giovanni Pico della Mirandola, came from a noble family. He studied and worked in great cultural centers like Bologna, Ferrara, Padua, Pavia, Florence, and Rome, and he was a great connoisseur of the Greek and Latin texts and of the Cabala. Already very young he was in contact with some of most important personalities of the Italian Renaissance, like Marsilio Ficino, Lorenzo il Magnifico, Girolamo Savonarola and Angelo Poliziano.

Clearly, quantity can be a characteristic of the quality, which makes the two concepts inextricably linked.

If we wish to fully understand the vision the ancients had about the physical and the nonphysical world, we also need to open our mind to the world of symbols. A symbol was in fact considered the best way for teaching religious, metaphysical and esoteric concepts, and this is the main reason why every form of art, music included, owns such a rich spectrum of all kinds of different symbols. Never the less, both pictorial art and music became important tools for expressing religious faith. The famous musicologist Marius Schneider describes the symbol as a tool for expressing one reality through another reality. He explains also how through the material reality of a symbol, a spiritual reality has the possibility to manifest physically. Nowadays, symbolism is unfortunately hidden to our eyes by the modern thought, which only sees the truth in science and considers spirituality almost only as a social phenomenon, depriving it by its original meaning.

1.2 Purpose of the essay

Purpose of this essay, is to bring back, with the help of iconography and old treaties, as much as possible of the ancient wisdom related to music, musical instruments and to the creation of the Universe, which is the key for the comprehension of the world in the physical plan. Through symbolism, we will see how things in appearance simple, hide on the contrary complex meanings, and we will exploit pictorial art in order to find the visual proof of our theories. Not less, this essay wishes to point out how all forms of art are interconnected and all serve together the same purpose.

II. THE ANGELIC FIGURE AND THE FOUR DIVINE INSTRUMENTS

2.1 The angelic figure through history

Angels are the most painted and represented creatures in the iconographic tradition of the whole world. A common mistake is to link angels only to Christianity, when in truth they already appear in 3000 B.C. in the Babylonian and Egyptian civilization (Fig 1). For these ancient civilizations, angels were messengers between Gods and humans, most of the times represented with wings and four legs. Also the Jewish tradition sees angels as messengers. This is confirmed by the fact that in Hebrew an angel is called *malak*, or at the plural *malakim*, which means messenger of God. In the Taoism and Buddhism the equivalent of angels is *devas* or celestial beings. They are spiritual beings, but they are described as bodies made of emanation of light and energy, and they are more than often represented in the Tibetan iconography. Islam, shares with Buddhism, Judaism and Christianity the same ideas about angels (Fig. 2, 3). The Koran in fact, describes them as spiritual entities created from light, before human beings were conceived. They can appear in the physical world in any form they wish, as it is explained in the verse of the Koran 19:17 “...then we sent to her our angel, and he appeared before her as a man in all respects”, and they constantly honour God, as written in verse 21:20 “They celebrate His praises night and day, nor do they ever slacken.” The Koran also describes the different tasks angels have. Some of them are responsible for directing the winds and the clouds, some others constitute God’s heavenly army, some are guardian angels, with the purpose of protecting humans during their life, and some others, as we can read in the verse 32:11, are responsible for taking the souls out of the body at the time of death: “...the Angel of Death, put in charge of you, will take your souls, then shall you be brought back to your Lord.” Regarding the western vision of the angelic figure, we could cite the words of the previously mentioned philosopher Pico della Mirandola, who dedicates to the angels an entire exposition titled *On the angelic and invisible world*. About the angels he writes: “God is the unity from which angels draw their being, their life, and all their perfections.” And again: “The angels sent to carry on the duty of this world are all guardian spirits [...] for this they are sent to us and appear to us in different forms and places and times.” At this point it is impossible not to notice how the angels are described with the same respect, importance and terminology in every culture and religion. In one word, the angelic figure is *universal*.

2.2 The angelic hierarchies

In the third chapter of his essay *On the angelic and invisible world*, Pico della Mirandola, mentioning and finding himself in perfect agreement with the theory written in the treatise *Caelestis hierarchia* by the Syrian philosopher Pseudo-Dionysius⁸, explains how the angels are divided in three different hierarchies. The hierarchies are then divided into three subgroups each, and the order, starting from the bottom is Angels, Archangels, Virtues, Powers, Princedoms, Dominions, Thrones, Cherubim and Seraphim. Each hierarchy has different duties, as Pico explains: "...the highest hierarchy has leisure only for contemplation [...] they praise God unceasingly with everlasting sound" then he continues: "...the middle rank is assigned to the work of the heavens", and again: "The final hierarchy has charge of things under the heavens." Pico develops this concept even further in the following lines: "...there are three angelic activities, purification, illumination and perfection. They are so distributed that the lowest order purifies, the highest perfects, and the middle one, illuminates." Angels have also an important and indivisible role in the conception of the Universe.

2.3 The importance of the Angelic Ministry in the Creation of the World

In the book of Genesis, on the first day God said: "Let there be light."⁹ However, if we keep reading the following verses, we discover that tangible light, or in other words the Sun, the Moon and all the stars made in order to illuminate the Earth, were only created on the fourth day: "Let there be lights in the dome of the sky to separate the day from the night, and let be for signs and for seasons and for days and years, and let them be lights in the dome of the sky to give light upon the earth."¹⁰ What it is clear then, is that the light of the first day is not the tangible light of the Sun, but the light of the consciousness of the angelic entities.

⁸ Dionysius was a philosopher and theologian of the late 5th and early 6th century. Pseudo Dionysius is a pseudonym he used due to the fact he identified himself with the Greek divinity Dionysus, god of the grape harvest and wine. He is mostly remembered for his works *De coelesti hierarchia*, *De ecclesiastica hierarchia*, *De divinis nominibus* and the *De mystica theologia*.

⁹ Book of Genesis verse 1:3.

¹⁰ Book of Genesis verse 1:14, 15.

This theory is explained by St. Augustine¹¹ on his treatise in twelve books *De Genesi ad Litteram*¹², wrote with the purpose to hold together the spiritual and the material aspects of the Sacred Scriptures, in particular the ones contained in the Old Testament, in order to restore faith in those Christians, who no longer believed in the connection between the literal and the figurative aspect of the word of God. St. Augustine, aware of the fact there were several interpretations concerning some passages of the Scriptures, analyses them analytically, giving explanations that were taking in account both their literal and symbolical meaning. In the verse 17.32 of the first book of *De Genesi ad Litteram*, that the light God created on the first day, is the light of angelic creatures: “Si autem spiritalis lux facta est, cum dixit Deus: *Fiat lux*; non illa vera Patri coaeterna intellegenda est, per quam facta sunt omnia, et quae illuminat omnem hominem; sed illa de qua dici potuit: *Prior omnium creata est sapientia*. Cum enim aeterna illa et incommutabilis, quae non est facta, sed genita Sapientia, in spirituales atque rationales creaturas, sicut in animas sanctas se transfert, ut illuminatae lucere possint; fit in eis quaedam luculentae rationis affectio, quae potest accipi facta lux, cum diceret Deus: *Fiat lux*: si iam erat creatura spiritalis, quae nomine coeli significata est, in eo quod scriptum est: *In principio fecit Deus coelum et terram*; non corporeum coelum, sed coelum incorporeum coeli corporei, hoc est, super omne corpus, non locorum gradibus, sed naturae sublimitate praepositum. Quo autem modo simul fieri potuit et quod illuminaretur, et ipsa illuminatio, ac diverso tempore narranda fuerit, paulo ante diximus, cum de materia tractaremus.”

Once angels were created, became aware of their state of separation from their creator, God. This awareness of individuality and separation is called *Vesperal Vision*. At this point, the angels made a movement of conversion towards the original light of God, which possesses what it is called *Diurnal Vision*, which is God’s will and the full comprehension about existence. The angels, through their movement back to source, gained in first instance what it is called *Matutinal Vision*, which is the will of staying in the light of God, and subsequently, they gained the *Diurnal Vision*, through which they understood God’s will and of being part of God’s plan about existence. The angels are the creatures in posses of all three kinds of vision, vesperal, matutinal and diurnal, and this is a fundamental concept for the understanding of their role in the creation of the Universe. In the verse 8.17 of the treatise *De*

¹¹ St. Augustine, Tagaste 354 – Ippona 430, whose full name was Aurelius Augustinus Hipponensis, is considered one of the most authoritative and influential voices of the Catholicism of the first century. He was a philosopher, bishop and theologian and he is remembered for the numerous treatise and dissertations he wrote during the course of his life. Some of St. Augustine’s most famous works are: *Confessionum* (an autobiographic book), *De musica* (in six books), *De Magistro*, *Retractationes*, *Epistolae* (letters), *De civitate dei contra Paganos* (in twenty-two books), *De vera religione*, *De fide rerum quae non videntur*, *De Genesi ad Litteram* and *De utilitate credendi*.

¹² *The Literal Meaning of Genesis*. In this treatise, St. Augustin uses a particular

Genesi ad Litteram, we read: “Neque enim sicut pecora, solo sensu corporis, vident Angeli haec sensibilia; sed si quo sensu tali utuntur, agnoscunt ea potius, quae melius noverunt interius in ipso Dei Verbo, a quo illuminantur ut sapienter vivant: cum sit in eis lux quae primo facta est, si lucem spiritalem in illo die factam intellegimus. Quemadmodum ergo ratio qua creatura conditur, prior est in Verbo Dei quam ipsa creatura quae conditur: sic et eiusdem rationis cognitio prius fit in creatura intellectuali, quae peccato tenebrata non est; ac deinde ipsa conditio creaturae. Neque enim sicut nos ad percipiendam sapientiam proficiebant Angeli, ut invisibilia Dei, per ea quae facta sunt, intellecta conspicerent, qui ex quo creati sunt, ipsa Verbi aeternitate sancta et pia contemplatione perfruuntur; atque inde ista respicientes, secundum id quod intus vident, vel recte facta approbant, vel peccata improbant.”

The angels, participating at the creation of the universe, were always aware about God’s intentions and their role was to teach all the other beings created after them, about the three kinds of vision, as it is explained in the verse 8.18 of the first book of St. Augustine: “Nec mirum est quod sanctis Angelis suis, in prima lucis conditione formati, prius Deus ostendebat quod erat deinceps creaturus. Neque enim intellectum Dei nossent, nisi quantum ipse monstrasset. *Quis enim cognovit intellectum Domini? Aut quis consiliarius eius fuit? Aut quis prior dedit illi, et retribuetur ei? Quoniam ex ipso, et per ipsum, et in ipso sunt omnia.* Ex ipso ergo discebant Angeli, cum in eis fieret cognitio creaturae deinceps faciendae, ac deinde fieret in genere proprio.” And again, in the verse 24.41 of the fourth book we read: “Quapropter cum sancti Angeli, quibus post resurrectionem coaequabimur, si viam (quod nobis Christus factus est) usque in finem tenuerimus, semper videant faciem Dei, Verboque eius unigenito Filio sicut Patri aequalis est perfruantur, in quibus prima omnium creata est sapientia; procul dubio universam creaturam, in qua ipsi sunt principaliter conditi, in ipso Verbo Dei prius noverunt, in quo sunt omnium, etiam quae temporaliter facta sunt, aeternae rationes, tamquam in eo per quod facta sunt omnia: ac deinde in ipsa creatura, quam sic noverunt tamquam infra despicientes, eamque referentes ad illius laudem, in cuius incommutabili veritate rationes secundum quas facta est, principaliter vident. Ibi ergo tamquam per diem, unde et concordissima unitas eorum eiusdem veritatis participatione dies est primitus creatus; hic autem tamquam per vesperam: sed continuo fit mane (quod in omnibus sex diebus animadverti potest), quia non remanet angelica scientia in eo quod creatum est, quin hoc continuo referat ad eius laudem atque caritatem, in quo id non factum esse, sed faciendum fuisse cognoscitur; in qua veritate stando dies est. Nam si vel ad seipsam natura angelica converteretur, seque amplius delectaretur, quam illo cuius participatione beata est; intumescens superbia caderet, sicut diabolus: de quo suo loco loquendum est, cum de serpente hominis seductore sermo debitus flagitabitur.”

The painting of Giusto di Giovanni de' Menabuoi¹³ (Fig. 4), shows clearly how the angels were active part in the creation of the world. In pictorial art it is however common to find representations of angels with closed eyes. These angels are the ones who chose to stay separated from God and not to make the reverse movement back to *light source*. These angels are subjected to a *fall*, and are therefore called *fallen angels*. They are sometimes represented fighting against those angels who chose to remain with God (Fig. 5), and other times they look much more like demons than angels (Fig. 6, 7). The choice to represent them with closed eyes is an effective expedient symbolizing the fact that their separation from God makes them blind. The fallen angels can no longer see the light of consciousness, in other words they lose their greatest gift, the diurnal vision and they are consequently unable to serve God in the process of creation. Due to this reason, they are sent away from heaven and they fall down to earth.

In the Book of Genesis, there are no references to the *night* as division between one day and another. The only temporal references we find are: “And there was evening and there was morning, first day”, and so on for all the days of the creation. This, which might appear at a first glance as a poetical or literary device, is instead an open allusion to the vespers and matutinal vision. During the creation of the universe, there was no darkness (night), because the angels were always present. In the *Genesi ad Littera*, St. Augustine treats this topic on the verse 14.28 of the second book: “Illud autem quod dictum est: *Et sint in signa et tempora, et in dies, et in annos*, quis non videat quam obscure positum sit, quarto die coepisse tempora, quasi superius triduum sine tempore praeterire potuerit? Quis ergo animo penetrat quomodo illi tres dies transierint, antequam inciperent tempora, quae quarto die dicuntur incipere; vel utrum omnino transierunt dies illi? An circa speciem factae rei dies appellatus sit, et circa privationem nox: ut nondum specie formata materia nox dicta sit, unde formanda erant caetera; sicut potest quamvis in rebus formatis, intellegi tamen ex ipsa mutabilitate informitas materiae: non enim spatiis vel locorum quasi remotior, vel temporum quasi anterior, discerni potest? An potius in ipsa re facta atque formata eadem mutabilitas, hoc est deficienti, ut ita dixerim, possibilitas, nox appellata sit; quia inest rebus factis, etiamsi non mutantur, posse mutari? Vespera autem et mane non quasi per temporis praeteritionem et adventum, sed per quemdam terminum, quo intellegitur quousque sit naturae propriae modus, et unde sit naturae alterius consequenter exordium: an aliqua alia ratio sit horum verborum diligentius vestiganda?” St. Augustine gives further explanations in the verse 25.42 of the fourth book: “Quia ergo Angeli creaturam in ea ipsa creatura sic sciunt, ut ei scientiae electione ac dilectione praeponant quod eam sciunt in Veritate, per quam

¹³ Italian painter born in Florence around 1330. He worked in Tuscany and in the whole north of Italy, mostly in Padua, where he died around 1390.

facta sunt omnia, participes eius effecti; ideo per omnes sex dies non nominatur nox, sed post vesperam et mane dies unus: item post vesperam et mane dies secundus; deinde post vesperam et mane dies tertius: ac sic usque in mane sexti diei, unde incipit septimus quietis Dei, quamvis cum suis noctibus, dies tamen non noctes narrantur. Tunc enim nox ad diem pertinet, non dies ad noctem, cum sublimes et sancti Angeli id quod creaturam in ipsa creatura noverunt, referunt ad illius honorem et amorem, in quo aeternas rationes quibus creata est contemplantur; eaque concordissima contemplatione sunt unus dies, quem fecit Dominus, cui coniungetur Ecclesia de hac peregrinatione liberata, ut et nos exsulemus et iucundemur in eo.”

2.4 The importance of the Angelic Ministry in Music

What we can call *musical angels* (angels with musical instruments), occur continuously in the Christian iconography during the whole period of the Christian tradition, which lead us to the conclusion that the angelic hierarchy plays a fundamental role in the musical practice. The function of the angels in the musical world is basically the same they had during the creation of the universe. They help in fact the human beings in the comprehension of the circular vision they are subjected to since their creation, and they do it through the musical sounds and the relations that exist between them. In music, everything has to be compatible. In music, every sound has a specific role and a specific meaning. In music, there is an order for everything, and this order is musical harmony. Like God is the absolute reference in the universe, so the *tonic*, which is the first degree of the scale, is the absolute reference for the other musical sounds, which are all dependent to it, even though they are in different degrees of relation to it. At the same time, we can affirm that the tonic is understood through the function of the other sounds of the scale, which reminds us to the concept of a larger project made by God about the existence of interdependency and co-dependency between all beings, the diurnal vision. Another important aspect to consider is the fact music speaks through *apophatism* and *cataphatism*. The apophatism is a theological current that speaks of God only through *negation*, or in other words, it describes God through what He is not. For this reason it is also known as *negative theology*, and it expresses itself in music through the *dissonance*. The cataphatism, on the contrary, is that theological current, which refers to God through *affirmation*, or in other words, only through what God is believed to be. It is therefore called *positive theology*, and it expresses itself in Music through the *consonance*. Affirmation and negation, and therefore also consonance and dissonance (which are not in relation to what it is considered pleasant for the ear), are complementary and work together in order to raise human understanding to a higher level of comprehension. Through negation

for example, it is possible to understand what affirmation does not explain and vice versa. The same, works for consonance and dissonance.

2.5 The four Divine Instruments

The musical angels are most of the times represented playing four specific instruments, and these instruments are the *horn* or in Hebrew *shofar*, the *trumpet* or *hatsotsarah*, the *lute* or *kinnor* and the harp also called *nebel*. Musical instruments follow in fact a rigid hierarchy, and since these four instruments are very often mentioned in the Bible, they deserve the appellation of *divine instruments*. In addition to that, we can also affirm that they are inextricably linked to both the Jewish and the Christian tradition, hiding meanings and symbols related to spirituality, religion and music. In general, we can say that the horn and the trumpet are mostly mentioned in the Old Testament, while the two stringed instruments, the lute and the harp are mostly related to the New Testament.

The four divine instruments are clearly represented in *La Mère des Hystoires: descendance d'Adam* (Fig. 8). It is also curious to notice how in pictorial art, when a scene was for example referred to an episode from the Old Testament, it was common rule to represent either in the center or in the highest part of the scene, the two instruments related to the Old Testament, which were the horn and the trumpet, while the harp and the lute were represented under the two wind instruments or to the sides of the scene. A precious biblical source where these instruments are mentioned is the psalm 150¹⁴: “...praise him with trumpet sound, praise him with lute and harp. Praise him with tambourine and dance, praise him with strings and pipe. Praise him with sounding cymbals, praise him with loud clashing cymbals... let everything that has breathe praise the Lord.” The Hebrew version of this psalm beholds the original names of these instruments saying: “Hallelu Him with the sound of the shofar, hallelu Him with the nebel and kinnor¹⁵.”

Another reference to these instruments can be found in the Bible in the Book of Daniel: “As soon as you hear the sound of the horn, flute, zither, lyre, harp, pipe and all kinds of music, you must fall down and worship the image of gold that king Nebuchadnezzar has set up.”¹⁶ In this case, we understand that people are forced to pray and honour a statue of gold, which represents a *false god*, and not by chance, in this verse are also named some instruments like the zither and the pipe, which

¹⁴ Psalm 150, New English Translation Bible, verse 3, 4, 5.

¹⁵ Psalm 150, Orthodox Jewish Bible, verse 3.

¹⁶ Third Book of Daniel, verse 5.

are commonly related to folk music only. In the last two paintings (Fig 9, 10), respectively from Hans Memling¹⁷ and Francesco Botticini¹⁸, we see the representation of the instruments described in Psalm 150 and in the Book of Daniel. In the painting by Hans Memling, among the other instruments we can see a *marine trumpet*, whose importance we will discuss in the chapter 3.1 of this essay.

¹⁷ Hans Memling was a German painter born between 1435 and 1440, which mostly worked in the Netherlands. He died in Bruges in 1494.

¹⁸ Francesco Botticini was an Italian painter born in Florence in 1446. He worked and died in the same town in 1497.



Fig. 1. Angels with four paws, Persia, VI century B.C.



Fig. 2. Angel Israfil plays the shofar, Iraqi manuscript,
 XIII century, Free Gallery of Art, Washington D. C.



Fig. 3. Angel Gabriel delivers God's message to Mohamed,
 Miniature.



*Fig. 4. La Creazione, Giusto di Giovanni de' Menabuoi, 1376,
baptistery of the Cathedral of Padua.*

The Iraqui manuscript (Fig. 2) and the miniature of angel Gabriel (Fig. 3), show two angels with clear Middle Eastern appearance. Their clothes, the turban one of them is wearing and their physical traits are all typical of non-European regions. The shape of the shofar angel Israfil is playing is still nowadays in use in some places of the Middle East. Even if the Koran does not forbid the representations of the prophet Mohamed, very often the Islamic artists choose not to represent it, like in the case of our miniature. In this way, the painters were sure the believers would have kept on praying the real prophet and not just a representation of him.

The painting *La Creazione* by Giusto di Giovanni de'Menabuoi (Fig. 4) represents the creation of the world. Here, on the contrary, we can see how the angelic figure was normally represented in western countries.

In this painting we admire Jesus Christ surrounded by the angels, which seem to be of three different kinds, recognizable by the colours of their wings, by the different robes they are wearing and by their dimensions, since some of them appear smaller than the others. As we have seen before in this essay, angels are divided in hierarchies and according to the hierarchy to which they belong, they have different duties. The three small angels that seem in the act of praying might belong to what Pico della Mirandola defines as the highest hierarchy, where angels constantly *contemplate* God and illuminate the universe through their prayers.

Layers of different colours, which could possibly represent the orbit of the seven major planets, surround the Earth and the Oceans, represented from far away. The thick blue layer where it is possible to see the twelve signs of the zodiac, represents the *empyrean sky*, which is that part of the sky where are placed the stars and the sun. The zodiac, which has always played an important role in the life of the ancients, seems to have a place of honour in this painting where each zodiac sign is represented in detail.

The layer of beautiful gold colour represents the *spiritual world*, where only Christ and the angels are situated. An important observation has to be made regarding the meaning of this shade. The colour *gold* symbolizes in fact the *direct light*, or in other words the light that shines on its own, clear attribution of God. This is the reason why only the angelic creatures and God himself are represented on this specific layer.



Fig. 5. La chute des anges rebelles,

from the manuscript Très riches Hereuse du Duc de Berry,

brothers Limbourg 1412 – 1489,

Musée Condé de Chantilly.

The French Gothic manuscript *Très riches Hereuse du Duc de Berry* is one of the most well preserved examples of manuscript, which represents an important source of information regarding the life, the customs and the thought of that time, containing sixty-five small miniature and sixty-six big ones. The three brothers Limbourg started the book in 1412, but when they died in 1416, the manuscript was not completed yet. Other two painters worked on it and the manuscript was only finished in 1489. The *Très riches Hereuse* is what it is commonly known as a *Book of Hours*, which was a form of devotional book very common in the Middle Age. Normally, a Book of Hours would have contained in the order, a calendar of the catholic feasts, an extract of the four gospels, the Little Office of the Blessed Virgin Mary, the Psalms of Degrees, the Penitential Psalms, the Litany of Saints, the Office of the Dead and the Hours of the Cross. Sometimes, at the very end there were various prayers for different occasions. The manuscript was dedicated to the *Duc de Berry*, which was the third son of the future king of France Jean II, also known as John the Good.

The bright light blue colour we can see in *La chute des anges rebelles* is a common trait of the entire manuscript, since we can affirm it is the main colour present in each miniature. God is sitting on the throne surrounded by small angels, and all around them, other angels sitting on golden chairs are waiting to be judged. Those who no longer have the diurnal vision are losing their place close to God, and after a fight with God's army, are falling down on earth with closed eyes, where they seem to burn in high golden flames. The line of clouds where God's army is standing is the delimitation and border between the spiritual world and the empiric sky.

This representation, which may seem very brutal despite the gentle lines of the drawing and the beautiful light blue in which all the figures are immersed, is a clear reminder of the importance of keeping a good behaviour, based on the desire to follow the light of God.



Fig. 6. Caduta degli Angeli ribelli,

Simone Martini, 1340 – 1345,

cm. 236 x 489

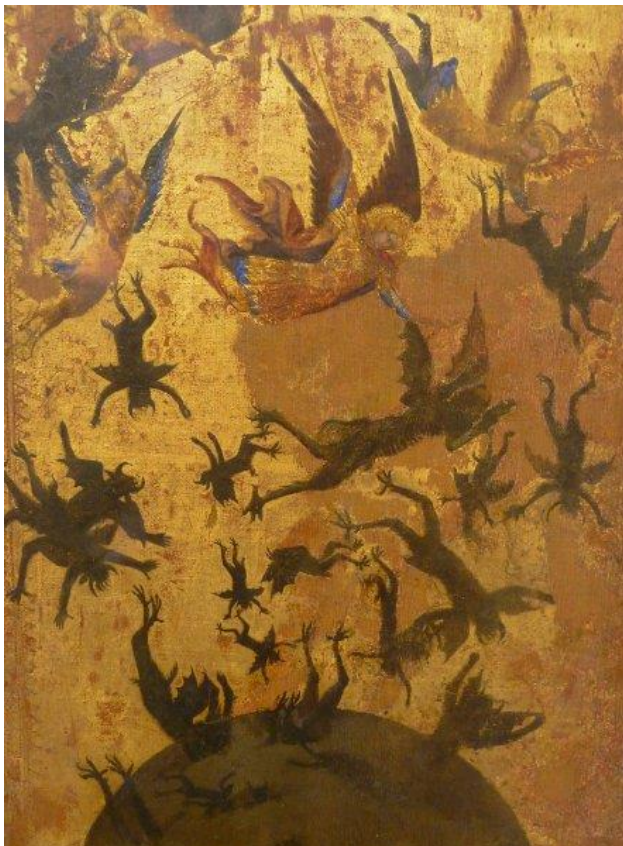


Fig. 7. Caduta degli Angeli Ribelli

Detail

The *Caduta degli Angeli Ribelli* by Simone Martini, painted between seventy and one hundred years earlier than the *Très riches Hereuse*, represents the same subject we have just discussed. We can therefore see very clearly how the topic of the fallen angels was considered important during the whole course of the Middle Age.

In this painting however, the scene is not permeated by a blue light colour, but everything is instead immersed in the golden light God himself infuses. Once again, we can see Christ sitting on his throne surrounded by faithful angels. Rows of chairs with other angels waiting to be judged are painted under them, while God's army is standing on the edge between the spiritual world and the empiric sky. If in the *Très riches Hereuse* the border between the spiritual world and the empiric sky was only marked by a line of thin clouds, in this case, the empiric sky is even easier to recognize because small bright stars are painted on a blue layer. This trait makes us think about the direct and clear way of expression the artists of the Middle Age were used to adopt where they need to represent.

The fallen of the angels, seems to be in this case even more cruel than the one from the manuscript. Even if the French artists represented the angels who lost the diurnal vision burning in high golden flames, the Italian painter Simone Martini makes them change their appearance transforming them into demons. This specific situation was very common during the Middle Age. It is clear in fact that despite the appellation of fallen angels, these creatures were no longer angels, and as logical assumption they were becoming the exact opposite of an angel, which is a demon.

It was Thomas Aquinas who recognized the fallen angels for the first time as demon, and even if the figure of the fallen angel appears only in the New Testament, there are few books of the Old Testament, which speak of a figure in opposition to God called *ha-satan*. More descriptions about the fallen angels are found in the apocryphal book of Enoch.

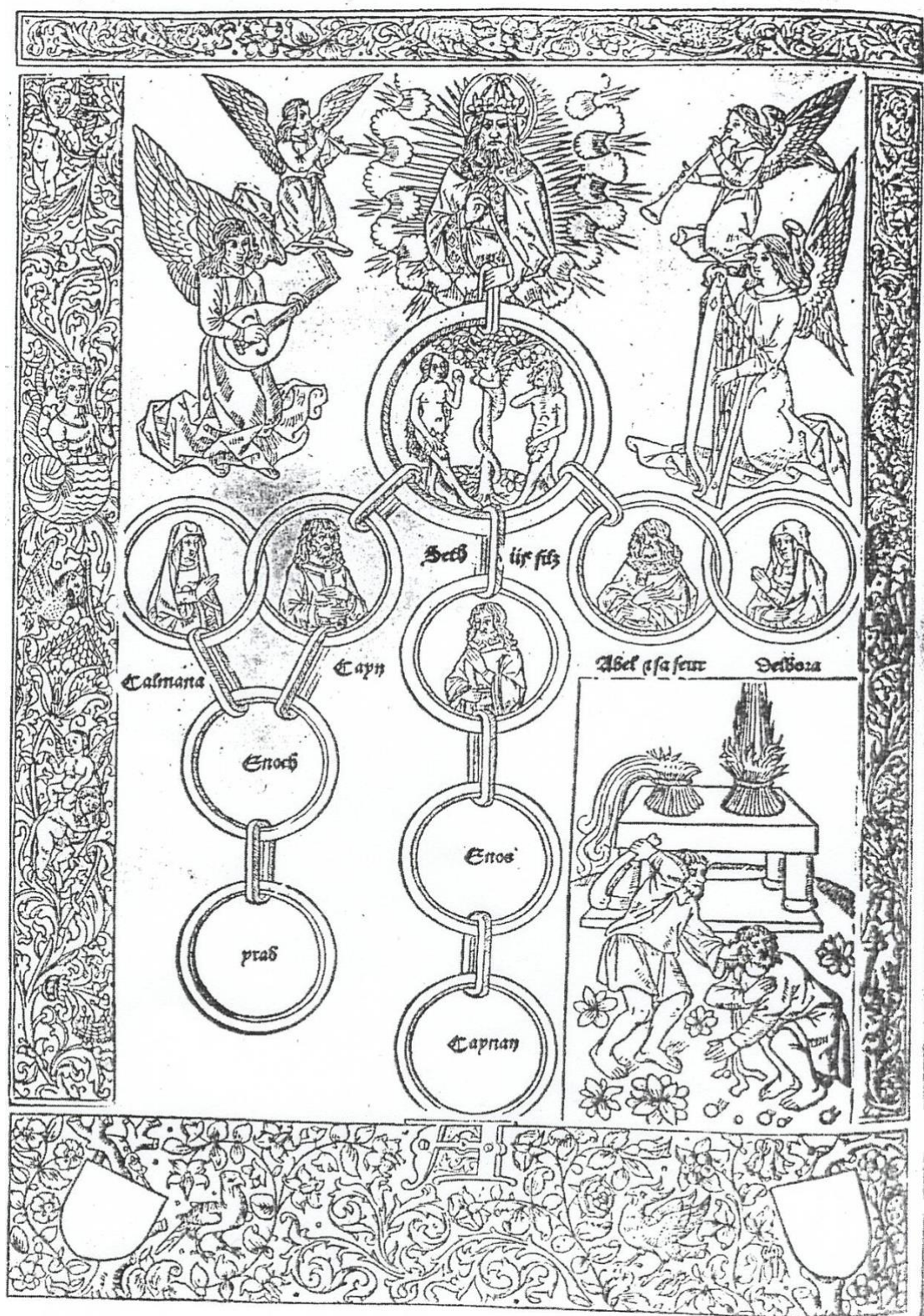


Fig. 8. *La Mère des Histoires: descendance d'Adam*, 1468, Paris,

Bibliothèque Cantonale universitaire, Lausanne, Suisse.



Fig. 9. Angel Musicians, Hans Memling, 1480, oil on wood, cm. 165 x 230,

Koninklijk Museum voor Schoone Kunsten, Antwerp.



Fig. 10. Angeli Musicanti, Francesco Botticini, 1480,

Pinacoteca museo della collegiata di Sant'Andrea.

It is curious to notice how the two paintings by Hans Memling and Francesco Botticini are made following the exact same patterns. They both represent some musical angels disposed in a row, and what we could say, is that these paintings basically have an instructive purpose. What they are meant to teach is the role the different instruments have. As we have already seen in the chapter 2.5 of this essay, the first painting is referred to the psalm 150 reporting all the instruments considered allowed to be played in churches, while the second one, which refers to the verse 5 of the third book of Daniel, includes also instruments considered as profane instruments.

This aspect of sacred and profane is also well represented through the look of the angels. While Memling paints his angels with a deferent look, dressing austere clothes, the Italian painter Botticini represents them with a more joyful aspect and wearing colourful clothes. The angels by Memling seem to be immersed in a light brown cloud while the ones by Botticini seem to be dancing in a blue sky.

Without detracting sacrality from one group of angels to another, what we should learn from these two paintings is that instruments had different roles, confirming our theory that some of them were considered *divine* because of their great analogy to the universe.

III. HORN AND TRUMPET

3.1 The Horn and the power of God

Both the horn and the trumpet had an important role in the Christian tradition, and they are considered as the instruments best representing the power of God. The horn (Fig. 5), as previously mentioned called *shofar* in the Jewish tradition, is made from an animal horn. The instrument is concave and the point is cut, in order to make a mouthpiece. The horn in particular, is also associated to God's pure state of unity. This symbolism of unity is represented by the fact that the horn, despite the trumpet, which can play melodies, only produces two sounds in relation of fourth (sol-do). The meaning of power and elevation attributed to the horn can also be found in the tight relation between the word horn (corno), and the root KRN of the name Kronos, which for the ancients Greek represented Saturn, the more distant planet situated in what they called "*the seventh sky*". It is proper of Saturn the attribute of giving humans spiritual awakening and elevation and it is no coincidence that in the book of Exodus verse 19,16 on the mount Sinai, Moses, (Fig. 6), uses the horn in order to collect the people's attention and deliver the message of God: "On the morning of the third day there was thunder and lightning, with a thick cloud over the mountain, and a very loud horn blast. Everyone in the camp trembled." The horn was considered such a sacred instrument, that during the Middle Age it was only allowed to play inside Churches and only by those people who had received an initiation. For practicing, these people were not allowed to use the instrument in its entirety, but only a mouthpiece. When no initiated people were present for playing the horn, the instrument was substituted with a *marine trumpet*, whose sound reminded the horn.

3.2 The Trumpet and the symbolism of the Heart

The trumpet or *hatsotsarah* (Fig. 7, 8), like the horn is a concave instrument, but it is made of metal. It is longer than the horn and it produces around sixteen sounds. This instrument hides many different religious symbols, and some of them can be found in its shape. The form of the trumpet reminds in fact of a chalice, which brings us to the legend of the Holy Grail and the symbolism of the heart. The heart has always been represented like a vase or a chalice because considered the vase where life (blood), is constantly renewed. In our case, since the Holy Grail contained the blood of Christ, becomes automatically the symbol of His heart. According to the legend, the Holy Grail was carved by the angels in an emerald, which fell apart from Lucifer's forehead at the moment of his fall. This emerald is in tight relation with the point the Indians call *third eye*. The third eye, often represented

in the Indian iconography, is situated in the middle of the forehead, between the eyes and it is considered the center of the divine intuition, also known as “eternal sense”. This explains why Lucifer lost it when he choose to no longer stay in the light of God, and why Adam, who was the guardian of the Grail, lost its possession in the moment he was sent away from Eden. The legend doesn’t clearly explain where the Holy Grail was kept till the birth of Christ, but what we know, is that after the death of Christ the Holy Grail was brought to Great Britain by Joseph of Arimathea and Nicodemus. Here is where the story of the Knights of the Round Table begins.

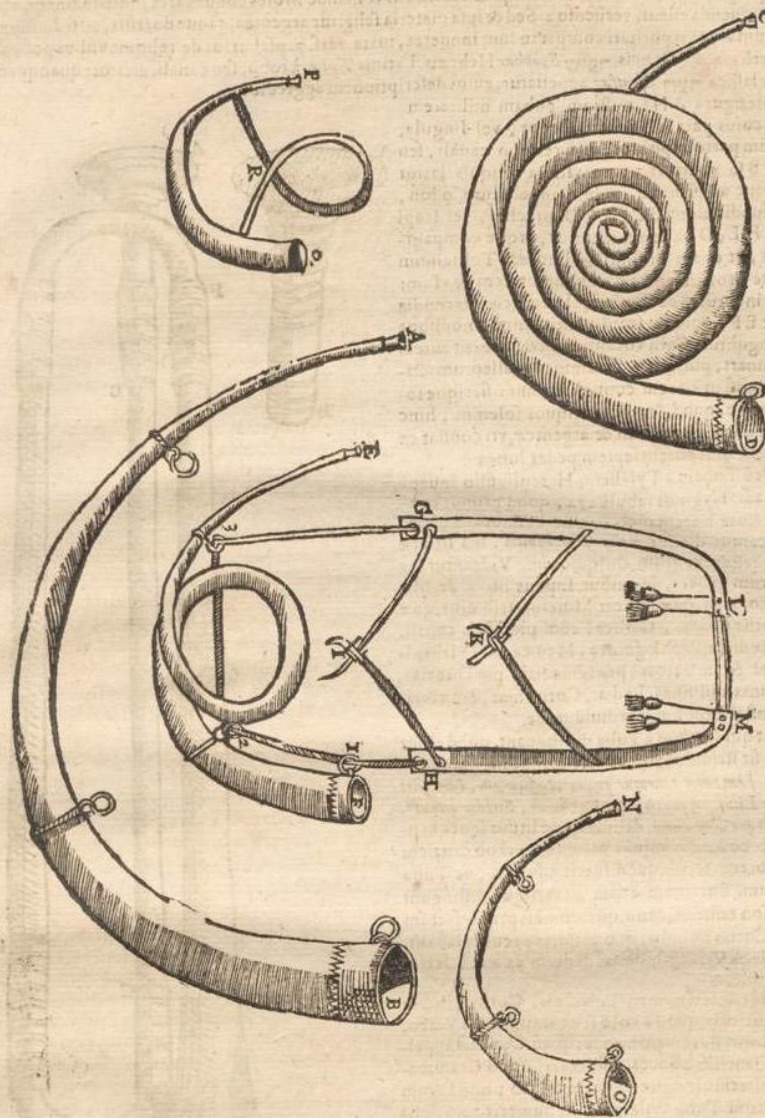
If we now look at the geometry of the trumpet, we will discover another hidden symbol. The trumpet is in fact made of a cube and a sphere, which become a square and a circle if we represent them on a horizontal plane. Now, by the fact that the cube and the square are the symbols of the Earth, and the sphere and the circle are the symbols of the Heaven, we will find in the trumpet the representation of the Earth surmounted by the Heaven. This is a picture of even greater impact if we think the geometry of the trumpet is the same geometry of the churches. The common shape of a church is in fact the combination of a parallelepiped surmounted by a dome (sphere). If we look at the building from the top to the bottom, we will find the symbol of the passage from Unity, or God, to the world of elementary manifestation, the Earth and its creatures, but if we look at the building from the bottom to the top, we will then see the reverse process of elementary manifestations going back to Unity. A building like a church shows us the concept of a Universe where everything is one with God and points out clearly the idea of Macrocosm and Microcosm. But the conception of circle and square as symbols of heaven and earth is not only proper of the western culture. In China, the dress of the ancient Emperors had to be round in the upper part and square in the lower part, symbolizing the union of earthly and heavenly energies in one man.

The trumpet has also the ambivalent meaning of voice of God and human voice. The first case is explained by the fact that the trumpet is based on one sound and its harmonics. The first three harmonic sounds the instrument produces are the fundamental sounds, necessary in order to produce all the other tones. Therefore they represent God the creator, and the other tones represent different and more states of his manifestation. From one point of view, we can affirm the trumpet only produces one sound, and on the other hand we can see that many sounds are originated by this single unity. The psalm 46.6 from the book of Apocalypse supports this theory saying: “Ascendit Deus in jubilo, Domino in voce tubae.”¹⁹ The second case, the one which sees the trumpet related to the human voice, is explained by the fact this instrument, contrary to the horn, plays melodies, and this brings it closer

¹⁹ God rises in acclamation, he is Lord in the voice of the trumpet.

to a human voice singing. Another important aspect to consider is the articulation. The trumpet pronounces the consonants, and this makes vivid the effect of a voice speaking, whether we want it to be God's or humans.

Few words should also be spent for pointing out the relation between the trumpet and the hunting game. As we know, the sound of the trumpet is the start of the chase game, but why should this sacred instrument be related to an activity considered an "amusement"? The answer lies in the true root of this game, which is in fact of liturgical function. The hunted animal represents the scapegoat for the sins of the world, and the whole game is then a parody of Christ dying for saving humanity. The verse of John 18,14 explains this concept very clearly: "It was Caiaphas who had advised the Jews that it would be expedient that one man should die for the people."



Omitto plurima quæ de variis Cornuum Venatoriorum sonis dici possunt, exempli gratiâ Venatores tot modis tonos suos non solum quoad tempora, sed etiam quoad acumen, & grauitatem immutare posse, quot à Tubicinibus variantur, de quibus postea.

Tantum addo Cornuum oscilla A, C, N, P, quæ solent esse mobilia, ex ebore, argento, ligno, aut alia quâuis materia, dummodo firmâ, atque durâ, fieri posse: quod & de serpente, Tuba, & aliis huiusmodi Instrumentis intellige: cætera petantur ex sequente propositione, legaturque cap. 6. Iosue, vbi cum septem Sacerdotes septem Buccinis arietinis ante Arcam Domini clangerent ad septimum sonum, muri Ierichunthini corruerunt: quod certè non contigit absque miraculo, de quo alibi: quanquam fieri potest vt vi sonorum aliquid corruat, vt alio loco probatum est.

PROPOSITIO XVIII.

Tubæ militaris figuram, partes, systema, tonos, & vsum explicare.

Tubarum vsum frequentissimum apud Hebreos in Scriptura legimus, quarum constructionem

O ij

Fig. 5. Representation of the Horn by Marin Mersenne. *Harmonicorum Instrumentorum*, 1648.

In the Latin text of the previous image concerning the horn, (Fig. 5), Marin Mersenne explains few things about the instrument, its history and religious contest. He begins by reminding the horn is an instrument used for the hunting game, but that it would be of no use to talk about the sound properties of this instrument, since the sound qualities of the horn depend on too many different factors, such as the skills of the player, the grace or absence of grace of his blowing and several more which he does not mention.

Mersenne explains that the mouthpiece, which we can see in the figures A, C, N and P, are most of the times made of ivory, silver and wood, but that any other material can be good for the construction of a mouthpiece as long as it is hard and “stable”. The twisted instrument, which is represented on the right side of the page is called by the author *Snake Horn*, due to its shape, which clearly reminds of a snake.

At the end of the explanations, Mersenne tells us that the instruments he represented are all mentioned in the sixth book of Joshua. Here, in the parable of the city of Jericho, we have seven horns (called trumpets in the modern translation of the scriptures), played by seven priests. In the verse 1:16 we read: “Now Jericho was shut tightly because of the Israelites. No one was allowed to leave or enter. The Lord told Joshua, «See, I am about to defeat Jericho for you, along with its king and its warriors. Have all the warriors march around the city one time; do this for six days. Have seven priests carry seven rams’ horns in front of the ark. On the seventh day march around the city seven times, while the priests blow the horns. When you hear the signal from the ram’s horn, have the whole army give a loud battle cry. Then the city wall will collapse and the warriors should charge straight ahead.» So Joshua son of Nun summoned the priests and instructed them, «Pick up the ark of the covenant, and seven priests must carry seven rams’ horns in front of the ark of the Lord.» And he told the army, «Move ahead and march around the city, with armed troops going ahead of the ark of the Lord.» When Joshua gave the army its orders, the seven priests carrying the seven rams’ horns before the Lord moved ahead and blew the horns as the ark of the covenant of the Lord followed behind. Armed troops marched ahead of the priests blowing the horns, while the rear guard followed along behind the ark blowing rams’ horns. Now Joshua had instructed the army, «Do not give a battle cry or raise your voices; say nothing until the day I tell you, ‘Give the battle cry’. Then give the battle cry!» So Joshua made sure they marched the ark of the Lord around the city one time. Then they went back to the camp and spent the night there. Bright and early the next morning Joshua had the priests pick up the ark of the Lord. The seven priests carrying the seven rams’ horns before the ark of the Lord marched along blowing their horns. Armed troops marched ahead of them, while the rear guard followed along behind the ark of the Lord blowing rams’ horns. They marched around the city one

time on the second day, then returned to the camp. They did this six days in all. On the seventh day they were up at the crack of dawn and marched around the city as before—only this time they marched around it seven times. The seventh time around, the priests blew the rams' horns and Joshua told the army, «Give the battle cry, for the Lord is handing the city over to you!»»



Fig. 6. Particular of a manuscript, XIV century, Moses is on the mount Sinai holding the Tables of the Law, above him, angels playing the horn, National Library, Paris.

Deus ipse præcepit, uti numerorum cap. 10 videre est: ut nempe Moses conuocaret multitudinem, ubi castramouenda essent, versiculo 2. Sed & ipsa materia seligitur argentea, eaque ductilis, ac si diuinum eloquium argenti puritati comparandum innueret, iuxta vers. 7. psal. 11. at de reliquis vñsibus postea: quæ verò *σκῆπτρον* Græcis, *שֹׁפָר* *Scophar* Hebræis, Latinis *Tuba*, à tubo, seu canali, dicitur: quanquam Tuba classica *קַיִן* *Chaisar* appellatur, cuius descriptionem aggredior.

Itaque figura AHI nostram Tubam militarem refert, cuius pars AB vocari solet os, vel lingula, hac enim parte inspiratur, quæ reliquo canali, seu A Tubæ BC inferitur; pars vltima reliquis latior HI vsque ad primum nodum appellatur Codon, vel infundibulum. BC, & ED brachia, vel scapi nodis F, E, D ita committuntur, atque compaginantur, ut etiam dissolui possint ad Tubicinum peregrè proficiscentium commoditatem & vsum: partes incuruas, ac semicirculares, seu internodia CD & EF, quibus scapi continentur, nodisque adstringuntur, Galli vocant *potentes*: debent autem foraminari, postquam in laminas malleorum ictibus extensi in orbem conuoluti sunt: fierique solent ex ære, quod & apud antiquos solebat, hinc ænea Tuba dicitur: sunt & argenteæ, uti constat ex Hebræis: sunt autem septem pedes longæ.

Potè Tubam à Tyrreno Herculis filio inueniam tradit Hyginus fabulâ 274, quod primus conchâ pertusâ buccinando pagum conuocavit; hinc tubæ cantus dicitur *melos Tyrrenum*: sed litteræ Sacræ restantur vñsibus antiquioribus. Videantur sex Tubarum genera, de quibus Lipsius lib. 4. de Militia Romana, quæ scilicet Mineræ tribuitur, quæ Ægyptiis *Chuone*, Gallica, cum plumbeo canali, *Carynx* dicta, Paphlagonica, Medica, & Tyrrenica: sed & in Vasce, præcentorias, puellatorias, gingrinas, miluinas, Lydias, Corinthias, &c. tibiærum instar à quibusdam diuiduntur.

Sunt qui Lituum à Tuba distinguant, quodd illius sonus sit stridulus, huius verò clangosus: hinc Seneca: *Fam tacet murmur graue classicorum, iam silet stridor Litui præpentis*: & Lucanus, *Stridor lituum, clangorque Tubarum*: deinde quod lituus sonet acutius ob codonem minùs patulum, vel ob canalem breuiorem: tertio quodd fuerit equitum, ut Tuba peditum. Buccinam etiam ab vtrisque distinguunt alij; non tamen Cornu, quantumuis primò factum sit ex Cornu bubulo, quo pastores pecus calabant. Deinde ex Vris agrestibus, demum ex ære, ferro, argento, &c.

Adde triplex nomen Tubicinis, Cornicinis, & Buccinatoris, quod à voce seu cantu *bon, bon* Varro, ut Isidorus Buccinam à voce, quasi *Vocinam* appellat: alij melius à bucca, vel *βουκάρη*: quod Grammaticis vltèriùs inquirendum permitto; nunc enim mirificum Tubæ systema cum numeris tum notis exhibendum: quod quidem incipiemus à grauiore sono, quo solent vti Tubicines; postea nempe de singulis illius sonis accuratius ageretur. Sit igitur primus illius sonus in *C fa ut*, certum est proximè sequentem versus acutum fore in *Gre sol*, quippe qui Diapente facit cum primo grauiore, adeo ut nequeas sonos intermedios, *re, mi, fa* vñllà inspiratione efficere. Deinde tertius sonus ascendit ad *C fa ut* acutius, ut contra *G sol* Diatessaron audiatur; aliq; soni deinceps eo quo vides ordine sequuntur. Vbi plurima notanda veniunt, primò istud systema constare Diapente Diatessaron, ad quod voces optimæ perueniunt: sonus enim decimus facit Decimanonam cum primo: quanquam possit tubicen tonum acutiorem in *A mi la re* producere, uti postea dicturi sumus.

Secundò, interualla hæc omnia diligenter obseruanda sunt, quippe quæ sequuntur naturalem numerorum seriem, enimvero octo primi soni obseruentur accuratè istis octo numeris, à binario grauiorem referente sonum *C ut fa* incipientibus, 2, 3, 4, 5, 6, 8, 9, 10, ut facillè concluditur ex libro de Consonantiis.

Tertio, cum Tuba per Diapente, Diatessaron, Ditonum, & Semiditonum progressa est, non tonum, aut

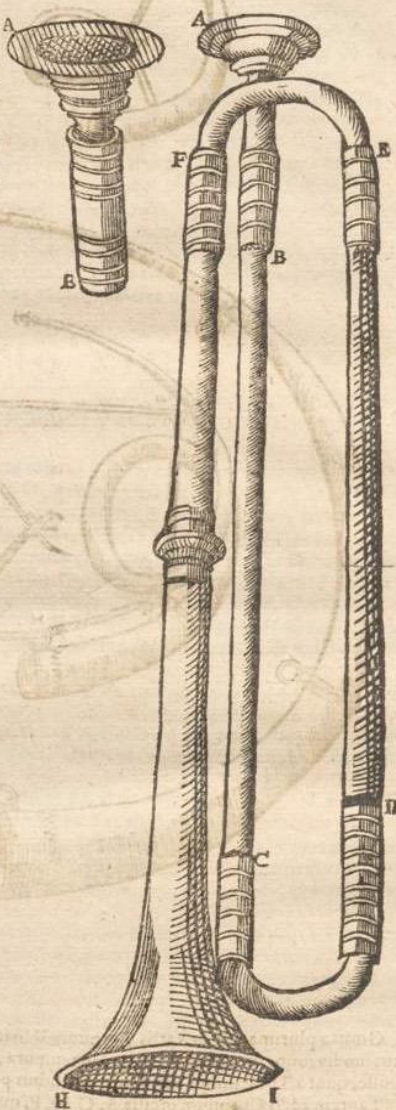


Fig. 7 Natural Trumpet by Marin Mersenne, *Harmonicorum Instrumentorum*, 1648.

Solum addo ita se habere Tubarum intervalla, ut quis a primo tono ad ultimum, penultimum, aut alium quemcumque immediatè, & unico saltu pertingere possit, licet nullum efficere queat inter primum & secundum, vel duos alios quoscunque se invicem consequentes. Iam verò Tubam mobilem seu tractilem aggredior.

PROPOSITIO XXI.

Harmonicæ Tubæ tractilis, quam Galli *Saquebute* vocant, figuram, partes, & systema explicare, & artem eâ canendi tradere.

Hanc Tubam Harmonicam appellamus, quòd Harmoniis, concentibusque adhibeatur: tractilem verò, seu mobilem, quod dimidia pars DD FF tantundem infra manu dextra deducatur, atque trahatur, quantum distat D ab F: tubus enim inferior, vel scapus BD inditur in tubulum exteriorem DF, in quo velut ensis in vagina reconditur. Laminæ transversæ M, DD, & E committunt, continentque brachia ne dispescantur: tubulus BA instruitur oscillo A, per quod tuba inspiratur, ventus enim, vel aer intromissus totum spatium ABFD GH vsque ad extremum codonis N conficit, hoc est 15 pedes, antequam egrediatur, enimvero scapi seu canales educi cum spiris HHG explicatis sunt 15 pedum; quanquam hæc complicantur, nec vnquam evolvuntur, quamdiu quis hoc Instrumento canit. Porro spiræ evolvuntur, & in tubum veluti rectum explicatae sunt duorum pedum, & 1, quæ demuntur ex tuba, cum illius toni Quartâ debent acutiùs intendi: tuncque sunt 4, pedes ab N ad D. Duo scapi mobiles DF sunt pedum 4, immoti verò seu inferiores reconditi sunt pedum 3; spiræ vocantur à Gallis *Tortil*: vbi notandum est laminas transversas MC & E, quemadmodum scapos singulos, faciliè dissolui, atque nodis coniungi, quibus inferuntur, ut hæc Tuba in plures partes diuisa feratur commodiùs.

Super sunt illius toni, quos satis ostendit Bassus Harmonicæ, quam decumanis fistulis accommodauimus: quâquam non est obuium quâ ratione gradus omnes Octauæ hac tubâ fieri possint, cum eos non exprimat Tuba classica, cuius intervalla, saltusque imitatur. Primum igitur absque scaporum motu solius inspirationis varietas Octauam, Duodecimam, & Quindecimam efficit: alios autem intermedios sonos, seu gradus ita producit, ut ad lævam manum laminam C capientem, dextra laminam E tenens proximè accedat. Deinde dextra deprimit quatuor digitis Ef ut efficiat fa; eodémque modo profequitur, ut continua scaporum Ef depressione, fiant reliqui toni, vsque ad

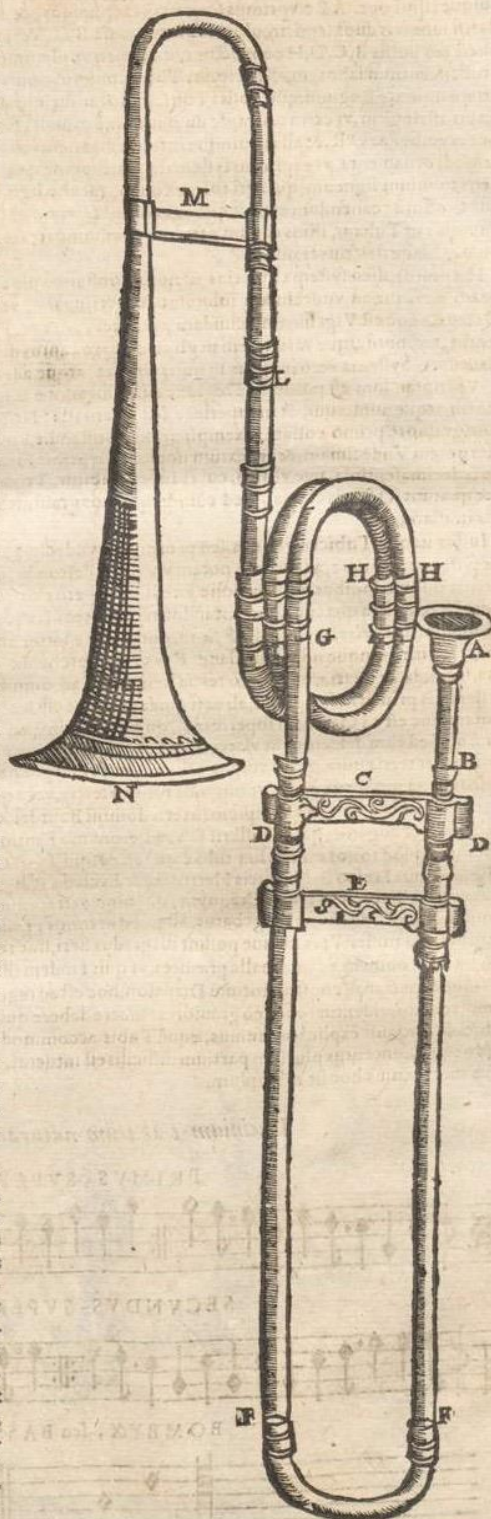


Fig. 8. Representation of Harmonic Trumpet by Marin Mersenne. *Harmonicorum*

Instrumentorum, 1648.

In the Latin text of the two previous images, Marin Mersenne basically names and describes the different parts of the natural and harmonic trumpet. He explains that while the natural trumpet is fixed, the harmonic trumpet has a mobile part, necessary in order to intonate the several musical tones. Mersenne provides also the reader with the names of these two instruments in different languages. For example, the natural trumpet is called *shofar* in Hebrew and *tuba* in Latine, while the harmonic trumpet is called by the French *saquebute*. He describes also the main tones a trumpet makes, which according to him are C fa ut, G re sol, and A mi la re. Mersenne mentions how ungraceful and hard the sound of the trumpet can be in the high register unless the player is very well trained.

Mersenne explains the trumpets are made of silver, which is a ductile but at the same time strong material, and since these instruments are associated to the voice of God, the colour of the silver is perfect in order to reflect the purity of the divine word. Regarding the mouthpiece, Mersenne explains it has to be made of silver or another metal, but it must not be made of ivory or any other bone. This material is in fact reserved to the horn, and in any case, it would not fit and work with the rest of the instrument, which is made of silver.

IV. MONOCHORD, HARP AND LUTE

4.1 The stringed instrument as image of Christ

The stringed instrument is associated to the image of the Christ on the cross, and therefore plays a key role in the Christian tradition. Jean Charlier de Gerson, commonly known as Jean Gerson (December 1363 - July 1429), who was a French theologian and reformer, on the chapter 18, volume one, second book of his treatise *Tractatus de Canticis*²⁰ writes: “[...] the monochord whose single string represents love [...] it must be seen in relation to Our Father.” Putting in relation the monochord (or stringed instrument) with God, is a crucial concept on which is based the shape and the construction of the stringed instrument itself, and which consequently influenced the western tradition of instrument making. The idea of *love* Jean Gerson writes about when he affirms that *the string represents love* might need some clarifications, since the concept of love Gerson hold is quite different than the concept of love we have nowadays. Love is in fact the true purpose God had, when he created the world and since the monochord represents God it consequently represents His love as well. Nonetheless, the same relation there is between the musical intervals is the same relation we find between all creatures in the world. The monochord becomes therefore an analogy between the *uncreated God* and the *created world*. This concept shows how love expands from a *vertical plan*, represented by God and the monochord, to a *horizontal plan*, represented by all creature and things of the manifested world. The little angel Cupido expresses the same concept. He shoots his arrow (vertical plan), which transforms itself in love among the creatures (horizontal plan).

Jean Gerson claims that the original sin made every man imperfect and fallen. He then applies this concept to music as well, and consequently, since the human being is affected by what he calls an *internal dissonance*, the human voice is imperfect too. This means that the voice is missing the sequence of the natural harmonic sounds (necessary in order to define the other intervals) that an open string would have. He explains therefore why it is so important for a man to use an external tool (like the monochord could be), in order to find again what he calls the proper *numbers*. The word *number*, in this case, is clearly not intended as a concept of quantity, but instead, as a concept of proportion between the harmonic sounds. The words of the psalm 42,4 “Oh God, my God, I will give praise upon the harp” make clear how the instrument played by the psalmist, is actually the Saviour himself.

²⁰ The *Tractatus de Canticis*, written between 1426 and 1429 in Latin language, is composed of three volumes, *De canticorum originali ratione*, *De canticordo* and *Carmina et centilogium de canticis*. The interest developed by Gerson for the musical matters, takes full form in the *Tractatus de Canticis*, which puts in relation the most fundamental aspects of music with theology and philosophy.

And again, in the psalm 49,4 we find the sentence: “I will solve my enigma with the harp” which makes us see how the player will be able to transcend his condition through the music.

4.2 The Monochord

Robert Fludd (1573/4 – 1637), also known with the Latin name of Robertus de Fluctibus, who was an English Neoplatonist philosopher, astrologer, alchemist, doctor and member of the sect of the Rosicrucians, on his famous book *Utriusque Cosmi Historia* (Fig. 9) published in 1617, describes the monochord as a line between the Heaven and the Earth. Through different drawings, which we can see below, Robert Fludd compares the monochord with the several elements of the manifested world, with the perfect human being, with the planets, with the musical intervals, with the Pythagorean temperaments and with the angelic hierarchies, giving in this way a complete view of the Universe (Fig. 10, 11, 12, 13, 14). Fludd represents a fundamental figure of his time, fighting through his writings for a more spiritual philosophy, and trying to prove that the universe was created in a numerical, geometric, musical and cabalistic way. He asserts in fact that: “...the key to understanding how all things are related comes from an occult knowledge of the musical harmony throughout the universe.” And again, on the first chapter of his book *The History of the Macrocosm*, Fludd writes: “God contains every name, since all is in him and he himself is in everything.”

Fludd is not the only one believing in the power numbers had during the creation of the universe. Many before him, from Plato to Leonardo da Vinci, from St. Augustine to all the Neoplatonists philosophers of the sixteenth century believed in this concept. In the fourth book, verse 2.2 of *De Genesi ad Litteram*, St. Augustine wrote a dissertation regarding the importance and perfection of the number six. He explains that number six is the first perfect number, since it is equal to the sum of all its parts: “Invenimus ergo senarium numerum primum esse perfectum, ea ratione quod suis partibus compleatur. Sunt enim et alii numeri aliis causis rationibusque perfecti. Proinde istum senarium ea ratione perfectum diximus, quod suis partibus compleatur, talibus duntaxat partibus, quae multiplicatae possint consummare numerum cuius partes sunt. Talis enim pars numeri dici potest quota sit. Nam ternarius numerus potest dici pars, non tantum senarii, cuius dimidia est, sed omnium ampliorum quam est ipse ternarius. Nam et quaternarii et quinarium pars maior ternarius est: potest enim dividi et quaternarius in tria et unum, et quinarium in tria et duo. Et septenarii et octonarii et novenarii, et quidquid ultra est numerorum, pars est ternarius, non maior vel dimidia, sed minor. Nam septenarius quoque dividi potest in tria et quatuor, et octonarius in tria et quinque, et novenarius in tria et sex: sed nullius horum potest dici ternarius quota sit pars, nisi tantum novenarii, cuius pars

tertia est, sicut senarii dimidia. Itaque horum omnium quos commemoravi, nullus consummatur ex aliquot ternariis, nisi senarius et novenarius. Nam ille constat ex duobus ternariis, iste autem ex tribus.”

St. Augustine continues explaining in the following verse 2.3, that number six has three divisors, which are 6, 3 and 2. One sixth of 6, is 1, one third of 6, is 2 and the half of six, is 3. The sum of these numbers, $1+2+3$ makes again 6: “Senarius ergo numerus, ut dicere coeperam, partibus suis connumeratis et in summam ductis, ipse completur. Alii namque sunt numeri, quorum partes simul ductae minorem summam faciunt, alii vero ampliorem: certis autem intervallorum rationibus pauciores inveniuntur, qui suis partibus compleantur, quarum summa nec citra insistat, nec ultra excrescat, sed ad tantum occurrat, quantus est ipse numerus cuius partes sunt. Horum primus senarius est. Nam unius in numeris nullae partes sunt. Sic enim dicitur et unum in numeris quibus numeramus, ut non habeat dimidium vel aliquam partem, sed vere ac pure et simpliciter unum sit. Duorum autem pars unum est, et ea dimidia, nec ulla altera. Ternarius vero duas habet, unam quae dici possit quota sit, quod est unum, nam tertia eius est; et aliam maiorem quae non possit dici quota sit, id est duo: nec huius ergo partes computari possunt illae, de quibus agimus, id est quae dici possunt quotae sint. Porro quaternarius duas habet tales: nam unum, quarta eius est; duo, dimidia; sed ambae in summam ductae, id est unum et duo simul, ternarium faciunt, non quaternarium. Non ergo eum complent partes suae, quia in summa minore consistunt. Quinarius non habet talem nisi unam, id est ipsum unum, quae quinta pars eius est: nam et duo quamvis pars eius minor sit et tria maior; neutra tamen earum dici potest quota pars eius sit. Senarius vero tres partes tales habet, sextam, tertiam, dimidiam: sexta eius, unum est; tertia, duo, dimidia, tria. Hae autem partes in summam ductae, id est unum et duo et tria, simul eundem consummant perficiuntque senarium.”

In the verses 2.4 and 2.5 St. Augustine takes in account the other numbers as well explaining that each number is special for one or another reason. Some numbers may be divisible only for themselves and others have many divisors, which sum is always inferior to the unit: “Iam septenarius non habet talem partem nisi septimam, quod est unum. Octonarius tres, octavam, quartam, dimidiam, id est unum, duo et quatuor: sed hae simul ductae septenarium faciunt infra insistentem, non ergo implent eundem octonarium. Novenarius duas habet, nonam, quod est unum; et tertiam, quod est tria: hae autem simul, quaternarium faciunt longe novenario minorem. Denarius tres habet tales partes; unum decimam, duo quintam, quinque dimidiam, qui numeri simul ducti ad octonarium perveniunt, non ad denarium. Undenarius non habet nisi solam undecimam, sicut septenarius solam septimam, et quinarius solam quintam, et ternarius solam tertiam, et binarius solam dimidiam, quod in omnibus

unum est. Duodenarius vero partibus suis talibus simul ductis, non ipse consummatur, sed exceditur; ampliorem quippe duodenario numerum faciunt: nam usque ad sexdecim perveniunt. Habet enim eas quinque, duodecimam, sextam, quartam, tertiam, dimidiam: nam duodecima eius unum est; sexta, duo; quarta, tria; tertia, quatuor; dimidia, sex: unum autem, et duo, et tria, et quatuor, et sex, in summam ducta sexdecim faciunt. Et ne multis morer, in infinita serie numerorum plures numeri reperiuntur, qui tales partes aut non habent nisi singulas, sicut ternarius, et quinarium, et caeteri eiusmodi; aut ita plures habent tales partes, ut in unum ductae atque in summam redactae vel citra insistant, sicut est octonarius, et novenarius et alii plurimi, vel ultra excedant, sicut duodecimus et duodevigesimus, et multi tales. Plures ergo reperiuntur quilibet horum, quam illi qui perfecti vocantur, eo quod suis simul ductis talibus partibus compleantur. Nam post senarium duodetrigesimus invenitur, qui similiter suis talibus partibus constat: habet enim eas quinque: vigesimam et octavam, quartam decimam, septimam, quartam, dimidiam; id est unum, et duo, et quatuor, et septem, et quatuordecim; quae simul ductae eundem duodetrigesimum complent: fiunt enim viginti octo. Et quanto magis numerorum ordo procedit, tanto productionibus pro rata portione intervallis reperiuntur hi numeri, qui suis talibus partibus in summam redactis, ad seipsos occurrunt, dicunturque perfecti. Quorum enim numerorum tales partes simul ductae non implent eosdem numeros quorum partes sunt, imperfecti nominantur: quorum autem etiam excedunt, plus quam perfecti appellantur.” These verses regarding the numbers and their role in the creation of the world are very important for the musical world and for those who are interested in music, because they give a glimpse of the relations that exist between the musical intervals and their consequent meaning.

It is only in the verse 2.6 of the fourth book that St. Augustine gives a clear explanation regarding the importance of the number six during the creation of the universe. Through his words we find a confirmation concerning Fludd’s opinion the world was conceived through numbers: “Perfecto ergo numero dierum, hoc est senario, perfecit Deus opera sua quae fecit. Ita enim scriptum est: *Et consummavit Deus in die sexto opera sua quae fecit*. Magis autem in istum numerum intentus fio, cum considero etiam ordinem operum ipsorum. Sicut enim idem numerus gradatim partibus suis in trigonum surgit; nam ita sequuntur unum, duo, tria, ut nullus alius interponi possit, quae singulae senarii partes sunt quibus constat; unum, sexta; duo, tertia; tria, dimidia: ita uno die facta est lux, duobus autem sequentibus fabrica mundi huius; uno superior pars, id est firmamentum, altero inferior, id est mare et terra: sed partem superiorem nullis alimentorum corporalium generibus implevit, quia non ibi erat positurus corpora tali refectioe indigentia; at inferiorem, quam sibi congruentibus animalibus ornaturus erat, necessariis eorum indigentiae cibis ante ditavit. Reliquis ergo tribus diebus ea creata sunt, quae intra mundum, id est intra istam universitatem visibilem ex elementis omnibus

factam, visibilia suis et congruis motibus agerentur: primo in firmamento luminaria, quia prius erat factum firmamentum; deinde in inferiore animantia, sicut ordo ipse poscebat, uno die, aquarum; alio, terrarum. Nec quisquam ita demens est, ut audeat dicere non potuisse Deum facere uno die cuncta, si vellet; aut si vellet biduo, uno die spiritalem creaturam, et alio die corporalem; sive uno die coelum cum omnibus pertinentibus, et alio terram cum omnibus quae in ea sunt; et omnino quando vellet et quamdiu vellet, et quomodo vellet: quis est qui dicat voluntati eius aliquid potuisse resistere?”

As it is clearly shown by Robert Fludd in the representation of the monochord and as many of the medieval philosophers explain, our world is divided into two sets. The first one, represented in the lowest part of the monochord is the world of the senses, while the second one, represented in the upper part of the monochord is the spiritual world. The world of the senses is divided itself in two sections, so, for the sake of comprehension we will talk about three sets. In the first and lowest one, called by Pico della Mirandola *Elemental World* and by Fludd *Third Heaven*, we collocate the elements Earth, Water, Air and Fire. In the second set, which Pico names *Celestial World* and Fludd *Middle Heaven*, we collocate the seven planets or spheres, which are Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn. Above the world of the senses we find the spiritual world. In this set, which Fludd calls *Empyrean Heaaven*, we collocate the nine angelic hierarchies, which are, starting from the lowest one: Angels, Archangels, Virtues, Powers, Princedoms, Dominions, Thrones, Cherubim and Seraphim (Fig. 12). Right above the angels we find the Tower of Ivory, which is the epithet of the Virgin Mary, and above her, we find God himself.

According to Fludd, the three heavens are all made of the same essence, which is the Divine Light. However, each Heaven contains different proportions of this perfect, original Light, and this causes them to have different densities. The Empyrean Heaven is the most spiritual and pure, filled with angels and consciousness, therefore its matter has been thinned out and its light-stuff moves and vibrates very fast. It is the less dense Heaven of all three. The second one is made for two quarters of Spirit/Light and two quarters of matter, which makes it denser than the first one. This Heaven is also called *Quintessence*. This is due to the fact it is made of Ether, which is an element in itself. Now, if we add this element to the other four we obtain the quintessence. The third heaven, at the end, is the thickest of all because it contains a smaller amount of original Light. Here, all things are more impure and therefore denser. According to Robert Fludd “...all beings, from angels to minerals are differentiated only according to their greater or lesser light content.”

4.3 The Harp

We have evidence of the use of the harp (*nebel*), or kithara, already in the ancient Greek, where we find it painted in old vases and represented as a small instrument with a number of strings variable between four and seven (Fig. 15, 16). The harp with four strings symbolized the four elements, water, air, earth and fire, and the four seasons, while the harp with seven strings represented the seven major planets, Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn. The tight connection between music and planets can be found in the Pythagorean thought (500 B.C.). For the Pythagoreans, the Universe was perceived as a huge musical instrument, where consequently, the laws that ruled the world were the same laws on which the whole musical harmony was conceived. Based on this concept, the movement of the planets was put in relation to the parts of a vibrating string. What it is mostly interesting about the harp, from a symbolic point of view, is the fact that the sound is simply produced by plucking an open string and there is no need (like on the lute for example), to shorten the string with the left hand in order to produce different tones. The string, which hangs at the two extremities of the instrument, one representing God and the other representing the human being, is therefore an endless connection between the divine and the manifested world. According to the Christian theologian Clement of Alexandria²¹ (150 – 215), the seven stringed harp represents also a symbol of the psalmist, in other words, of that person in charge to deliver the *message* or *sound*.

4.4 The Lute

The rich, detailed and spiritually aware structure of the monochord, influenced a great deal the western school of instrument making, and since the perfection of an instrument was for the ancients directly proportional to the number of details the instrument itself was able to offer for representing and reflecting the Universe, we can affirm that the most complete instrument among all, is the lute. The lute is in fact the perfect reflection of both the universe and the human being on a musical instrument.

If we now take a look at the structure and setting of the lute (*kinnor*), we will find, just like in one of Robert Fludd's monochords, the Four Elements of the world of the senses, placed of course in the lowest part of the soundboard. Right above them, in the highest part of the soundboard are located the seven Planets. On the neck of the instrument are situated the Angels, where each fret corresponds

²¹ Also known with his original name Titus Flavius Clemens.

to a different angelic hierarchy. The lute player then, is not only moving the fingers of his left hand between the frets of the instrument, but he is actually exploring the different stages of angelic consciousness, as it is clearly expressed in the chapter 23 of the first book by Jean Gerson, which says “Happy is the spiritual musician who is able to improvise on his instrument a melody in every tempo and who tries without rest to make beautiful every sound of the mystical range through the meditation of the fingers.” If we keep looking at the structure of the lute we find the nut, which, located on top of the frets and made of ivory, represents the *Turris Eburnea*, or Virgin Mary. The nut can be either made of ivory or bone, which through the transparency of their colour symbolize the purity of the Virgin, or of a dark wood, since we read in the *Song of Solomon*²² referred to the Virgin Mary: “I am dark but fair of form”²³, and again: “Let not your eyes be turned on me, because I am dark, because I was looked on by the sun...”²⁴. A further explanation for the use of these materials in the manufacturing of the nut is found in the relation there is between the Virgin Mary and the Moon. As we will further explain later in this essay, the Virgin Mary is related to the Moon, which has always two faces, a bright one, represented by the ivory and the bone, and a dark one, represented through the use of a dark wood. The pegs at the end, moving and adjusting the strings between the world of the senses and the spiritual world (Earth and Heaven), provide the instrument of Universal Harmony, while the six strings of the lute represent each day of the creation (Fig. 17). St. Augustine, in the fourth book of his treatise *Literal Meaning of Genesis*, explains how number six is the first of the *perfect numbers*, since it is the first one being equal to the sum of its divisors.

In one of the most important treatise of the XVII century, published between 1637 and 1638 and called *L'Harmonie Universelle* by Marin Mersenne, (Oizè 1588 – Paris 1648) who was a French mathematician, theologian and philosopher, we read that the neck of the lute must be as long as the length between the beginning of the sound board (considered from the bottom) and the first half of the rosette. The rosette itself and its symbolism cover an important role in the structure of the instrument, not only in a physical way (it is in fact through the rosette the sound is released), but also because it is considered the Seal of God. The reason of this appellative dwells on both its name and shape (Fig. 18, 19). The first symbol we wish to analyse, since there is no doubt in the fact the rosette is always represented with the features, either stylized and geometrical or very complex and ornamental of a flower, is the one of the rose. The traditional symbolism of the rose is the one of a cup or vase, which is in relation to the Holy Grail. In iconography, the rose is often represented at the foot of the cross, and the drops of Christ's blood falling on the flower, make it bloom. Clear enough,

²² Also known as *Cantico dei Cantici*.

²³ Song of Solomon, first book, verse 1:5.

²⁴ Song of Solomon, first book, verse 1:6.

his blood represents the redemption and the resurrection Christ achieved and consequently gave to humanity. The petals of the rose then, which number can vary between four and six, respectively representing the four elements, the quintessence or the six days of the Genesis, gather his blood like in a cup, like in the Holy Grail.

While I was looking for some good pictures of different rosettes to use as examples here on this essay, I could not help noticing the great similarity the majority of them share with the famous Flower of Life (Fig. 20). This is the second symbol I wish to analyse in relation to the rosette as a Seal of God. Even though the Flower of Life is very well known in all religions and cultures all over the world and since the most remote times, I would not define it strictly as a religious symbol. Since the scheme of the Flower of Life is the most complex form of the sacred geometry and contains in itself the most important patterns of the creation of the universe and life, I would say it clearly goes beyond all religions, more properly ranging in the esoteric field. The symbol is a scheme made of circles all originated from one first sphere representing consciousness, or God. To each day of the creation, the centrum of a new sphere is placed on the surface of the old one, and if we continue the process beyond the seven days of the creation, we obtain the scheme of the Flower of Life. This figure is of great importance because in its scheme we find every physic law and existing form. For example, within the geometrical pattern of the Flower of Life we can find all Platonic solids²⁵, which are the icosahedron, octahedron, star tetrahedron, hexahedron and dodecahedron. Also the frequencies of light and sound are connected to this exact same pattern since the distance between the spheres of the Flower of Life is in fact the same distance there is between the tones and semitones in music. Nowadays, we know that everything on this universe is connected to the geometrical form of the Flower of Life, and this idea of connection between all in one fits very well with the concept of macrocosm and microcosm the great majority of the philosophers express. Furthermore, the idea of an ancient and esoteric wisdom fits with Fludd's opinion that the true understanding of the harmony of the universe and of the laws that rule it is impossible without the knowledge of the esoteric and alchemical mysteries. In my opinion, there could not be a greater and richer symbol than the Flower of Life representing on a lute the Seal of God.

At this point, a little comment should be made about the theorbo. This instrument of the lute family is considered "hybrid", and this appellation is due to the fact the theorbo shares both the symbolisms of the harp and the lute. The theorbo has in fact some strings called *bourdons* to play openly like on a harp, symbolizing the endless connection between God and the human being, and some others

²⁵ The five platonic solids take their name from Plato, who described them in his book *Timeo* in 350 B.C.

which require the left hand in order to produce different tones, symbolizing, like on a lute, the meditation of the musician upon the different states of the angelic hierarchies.

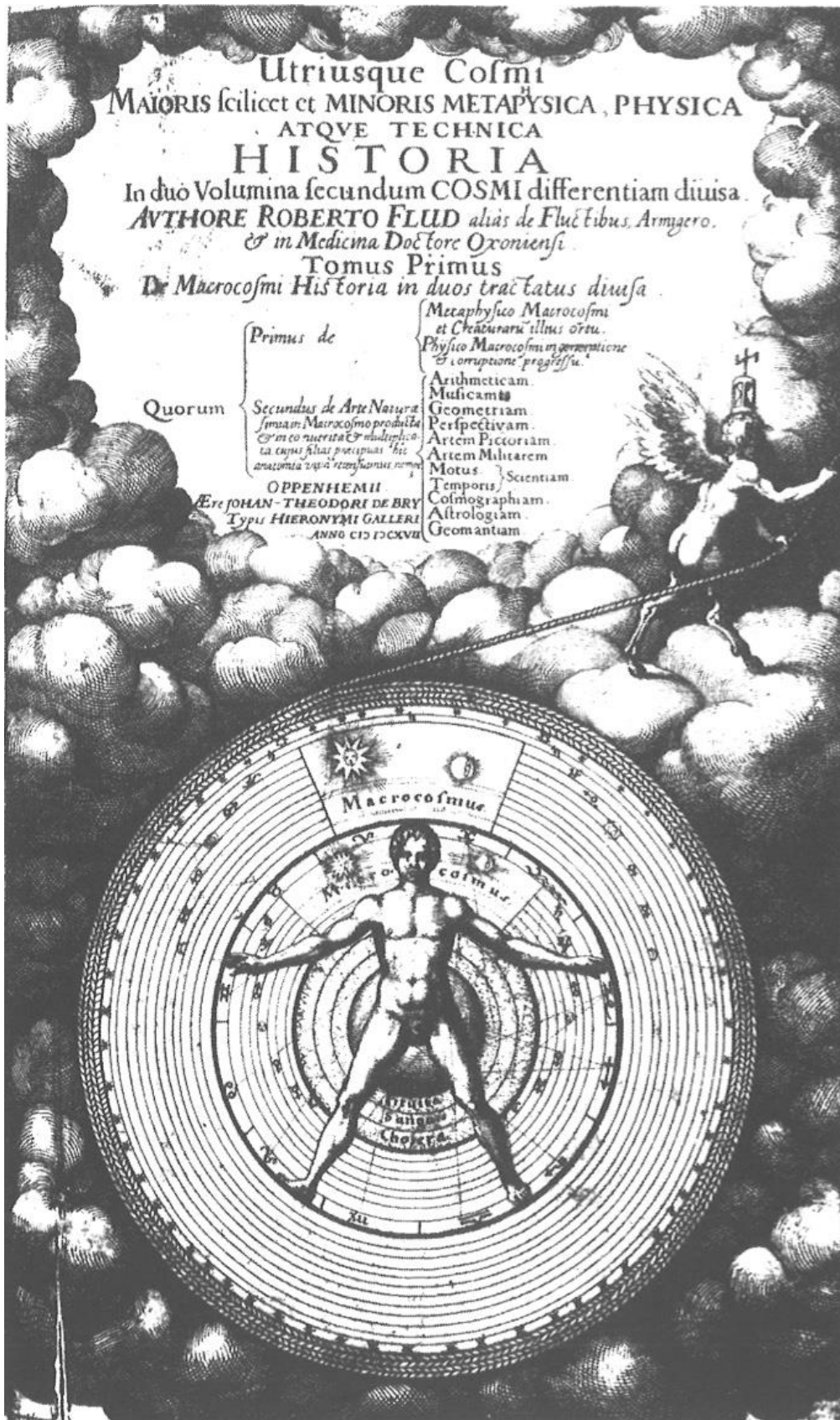


Fig. 9. Frontispiece of the treatise “Utrisque Cosmi Historia”, where Robert Fludd explains the correspondence of the ethereal and elemental worlds with the human being.

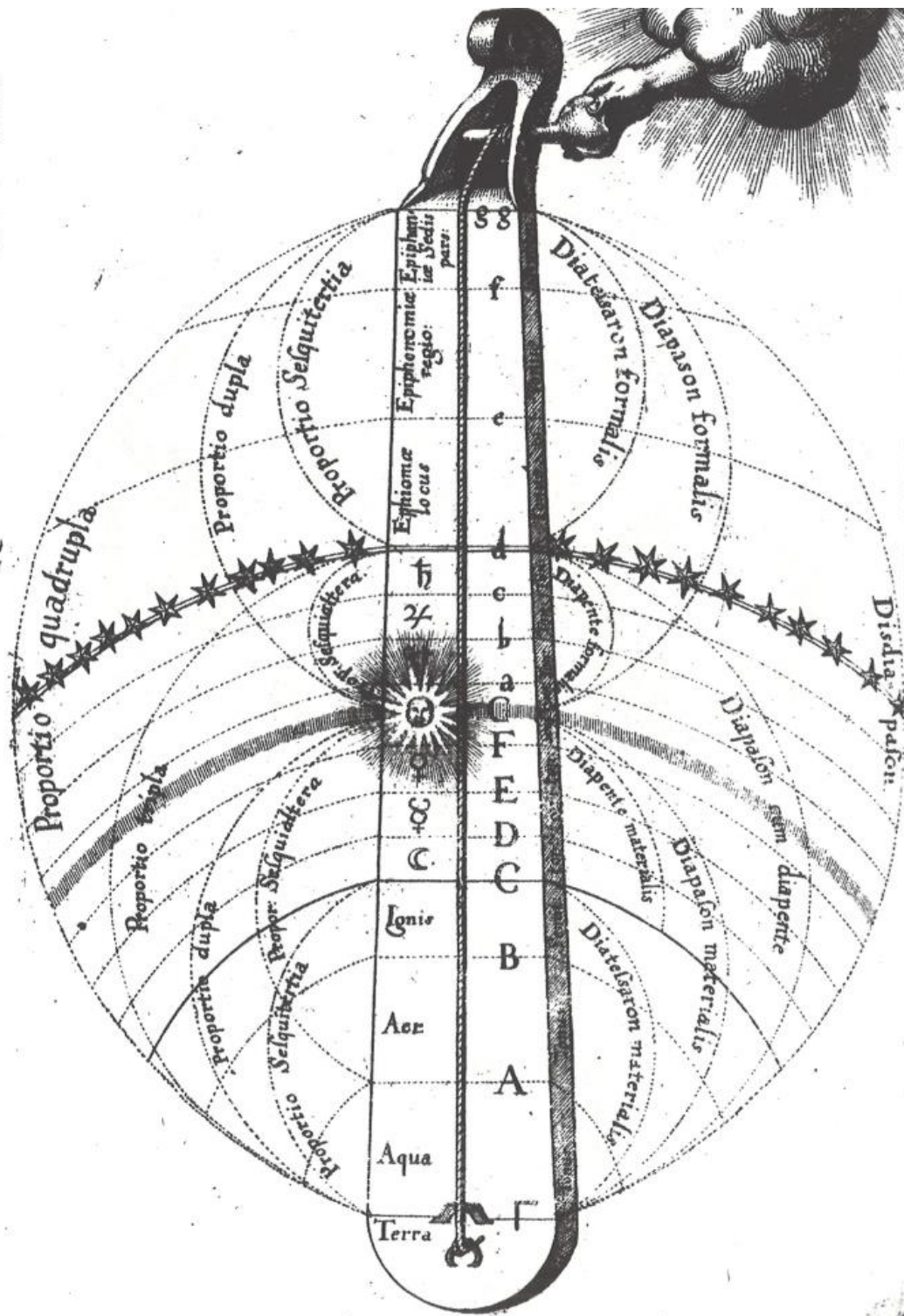


Fig. 10. The Divine Monochord.

In this drawing the Spiritus Mundi is represented by a string. On the left side of the string are listed from the bottom the four elements, the planets and the angels hierarchies which Fludd calls with the Greek names of Epiphanie (Apparitions), Epiphonomiae (Voices) and Ephiomae (Acclamations). On the right side we see the note of the scale from the low G, associated to the Earth (Greek letter Gamma), to the two octave higher gg, associated to the highest angelic hierarchy. On the right side of the scale we find the Greek names of the musical intervals Disdiapason (double octave 4:1), Diapason (octave 2:1), Diapente (fifth 3:2), Diatessaron (fourth 4:3). The musical intervals correspond to the proportions Dupla, Tripla and Sesquialtera of the left side of the picture. On top of all, God's hand provides the string of perfect intonation.

Like in the picture above, the “Spiritus Mundi” is represented by a string. Here, it extends from God to Earth, passing through the human body and connecting in this way the divine side to the earthly side of the human being. The heart is in relation to the Sun, while the three worlds Empyrean Heaven, Ethereal Heaven and Elemental Heaven, are represented as circles. They correspond respectively to the man’s head, chest and belly and they all have a “bright” or divine side and a “dark” or earthly side, represented in the drawing by a light and dark hemisphere.



Fig. 12. The Great Monochord.

This is the most complete of Fludd's monochords. Here is where he summarizes all his theories representing several different systems into one monochord. Four statements stand at the top of the drawing. They say: "The monad generates a monad and reflects its ardour in itself", "The One is all things and all things are the One", "God is all that there is, from him all things proceed and to him all things must return", and "The infinite dimension of the Tetragrammaton: in and between all things.". Beside the peg (left side), there is an Alpha into a triangle symbolizing God as beginning. To this corresponds an Omega into a triangle (right side), symbolizing God as the end of the circumference. On the left side, above the Alpha we read the statement "God is the beginning, and the beginning is the end" while on the right side, above the Omega we read the words "God is the end, and the end is the beginning." The column between the Alpha and the Omega contains the representation of the universe with the four elements, the seven planets, the fixed stars and the angelic hierarchies. These divisions correspond to the musical notes written close to the string, which are also related to the musical intervals marked by the circles on the bottom of the pictures. In a column of the monochord Fludd writes how the musical notes are related to the angels "Nine orders of Angels in the Empyrean Heaven, corresponding to the four notes of the diatessaron (4th) and five of the diapente (5th).". Another column is dedicated to the human being where we find the Intellect of Mind, the Reason and the Lucid Soul. One last column, the upper one, is dedicated to the Tabernacle of Moses. It is divided into three sections, the Holy of Holies, the middle part decked with gold and seven candlesticks (Menorah), and the last exterior part.

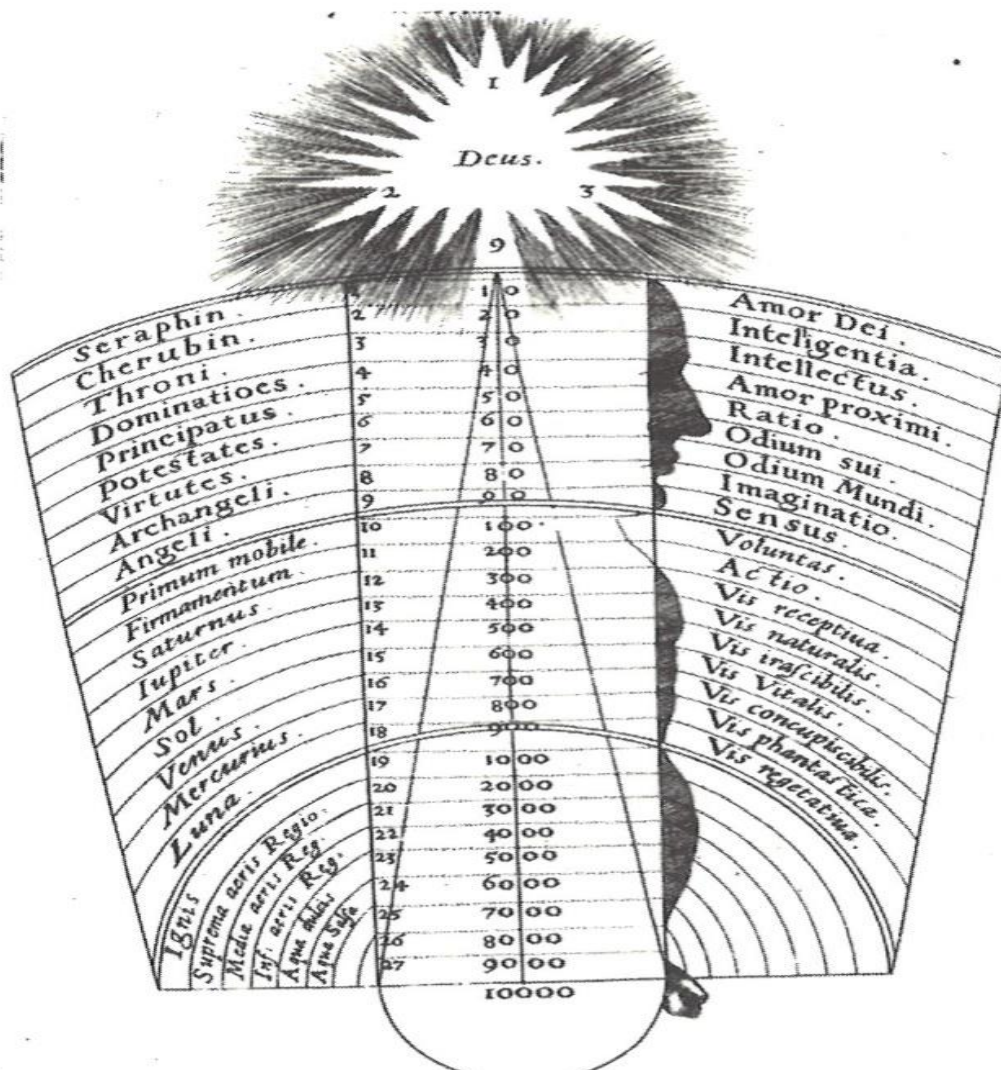


Fig. 10. Man's Higher Faculties.

In this drawing we can see three different classifications. Starting from the left, we find the now familiar division into the four elements, planets, fixed stars and angelic hierarchies. In the middle we can see the idea of the three octaves transposed into an arithmetical scheme. Here, the three worlds of the Macrocosm, divided into twenty-seven levels are represented in radical, square and cubic numbers. On the right side, we find the section dedicated to the man's faculties, which are starting from the top: Love for God (will), Intelligence (action), Intellect (receptive nature), Love of others (natural force), Reason (irascible nature), Aversion of oneself (vital nature), Aversion of the world (desire nature), Imagination (fantasizing nature), Sense (vegetative nature). This last section points out the evolution of the human being from the vegetative state to the state of will.

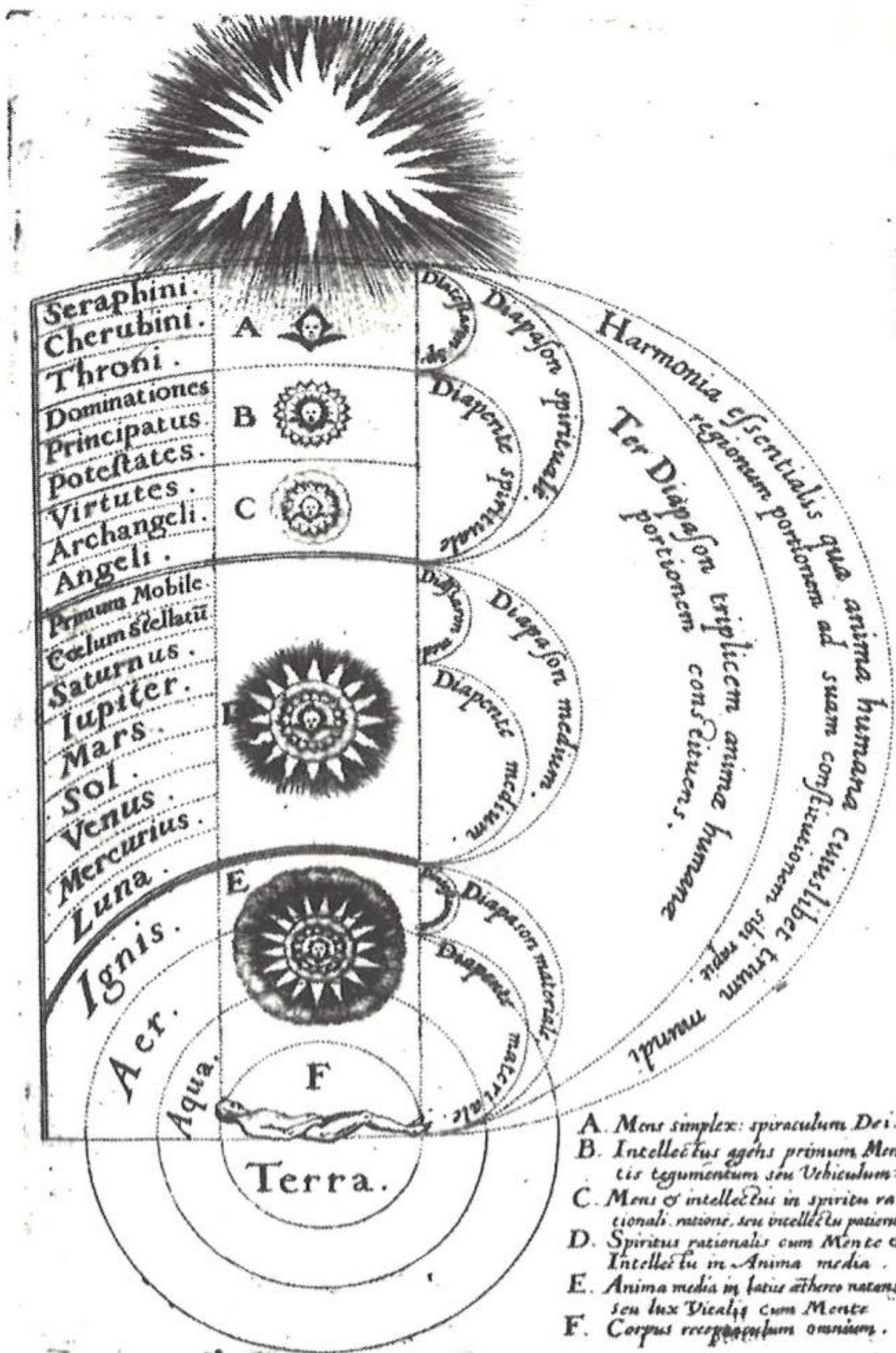


Fig. 13. The seven Chakras.

Also this drawing is divided into three sections. On the left side we find the classical division with the four elements, planets, fixed stars and angels. In the middle part we can see the letters from A to F representing the seven main chakras. A Lotus flower, which is the Indian symbol for the chakras is associated to each letter. The Sanskrit word chakra means wheel or disk and the chakras are energy centers in which the vital energy flows. The letter A corresponds to the Pure Mind (aperture to God), the letter B is the Active Intellect (vehicle of the mind), the letter C is represents the Rational Spirit, the letter D is called Middle Soul, the letter E is the Vital Light in the Mind and the letter F represents the Body. The terminology Fludd used for describing the chakras is quite different from the Hindu terminology, which calls them respectively from the top Sahaswara chakra, Ajna chakra, Vishuddha chakra, Anahata chakra, Manipura chakra, Svadhisthana chakra and Muladhara chakra, but the link with the Indian culture is clearly represented by the five Lotuses and the “thousand petalled” blaze of God’s light (on top). The traditional Hindu number of petals of the Lotuses are two for the Ajna chakra (letter A), nineteen for the Vishuddha chakra (letter B) and thirteen for the Anahata (letter C) as we can see in the drawing. Into the arc on the right side of the picture we read a fundamental statement of the macrocosm-microcosm doctrine “The essential harmony by which the human soul draws into its own constitution any portion of the regions of the three worlds.”

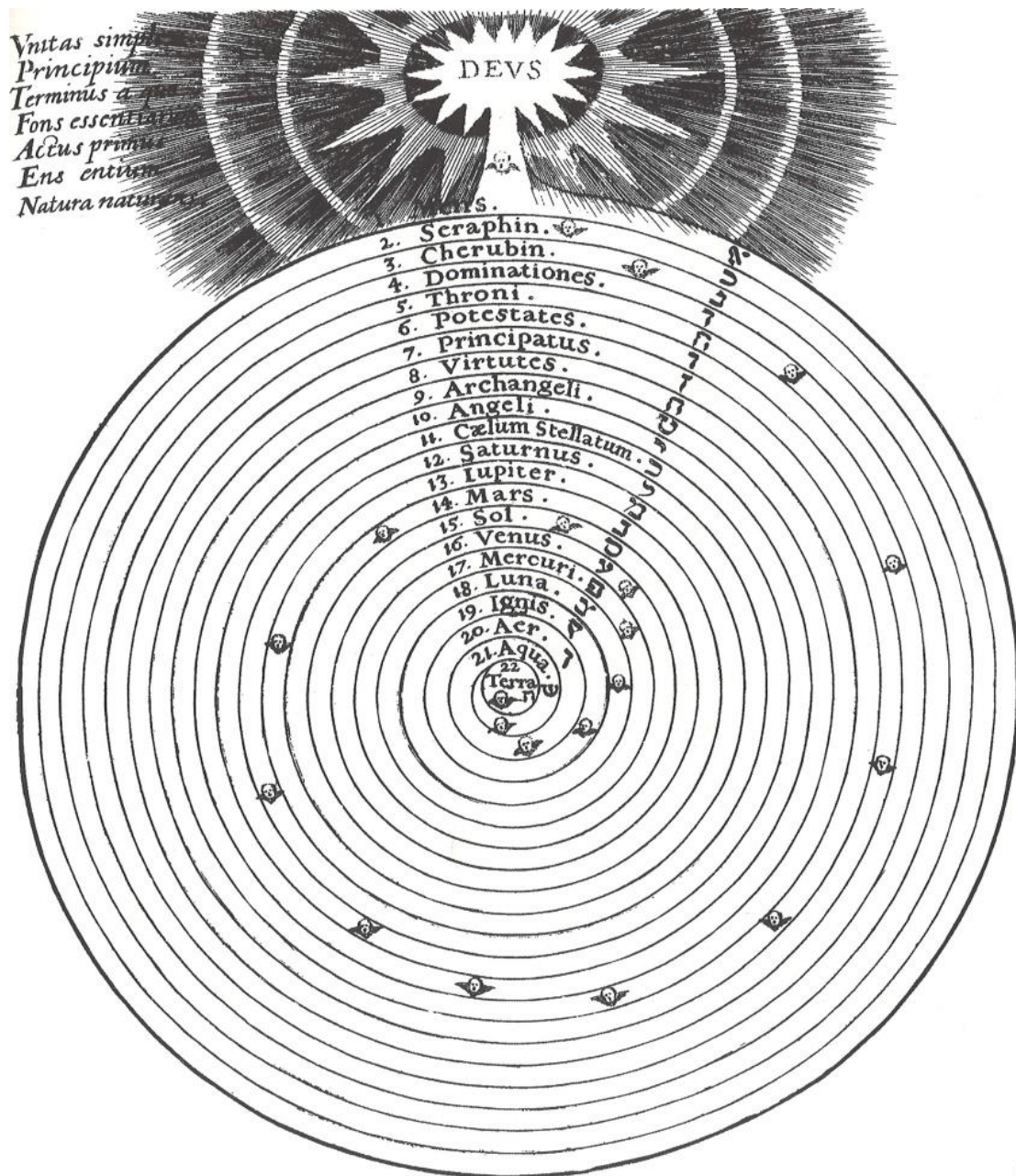


Fig. 14. The Plotemaic Universe I.

In this drawing we can see a spiral descending from the light of God (Deus) to the manifested world. The drawing is particularly interesting because it clearly shows the angelic hierarchies, calling each one with its proper name. Each section of the spiral is marked by Hebrew letters starting from Aleph (right side).

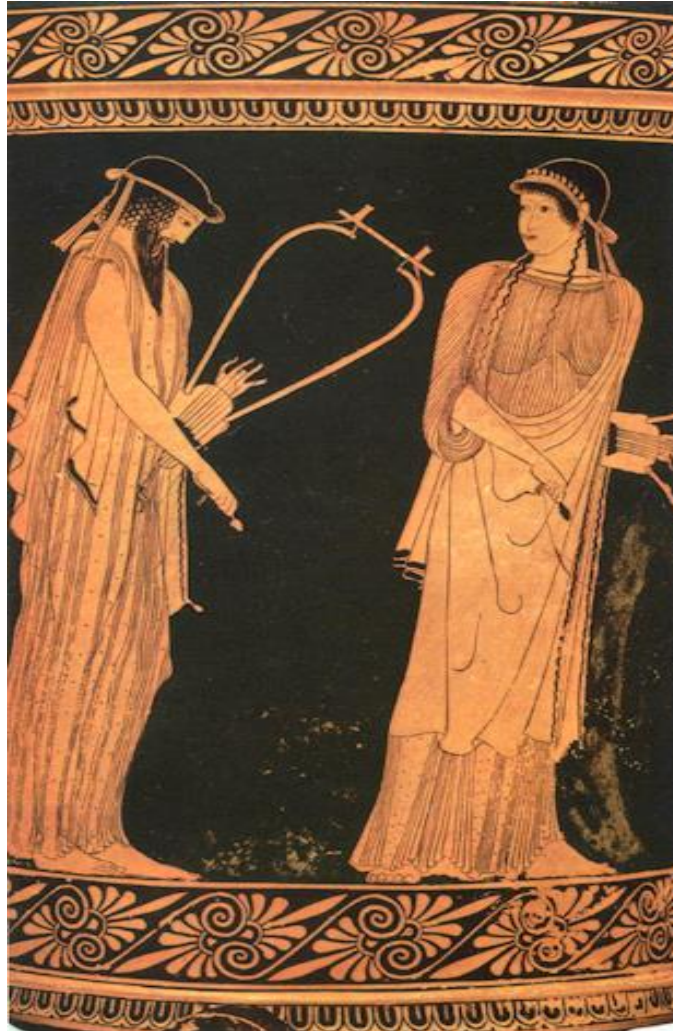


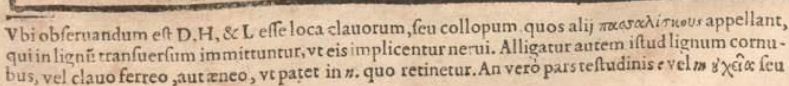
Fig. 15. The poets Sappho and Alcaeus holding two seven stringed lyres.

Detail from Athenian red-figure clay vase,

about 480 B.C. Munich, Antikensammlungen J753.

7

Quod autem ad nostra spectat, tres figuræ inferiores referunt Lyram vel citharam, quæ in pluribus marmoribus, nummisque cernitur, quarum prima D, E, F, G cœlata est in gemma Jac. Gaffarelli.



54

In the Latin text about the harp (Fig. 16), Marin Mersenne explains he collected some evidences regarding the structure and shape of the instruments he represented, mainly from old coins and from ancient statues. Mersenne mentions also some dialogues of Galileo Galilei²⁶ where the famous scientist writes about a harp of thirty-five strings, which he calls *Symique*, and another one of forty strings, which he calls *Epigonion*. In the writings of Galileo, Mersenne finds also an interesting description of a harp that was played with a plectrum. In regard to this topic, we can see that in the detail of the Athenian vase (Fig. 15) the two poets, Sappho and Alcaeus are holding with their right what it may seem a little plectrum attached to the instrument by a string.

²⁶ Galileo Galilei (1564 – 1642) was an Italian philosopher, mathematician and astronomer who fought against the ideas of his time, which said the Earth, was a fixed planet placed at the center of the Universe. Galileo was considered by many an heretical and spent under house arrest many years of his live, never giving up on his theories and gaining the appellation of father of modern science and observational astronomy.

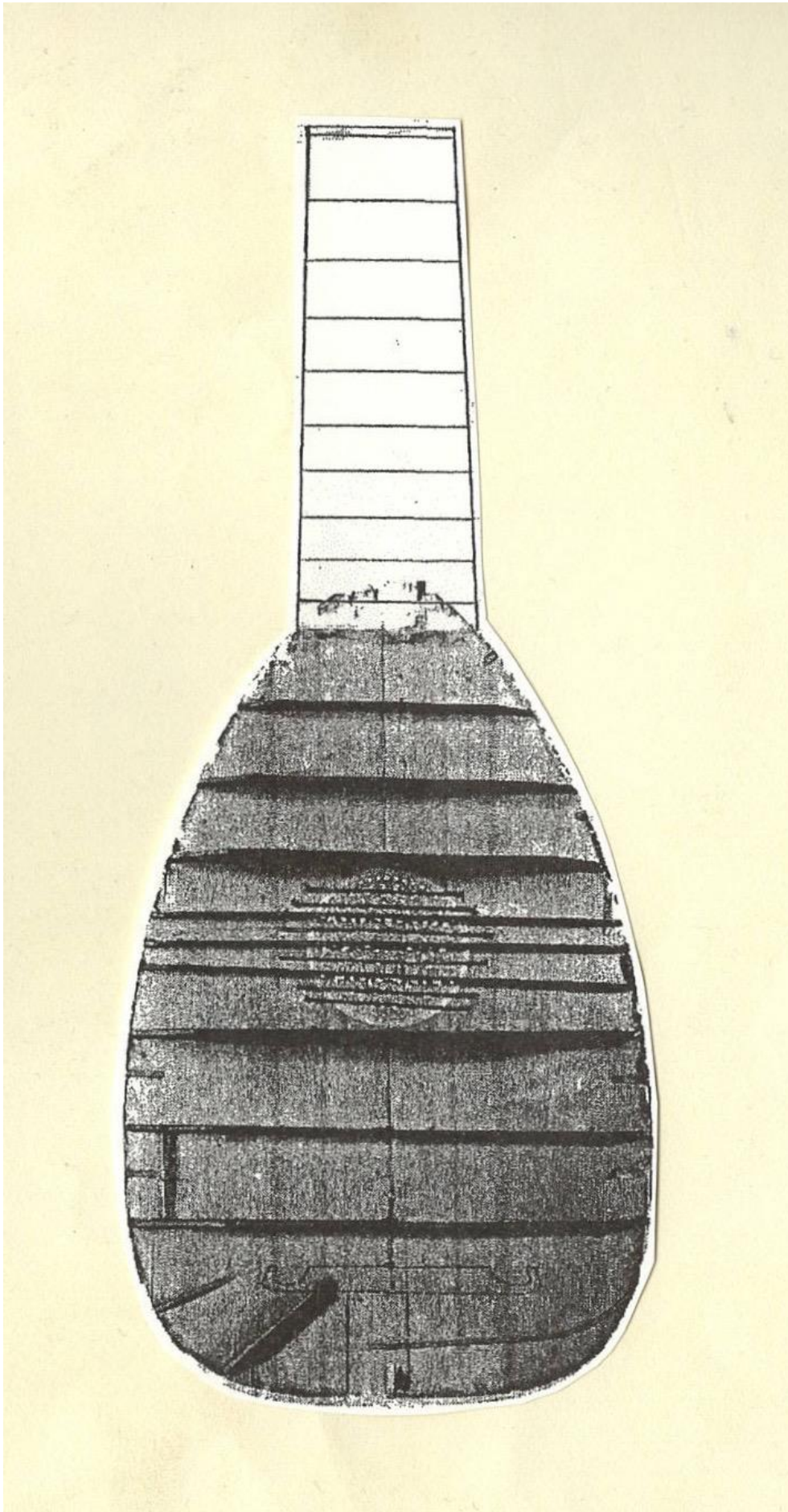


Fig. 17.

Regina Caeli

Seraphim

Cherubim

Thrones

Dominions

Princedom

Powers

Virtues

Archangels

Angels

Saturn

Jupiter

Mars

Sun (3bars)

Venus

Mercury

Moon

Fire

Air

Water

Earth

4.5 About the four elements

Until now, a lot has been said about the angels and their hierarchies, but only few words have been spent about the four elements. St. Augustine, in his treatise *De Genesi ad Litteram*, gives good and clear explanations concerning these four fundamental bases of the world, and through his writings it is possible to understand why the four elements are placed in the order we know.

In the verse 1.4 of the second book, St. Augustine writes that the element *earth* represents the *faith*. The earth, which is solid and gives stability to the world, is for him like the faith, which is based on the solid foundations of the teachings of the prophets and of the Gospels. To reinforce this theory, he continues explaining why the earth was placed on the waters. The *waters*, which are the Oceans, represent the *baptism* and the strength and faith it gives to people: “Hic occurrit admonere cavendum errorem, quem in libro primo cavendum monui, ne forte quia scriptum est in Psalmis: *Fundavit terram super aquam*; arbitretur aliquis nostrum, adversus istos de ponderibus elementorum subtiliter disserentes, isto testimonio Scripturarum esse nitendum: quia illi non retenti auctoritate Litterarum nostrarum, et nescientes quemadmodum dictum sit: Libros sanctos facilius irridebunt, quam illud repudiabunt, quod vel certis rationibus perceperunt, vel experimentis manifestissimis probaverunt. Illud namque in Psalmis, aut figurate dictum recte accipi potest: ut quoniam coeli et terrae nomine saepe in Ecclesia spiritales carnalesque significantur, coelos ostenderit pertinere ad serenam intellegentiam veritatis, dicens: *Qui fecit coelos in intellegentia*; terram vero ad fidem simplicem parvulorum, non fabulosis opinionibus incertam atque fallacem, sed prophetica et evangelica praedicatione firmissimam, quae per Baptismum solidatur, et ideo subiecerit, dicens: *Fundavit terram super aquam*. Aut si ad litteram quisquam cogit intellegi, non incongruenter vel sublimia terrarum sive continentium, sive insularum accipiuntur, quae superiora sunt aquis; vel ipsa tegmina speluncarum, quae super aquas pendula soliditate firmata sunt. Quocirca nec ad litteram quisquam potest sic intellegere, quod dictum est: *Fundavit terram super aquam*; ut aquarum pondus terreno ponderi supportando naturali ordine quasi subiectum esse arbitretur.”

In the verse 2.5 of the same book, he explains that the element *air* is always placed above the water, since air tends by its nature to go upwards. To explain this, St. Augustine makes the example of a glass, which can not be filled with water if placed with the concave side on the surface of the water itself: “Aerem vero aquis esse superiorem, quamvis propter ampliora sui spatia etiam aridam contegat, hinc intellegitur, quod nullum vas ab ore impressum repleti aquis potest: unde satis indicat aeris naturam locum petere superiorem. Videtur enim vas inane, sed aere plenum probatur, cum ore imo in aquam deprimatur; quia enim per superiorem partem non invenit emicandi locum, nec deorsum

versus irruptis aquis subter eas ire natura sinitur, plenitudine sua repellit eas, et in vas non permittit intrare. Cum autem vas ita collocatur, ut os non habeat deorsum, sed in latus inclinatum, intrat aqua inferius, exeunte aere superius. Itemque si vasis erecti os pateat in coelum, cum infundis aquam, evadit aer sursum versus, ex aliis partibus qua non infundis, et fit locus aquae deorsum versus intrandi. Quod si vi maiore vas deprimitur, ut vel ex latere vel desuper aquae repente influant, et undique os vasis obtegant, dirumpit eas aer sursum nitens, ut eis ad ima locum faciat; et ipsa disruptio singultus vasorum est, dum partibus fugit, quia totus tam cito non potest, propter illius oris angustias. Ita si aer super aquas ire cogitur, etiam confluentes eas disicit, cum exsiliantes impetu eius impulsae ebulliunt, et eum bullis crepantibus emittunt in sua properantem, atque illis ad ima decidendi aditum dantem. Si autem sub aquas ire cogatur ex vase, ut illo cedente vas ab ore in ima presso repleti velis, facilius undis undique versum cooperitur, quam per os eius ab inferiore parte intrandi gutta exigua reperit locum.”

The chapter 3.6 of the second book is dedicated to the element *fire*: “Iam vero ignem ad superna emicantem etiam ipsius aeris naturam velle transcendere, quis non sentiat? quandoquidem si ardentem faculam capite deorsum quisque teneat, nihilominus flammae crinis ad superiora contendit. Sed quoniam circumfusi ac superfusi aeris praepollenti constipatione subinde ignis exstinguitur, et in eius qualitatem per abundantiam superatus subinde commutatur ac vertitur, ad universam eius altitudinem transiliendam non potest perdurare. Itaque super aerem purus ignis esse dicitur coelum, unde etiam sidera atque luminaria facta coniectant, illius videlicet igneae lucis in eas formas quas in coelo cernimus, conglobata dispositaque natura: ac per hoc, sicut terrarum ponderibus et aer et aqua cedit, ut ad terram perveniant; sic aquarum ponderi, et ipse aer cedit, ut vel ad terram vel ad aquam perveniat. Unde intellegi volunt, hoc modo necesse fuisse ut aer quoque, si quis eius particulam in spatiis illis sublimibus coeli posset dimittere, pondere suo caderet, donec ad aerea subter spatia perveniret. Quapropter colligunt multo minus esse posse aquis supra illud igneum coelum aliquid loci, cum illic aer multo aquis levior manere non possit.” Here, St. Augustine explains that the fire has the tendency to always cast itself upwards, going even beyond the nature of the air.

In the third book, verse 2.3 of the *Genesi ad Litteram*, St. Augustine writes how similar the elements air and water are. Due to their similarity, these two elements can in fact blend together. He explains that the air, by becoming denser transforms into water in a moment: “Oportebat itaque ut in creandis habitatoribus inferioris huius mundi partis, quae saepe terrae nomine tota commemoratur, prius producerentur ex aquis animalia, postea vero de terra: quod ita sit aeri aqua similis, ut eius exhalationibus pinguescere probetur, ut et spiritum procellae faciat, id est ventum, et nubila contrahat,

et possit volatus avium sustinere. Quapropter etiamsi verum dixit quidam saecularium poetarum: *Nubes excedit Olympus, et: Pacem magna tenent*; quia perhibetur in Olympi vertice aer esse tam tenuis, ut neque nebulis obumbretur, nec turbetur vento, neque sustentare alites possit, neque ipsos qui forte ascenderint homines, crassioris aerae spiritu alere, sicut in isto aere consueverunt: tamen et ipse aer est, unde aquis vicina qualitate diffunditur, et propterea ipse quoque in humidam naturam conversus diluvii tempore creditur. Neque enim arbitrandum est aliquid de spatiis siderei coeli usurpasse, cum omnes etiam altissimos montes aqua transcenderat.”

The chapter 4.6 of the third book, is about few interesting considerations that put in relation the *four elements* with the *five senses*: “Ideoque sunt etiam qui subtilissima consideratione quinque istos manifestissimos corporis sensus secundum quatuor usitata elementa ita distinguant, ut oculos ad ignem, aures ad aerem dicant pertinere. Olfaciendi autem gustandique sensum naturae humidae attribuunt: et olfactum quidem istis exhalationibus humidis, quibus crassatur hoc spatium, in quo aves volitant; gustatum vero istis fluxilibus et corpulentis humoribus. Nam quaecumque in ore sapiunt, ipsius oris humori commiscuntur ut sapiant, etiamsi arida cum acciperentur fuisse videantur. Ignis tamen omnia penetrat, ut motum in eis faciat. Nam et humor privatione caloris congelascit, et cum possint fervere caetera elementa, ignis frigescere non potest: facilius quippe exstinguitur, ut ignis non sit, quam frigidus maneat aut fit alicuius frigidi contactu tepidior. Tactus autem, qui est quintus in sensibus, terreno elemento magis congruit: proinde per totum corpus animantis, quod maxime ex terra est, quaeque tacta sentiuntur. Dicunt etiam nec videri sine igne posse aliquid, nec tangi sine terra. Ac per hoc elementa omnia in omnibus inesse; sed unumquodque eorum ex eo quod amplius habet accepisse vocabulum. Ideo autem caloris privatione, cum corpus nimie frigescit, obtundi sensum, quia motus pigrescit, qui ex calore inest corpori, dum ignis aerem, et aer humida, et humor terrena quaeque afficit, subtilioribus scilicet crassiora penetrantibus.” St. Augustine explains the fire is in relation to the eyes, since without the light of the fire it is not possible to see, while the air is in relation with the ears, due to the fact the sound expands itself through the air. The sense of smell and the test are both in relation to the water, respectively because of the smells are brought to the nose by the air and because the food is mixed with the saliva of the mouth. At the end, the sense of touch is in relation to the element earth because anything that is touchable is here on the physical plan.

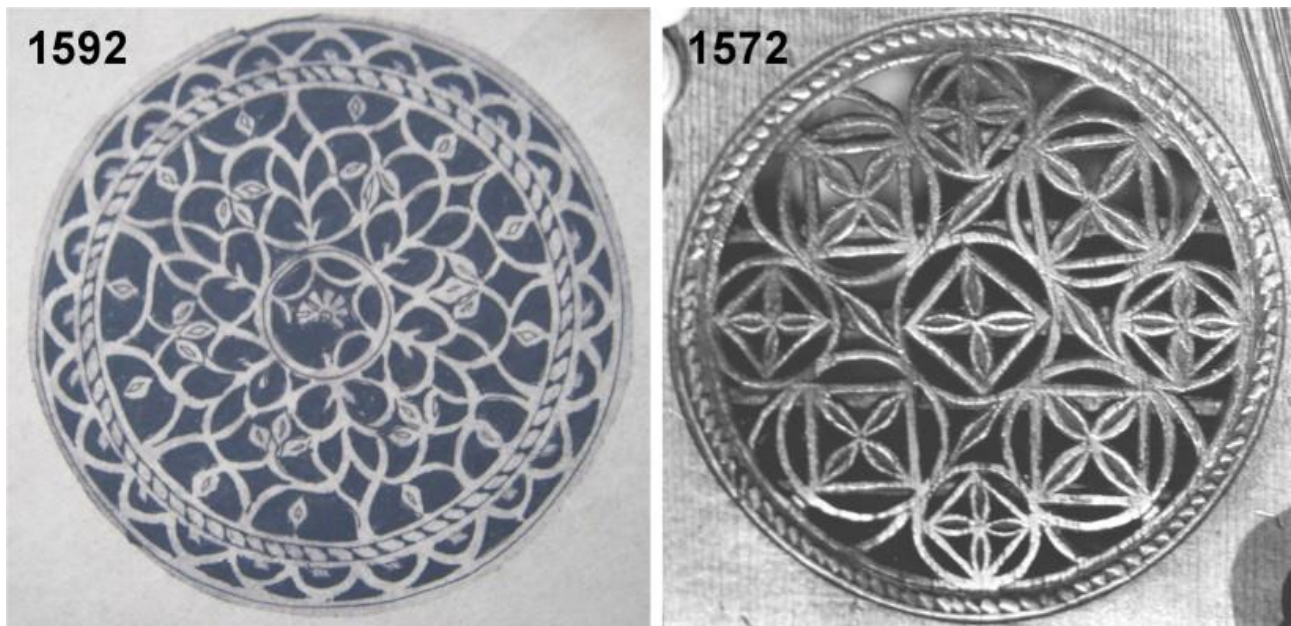


Fig. 18. Two examples of original lute rosettes respectively from 1592 and 1572

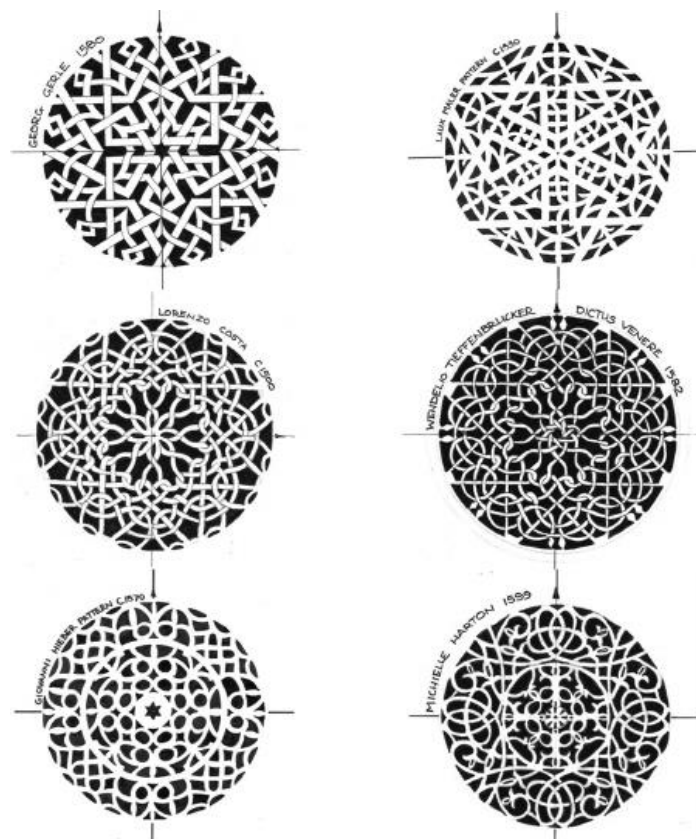


Fig. 19. Six examples of rosettes. From the picture, it is easy to point out two different constructive styles. A more stylized one and another one recalling more of natural forms and flowers.



Fig. 20. Lute rosette. The central motive has a clear resemblance with the Flower of Life.

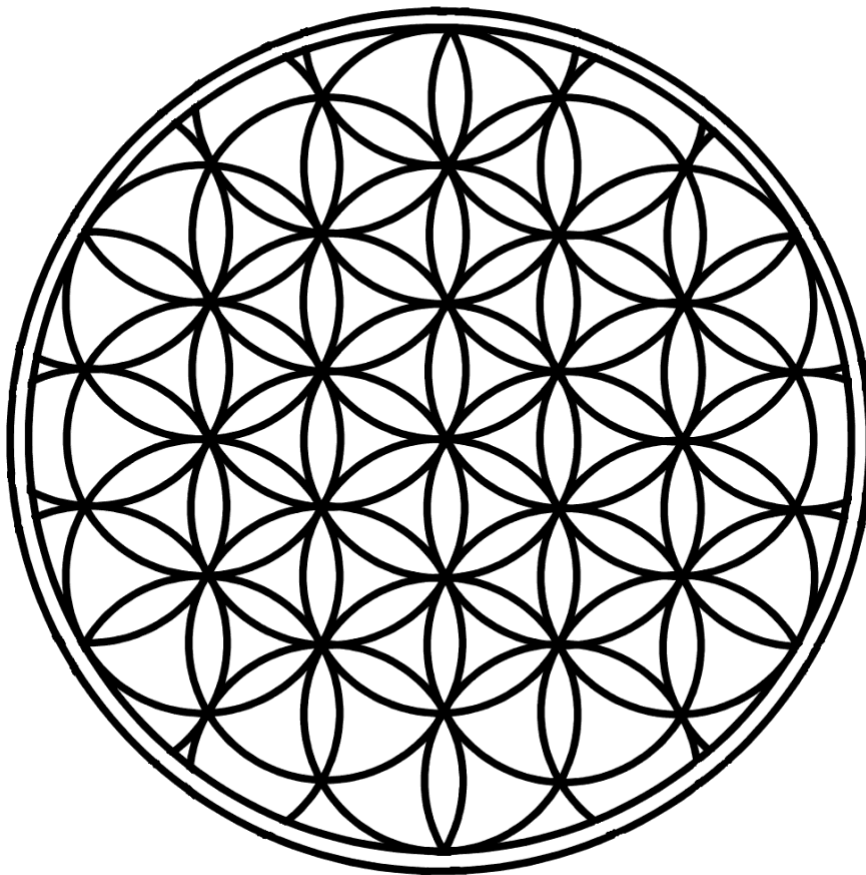


Fig. 21. Flower of Life.

V. ABOUT THE VIOLA DA GAMBA

5.1 The Viola da Gamba compared to the other divine instruments

The viola da gamba (Fig. 22, 23), as a direct descendant of the lute shares with it part of the same history and symbolism, but like any of the other divine instruments, the viol serves the purpose of representing the image of the Universe, and for this reason, it is put in relation to the trumpet, to the horn and the harp as well.

The first trait the viol has in common with the four divine instruments is its shape that reminds of a cup. As previously mentioned, this shape is linked to the image of the Holy Grail, which contained the blood of Christ and its consequent meaning of redemption and resurrection. Like for the lute, the soundboard of the viol is used as a representation of the Elemental World. Here, on the lowest part of the soundboard we collocate the four elements, and above them, the seven planets. The neck of the instrument holds the angelic hierarchies and the head bone represents the Virgin Mary. The six strings, like on a lute represent the six days of the creation while the pegs are responsible to provide the instrument of *divine harmony*. The function of the string, also in this case stretched between two extremities, the first one symbolizing God and the spiritual world, and the second one symbolizing the human being and the physical world, is to represent the connection between these two realities. Even though the rosette is not the most characteristic trait for a viola da gamba, we have many examples of viols which soundboard is carved with a rosette. Like for the lute, the rosette on the viol symbolizes the Seal of God. Further tangible signs of familiarity among the viol and the other divine instruments, lute, horn trumpet and harp, can be found in the music literature for viol, where we have plenty of examples of pieces titled *La Luthée* or *Les Sonneries*, where the viol has to imitate respectively the sound of the plugged instrument or the sound of the bells. We also know that Jean du Buisson²⁷ wrote some pieces for viola da gamba where he put some articulations for the fanfare played on a trumpet. This gives us the idea of how the viol, as much as the other divine instruments was ment to play articulated, and nonetheless, it gives us the idea of how important was the aspect of playing imitating on the instrument the sound of the word of God. This concept, which had been crucial and fundamental up to the first half of the eighteenth century, began to fade at the end of the same century, where the vision of the instrument as a cosmological representation of the universe slowly disappeared.

²⁷ Jean du Buisson, also known as Jean Laquemant (1622 – 1680) was a French composer of the Baroque period. He composed more than one hundred pieces for viola da gamba sola.

5.2 The seventh string

The constructive evolution of the viola da gamba brought the instrument, at the end of the seventeenth century, to the addition of a seventh string. This seventh string was essential in order to accomplish the musical needs of that time which required a lower and more extended sound range, but if we also wish to look at the symbolical meaning of this seventh string, we need to examine first the reason why the number seven appears so often in musical history and why many philosophers consider it fundamental. Seven are in fact the musical tones, which are put in relation to the seven major planets. Seven are the strings of the harp and the viol and seven are the holes of the flute of Pan, God of the Universe. Several different cultures embrace the number seven as a number of considerable importance, the Christians, for example, divide into seven gifts the influence of the Holy Spirit, the Brahmins believe the Sun is made of seven rays, the Chinese describe it as a number of overwhelming wonder and great power, and just to make some literary examples we could cite Homer, who says on his second hymn to Mercury “And he stretched seven concordant strings of sheep-gut”, or Vergil, who writes on the book six of *Aeneid* “Orpheus accompanies different tones of the voices with seven strings”, and again Horace who writes on the book three of *Carmina*, ode eleven “And thou, O lyre, skilled in resounding with thy seven strings.”

The Septenary is the sum of the numbers three and four, and here is the key of its power, since three is the first odd number, and four is the first even number, and from their combination everything on this Universe is created, as Francesco Giorgi, also known as Zorzi, who was a member of the Franciscan Order in Venice explains in his treatise *Harmonia Mundi* published in 1525. Giorgi, great expert of the Greek classics and of the Cabala, teaches us that the Pythagoreans did not consider number two as even, since they saw it as an extended form of Unity. For this reason, number four becomes the first even number. Since we live in a reality that is perceived through duality, (for example we know light because we experience darkness or we know good from bad), Giorgi continues on his treatise explaining that “...from the even and the odd, like active and passive, are composed all things and in the same way they are dissolved.”

5.3 The curl

Among all the similarities the viola da gamba shares with the lute, there are few specific traits that only viols have. One of these traits is the curl placed on the top of the instrument, which was

introduced by the Italian viol makers at the very beginning of the sixteenth century. Although the introduction of the curl did not change anything in the sound properties of the viol, it was anyhow a huge and important change for the features of the instrument that was adopted from that moment on and helped consolidate the identity of the viol family. The curl, which at the beginning was a full curl, evolved during the years becoming a hollow spiral, sometimes with extended edges. Later on, we witness the appearance of instruments that had an animal or human head instead of the curl. The heads and the curls did not only have an aesthetical function but they were made in order to add a meaning to the instrument, symbolizing something specific.

The classical curl, or spiral (Fig 24), is a simple line rolling on itself. The spiral is one of the forms of divine geometry and it is often used for symbolizing God since it appears almost everywhere in the universe. The circular form of the spiral, which starting from one point of origin could expand forever, getting bigger and bigger, links to itself the concepts of emanation, expansion, development and cyclical continuity. The abovementioned concepts can be clearly related to the instrument conceived as a sacred item and extension of the Universe, but they can also be addressed to the musician himself, as a reminder of the path of evolution and development he faces.

A famous mathematician of the Middle Age called Leonardo Fibonacci²⁸ (Pisa 1175 – Pisa 1235), discovered, studying the nature and the natural phenomena, the numerical proportion that is behind the spiral. The Fibonacci's sequence is 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 and so on, and it is made from the sum of the two previous numbers starting from one. This sequence of numbers respects exactly the same proportions Pythagoras discovered about the musical tones, which are 1:1, 2:1, 3:2, 5:3, 13:8, 21:13 and 34:21.

Concerning the lion's heads, we should start saying that this animal is in all cultures the symbol of strength and power, and the power of the lion is often associated to the sun, which shines on the Earth giving life, but most important of all, the lion is also the symbol for the resurrection of Christ. To explain this concept we should start from the fact that to each evangelist is associated a symbol. We find in fact a man for Matthew, a bull for Luc, an eagle for John and a lion for Marc. The association of these four living beings to the evangelists is to attribute to Ireneo di Lione²⁹, who was a roman

²⁸ Fibonacci is an appellative coming from *filius Bonacci*, since Leonardo's father's name was Guglielmo dei Bonacci.

²⁹ Ireneo, born in Asia Minor became priest in the church of Lyon, where he died around 202 A.C. He is remembered through his opera divided in five books *Adversus Haereses* (Against Heresies), which is a public attack to Gnosticism.

bishop lived in the II century. The abovementioned symbols however, are not only the identification marks of the evangelists, but they represent as well the four aspects of the Son of God. This is confirmed in the homilies on Ezekiel, 1,10 of Gregorio Magno, who speaking about the four Gospels and the most important moments in the life of Christ, explains that the *Man*, symbol of Matthew represents the *Incarnation*, the *Bull*, symbol of Luc represents the *Sacrifice of his own Life*, the *Lion*, symbol of Marc represents the *Resurrection* and the *Eagle*, symbol of John represents the *Ascension*. With this knowledge, we can now easily recognize the lion's heads as an image of Christ and the consequent redemption he brought to the world through the resurrection. Yet again, the instrument becomes the necessary tool for the musician desiring to transcend his earthly condition.

The same kind of reasoning can be now applied to the human heads. Symbolizing the incarnation of God, the human heads let the instrument become an even stronger cosmological representation. The place on the viol where both the curl and the heads are situated is also noteworthy and fully supports this theory. Looking back at Fludd's monochords, we can see they are placed right above the Turris Eburnea, in the space he reserves to the drawing of God's hand (Fig. 10), or to the Alpha (Fig. 12) that represents God as the *beginning*. This aspect, underlines the fact the curl and the heads are intended as a representation of God. The carved faces are very different from one another, sometimes they are male, sometimes female, sometimes they are very pleasant, and sometimes might have an ugly or scary look, which do not fit with the image of beauty and perfection one would automatically associate to God. This aspect finds an explanation in the concept (familiar to several religions) that representing the perfection of God would be impossible even through the most beautiful image. Knowing that this purpose would fail anyway, no matter how hard the effort is, brings to the conclusion that the most logical thing to do, is representing God through his opposite, which could then be the image of something known as evil, bad or scary. This is the case of the Pirate's head of a viol built in 2007 by the Swiss instrument maker Luc Breton (Fig. 25, 26, 27). From the pictures we can see the pirate's right eye is blind and his right ear is covered with a bandage, and since the right side of the human body is considered the rational and mental side, while the left one is considered the spiritual side, we deduce, that despite his angry expression, the pirate is symbolizing the way towards the intuitive and spiritual path. The pirate's closed eye reminds us to the topic of the fallen angels discussed on chapter 2.3 of this essay. A curious thing to notice is the fact the pirate seems to have a higher state of awareness and consciousness compared to those angels who no longer are in the light of God. This is very important, because more than often we underestimate the importance and the possibilities of the human beings and we forget how close they are in fact to God. Their unbreakable link to light source is the *Soul*. The same Jean Gerson, on his essay titled *On*

Mystical Theology: first treatise explains that: "...the soul's light is both like an angel and open to God. [...] it is the soul itself, existing as a certain light of an intellectual nature derived from the infinite light of primary intelligence, which is God." Going now back to the pirate's head, we should also remember that the ancients believed that the best and most important sound of the instrument was not given by the long part of the vibrating string, which was producing a *rough sound* good to be delivered to those without a special knowledge, but on the contrary, it was given by the short piece of the string that was left between the point where it was plucked and the point of its connection to God, which was producing the *subtile sound* close to the left ear of the musician. Nowadays, in several countries of the Middle East and in India, it is still common to find some string instrument players wearing a turban they do not place straight on the head, but which covers their right ear leaving the left one open to the sound of the instrument. On the back of the pirate's head we can see a complex inlay that is not meaningless, but which represents a sort of identity card of the instrument itself. The geometrical proportions of the delicate inlays suggest several times the numbers seven and nine, symbolizing that the instrument has very strong harmonics of 7th and 9th. At the end, we discover two important meanings in the anchor. First of all the anchor is a symbol of safety and protection, which also represents hope; the hope of redemption Christ gave to humanity. In second place, the anchor is a very important reminder to stay *anchored in faith*, which in other words means to stay in touch to the orthodox vision and conception of the creation.

5.4 Tail-piece, sound post, bridge and the sides of the instrument

It is very curious to notice how Christopher Simpson, in the English version of his treatise *The Division Viol* from 1655 describes the different parts of the viol using a terminology which refers to the human body. According to his words, the viol has in fact a *neck, belly, back* and *tail - piece*, as if he saw the instrument as the embodiment of a human being. In the Latin version of the same treatise, the neck is called *iugum*, which in English means *beam*, and that could be seen as a metaphor of the beam of the cross. The tail - piece becomes in the Latin version a *retinaculum*, from his function of anchoring the strings. If we now look at the form of the tail - piece, we can recognize the shape of a triangle placed upside down and crossed by a nail. In sacred symbolism, an upside down triangle always represents the geometrical scheme of the *heart*, and since this *heart* is transfixated from a nail, it is my idea that it could represent the heart of Christ. We also learned from Fludd's monochords that the strings are stretched between the spiritual world (God) and the world of the senses (human

being), and therefore, looking at the tail – piece as the heart of Christ could give a good meaning, if we consider Christ is seen as the incarnation of God on earth, or the so called *God made flesh*.

Inside the body of the viol, we find the *sound post*, that in English is named after its function, which is the one to transmit the vibrations from the *belly* to the *back* of the instrument. Yet again, in the Latin version of Simpson's treatise we find it called differently. Here, it takes the name of *sustentaculum intestinum*, which in English means *internal support*. It is interesting to see how in Italian and French, the sound – post is respectively called *anima* and *âme*, which in both languages means *soul*. It is clear we are looking at another example of how the instrument becomes the embodiment of a human being, which reminds also with a vivid image about the previously mentioned concept of macrocosm and microcosm. In this specific case, as the human body is the house for the soul instilling life to a person, so the body of the viol is the house for the soul of the instrument transmitting the sound.

Both the English and Latin translations of *The Division Viol* collimate regarding the aspect of the *bridge*, in Latin called *ponticulus*. Here the two words hold the same meaning and share therefore the same symbolism. The bridge, as the connection between two sides, represents the link between two worlds, which in this case are the material and the spiritual world. The bridge is in fact the horizontal representation of what the two extremities of the instrument and the strings represent on a vertical plane. Besides this meaning, the bridge symbolizes also the link between the different states of the being and the, sometimes hard, path of human life. As described by René Guénon in his book *Symbols of Sacred Science*, the bridge is: "...the thread between the different states of the being...this thread, thin but resistant emphasizes the parlous nature of life that is the only possible way, which not everyone is able to wander." From a cosmological point of view, the bridge is considered the *man* situated on the *material world*, represented by the lower part of the soundboard and indissolubly connected to *God* through the strings.

As we have already seen, the form of the divine instruments and consequently the shape of the viol as well, reminds of the shape of the Holy Grail. In addition to the important meaning of this form, the viol holds another symbol given by its concave sides, which are not just representing a practical escamotage adopted in order to use the bow more freely. According to the theories of Luc Breton, the concave sides of the viol symbolizes that the *material world* or world of the senses, is allowed to fond with the *spiritual world* represented by the instrument itself. This new meaning brings clearly God and the human being even closer to each other, in a plan that was not known before.

5.5 The bow

The first thought, when coming upon the subject of the bow in music, is about its similitude with the bow intended as a weapon and the concept that very often, the shape, construction and ideology of musical instruments were influenced by items which did not necessarily belong to the musical world. In this specific case, the fact the two objects share the same name and a similar shape, can only bring to the conclusion they also share the same symbolism. We find the bow in every culture and mythological tradition as a symbol and weapon of the kings, and the reason why the bow is always associated to royalty, is because it represents the union between two powers, the temporal and the spiritual power, which are awarded from God to those who must lead the nations. Some of the Hindus divinities like Shiva and Skanda³⁰ are represented holding a bow, and the old Hindu traditions fully share the vision of the bow as a symbol of power given from the Gods to the humans.

A particular analogy arose from the Christian tradition, puts the bow in relation to the rainbow. In the book of Genesis, verse 9:13 we read: “I am giving you a sign of my covenant with you and with all living creatures, for all generations to come. I have placed my rainbow in the clouds. It is the sign of my covenant with you and with all in the earth.” And again, in the same book, verse 9:16 it is written: “When I see the rainbow in the clouds, I will remember the eternal covenant between God and every living creature on earth.” We understand here, that the symbolism of the shape of the bow as union between the spiritual and temporal power, comes from this alliance between God and all creatures on earth, the Sacred Scriptures talk about. It is also important to notice the number of shades that compose the rainbow, which are seven. The sacredness of this number, previously discussed on this essay, can only further underline the symbolical importance of the rainbow.

Besides the general symbolism of the bow, another aspect to consider is the figure the bow forms together with the instrument. The viol, on the vertical plane, and the bow, on the horizontal plane, become a cross, which is a figure of great importance not only in the Christian tradition. As explained by René Guénon in his book *The symbolism of the Cross*³¹, the cross represents and symbolizes the realization of the *Universal Man*. With the term *Universal Man*, Guénon refers to a person who has reached the true realization in the multiple states of the being, which are the states of the universal

³⁰ Skanda, also known as Karttkeya, is in the Indian tradition the son of Shiva and Parvati.

³¹ Original title: *Le symbolisme de la Croix*.

manifestation (macrocosm), and the states of the individual human manifestation (microcosm). The true realization of the Universal Man is gained through his total expansion, which occurs through *amplitude*, represented in the horizontal plane, and the *exaltation*, represented in the vertical plane. While the horizontal plane represents mainly the realization of the being on the physical reality, the vertical plane represents the growth of the being on a spiritual level. Yet again, we can see how the musical instrument becomes the embodiment of the spiritual path the human being has to face during his earthly existence.

The practical function of the bow will lead us to yet another important symbolism. The bow is in fact fundamental in order to make the instrument *speak*, and since the cosmological vision recognizes the instrument, or the string of the monochord, as Christ, the bow takes the function of *spiritual master*, or *patron saint*, through which the words of Christ are delivered to humanity. Nowadays we are used to see the figure of the musician as the master of his instrument, and we put him in a more higher and noble position than the one occupied by his instrument and bow, forgetting that the thought and opinion of the ancients regarding this matter was quite different. In ancient times, the string (instrument), which represented God, came at the first place in order of importance. Then there was the bow, and only at the last place came the musician. The role of the musician was basically the one of making sure everything was ready in order to let God speak. This “making everything ready”, which on a symbolical plan represented the intention to walk a path of moral integrity and loyalty towards God, on a physical plan went from the accurate care of the instrument and the bow to the perfect practice of a musical piece. Most important of all, the ancients also knew that God speaks when he wants and to whom he wants.

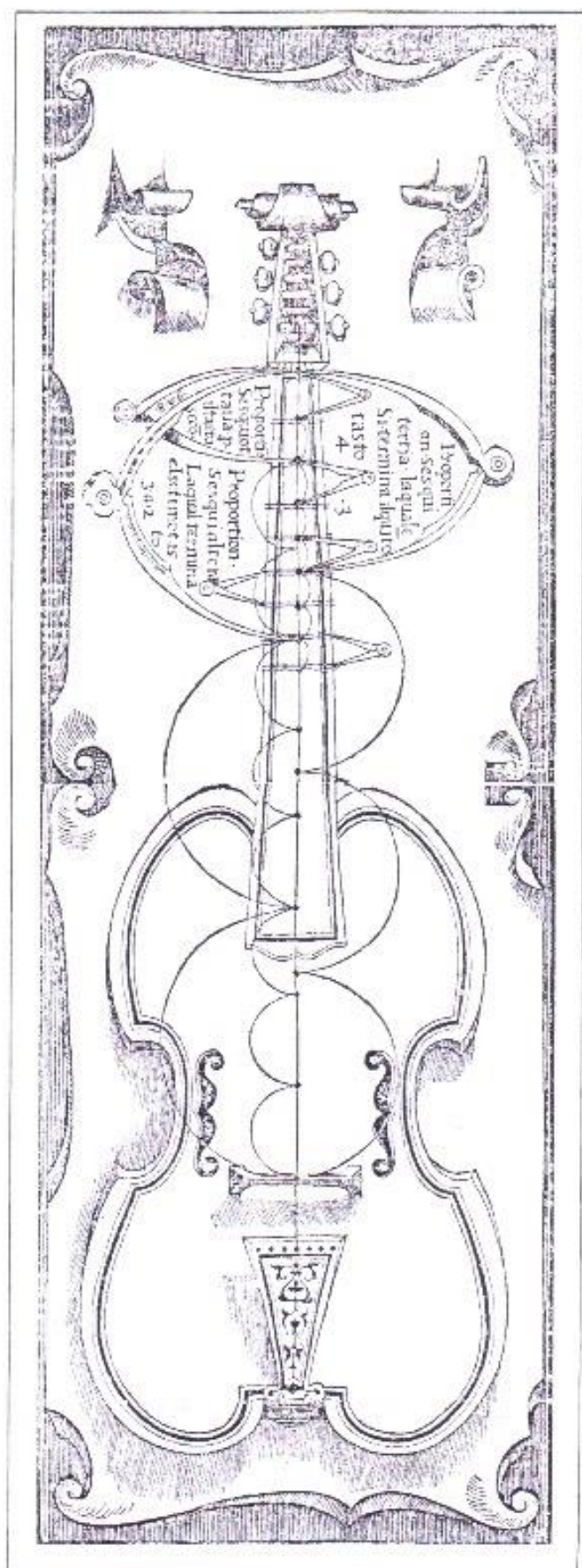


Fig. 22. Viola da Gamba.

fecte vocis cantus tam letos, quàm tristes, ipsosque accentus imitari, ut iam solemne sit Barbitos concentibus vocum adeo feliciter adhiberi, ut Harmonia perfecta ex utrisque resultet.

Porro si Arcuum tractus, celeritates, saltus, & infiniti propemodum motus cum diminutionibus, & aliis sinistrae manus artificii spectentur, vel potius audiantur, ita rapitur animus, ut vix possit ei primum denegare: si tamen aduertas idem de minore Barbito dicendum, si forte sonorum violentiam, & asperitatem excipias ex maiore quàm par est nervorum brevitate, & crassitudine quibus instruitur oriundas; cui si eas obuiam, utrisque nervis eam inter se tam in longitudine, quàm in crassitudine rationem, quæ cernitur in fidibus Barbiti maioris, servantibus, nullum erit inter hæc instrumenta, præterquam in scapi gradibus discrimen, quibus nempe minor Barbitos caret.

Non est autem quodd in explicanda Barbiti tangendæ methodo tempus insumamus, cum metationes



Fig. 23. Viola da Gamba by Marin Mersenne, *Harmonicorum Instrumentorum*, 1648.

The first image of viola da gamba (Fig. 22) is taken from the famous treatise *Opera Intitulata Fontegara* by Silvestro Ganassi, published in Venice in 1535. Ganassi, also known as Silvestro dal Fontego, who lived between the end of the fifteenth century and the first half of the sixteenth century, was an important Italian musician, author of another famous treatise called *Regula Rubertina* divided in two volumes, the first one printed in 1542 and the second one 1543. The six-stringed viola da gamba of the picture is represented as a monochord and it is divided, with the help of a compass, into the right proportions the player should follow for placing the frets. The original picture was divided in two parts between the left and the right page of the treatise and it was reconstructed with the help of a computer.

The second image (Fig. 23), represents a bass viol taken from the treatise *Harmonicorum Instrumentorum* by Marin Mersenne. In the Latin text of the same page, the author gives some advices on the tuning of the instrument. Starting from the lowest string, he suggests the tuning should be Re (D), Sol (G), Do (C), Mi (E), La (A), and Re (D). He also describes the viola da gamba as an instrument with a gentle and elegant sound, and in order to obtain a really good sound he even gives advices on the thickness of the strings. The calibers he suggests are 320 for the low D, 240 for the G, 180 for the C, 144 for the E, 108 for the string of A, and 80 for the high D.

Præfatio.

zontali, & motu perpendiculari à proiciente sursum versus impresso, adeo ut lapis illo motu ad maiorem distantiam, seu longius moueatur, quoties motus à curru cum lapidi, tum manui & soli cor-
pori impressus vegetior est motu à manu impresso.

At verò non ita quadrat expectati-
etia, quod ait Galileus de globo
ab æneo tormento exploso, scili-
cet globum illum horizontali mo-
tu volentem eodem momento
terram attingere, quo globus al-
ter æqualis ex eadem turri, vel al-
titudine simul cadens eandem ter-
ram, vel eundem horizontem at-
tingit, cum sagitta ab arcu emissa
horizontali motu vix ad medium
sui cursus iter perueniat, cum la-
pis, vel alia sagitta ipsi arcui im-
posita cadendo terram attingit:
qua de re fusiùs dictum est prop.
22. libri citati. Iuuat etiam addere
peculiarem admodum obserua-
tionem, quâ reperi globum plum-
beum in aëre tredecim pedu con-
ficere spatium vno horæ secundo
proximè, quod percurrit in aqua
spatio secundorum 2, atque adeò
hoc tempus est ad illud vt 3 ad 2:

globum verò plumbeum æquale præcedenti, concuum tamen, & triplò leuius, in aqua spatio quin-
que secundorum cadere, hoc est duplò tardius: vnde viderint eruditi Physico-mathematici num
quidpiam inde possit elici in gratiam proportionis, quæ toties quæsitæ, nunquam tamen quodd sciam
inuenta est inter aquæ, & aëris densitatem, atq; raritatem, de quibus fusè prop. 30. lib. Gallici de Sonis.

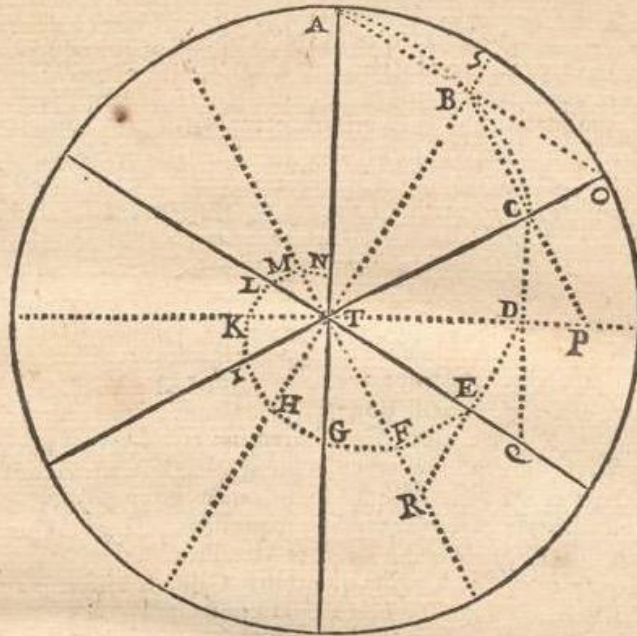


Fig. 24. Scheme of the Spiral by Marin Mersenne. *Harmonicorum*, 1648.



Fig. 25. Pirate's head, right side. Bass viol by Luc Breton.



Fig. 26. Pirate's head, left side.



Fig. 27. Pirate's head, back side.

VI. THE SYMBOLISM OF THE SOUND RANGE

6.1 The Sound conceived as beginning of the Universe

In the first verse of the opening chapter of the Gospel of John we read: “At the beginning was the Word, and the Word was with God, and the Word was God.” The term *Word* in this case goes beyond its usual meaning and must be understood in a larger way, which is over the rational thought. The term *Word* holds in fact the meaning of *Sound*, and this sentence, describing the creation of the universe, introduces us to the ancient knowledge that the sound was the beginning of all things; the sound was the beginning of the universe. The ancient Egyptians called this initial sound the *laugh*, or the *shout*, of the god Thot and we also have evidence that in the tradition of the indigenous tribe of Witoto³² appears the sentence: “At the beginning the word gave origin to the Father”, where the word *father* takes the meaning of *supreme God*. The same concept is also found in the Indian tradition, where people recognize the sound of the syllable Aum (Om), as the sound that gave origin to the entire universe. This is the reason why in the Upanishads³³, the Aum is described as the primordial sound of praise, and as the sound that made everything grow.

As it is clear by now, the ancients considered the sound as the essence of the universe and of all living things. They were therefore familiar to the idea that all beings, from stars to humans, hold a personal sound that sometimes was audible and sometimes was not audible to human ears.

6.2 The sound range and the planets

The musical theory of the Renaissance and the philosophical current of thought of the same period, are mostly based on the ideas and discoveries of the ancient Greek philosophers. The theories of Pythagoras became the base of the musical theory and the writings of Plato, had such a huge influence upon the philosophers of that time, that a whole bunch of them were in fact called Neoplatonists. During the Middle Age and the Renaissance, the music was divided into three main categories called *mundana*, *humana* and *instrumentalis*.

³² The tribe of Witoto, also known as Huitoto lives in the forests of South America, and more precisely in the south east of Colombia and in the north of Peru.

³³ The Upanishads are a collection of about 300 religious books containing the fundamental concepts and ideas of Hinduism.

According to the theories of Boethius³⁴ (480 – 524), to whom the other philosophers and musicians refer when coming upon this subject, the *musica mundana* is the music of the macrocosm and consequently it is the sound of the heavenly bodies (planets) and of the four elements. This kind of music is not perceived by the human hear. With the term *musica humana* he refers on the other hand, to the music of the microcosm, and therefore to the sound of the human soul. The *musica humana* is only audible to the human hear through the start of an introspective journey. The last category, the *musica instrumentalis* is the practical music, which tries to imitate the other two previously mentioned kinds of music although remaining always imperfect. One of the fundamental concepts on which musical theories were based, regards the *musica mundana* and the sound of the celestial bodies. To each sound of the septenary of music, generated as previously explained from the numbers three and four, is related the planetary septenary, made of the seven major celestial bodies, or planets. The scheme below represents how these planets are in relation to the musical sounds:

Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
B	E	A	D	G	C	F

The tones B and F at the two extremities of the scheme are the foundation of the septenary because proceeding and developing in inverse direction, the B through fourths and the F through fifths, origin the same sets of tones. Like the even and the odd, the tones B and F are opposite one another but inextricably linked, and meet half way on the tone D. This tone, representing Mars in the planetary system is the archetype of the unison. If we now consider the same set of tones in the diatonic order, we get a new system, where the sound E and the Sun are placed in the middle of the scheme, and therefore at the center of the Universe. It is a way a speaking and not a strict correspondence since the modern tones we know are not the same as the ones of the harmonic scale used at that time.

Saturn	Jupiter	Mars	Sun	Venus	Mercury	Moon
B	C	D	E	F	G	A

The theories of the ancient Greeks regardin the relations between the planets and the musical tones, had a huge influence in the musical world of the Middle Age, Renaissance and Baroque period. Also

³⁴ Through his writings, Boethius, who worked in Ravenna at the court of Theodoric king of the Ostrogoths, summarized and synthesized the old wisdom of the classical theories bringing them into the Middle Age and the Renaissance. In his book *The Principles of Music*, Boethius explains in detail the calculation of the intervals and the construction of the scales, relying on the works of Plato, Aristotle, Ptolemy and Nicomachus of Gerasa.

Marin Mersenne on the fifth theorem of his treatise *L'Harmonie Universelle* writes about these important relations, explaining in which areas they are defined and on what they depend: “Les consonances peunent être compares aux Cieux at aux Planettes, à cause de leurs dispositions, de leurs aspects, de leurs grandeurs, de leurs distances, at de leurs mouvements.”³⁵

6.3 The traditional vision

The musical tones were not only put in relation to the celestial bodies. We have evidence in fact that during the course of the Middle Age there were several different kinds of understandings and interpretations regarding the sound range, some of them completely false and unrealistic. The traditional view of the Middle Age and Renaissance period regarding the sound range, which is perhaps the most suitable and logic for instrument makers and musicians, puts in relation the Latin names of the musical tones *Ut, Do, Re, Mi, Fa, Sol, La* and *Si* with the major religious figures of the Catholicism. The following scheme summarizes these analogies very clearly:

- *Ut* is attributed to *God* the unknowable and it is the beginning of the salm dedicated to *Sancti Iohannes*. Therefore it is linked to the term *So That*
- *Do* represents its octave and it is related to *Dominus*, the manifestation of God
- *Re* has the ambivalent meaning of *man king* in Latin called *Rex*, and of *reus* which means *culprit*, since the tone *re* (d) is associated to the human being guilty of the original sin
- *Mi* is associated to the angel *Michael* and to the Latin word *Mitere*, which means *to send*
- *Fa* stays for *femina* and represents the *Virgin Mary*
- *Sol* is attributed to the son creator and represents the *voice of Christ*, the *Sol justitiae*
- *La* is associated to the *Moon (Luna)*
- *Si* is an ambivalent tone depending on its form either natural or flat. The *Si natural*, due to its close relation to the *Do*, is referred to the *apostle John*. *Si* is in fact the abbreviation of *Sancti Iohannes*. The *Si flat*, which on the contrary brings to another direction compared to the *Do*, is associated to *John the Baptist*

The incipit of each verse of the hymn dedicated to *Sancti Iohannes* holds the names of the musical tones. The text of this famous psalm is the following:

³⁵ The consonances may be compared to the Sky and the Planets due to their disposition, aspect, size, distance and movements.

Ut queant laxis
Resonare fibris,
Mira gestorum
Famuli tuorum,
Solve pollut
Labii reatum,
Sancti Iohannes³⁶

Jean Gerson developed and deepened this topic in a very original way. In the chapter nineteen and twenty of the second book of his treatise *Tractatus de Canticis*, he uses the vowels *A, E, I, O, U*, all contained in the Latin names of the musical tones for making further and very interesting analogies between the musical sounds and the different emotions of the human spectrum. Nowadays, the key of understanding of his theory is unfortunately not so clear, and it gives space to many suppositions. One of them is that he could have used some astrological correspondences and some of the old Greek knowledge about the celestial bodies in order to link the musical sounds to the planets and therefore to the effect they have on the human beings. His ideas are expressed in the following scheme:

- *A* contained in *Fa* and *La* represents *Love*
- *E* contained in *Re* represents *Hope*
- *I* contained in *Mi* and *Si* represents *Compassion*
- *O* contained in *Do* and *Sol* represents *Fear*
- *U* contained in *Ut* represents *Sorrow*

In this specific case the musical tones are associated to feelings, but we find also other cases where musical intervals are associated to some elements that a modern mind would not easily link to the musical world. In particular, the musical intervals are associated to the *Soul's Powers*. These powers, described by Ptolemy³⁷ (127 – 148 A.C.) are the power of *Thought, Feeling* and *Life*, which he respectively associates to the consonant intervals of *octave, fifth* and *fourth*.

³⁶ So that your servants may, with loosened voices, resound the wonders of your deeds, clean the guilt of our stained lips, O Saint John.

³⁷ Ptolemy, also known with the Latin name of Claudius Ptolemaeus, was a Greek/Egyptian astronomer and mathematician who became, after Aristotle, one of the major scientific authority of the medieval period.

6.4 Planets, tones and muses

The conception of a cosmic sound was so deeply rooted during the Renaissance that many theorists of that time spoke about the universe in the terms of a vibratory unity, and reviewed Plato's theory regarding the Muses. Plato assigned to each planet the name of a Muse, which he intended as the *soul* of the planet itself.

In the monochord of Franchino Gafori³⁸ (Lodi 1451 – Milan 1522), which is curiously represented as a snake with three heads (Fig. 28), it is possible to see, represented on the right side of the drawing, the seven major planets and the fixed stars related to the Greek Modes, which are Hypodorian, Hypophrygian, Hypolydian, Dorian, Phrygian, Lydian and Mixolydian, and to the Muses, represented on the left side. Their names are Clio, Calliope, Terpsichore, Melpomene, Erato, Euterpe, Polyhymnia, Eurania and Thalia. On the bottom of the monochord we find the four elements and on top of everything, Apollo, god of the music, sits on his throne. This monochord, very particular on his genre maintains some of the main characteristics and structure of the classic monochord, but on the other hand looks very “pagan”, offering a tribute to the Greek culture.

³⁸ Gafori, also known with the latin name of Franchinus Gaffurius, was *maestro di cappella* at the Cathedral of Milan. He was also a writer on music theory and he is remembered for his book *De Harmonia Musicorum Instrumentorum*, written in 1500 and initially distributed as a manuscript, since it was printed for the first time only in 1518.

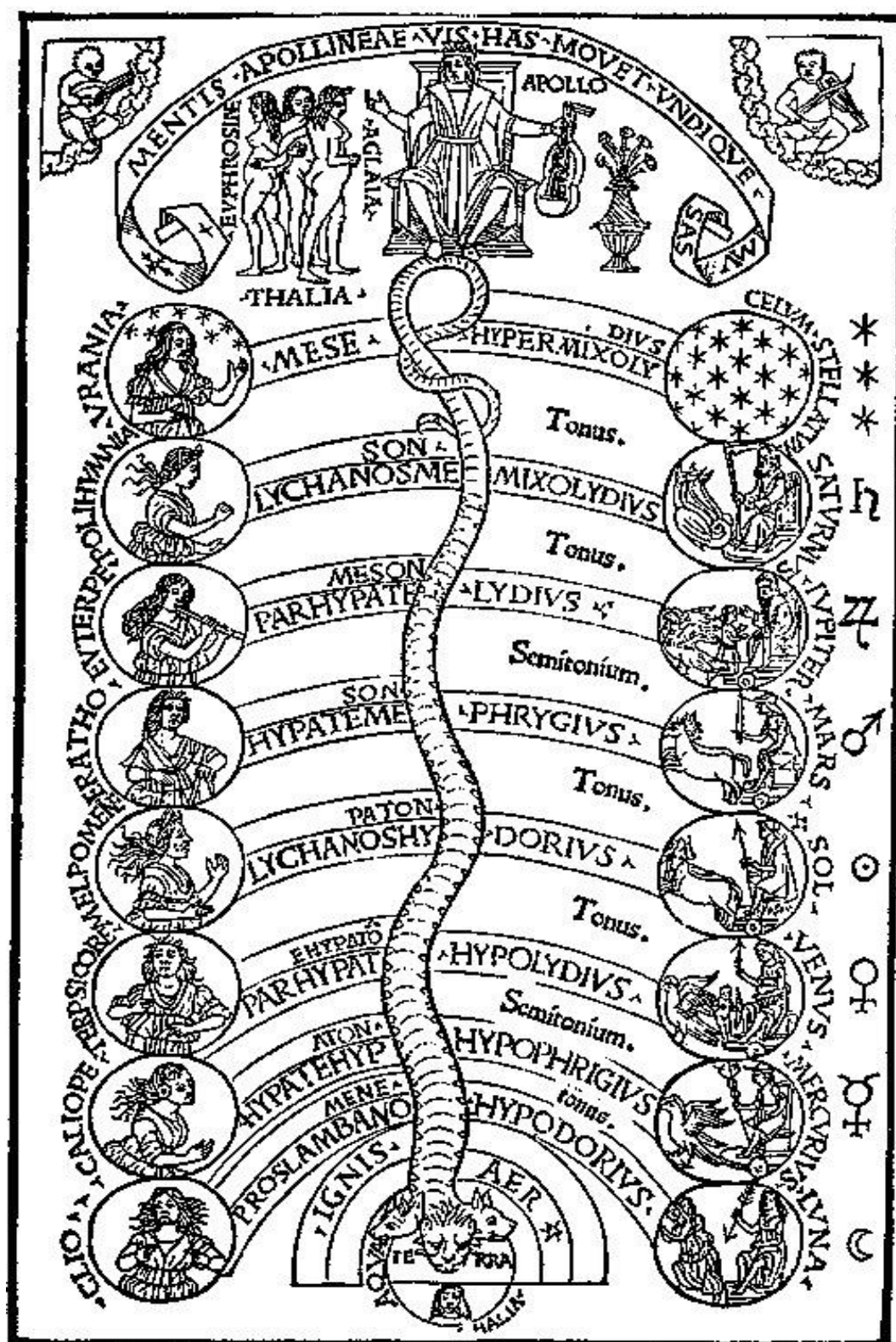


Fig. 28 Monochord representing the nine Muses.

VII. THE PRESENCE OF MUSIC IN PICTORIAL ART

7.1 Gentile da Fabriano and the *Polittico di Valle Romita*

Gentile da Fabriano was an Italian painter born in Fabriano, a town situated in the center of Italy, in the region Marche, a place, which established since the origins important relations with the city of Venice and which has been always greatly influenced by the Venetian art. The date of birth of Gentile da Fabriano is unknown, but it is estimated for the year 1370. Only one century after the birth of Gentile, whose art played an important role in the international Gothic art, the region Marche, and in particular the city of Urbino became a famous artistic center for the Italian Renaissance, and hosted great painters like Sandro Botticelli, Piero della Francesca and Raffaello Sanzio. Still very young, Gentile moved from Fabriano and reached prosperous cities like Venice³⁹, Florence⁴⁰, Pavia and Rome. The only work Gentile paints in his hometown is the famous *Polittico di Valle Romita*, painted around 1400 for the church of the monastery of Valle Romita⁴¹. The *Polittico* has been kept in Milan at the Pinacoteca of Brera since 1811, after the Napoleonic pillage. Gentile da Fabriano, whose paintings rich of symbolism and ancient knowledge gave a huge contribution to the Italian and European art, died in Rome in 1427.

The *Polittico di Valle Romita* (Fig. 29) represents the coronation of the Virgin Mary. The Holy Virgin is situated in the central part of the painting together with God, Christ and the musical angels. The other figures around this central panel represent, (Fig. 30), Saint John in the desert (n°2), the martyrdom of Saint Peter (n°3), the crucifixion (n°4), Saint Thomas Aquinas (n°5), Saint Francis with stigmas (n°6), Saint Jerome (n°7), Saint Francis (n°8), Saint Dominic (n°10), and Saint Mary Magdalene (n°11). The central part (n°9), which we are going to analyse, is very complex and noteworthy due to its allusions to music and musical theory.

Examining the particular of the central part of the painting (Fig. 31), we notice immediately the constant repetition of the numbers 5 and 4 in several details of the opera of Gentile da Fabriano. It is fundamental to know that these numbers are referred to the 5th and 4th harmonic sound, which are respectively referred to God and to the Virgin Mary. The first figure we want to examine is the white

³⁹ Here, Gentile decorates the *Sala del Maggior Consiglio* of Palazzo Ducale.

⁴⁰ In Florence, he paints one of his masterworks, the famous *Adorazione dei Magi*, kept in Florence at the Uffizi.

⁴¹ Valle Romita, also called Val di Sasso, takes its name from the village of Valleremita, site of an ancient monastery.

haired man. He represents the *Ancient of Days*⁴², or in other words *God* as *Verbum*. The appellation of *Ancient of Days* appears three times in the Book of Daniel, and we recognize the figure of the painting through the verses 7:9, 13, 22 where Daniel tells about a dream he had and says: “I watched as thrones were put in place and the ancient one sat down to judge. His clothing was as white as snow, his hair like purest wool. He sat on a fiery throne with wheels of blazing fire”. And again: “I saw in the night visions, and behold, with the clouds of heaven there came one like the son of man, and he came to the Ancient of Days and was presented before him.” For the third time we can read: “...until the Ancient of Days came, and judgment was given for the saints of the Most High, and the time came when the saints possessed the kingdom.” The psalm 90:2 explains the concept behind the expression *Ancient of Days*, which regards the fact God existed before times, without need of creation: “Before the mountains were born or you brought forth the whole world, from everlasting to everlasting you are God.” And again, in the book of Isaiah verse 43:13 we read: “From eternity to eternity I am God. No one can snatch anyone out of my hand. No one can undo what I have done.” In the *Polittico*, God wears a gold crown with five points and He is surrounded by five flames of fire on one side, and four on the other side, each one containing an angel. They represent the sequences of 5th and 4th and their reversibility, since the 4th, which represents the Virgin Mary is placed on the side where Jesus sits and vice versa.

The *Virgin Mary*, who wears the same crown as the *Ancient of Days* indicating they share the same power and authority, sits and forms the number four with her crossed arms representing her as the interval of 4th. On her crown are painted seven stars symbolizing the musical tones. Christ is sitting beside the Virgin, and we notice a knot on his belt with three flaps, which are the first three harmonic sounds. He holds a cross with his left hand, symbolizing that the sum of the 4th and the 5th (represented by him) make the Unity. Between the Virgin Mary and Christ is placed the Holy Spirit.

Another important symbolism is referred to the eight *Musical Angels* represented on the bottom of the painting, which are the representation of the musical scale. The first and the last angel, holding the same instrument, in this case, a *kinnor*, represent the same musical tone, the *Do* (Dominus) in two different octaves.

Under the angels, is painted the *Empirical Sky* with the stars, the Sun and the Moon. The Sun symbol of Christ is painted under the Virgin Mary, while the Moon, symbol of the Virgin is represented under

⁴² Also known as *Ancient of Ages*.

Jesus. Yet again, we find expressed the concept of the reversibility of the intervals of 5th and 4th, and of the Unity (God), that is achieved through their sum.

Colours, which are so fundamental in pictorial art, hide a noteworthy number of symbols. The predominant colour in the opera of Gentile da Fabriano is clearly *gold*, which represents the *direct light*. Everything in the painting is permeated with the beautiful golden light God emanates. The Sun, painted in the Empirical Sky of the central panel, which symbolizes Christ, is in contrast with the *silver* colour of the Moon. This shade has in fact the meaning of *reflected light*. The *red* colour of the robe the Ancient of Days and Christ wear is a symbol of *salvation, redemption and nobleness*⁴³. The *blue* robe the Virgin Mary wears represents the *heavenly grace*, while the colour *white* used for painting the Holy Spirit and the Ancient of Days is a symbol of *sanctity and purity*.

⁴³ Red is a colour often used in pictorial art for identifying kings and important people.



Fig. 29. Gentile da Fabriano "Polittico di Valle Romita" 1400, cm 280 x 250, Pinacoteca di Brera, Milan, Italy.

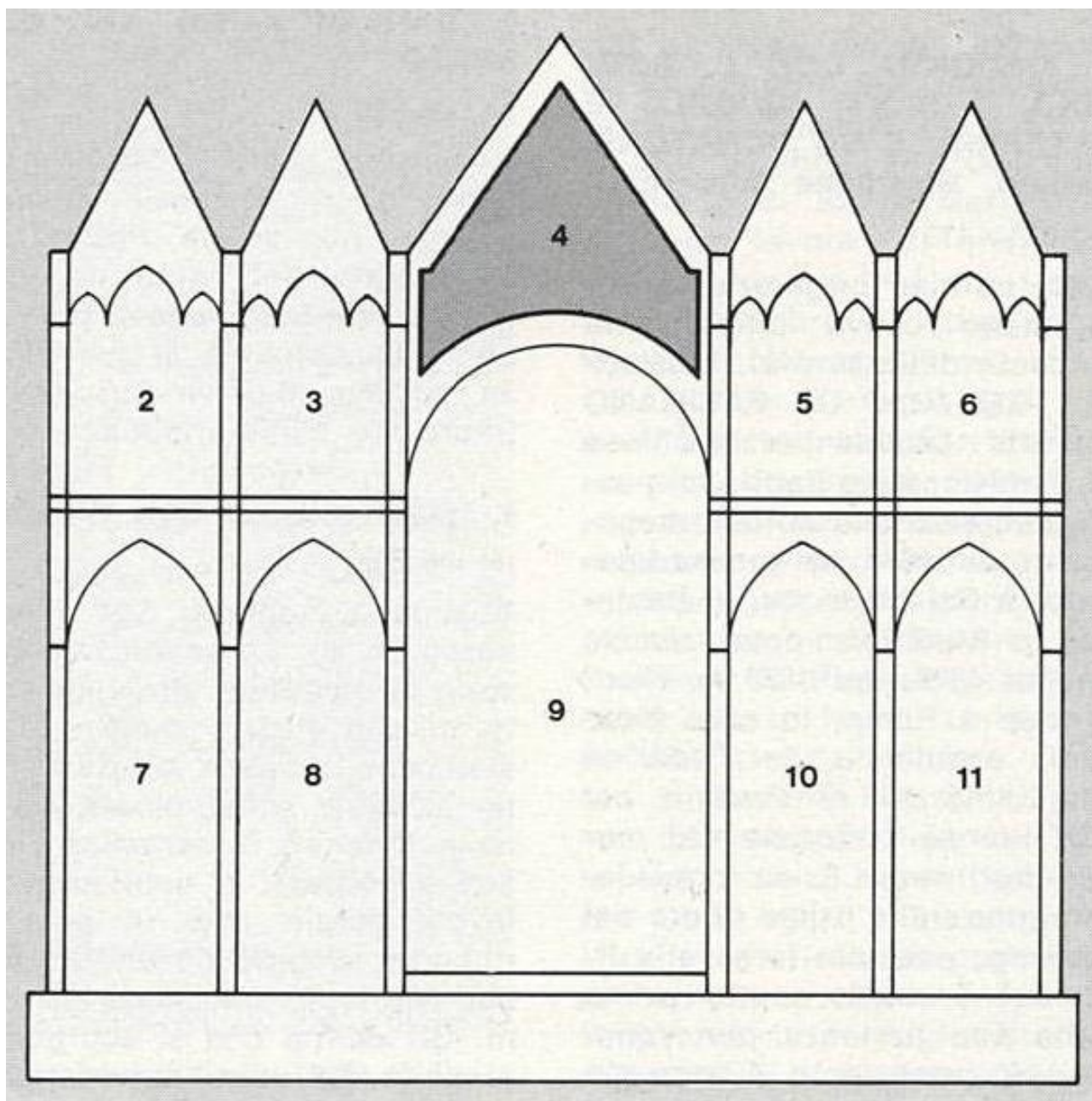


Fig. 30. Scheme of the different figures.



Fig. 31. Detail of the coronation.



Fig. 32. Detail of the eight musical Angels.

7.2 A page of musical theory represented in L'arbre de Jessé

L'arbre de Jessé (Fig. 32), showing the genealogical tree of the lineage of Jesus Christ, is a more than often represented subject during the whole Middle Age. The scene, which seems to be represented in a church, due to the fact it takes place between two columns, which are usually the symbol for a sacred place, is the illustration of Isaiah's prophecy⁴⁴ saying: "A shoot will come up from the stump of Jesse⁴⁵, from his root a Branch will bear fruit. The Spirit of the Lord will rest on him – the Spirit of wisdom and of understanding, the Spirit of counsel and of might, the Spirit of knowledge and of fear of the Lord - and he will delight in the fear of the Lord."

Looking at the drawing, we can see that the first figure into the circle (central column) is Christ representing the interval of 5th and the *diurnal vision*. Above his head, the Holy Spirit is flying and producing six emanations recognizable by the other birds situated in groups of three on each side of Jesus. Three of them are the heavenly emanations and the other three are the earthly ones⁴⁶. Under Christ, sits the Virgin Mary who represents the musical interval of 4th. The last two places are occupied by the *matutinal vision*, represented by the nebel (harp), whose strings are the endless connection to God, and the *vesperal vision* at last, represented by an instrument whose strings need to be shortened in order to produce different sounds. Jesse is illustrated by the figure of the old man lying in bed. On the two sides of the drawings, starting from the top we see the Angels, the Prophets, the Apostles, and on the same level at the end we find the Kings and the Priests.

⁴⁴ Isaiah, verses 11:1, 3.

⁴⁵ Jesse is king David's father.

⁴⁶ It is important to notice, that the famous "*Star of David*", is formed by the union of the three earthly emanations, represented by a triangle, and the three heavenly emanations, represented by a reverse triangle.



Fig. 33. *L'arbre de Jessé*, Book of Psalms XIII century, Psautier Ingeburge 1210, Musée Condé de Chantilly.

7.3. Matthias Grünewald and the unreal Viola da Gamba

Matthias Grünewald, also known as Mathis Gothart Nithart, was a German painter born in Würzburg, Bavaria, between 1470 and 1480. He lived all his life in Germany, but very little is known about him, since he carried a withdrawn lifestyle without exposing himself to mundane environments. The subjects of his paintings are always religious, and even though he painted with all the perspective rules proper of the Renaissance, the spirit of his works is still late medieval. This trait can be seen for example through his attempt of delivering religious messages with the representation of symbols, which are present in each one of his masterpieces. The altar of Isenheim (Fig. 34), made for the Abbey of Anthonite, is one of his most famous paintings. It is divided in four main parts, representing the Annunciation to the Virgin Mary, the Nativity, the death of Christ and his Resurrection. The central part of the painting (Fig. 35), completed in 1515 and representing the Nativity, is of great interest for the musical world, since in this case, the instruments become a symbol of life path. Grünewald gave a huge contribution to the pictorial current of that time, but he only gained the fame he deserved after his death. He spent the last years of his life in poverty, living of simple and humble jobs and he died of plague in Halle, in 1528.

The central panel of the altar is sharply divided in two sets. The right side, where the just born Christ and the Virgin Mary are represented stands for its light colours, while the left side, shows unusual figures and darker shades of colour. In general we could say that the dark colours predominate in all the panels of the altar apart from the one of the Nativity, which is a clear symbol of how the birth of Christ brought light, salvation and redemption to the world.

Looking in detail at the left side of the central panel (Fig. 36), we can see that here are represented a bunch of angels praying and playing for the blessed event. The majority of them are situated into a little temple delimited by columns, which are the symbol for a sacred place where humans are not allowed to stand. Just one angel is sitting alone outside the temple playing an instrument, which can be described as more than unusual. Even though the strange instrument is still recognizable as a viola da gamba, everything on the instrument, from its shape to the grip of the bow the angel is holding, are unrealistic. It would be for example impossible to play on the middle of the neck, where no harmonic sounds are produced, and even more difficult would be to play with such a low bridge. Behind this angel of gorgeous beauty, we can see another angel in a red dress playing, on the contrary, a normal instrument in a quite commonly and correct way. Beside him, another angel with a dark plumage, and which does not look very attractive, is playing in a more or less normal way.

According to the theories of Luc Breton, what the three angels are symbolizing is an allegorical representation of the *seduction*, which all humans on earth are subjected to. This topic was very common in the late Middle Age, and Grünewald seems to feel the need to revisit it in a more modern way. The red dressed angel describes the *right path*. The common look of the angel is not trying to seduce the external world, and it is not going to be seduced either. At the same time, his correct way of playing the instrument symbolizes the pure intent of its spirit that will lead towards a good and honest life. The dark angel, playing in a more or less correct way, symbolizes the contact there is sometimes in life with negative energies or seductive things that distract the human being from his devotion to God. Even though this may sometimes occur, there is always the possibility to get back to a proper style of life. Proof for that is the fact the dark angel still sits on the sacred altar. The last angel, who is able to do impossible things and who is the most beautiful of the three, symbolizes the *seduction*. Sitting outside of the altar he is deliberately seducing the external world, and the birth of Christ represents now a danger for him. To this purpose, it is interesting to notice how the Virgin Mary is completely immune to the charm of this angel, since her newborn baby takes her full attention and love.

As previously mentioned, light and bright colours characterize the right side of the central panel. This one is also the only panel of the altar where we can clearly see a landscape. Behind the Virgin we can in fact admire the mountains and a little wood. In the sky, we distinguish two small angels flying, one with blue robes and the other one dressed in red, while the light of God descends on the earth for blessing the Virgin and the newborn Christ. The only object connecting the right side of the panel with the left one is a wooden tub. This object of apparent everyday use could symbolize a baptismal font.

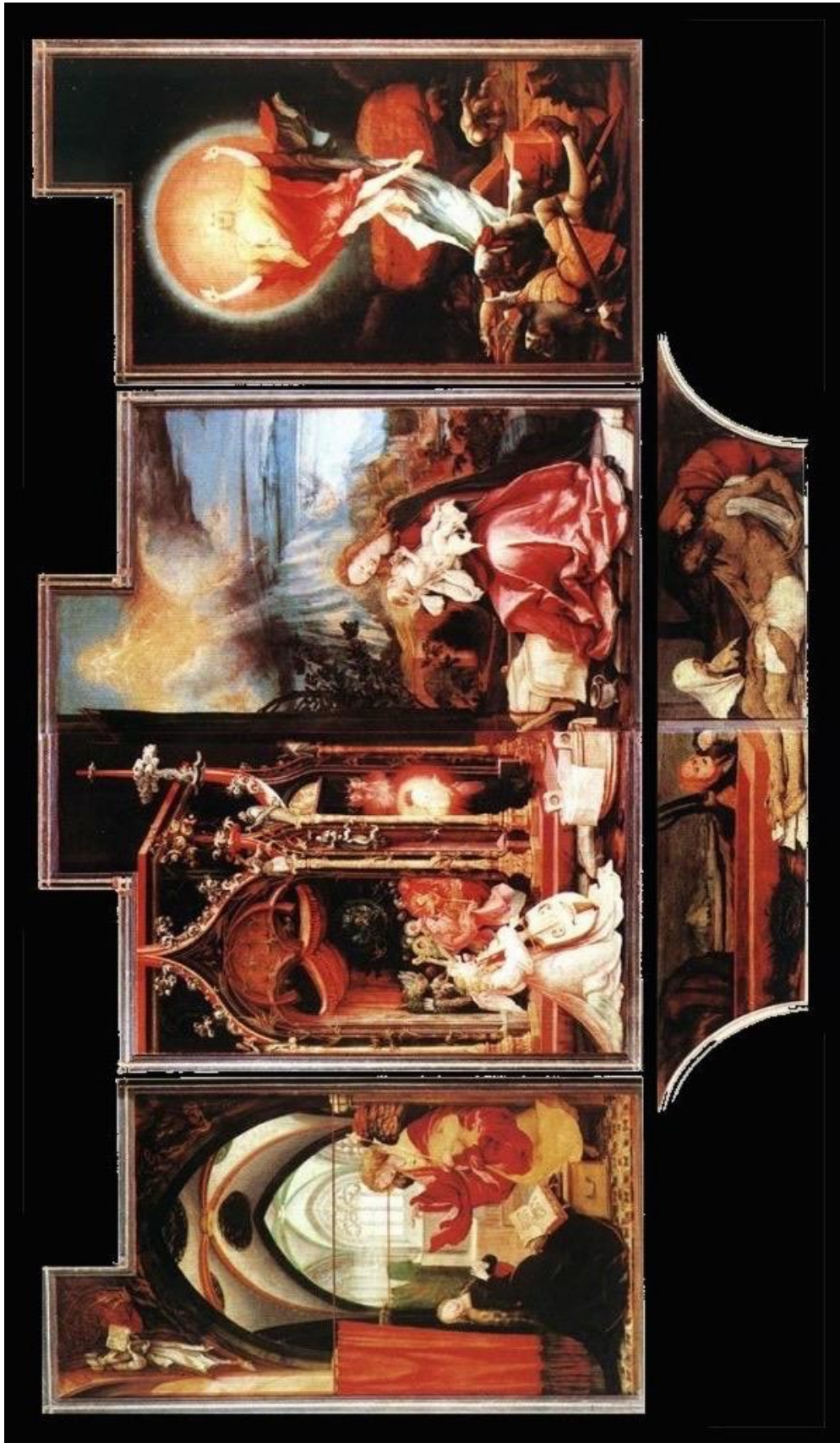


Fig. 34. Matthias Grünewald, *Altar of Isenheim*, oil and tempera on panel, Musée d'Unterlinden, France.

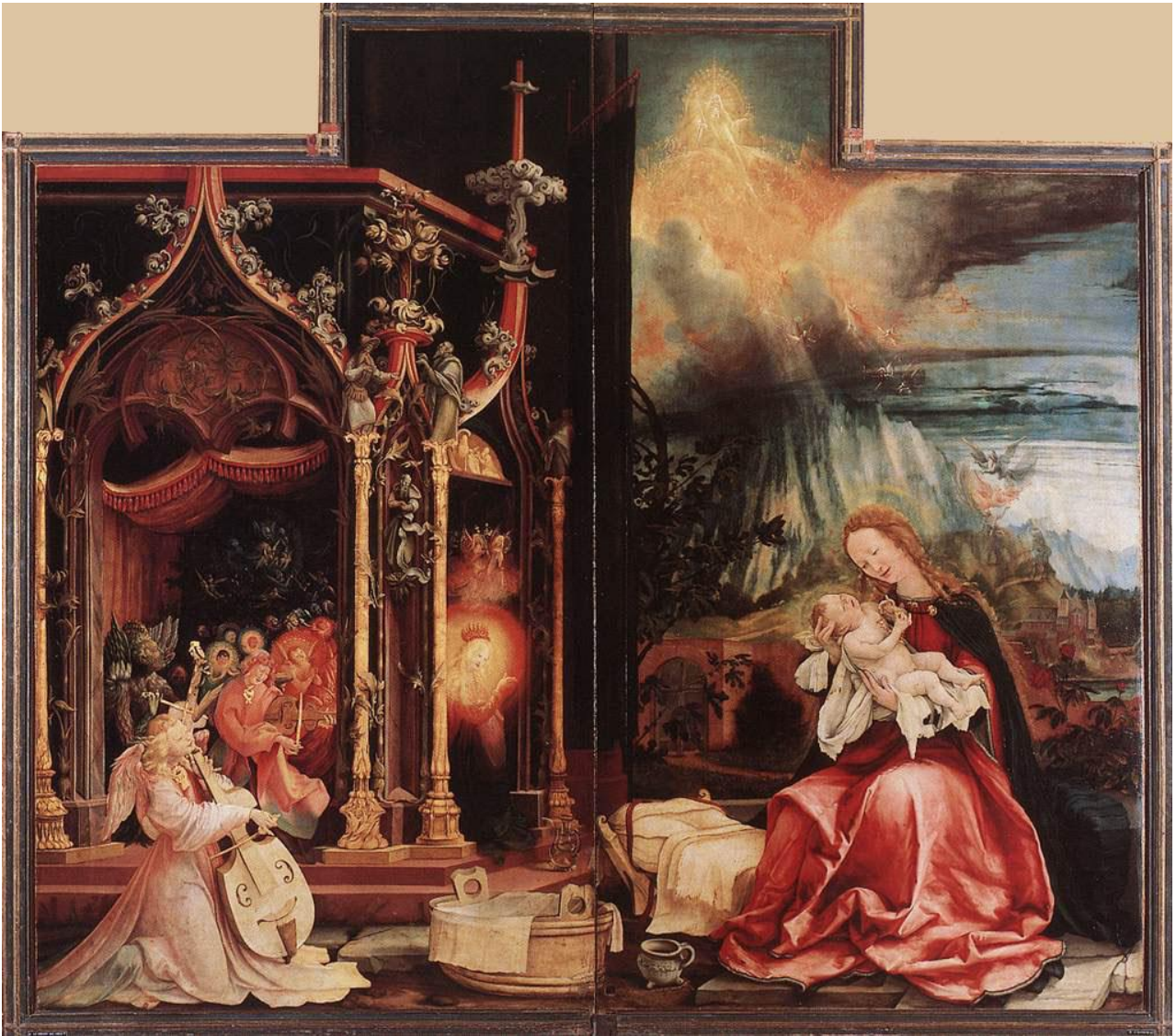


Fig. 35. Central panel of the altar of Isenheim.



Fig. 36. Detail of the left side of the central panel.

7.4 Bosch and the Musical Hell

Hieronymus Bosch⁴⁷, whose real name was Jeroen Anthoniszoon van Aken, was born around 1453 in Hertogenbosch⁴⁸, in southern Netherlands, and become already very young a famous and undisputed artist. Spirituality and religion had an important role in his life and he openly accused through his drawings those ministers of the church who were not living according to the Christian principles of poverty and charity. Some of his paintings, considered offensive, were for this reason unfortunately destroyed. The huge amount of symbols Hieronymus Bosch uses in his works, coming from disparate and old traditions, religions, and different philosophical currents⁴⁹, make seem his pictorial style aiming to the past, although his paintings are unique and innovative in their genre. After a life that could be described as quite and wealthy, Bosch died in Hertogenbosch on the 9th of August 1516.

The famous painting *The Garden of Earthly Delights* (Fig. 37), divided in three plates called *The Earthly Paradise*, *The Garden of Delights* and *The Musical Hell*, hides several interesting theological, philosophical and musical allegories. When the two side wings are closed, the painting surprises the observer with a representation of the Genesis (Fig. 38), where the Earth is represented in an early stage of the Creation⁵⁰. When the wings are open, we see at first the perfection of the *Earthly Paradise*, where a rich and flourishing vegetation and every sort of animal, including a unicorn, surround Adam and Eve, standing at the presence of God. Through this peaceful and quite scene, Bosch perfectly represents the paradise. After this panel we can admire the evolution of humanity in the *Garden of Delights*. In this plate, the figures seem to act very freely and without any inhibition. Like Grünewald, Bosch represented the seduction exerted on man by the earthly pleasures and the danger they may cause. Even if the scene is painted with the same colours used for the *Earthly Paradise* and even if the landscape is not changing much, the main energy this panel emanates is of untidiness and confusion. In the third and last panel are represented the chaos, misery and tortures

⁴⁷ He personally picked this pseudonym, which probably comes from a shortened form of his hometown's name, Hertogenbosch.

⁴⁸ Literally *Bois le Duc*.

⁴⁹ Especially when coming upon the subject of demons, which Bosch so often represents, we discover symbols related to different cultures. Some of his demons appear with the resemblance of Egyptian monsters or scary creatures related to the European Gothic, but there are also references to Buddhism and to the Tibetan culture.

⁵⁰ Since only plants are represented, we assume Bosch painted the third day of the Genesis. Also the fact the colors he used are so dark, may be a prove that the tangible light was not created yet.

proper of the hell. Here, the colours change from the bright ones of the first two panels into much darker shades. For painting the *Musical Hell* Bosch uses in fact a predominance of black, grey and brown. The landscape has barely any vegetation and a war seems to take place on the back of the scene. It is in this plate we find the most interesting musical allegories.

As previously mentioned, we know that the musical instruments follow a precise hierarchical order, which considers instruments like the horn, the trumpet, the harp and the lute as divine, but Bosch represents them with a particular order, prioritizing and giving the center of the scene to instruments like the bagpipe, the hurdy-gurdy, an unclassified wind instrument and a drum, considered folk instruments for antonomasia and never used for playing religious music. The harp and the lute are situated at the edge of the scene and they even seem to be instruments of torture. Through this representation Bosch symbolizes the reverse order of things that characterizes hell. Both the men, hanging respectively on the harp and on the lute, are the representation of Christ on the cross. This detail reinforces and confirms even more the previously discussed theory, regarding the association the Christian world made between the stringed instrument and Christ on the cross. Furthermore, the overlapping of the harp and the lute is an allegory representation of the theorbo, considered a hybrid instrument due to fact it shares both the symbolism of the harp and the lute, as discussed in chapter III. One last detail in this painting regarding the musical world is found right under the “theorbo”. A musical book is painted on this spot, but it does not seem to be taken in consideration by the group of people and the demon, which are instead reading and perhaps singing a melody written on the bottom of an unlucky fellow. The music score is very unusual, since it has four lines instead of five. All in this painting shows that music, which has always been considered the finest among the arts, is denigrated and deprived of its original meaning.

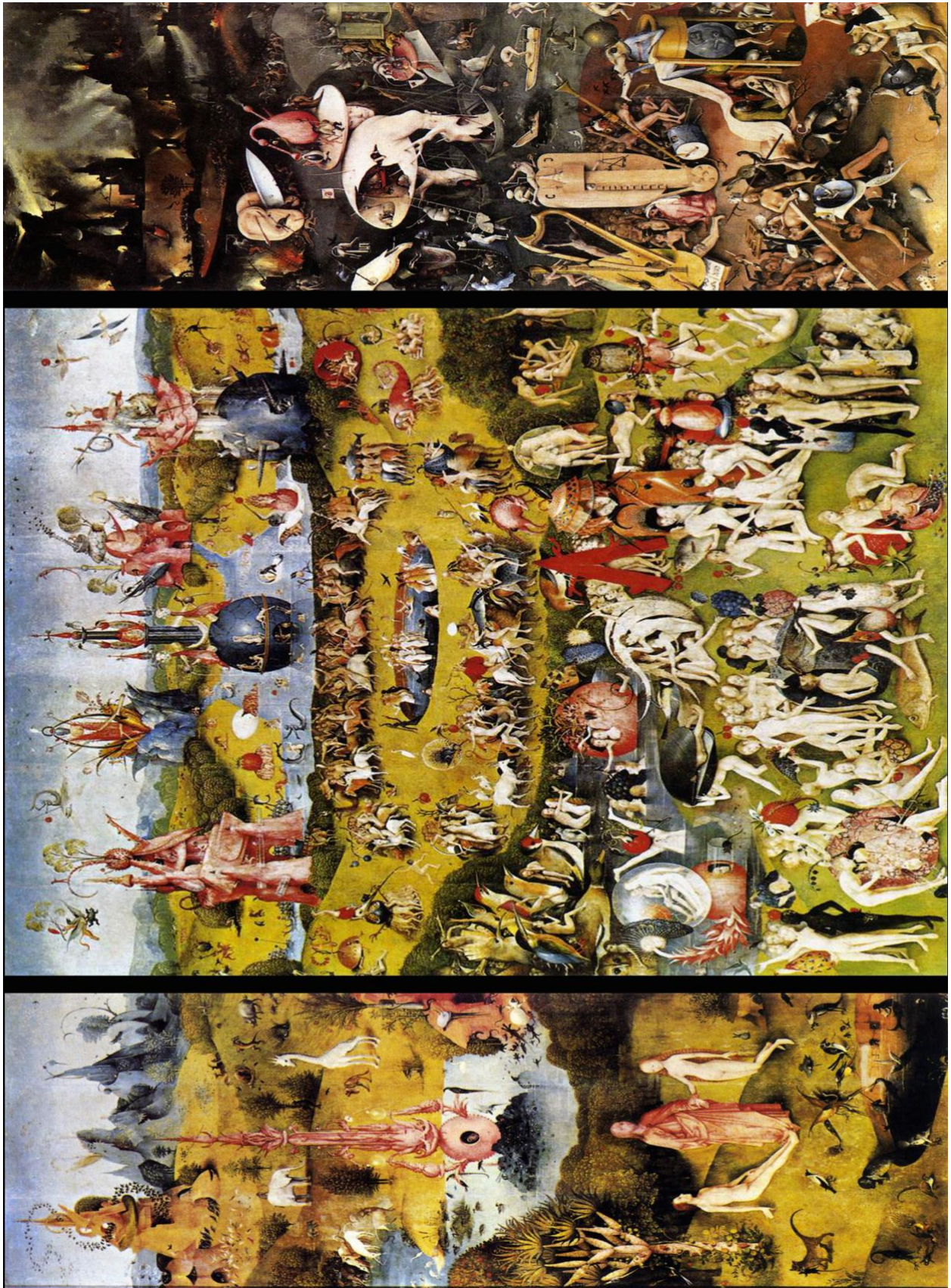


Fig. 37. Hieronymus Bosch, *The Garden of Earthly Delights*, oil on oak panels, cm 220 x 389, Museo del Prado, Madrid.

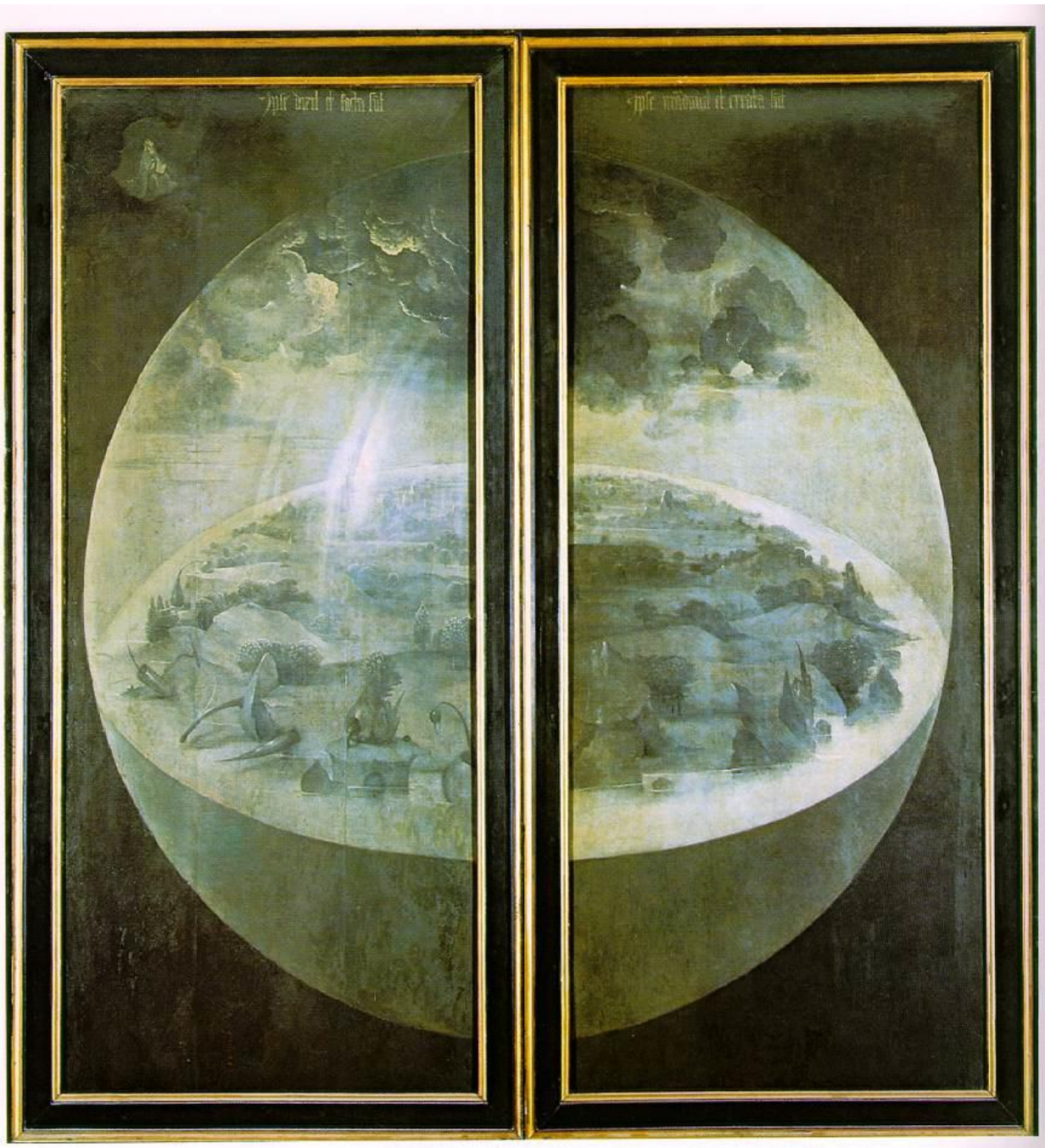


Fig. 38. *The Garden of Earthly Delights. Side wings closed.*

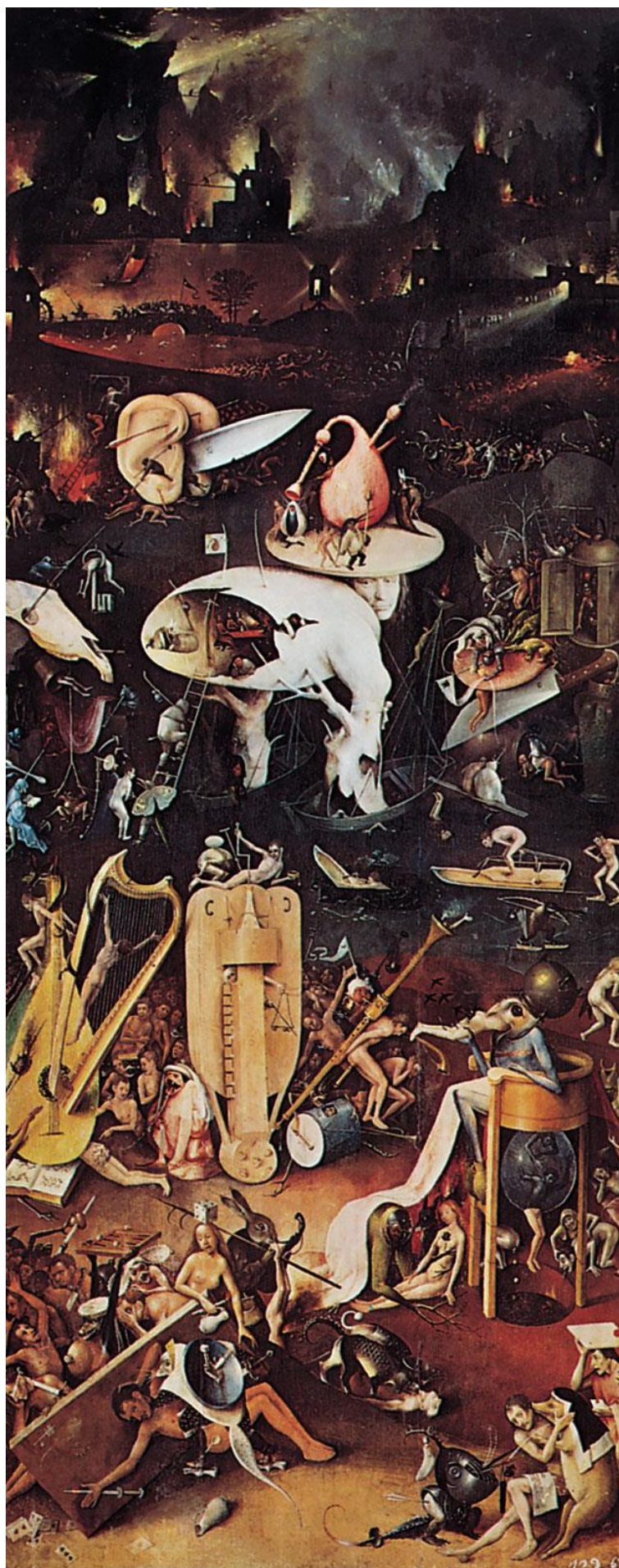


Fig. 39. *Detail of the third panel in which is represented Hell.*



Fig. 40. Detail of the score.



Fig. 41. Detail of the score.

VIII. CONCLUSION

8.1 Personal considerations

What it is clear to me, after having been written this essay, is that all forms of art, from music to architecture, from pictorial art to sculpture, from mathematic to geometry, are made of the same essence, follow the same pattern and lead towards the same purpose. This sacred purpose which human beings aim about (sometimes without knowing it), is to make a reverse movement back to source, whatever they may believe it to be, in order to find unity. I have also discovered that all forms of art basically rotate around two things: circle (number three, sky), and square (number four, earth), and that through them anything is possible. The essence of the arts is to find a combination between these two elements.

The importance of the numbers three and four, made me also realize that it is not by chance the liberal arts are divided in *trivium* and *quadrivium*. The concept of trivium and quadrivium is a fundamental one, whose origins are found in the Greek philosophy and which divides the subjects of studies, called *liberal arts*, in two groups. In the trivium⁵¹ are the arts of *grammar*, *logic* and *rhetoric*, while in the quadrivium⁵² we find the arts of *arithmetic*, *geometry*, *astronomy* and *music*. These seven arts became the basis of studies during the Middle Age and fundamental components of the later western education. The concepts about geometry Plato expresses in the *Republic* “What geometry rightly treats is the knowledge to the Eternal”, and “God is always geometrizing”, have to be applied to all the seven arts.

After having read and understood how people in the past put a sacred purpose in all kinds of activities they were dedicated to in life, I became aware of another thing. It is the concept of no separation between *arts* and *crafts*. I realize now how much effort there was behind the process of building an instrument and the perfection an instrument maker was aiming to. It is the same kind of effort architects put in building a church, or musicians put in performing music. Regarding this topic, Gean Gerson, on his essay *On Mystical Theology: The Second and Practical Treatise* explains a beautiful concept I wish to report here: “...on the road of the divine calling, one person walks one way, and another, another way, according to the types of their graces, functions and activities.” At this point he reports few verses from the Bible⁵³: “To one is given through the Spirit the utterance of wisdom,

⁵¹ From the Latin *tri - via* (three-way).

⁵² From the Latin *quadri - via* (four-way).

⁵³ Corinthians 12:8, 11.

to another that of knowledge, to another faith, to another the grace of virtues, to another prophecy, to another the discernment of spirits, to another the gift of languages, to another the interpretation of languages. One and the Spirit is behind all of these activities”, which he explains like this: “The assignment of causes in a particular situation can vary, and frequently it is difficult to judge concerning each one. You are chosen for this activity in the mystical body, you for that one, in trying to fulfil your call to salvation.” His thought is in my opinion of great relief, since it opens to the opportunity of a constant process of learning that starts from the exact point of understanding a person holds, and always leads towards expansion.

At this point, recalling to the initiation of the horn players, we could say that the whole initiation process, which started from their will and dedication, was in fact the beginning of an expansion that was going beyond normal comprehension and that people without that initiation would have not reached. According to the theory that each form of art was sacred (and with *art* I include also what for the sake of comprehension I now define *realm*), it is logic to assume that almost all activities, when made at a high level, were subjected to initiation. Taking a step back, this assumption makes me realize that *life* is an initiation in and on itself.

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ZUSAMMENFASSUNG

Die aufgeklärte Denkweise begann Ende des 18. Jahrhunderts mit der französischen Revolution. Es war der Anfang einer Periode, die viele für den Beginn einer neuen Ära halten, die auf die Konzepte (Theorien) des Rationalismus und des Egalitarianismus basiert, in denen die Wissenschaft als die einzige Wahrheit erachtet wird und der politische und kulturelle Gedanke radikal geändert wurde. Diese Ära, die für den Anfang des gegenwärtigen Zeitalters - das die Gesellschaft direkt in die industrielle Revolution führte - gehalten wird, markierte das Ende einer sehr langen Periode von Traditionen, Weisheit und Spiritualität.

Es ist genau diese Periode des grossen Wissens und der Traditionen, die nicht präzise datiert werden, aber ungefähr mit der Zeit von der griechischen Antike bis Mitte des 18. Jahrhunderts umrissen werden kann, die unsere ganze Aufmerksamkeit erfordert. Zweck dieser Arbeit ist, durch historische Traktate und durch Bildquellen die Konzepte, die die Alten über Musik, Musikinstrumente und die Rolle der Menschen im musikalischen Universum hatten, zu analysieren.

Das Wort "Universum", das ein Schlüsselwort in diesem Essay ist, wird uns zu der Entdeckung führen, dass das Musikinstrument in seiner Totalität eine Repräsentation des Universum selbst ist. Das Öffnen unseres Geistes für die Welt der Symbole, die in den Alten Zeiten für das beste Mittel spirituelle, esoterische, und religiöse Konzepte zu Unterrichten, erachtet wurde, wird unser Verständnis erweitern. So können wir sehen, wie jeder Teil des Musikinstruments eine spezifische Rolle und symbolische Funktion hat, die fernab von der praktischen Funktion liegt, wie wir sie bezeichnen, wenn wir diesen Tatbestand von der modernen Sichtweise aus betrachten würden.

Die bildende Kunst, die, wie wir sehen werden, Hand in Hand geht mit Musik, und dem selben Zweck dient, wird uns helfen, eine visuelle Bestätigung unserer Theorien durch wunderschöne Gemälde zu finden. Ausserdem wird es möglich sein, zu sehen, dass es eine starke spirituelle Weisheit, sowie Wissen und Tradition gibt, die nicht nur alle Formen der Kunst untereinander, sondern auch alle Aspekte des Lebens mit dem Sakralen verbindet.