

# Robert Fludd and *De templo musicae* (1618)

By PETER HAUGE

Robert Fludd (1574-1637) is well known for his compendious (yet unfinished) and intriguing work, *Utriusque cosmi majoris scilicet et minoris metaphysica, physica, atque technica historia* (*Metaphysical, Physical and Technical History of both Major and Minor Worlds*). The two volumes were published abroad by the famous Johann-Theodor de Bry press, 1617-1626, and for which the author received “16 coppies [...] with 40 pounds in Gold, as an unexpected gratuitie”.<sup>1</sup> Fludd’s work has been discussed and given adequate attention among historians of science and historians of philosophy.<sup>2</sup> Though he wrote extensively on music only few scholars have studied this subject, and then only the music philosophy which, nevertheless, was of paramount importance in Fludd’s setting of the universe.<sup>3</sup> However, one of the subjects of the second tractate, *De naturae simia* (*The Abe of Nature*, 1618) of volume one (cf. fig. 1), is music theory, practice and organology, known as *De templo musicae* (*On the Temple of Music*).

Whereas Jocelyn Godwin has studied the chapters dealing with organology,<sup>4</sup> an in-depth study of the music theory and practice has so far been given scant attention by present-day scholars.<sup>5</sup> This obvious lack of interest in Fludd’s musical work today could be due to the harsh statements made by the famous eighteenth-century music historian Sir John Hawkins:

<sup>1</sup> Robert Fludd, *Doctor Fludds Answer unto M. Foster, or the squeezing of Parson Forsters Sponge*, London 1631, pp. 21-22. The first volume of *Utriusque cosmi majoris scilicet et minoris metaphysica, physica, atque technica historia* were published in Oppenheim in 1617-18, the remaining part of the work appeared in Frankfurt in 1619-26.

<sup>2</sup> Cf. Allen G. Debus, *Robert Fludd and His Philosophicall Key*, New York 1979, pp. 1-57; William H. Huffman, *Robert Fludd and the End of the Renaissance*, London 1988; but also Jocelyn Godwin, *Robert Fludd: Hermetic Philosopher and Surveyor of Two Worlds*, London 1979.

<sup>3</sup> Fludd’s music philosophy appears in *Utriusque cosmi [...] historia*, vol. 1, tract. I, “De musica mundana”, pp. 78-106. For modern discussions, see Luis Robledo, *Robert Fludd: Escritos sobre musica*, Madrid 1979; Peter J. Ammann, “The Musical Theory and Philosophy of Robert Fludd”, *Journal of the Warburg and Courtauld Institutes* 30 (1967) pp. 198-227; Godwin (1979) pp. 4-49; and Michael Fend, “Seventeenth-Century Criticisms of the Use of Analogy and Symbolism in Music Theory”, *Miscellanea musicologica* 17 (1990) pp. 54-64.

<sup>4</sup> Jocelyn Godwin, “Instruments in Robert Fludd’s ‘Utriusque cosmi [...] historia’”, *Galpin Society Journal* 26 (1973) pp. 2-14; Jocelyn Godwin, “Robert Fludd on the Lute and Pandora”, *Lute Society Journal* 15 (1973) pp. 11-19.

<sup>5</sup> David T. Barton, *Robert Fludd’s ‘Temple of Music’* (unpublished MA thesis, University of Oregon 1978) is, however, an excellent and detailed study of Fludd’s *De templo musicae*.

## FIG. 1

Outline of the *Utriusque cosmi [...] historia*  
(Oppenheim & Frankfurt 1617-26), 2 vols.

Vol. 1: *De macrocosmi historia*:

Tract. I, *De metaphysico macrocosmi et creaturarum illius ortu*  
(1617), in seven books (pp. 17-206)

Tract. II, *De naturae simia*  
(1618), in eleven parts (pp. 5-783):

Pars i, *De arithmetica universali*, in eleven books (pp. 5-158)

Pars ii, *De templo musicae*, in seven books (pp. 159-259):

lib. 1, *De musicae subjecto* (pp. 164-69)

lib. 2, *De systemate musico* (pp. 170-81)

lib. 3, *De consonantiis musicis* (pp. 182-89)

lib. 4, *De temporibus musicis* (pp. 190-208)

lib. 5, *De symphonicae melod. partibus* (pp. 209-25)

lib. 6, *De instrumentis musicis vulgariter notis* (pp. 226-44)

lib. 7, *De instrumento nostro magno* (pp. 245-59)

Pars iii, *De geometria*, in three books (pp. 261-92)

Pars iv, *De optica scientia*, in four books (pp. 293-316)

Pars v, *De arte pictoria*, in three books (pp. 317-41)

Pars vi, *De arte militari*, in four books (pp. 343-432)

Pars vii, *De motu*, in four books (pp. 433-501)

Pars viii, *De tempore*, in three books (pp. 502-27)

Pars ix, *De cosmographia*, in three books (pp. 529-57)

Pars x, *De astrologia*, in seven books (pp. 558-714)

Pars xi, *De geomantia*, in four books (pp. 715-83)

Vol. 2: *De supernaturali [...] microcosmi historia* (1619-26) [unfinished]

The rest of this tract, excepting those whimsical devices, such as musical dials, musical windows, musical colonnades, and other extravagances with which the author has thought proper to decorate his work, contains very little that deserves notice. Upon the whole Fludd appears to have been a man of a disordered imagination, an enthusiast in theology and philosophy.<sup>6</sup>

Contrary to Fludd's sections on music philosophy, Hawkins does to some extent acknowledge the relevance of the theoretical and practical sections on music (i.e. the "whimsical devices"). However, when Fludd's writings on music theory and practice are considered in the context of his own time, they reveal an interesting

<sup>6</sup> John Hawkins, *A General History of the Science and Practice of Music*, London 1778/repr. 1963, p. 623.

and different picture of the musical subjects: *De templo musicae* was indeed not “completely antiquated in comparison to other, similar treatises of the period”<sup>7</sup> and it becomes obvious that the argument that he “preferred to adhere to unproved theories rather than accept the evidence of his senses”<sup>8</sup> is rather simplistic.

### Biography

Robert Fludd, born in 1574, studied at St. John’s College, Oxford, where he obtained a BA in 1596 and an MA in 1598.<sup>9</sup> After his graduation he travelled on the Continent through France visiting Paris, Lyon, Avignon, and Marseilles; through Italy where he stayed in Padua and Rome and seems to have passed through Livorno and Venice; and through Germany staying at Augsburg. Fludd also mentions that he went to Spain but gives no real clue as to where in Spain.<sup>10</sup> When Fludd in late 1604 returned to England, he began to study medicine at Christ Church College, Oxford, and after one year he was awarded the MB and MD degrees.

Fludd wrote treatises on medicine (e.g. *Medicina Catholica*, Frankfurt 1629, 1631 (2 vols.)), religion and philosophy (e.g. *Tractatus Theologo-Philosophicus*, Oppenheim 1617), and alchemy (e.g. *Truth’s Golden Harrow*, MS c. 1623). Indeed, in several of his writings – the *Apologia Compendiaria* (Leiden 1616), for example – it is clear that he was drawn to the ideas of the Rosicrucians whom he defended against their opponents. Because of the tremendous diversity of subjects found in the *Utriusque cosmi [...] historia* (philosophy, medicine, alchemy, geometry, the art of memory, military arts, astrology, music and perspective), he was accused of having received help from the Rosicrucians in writing his work.<sup>11</sup> This enormously wide-ranging, uncompleted work, amounting to nearly a thousand pages, can be interpreted as a late Renaissance synthesis of Neoplatonism, Hermeticism and theology – that is, the whole spectrum of knowledge – arranged in a universe of correspondences with the sole purpose of demonstrating the truth of Christianity. In this hierarchical universe of correspondences where man was interpreted as a microcosm of the universe (macrocosm), music – as harmony in its overall sense – played an essential role in keeping the whole system together. Thus Fludd argues in his defence of the Rosicrucians from 1617:

<sup>7</sup> As stated by Ammann (1967) p. 206, partly quoting from Friedrich Blume, “Fludd”, *Die Musik in Geschichte und Gegenwart* 4 (1955) col. 441.

<sup>8</sup> Lillian M. Ruff, *The Seventeenth-Century English Music Theorists* (unpublished Ph.D. thesis, University of Nottingham 1961-62), p. 16. Cf. Andrew Ashbee, “Fludd, Robert”, *The New Grove Dictionary of Music and Musicians* 6 (1980) p. 663: “In obscure language and with fantastic diagrams Fludd postulated that the universe was a musical instrument set playing by the soul or spirit of the world [...]. Fludd’s abstruse fantasies leave most agreeing with Hawkins that he was ‘a man of a disordered imagination’”.

<sup>9</sup> Joseph Foster (ed.), *Alumni Oxonienses: The Members of the University of Oxford 1500-1714*, London 1891, vol. 2, p. 512.

<sup>10</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 3.

<sup>11</sup> Fludd, *A Philosophical Key* (c. 1619), GB-Ctc, Western MS 1150, fol. 15<sup>v</sup> (for the abbreviations of library sigla, see *The New Grove Dictionary of Music and Musicians* 1 (1980) p. xxiii); cf. Huffman (1988) p. 37.

Therefore happy will be he who is well versed in such mysteries of occult music [i.e. the harmony of macrocosm and microcosm] since without a knowledge of these things it is impossible for anyone to know himself. And without this he will be unable to reach a perfect knowledge of God, for he who understands himself truly and intrinsically perceives in himself the idea of the divine Trinity.<sup>12</sup>

Hence all parts of the universe are present in man, and by studying and understanding man one would eventually be able to gain a deep knowledge of the universe, man himself, and ultimately the Creator.

The publication of *Utriusque cosmi [...] historia* led Fludd into numerous controversies with esteemed scholars. Among the most renowned and persistent were Marin Mersenne, who wrote a compendium of all musical subjects, *Harmonie Universelle* (Paris 1636-37), and Johannes Kepler who expounds on the philosophy and the theory of music in *Harmonices Mundi* (Linz 1619), including a critical appendix on Fludd's music philosophy.<sup>13</sup> These controversies, which continued throughout Fludd's life and even after his death in 1637, clearly imply how serious and important the work was considered by other scholars.<sup>14</sup> In spite of the differences between Fludd and his fellow scholars, they seem at least to have recognised his enormously wide range of knowledge:

Their only spite unto me is, because they discern my works to be well esteemed abroad in the world, my self being (as exorbitant unto their Church) esteemed by them as an Heretic. All that the greatest adversary I have, even Marinus Mersennus himself aimeth at, is to have me change my Religion [i.e. to convert from the Church of England to Catholicism], & to gain me to their side, & for that intent he promisth me, if I will leave my Heresy (as he termeth it), many rewards & courtesies.<sup>15</sup>

It must be remembered that it is not Fludd's *De templo musicae* in particular that his opponents, Mersenne and Kepler, attack – it is his overall philosophy, interpretation and use of theology and to a lesser extent his philosophy of music, *musica mundana*.

Together with his friend, the lawyer and antiquary, John Selden who read the manuscript of the *Utriusque cosmi [...] historia*, Fludd belonged to the intellectual circle around Sir Robert Cotton and had access to Cotton's renowned library with its un-rivalled collection of books and manuscripts.<sup>16</sup> During the 1620s it

<sup>12</sup> Fludd, *Tractatus Apologeticus Integritatem Societatis de Rosea Cruce defendens*, Leiden 1617, p. III; translation by Debus (1979) p. 9.

<sup>13</sup> Johannes Kepler, *Harmonices Mundi*, Linz 1619, lib. 3, caps. 1-16.

<sup>14</sup> Cf. "Letters between John Pell, Theodore Haak and Marin Mersenne", Gb-Lbl, MS Add. 4279.

<sup>15</sup> Fludd, *Doctor Fludds Answer [...]* (1631) p. 24.

<sup>16</sup> On the history of the library, see especially Francis Wormeald & Cyril E. Wright (eds.), "The Elizabethan Society of Antiquaries and the Formation of the Cottonian Library", *The English Library before 1700*, London 1958, pp. 176-212. Fludd dedicated *KAΘOAIKON* (*Katolikon*, Frankfurt 1631) to Cotton, addressing him as his singular friend.

began to be regarded by the government as a source of danger. After his fall in 1621 Francis Bacon was forbidden access to it for the fear of what information he might find there; and in 1626 Buckingham threatened to close it and even Sir Cotton's access to his own library was heavily restricted. From 1629 until 1633 it was closed. On a few occasions, Fludd's name appears in some lists together with names of people borrowing from the library.<sup>17</sup> The lists do not, unfortunately, indicate whether Fludd read any of the music manuscripts of Cotton's library.

### The Date of *De templo musicae*

Though the first volume of the *Utriusque cosmi [...] historia* was published in 1617-18, Fludd claims that he had finished his work four or five years before he learned about the Rosicrucians:

My Microcosmical history as well natural as artificiall was composd by me some fower or five yeares before the renowne and fame of the Fraternity of the Rose Cross had perced my ears, as by the testimonys of my worthy friends Mr. Dr. Andrews, and that most learned Gentleman of the Inner Temple Mr. Seldein.<sup>18</sup>

Fludd's "Microcosmical history" must be the second and last volume to appear in 1619 as *De supernaturali [...] microcosmi historia*. It is certain that Fludd knew about the Rosicrucians in 1615 when he wrote on a defence for the Society which he published the following year in Leiden as *Apologia Compendiaria*. As this tract was written as a defence against Andreas Libavius' attack on the Rosicrucians,<sup>19</sup> it seems reasonable to assume that the first time Fludd heard about them was through their first manifesto, *Fama fraternitatis* (Cassel 1614). Consequently, Fludd's *Utriusque cosmi [...] historia* must have been completed around 1610. It is also possible to determine when Fludd was working on *De templo musicae*, for in the section on astrology, Fludd incidentally mentions:

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|---|---|
| <p>For after that I had received the BA degree at Oxford, I adhered in the depth of my heart to the mathematical science [and] amongst its other arts I also strived to examine profoundly the science of astrology with all strength, and I put no small amount of work on horoscopes and on the investigation</p> | <p>Posteaquam enim Oxonii Baccalareatus gradum assumpseram, quo tempore in ipsa medulla studii Mathematici haerebam inter caeteras artes hujus quoque scientiae Astrologiae profunditatem scrutari omnibus viribus annitebar, operamque haud exiguam in Geneseos &amp; furti investigatione</p> |
|---|---|

<sup>17</sup> GB-Lbl, Harley 6018, fol. 157<sup>r</sup>, with a list from the 1620s mentions "Doctor Flud"; fol. 180<sup>r</sup> (books borrowed on 15 January 1630) notes: "To Doctor Flud Phisiton: History of Asia and Tartarye in french with Pictures a faire booke in folio. old bound. A Booke of Arabian Astrology. Daniel de Morley, ould bound?"

<sup>18</sup> Fludd, *A Philosophicall Key* (c. 1619) fol. 15<sup>v</sup>.

<sup>19</sup> Andreas Libavius, *Analysis confessionis fraternitatis de Rosia Cruce*, Frankfurt 1615.

of theft [...]. And not long time after, it happened, while I was anxiously occupied with my studies on the treatise on Music and I hardly left my study for a whole week, that one Thursday a quite noble, young man came to visit me by chance.

ponebam [...]. Accidebat etiam non multò post, dum in studiis meis circa tractatum de Musica ita anxiè occupabar, ut vix per integram septimanam è cubiculo meo egrederer, ut die quodam Jovis accederet ad me visendi causa juvenis, quidam satis nobilis.<sup>20</sup>

The treatise on music, which certainly must be *De templo musicae*, can therefore be dated to have been written between 1596, when Fludd received his BA, and 1610. It cannot be completely excluded that he wrote parts of it during his six years of travelling or even after he returned to England around 1604. There is some indication that Fludd may have been working on, or using, at least part of *De templo musicae* during the winter 1601-2 when he most likely visited the Vicomte de Cadenet Marquis d'Oraison in Provence.<sup>21</sup>

### Contents and Description

The treatise on music opens with a very detailed engraving (Ill. 1) which often has been reproduced in modern studies on Fludd, though with only a superficial explanation of its details.<sup>22</sup> The title of the illustration is *De templo musicae* which is then discussed in considerable detail. The temple can be divided into three distinct sections:

1. On the base of the column furthest to the left Fludd has depicted the lute, the king of instruments.<sup>23</sup> The rest of the column can be divided into two sections each presided by a Greek/Roman mythological god: above the monochord (cf. lib. 3) with its four octaves (*F-g'''*), Apollo sits and plays on the divine lyre, presumably representing song or melody. Thus Fludd has created a correspondence between the human, worldly instrument, and the lyre of Apollo, the sun and the leader of the Muses on Mount Parnassus. In other sections of *Utriusque cosmi [...] historia* the monochord symbolises the chain of being. The second section of the column is presided by the guardian of time: Saturn together with his at-

<sup>20</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 701-2 (all translations are by the author unless indicated otherwise).

<sup>21</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 3. This is François Vicomte de Cadenet Marquis d'Oraison or his son André, who became Chevalier du Saint-Esprit in 1619; cf. François-Alexandre Aubert de La Chesnaye-De Bois (ed.), *Dictionnaire de la Noblesse*, Paris 1864, vol. 4, p. 554 & vol. 15, pp. 179-84. See also C.H. Josten, "Robert Fludd's Theory of Geomancy and his Experiences in Avignon in the Winter 1601-02", *Journal of the Warburg and Courtauld Institutes* 27 (1964) pp. 327-35.

<sup>22</sup> Godwin (1979) pp. 78-79; Frances A. Yates, *Theatre of the World*, London 1969/repr. 1987, pp. 53-57; Ammann (1967) pp. 205-6; and Jacques Chailley, "Le Temple de la musique de Robert Fludd (1617)", *Education musicale, France* 40 (1985) pp. 7-8; the most comprehensive discussion so far is Barton (1978).

<sup>23</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 226.

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tributes, the hour-glass and scythe. He is, naturally, placed on top of a musical dial which symbolises time and measurement of time in music (cf. lib. 4). Hence Fludd has shown the correspondence between the worldly music – consisting of notes, intervals (monochord), and rhythm (the dial) – and the heavenly sources of inspiration, Apollo and Saturn.

2. The middle tower deals with the creation of music. In the basement Pythagoras listens to the blacksmiths, Tubal and his sons, hammering, and orders them to weigh the hammers. This ultimately leads him to discover the three musical proportions, the fourth, fifth and octave.<sup>24</sup> Above there are two triangles, one symbolising the rhythmical proportions (Saturn) and the other the intervals (Apollo); these two triangles are practical devices to be used when composing (cf. lib. 5). The process of composing is depicted with Thalia, the muse of comedy and pastoral poetry,<sup>25</sup> pointing her baton at a small musical composition (cf. lib. 5, cap. 10). When Thalia's composition is performed, the music penetrates the two entrances above her, symbolising the ears, "the organs of hearing, without which the emitted sound is not perceived, nor may one enter this temple except by them" ("auditus organa, [...] sine quibus sonus editus non percipitur; nec in hoc templum fit ingressio, nisi per ipsas").<sup>26</sup> In this way Fludd has depicted the very popular concept that music could penetrate into the heart, the residence of the soul, and thus affect the listener in the purest way without first being corrupted by passing through the mind. When music is performed, it sets the air in motion, illustrated by the spiral and presumably inspired by Vitruvius (cf. lib. 2, cap. 5).<sup>27</sup>

3. The section furthest to the right deals with the performance and reading of music. The base shows the five-line staff with a bass clef and all the available note-values; above there are six columns of which five have a five-line staff with either a bass, tenor, or treble clef; between the first two columns the Gamut (*F-a''*) is depicted, and in the three following spaces between the columns the soft, natural and hard hexachords are shown. These are also symbolised by the seven organ pipes: the soft are round; the natural are round, too, but with a sharp top; and the hard are square. Again, this is also illustrated in the three towers above (cf. lib. 2). Between these, four windows are seen containing the octaves, sixths, thirds and fifths (cf. lib. 5, cap. 9).

Thus the first column explains music as *musica mundana*;<sup>28</sup> the tower in the middle is concerned with the creation of music in the physical world; and the third part of the illustration is on the practical performance of music.

<sup>24</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 162-63.

<sup>25</sup> Thalia was also the symbol of Earth, see Francesco Gaffurio, *Practica musicae*, Milan 1496, frontispiece; cf. Edgar Wind, *Pagan Mysteries in the Renaissance*, New York & London 1958/repr. 1968, pp. 265-69.

<sup>26</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 162.

<sup>27</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 168.

<sup>28</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 165.

After the introduction, which provides a brief description of the temple, follows the traditional history of music and the Boethian definitions of music, together with references to various ancient and more modern philosophers (Plato, Aristotle, Ficino, Cardanus). At the opening of the second book, Fludd explores details of music theory, giving definitions of various terms and discusses hexachordal theory, the solmisation system, and the clefs – all subjects essential for the practical musician of the Renaissance. The third book deals with the perfect and imperfect consonances and how to find them on the traditional Boethian monochord. The fourth book concerns note-values, rests, proportion signs, and ligatures. In the fifth book Fludd explains how to compose, using the triangle of consonances seen in the middle tower. He provides, furthermore, rules concerning composition, and finally he discusses the use of Thalia's composition baton. It is obvious that the main sections given the most detailed attention are books four and five; these concern the two most important aspects of music: melody/harmony and rhythm as illustrated by the two triangles in the middle tower and the symbols of Apollo and Saturn.<sup>29</sup>

The remaining part of the treatise deals with musical instruments,<sup>30</sup> particularly of the lute family, presumably because Fludd considered the lute “the king of instruments” as it corresponded to the lyre on which Apollo plays – the universal source of inspiration as depicted in the first column. Fludd also provides lessons on how to read tablature and transposition, for example, and ends the treatise with a discourse on a new mechanical instrument, “De instrumento nostro magno” (“On Our Great Instrument”), he claims to have invented.<sup>31</sup>

At first sight this temple does seem rather fantastic with all the letters, numbers, and obscure figures, diagrams and columns, reminding one very much of a rather complex emblem. However, the illustration of *De templo musicae* is most likely a mnemonic device similar to the medieval picture of the Guidonian Hand, though more complex.<sup>32</sup> It is curious to note that Fludd dedicated both the musical treatise with its complex details and the treatise on the art of memory to the same person, the Marquis d'Oraison.<sup>33</sup>

There are a few sources which could have inspired Fludd to build his temple of music. As a mnemonic device, *De templo musicae* could have been inspired by Giulio Camillo's popular work on the art of memory, *L'Idema del teatro* (Florence 1550), which appeared in numerous reprints.<sup>34</sup> When asked about his memory

<sup>29</sup> The importance of these two basic elements of music is also implied in Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 164, 166.

<sup>30</sup> Cf. Godwin, “Instruments in Robert Fludd's ‘Utriusque cosmi [...] historia’” (1973); and Godwin, “Robert Fludd on the Lute and Pandora” (1973).

<sup>31</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 245-59. Apparently, one of Fludd's instruments (based on his monochord, pp. 91-94, 247-50), which he invented as an aid for composers, had been approved by musicians at the Court of James I; cf. Fludd, *Clavis philosophiae et alchymiae Fluddanae*, Frankfurt 1633, p. 29 (quoted in Ammann (1967) p. 219).

<sup>32</sup> Cf. Karol Berger, “The Hand and the Art of Memory”, *Musica Disciplina* 35 (1981) pp. 87-120.

<sup>33</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 3.

<sup>34</sup> Thanks are due to Dr. Luc Deitz for calling Camillo to my attention.

theatre Camillo declares that it represents “all that the mind can conceive and all that is hidden in the soul – all of which can be perceived at one glance by the inspection of the images”.<sup>35</sup> Camillo’s system consists of seven pillars or sections each given a name of one of the seven planets – that is, the planets understood as archetypal images and not in astrological terms. Similarly in a more limited form Fludd’s temple consists of seven books each devoted to a specific musical topic. Another possible source of inspiration is Giovan Paolo Lomazzo’s *L’Idea del tempio della pittura* (Milan 1590).<sup>36</sup> The general conception of the temple of painting is inspired by Camillo which Lomazzo also indicates.<sup>37</sup> In the treatise the art of painting is compared to a temple with seven pillars, representing the seven parts of painting. Each part has, in addition, been allocated to a contemporary painter who also represents the qualities of a particular planet. Though Fludd’s temple does not make use of the archetypes of planets, he could have copied Lomazzo’s division of the seven parts of painting.<sup>38</sup> Indeed, both authors strongly adhere to the Neoplatonic cosmology where art is ultimately an expression of correspondences between man (microcosm) and universe (macrocosm). According to Fludd, music students should learn “the true and profound music of the wise, a subject through which the proportions of natural things are investigated, and the harmonic consensus and properties of the whole world are revealed”, rather than singing scales and commonplace melodies.<sup>39</sup> Lomazzo wished to illustrate the painter not as a simple manual labourer but as an artist forming his ideas in correspondence with macrocosm.<sup>40</sup>

Seen from a Renaissance Neoplatonic viewpoint, Fludd’s mnemonic device, which contains all knowledge on music of the microcosm, is not an unusual idea. On the contrary, Fludd has simply taken an idea of a framework and applied it to another art form: music.

### Medieval Sources

Already in 1776 Hawkins briefly mentions that some parts of Fludd’s *De templo musicae* seem to have been inspired by English medieval sources:

From the manuscript of Waltham Holy Cross [i.e. GB-Lbl, Lansdowne 763] which it is evident [Fludd] had made use of, gives the whole doctrine of the Cantus Mensurabilis, with the diagrams relating to it, and among the rest that of the triangular shield [i.e. Torkesey’s triangle], exhibited in page 248 of this work, the invention whereof he ascribes to one Robert Brunham, a monk.<sup>41</sup>

<sup>35</sup> Yates (1969) p. 158.

<sup>36</sup> Cf. Carmen R. Suso, “El Templo de la Pintura”, *Lecturas de historia del arte* 2 (1990) pp. 285-88.

<sup>37</sup> Giovan P. Lomazzo, *L’Idea del tempio della pittura*, Milan 1590, p. 40.

<sup>38</sup> Lomazzo (1590) chap. 9, “Fabrica del tempio della Pittura, & de i suoi Governatori”, pp. 39-43.

<sup>39</sup> Fludd, *Tractatus Apologeticus [...]* (1617) p. 109; translation by Debus (1979) p. 6.

<sup>40</sup> Gerald M. Ackerman, “Lomazzo’s Treatise on Painting”, *The Art Bulletin* 49 (1969) pp. 317-26.

<sup>41</sup> Hawkins (1778) p. 623; *Lansdowne 763* is a collection of treatises compiled by the precentor of Waltham Abbey, John Wylde, around 1460.

As Hawkins noticed, the *Lansdowne 763* manuscript does contain the so-called Torkesey triangle, *Declaratio trianguli et scuti* (fourteenth century; see Ill. 1, lower triangle, left corner) dealing with the notation of note values of mensurable music, which is also depicted and explained in *De templo musicae*.<sup>42</sup> However, Fludd attributes the triangle to a friar, Robert Brunham,<sup>43</sup> who is not mentioned at all in the manuscript. Though *Lansdowne 763* was apparently well known by composers and music theorists of the time,<sup>44</sup> it seems most unlikely that Fludd personally knew this particular manuscript.

According to Barton, Fludd's source was the *Bury St Edmunds* manuscript which in the seventeenth century belonged to the Cotton Library – a library to which Fludd as mentioned earlier had access.<sup>45</sup> This manuscript contains Egidius de Murino's *Tractatus cantus mensurabilis* (mid-fourteenth century) which in some instances is similar to Fludd's discussion of proportional theory, the Torkesey triangle, and a copy of *Quatuor principalia musicae* (c. 1370), a tract from which Fludd abundantly copied verbatim.<sup>46</sup> In addition, this manuscript has also Hanboys' *Summa [...]* which contains references to Robert Brunham.<sup>47</sup>

However, a more likely manuscript collection of music treatises which Fludd borrowed from is to be found in Trinity College Library, Cambridge:<sup>48</sup> the collection opens with the popular *Quatuor principalia musicae*, continues with *Proportiones musica mensurabilis Fratris Roberti Brunham [...]*, that is, here Torkesey's diagram is attributed to Robert Brunham which indeed agrees with Fludd's statement;<sup>49</sup> then follow Guido of Arezzo's *Micrologus* and Odo of Arezzo's *Dialogus de musica*.

Thus the first part of *De templo musicae* – in which Fludd heavily relies on the popular treatises, among others *Quatuor principalia musicae* – is the most conservative, and contains the traditional history (i.e. mythology) of music together with

<sup>42</sup> Fludd, *Utriusque cosmi [...]* *historia*, vol. 1, tract. II, p. 191 [correct: 192].

<sup>43</sup> Fludd, *Utriusque cosmi [...]* *historia*, vol. 1, tract. II, pp. 191, 201.

<sup>44</sup> It was owned by Thomas Tallis whose signature appears on the last folio; Thomas Morley refers to it in *A Plaine and Easie Introduction to Practicall Musick*, London 1597, sig. \*\*\*(4)<sup>v</sup>; and according to Hawkins (1778) p. 132 (note), also William Byrd – a pupil of Tallis and the teacher of Morley – must have had it in his possession.

<sup>45</sup> Barton (1978) p. 103; also Barton ((1978) pp. 57, 99) concludes that Fludd did not use *Lansdowne 763*.

<sup>46</sup> Compare Fludd, *Utriusque cosmi [...]* *historia*, vol. 1, tract. II, pp. 164-69, 185-89, 210-11, with Charles E.H. de Coussemaker (ed.), *Quatuor principalia musicae* (Scriptorum de musica medii aevi), Paris 1864-76, vol. 3, pp. 202-7, 212-18, 280-81 (rephrased, though).

<sup>47</sup> The *Bury St Edmunds* manuscript (GB-Lbl, Cotton Tiberius B.IX) is first mentioned in Cotton's library catalogue from c. 1631 (GB-Lbl, Add. 36.682, fol. 78<sup>r</sup>); yet, the manuscript does not appear in a later catalogue, GB-Lbl, Add. 36.789 (c. 1631-38). It was presumably purchased in 1626 at the auction of the library of John Dee where it appears already in 1583 (GB-Lbl, Harley 1879, fol. 99<sup>v</sup>).

<sup>48</sup> GB-Ctc, Western MS 1441, the manuscript is dated 1416. In 1738 the manuscript was presented to the College by Roger Gale who inherited a large collection of manuscripts through his father. It is possible that the manuscript originally belonged to John Dee though it does not appear in his catalogues (Harley 1879); cf. Montague R. James, *The Western Manuscripts in the Library of Trinity College, Cambridge*, Cambridge 1902, vol. 3, pp. x-xii. Thanks are due to sub-librarian Alison Sproston, Trinity College, for information on the manuscript.

<sup>49</sup> In addition, compare Fludd, *Utriusque cosmi [...]* *historia*, vol. 1, tract. II, pp. 197-99, with GB-Ctc, Western MS 1441, fols. 33<sup>r</sup>-35<sup>v</sup>.

the Boethian definitions of music, the definitions of intervals, and the exposition of the Boethian monochord. These sections, at least, could easily be those he refers to in his section on astrology and therefore written while he was still in Oxford.

### Contemporary Sources

It was customary to introduce music theory and practice with a chapter on the mythological history of music and on etymology and definitions. Thus Fludd's decision to introduce *De templo musicae* with such a chapter is not exceptional in any way; rather, it reflects the practice of the time. Subjects such as solmisation, hexachords, and ligatures which Fludd apparently did not borrow from the *Quatuor principalia musicae* could have been copied from more modern sources.

Since the English solmisation system differed from the continental practice, it is possible to determine whether Fludd used English or foreign sources. Already from around 1590 English theorists argued that the solmisation syllables *ut* and *re* were only used on the lowest notes of the Gamut (*G* and *A*); in addition, it was customary in England to transpose the three hexachords a fourth up so that the natural would have *ut* on F, the hard on C and the soft on B<sup>b</sup>. Fludd does not employ the English convention of transposing hexachords thereby implying that his source/sources must be continental.

A closer comparison between Fludd and Friedrich Beurhusius, *Erotematum musicae libri duo* (Nuremberg 1580), reveals that Fludd has sometimes literally copied and other times paraphrased this small but popular treatise.<sup>50</sup> Thus the greater part of the sections in Fludd's book two, dealing with solmisation and hexachords, are borrowed from *Erotematum*.<sup>51</sup> Also Fludd's rules on ligatures and even the examples are taken directly from that treatise.<sup>52</sup> In the sections on composing (lib. 5), Fludd has, in comparison with the previous subjects, only borrowed sparingly from the *Quatuor principalia musicae*. Only the various definitions of terms, such as "Discantus", "concordantia", and the intervallic proportions, have been taken from the fifth book of *Quatuor principalia musicae*, though rephrased.<sup>53</sup> The rules and definitions of book 5, chapter 4, taken from *Erotematum* have been abbreviated to such an extent that they become general and somewhat vague. Fludd has, furthermore, interpolated Beurhusius' rules on endings ("clausulae") with rules on how "all concords of harmonised melody are formed above a plainsong or a bass" without any examples and seemingly defining the plainsong as a bass part.<sup>54</sup>

<sup>50</sup> Friedrich Beurhusius, *Erotematum musicae libri duo*, Nuremberg 1580, was available in England, cf. Morley (1597) sig. \*\*\*(4)<sup>v</sup>, and Thomas Ravenscroft, *A Briefe Discourse*, London 1614, p. 18.

<sup>51</sup> Compare Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 172-73, with Beurhusius (1580) sigs. B4<sup>r</sup>, B5<sup>r-v</sup>, B7<sup>r</sup>.

<sup>52</sup> Compare Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 193, with Beurhusius (1580) sigs. D3<sup>r-v</sup>.

<sup>53</sup> Compare Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 210-11, with GB-Ctc, Western MS 1441, fols. 43<sup>v</sup>-44<sup>r</sup> (Coussemaker (1864-76) pp. 280-81).

<sup>54</sup> Compare Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 214-16, with Beurhusius (1580) sigs. H1<sup>v</sup>-H4<sup>r</sup>.

*De templi triangulo* or On the Temple's Triangle

Many Renaissance treatises on counterpoint provide a table to help the student select the appropriate intervals between the parts of a polyphonic composition in order to create the most perfect harmony. In the earliest tables the tenor is the important part from which the intervals should first of all be judged. Thomas Morley, borrowing from Gioseffo Zarlino, provides a detailed table and numerous examples showing all possible combinations of perfect and imperfect intervals and their compounds.<sup>55</sup> Again Fludd follows tradition and has a counterpoint table, *De templi triangulo* – a triangle consisting of black and white squares (Ill. 2; in Ill. 1 depicted in the middle tower, just below Thalia).

Fludd explains, in a very detailed description of how to use the triangle, that the black squares symbolise the dissonances which can be employed with great subtlety by a skilled composer, whereas the squares containing numbers are the perfect and imperfect consonances.<sup>56</sup> The hypotenuse symbolises the bass line and the vertical line of the triangle corresponds to the Gamut (*G-b''*), that is, notes which can be used above a specific bass note. This is indeed a very important and intriguing diagram, for Fludd explains that

first the bass is composed according to your wishes. The bass is like a fundament upon which all the other melodic parts are built, observing diligently the principles and rules needed for its composition [...]. Having done this, the concords must be selected from the above-mentioned Triangle, and from these – by putting them together – we can build higher concords [...]. The melodies of the remaining parts must be placed above the bass or fundament so that all of them correspond appropriately to the bass-part and are supported proportionally by the lower support.

Primum pro libitu tuo componatur Bassus, qui est quasi fundamentum, super quod omnes alia melodiae partes aedificantur, observando diligenter leges & regulas ad ejus compositionem requisitas [...]. Hoc facto eligendae sunt ex Triangulo praedicto concordantiae, quarum unione concordantias superiores aedificare possimus; [...] Super hanc Basin sive fundamentum reliquarum partium scalae sunt elevandae, ita ut qualibet ipsarum pars apte Basi correspondeat, & quasi proportionaliter sustineatur ab inferiori illo sustentaculo.<sup>57</sup>

Contrary to contemporary music theorists (e.g. Beurhusius) and medieval manuscripts, Fludd makes no reference to the tenor at all as the part from which intervals below or above should be used.<sup>58</sup> It is apparent that Fludd strongly adheres

<sup>55</sup> Morley (1597) pp. 129–30; Gioseffo Zarlino, *Le istitutioni harmoniche*, Venice 1558/repr. 1573, pp. 281–85.

<sup>56</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 211.

<sup>57</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 217–18.

<sup>58</sup> Beurhusius (1580) sig. H2<sup>v</sup>; *Quatuor principalia musicae* in GB-Ctc, Western MS 1441, fol. 44<sup>r</sup> (Coussemaker (1864–76) p. 281).

to the new bass-derived way of composing; for him the bass was the most essential part, completely determining the features of the upper parts. It is precisely because of Fludd's conception of the bass that his triangle is exceptional. None of the earlier theorists explicitly mentions that one must begin with composing the bass.<sup>59</sup> At the same time it must be emphasised that Fludd argues that it is the lowest note that decides the consonances to be used in the upper parts:

It is therefore clearly perceived that a harmonised melody is produced from the system's base by ascending [to the other parts], and how the melodic parts are said to have a harmonic *concentus* from a single fundament. In this description of the Triangle the setting of all songs and melodies is formed, and the true places of the intervals are described; that is, the places of the first concords and discords, and those which proceed from them.<sup>60</sup>

Consequently, if the tenor is lower than the bass, it is the tenor that governs the other parts and the choice of harmonies:

|   |  |
|---|--|
| <p>And it must be observed that sometimes the tenor will occupy the position of the bass, and the bass the position of the tenor. But in this case, you must diligently consider that all the parts are governed by the lower note.</p> | <p>Atque hoc observandum est, quod aliquando Tenor locum occupabit, &amp; Bassus Tenoris: Sed tunc diligenter considerandum est, quod in hoc casu omnes partes gubernentur a voce graviore.<sup>61</sup></p> |
|---|--|

Hence Fludd has placed himself between the new conception of the bass as the harmonic fundament and the conservative view, defining the bass as the lowest sounding note of a composition, which means that he is unable to recognise the 'real bass-line'.<sup>62</sup> When taking into account the possible date of the completion of *De templo musicae* (i.e., around 1610) Fludd's very clear statements can in no way be considered conservative. He is the first in England at all to deal with bass-derived composition.<sup>63</sup>

<sup>59</sup> However, Morley ((1597) p. 86) explains that "[...] in base descant the base is the ground, although wee are bound to see it vpon the plainsong: for your plainsong is as it were your theme, and your descant (either base or treble) as it were your declamation, and either you may reckon your cordes from your base vpwades, or from the plainsong downwarde, which you list. For as it is twentie miles by account from London to ware [Ware], so it is twenty from Ware to London?" The popular statement on the bass as the fundament can be traced back to Merlinus Cocaius, *Opus Cocaii Mantuanii Macaroneacorum*, Venice 1513, lib. 10, Macaronea XX, "De musica?"

<sup>60</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 217; for original text, see top of Ill. 2.

<sup>61</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 221.

<sup>62</sup> I.e., the lowest note in the bass is not necessarily the lowest sounding note and thus the harmonic basis (Rameau's *basse fondamentale*). Fludd's statement agrees with other theorists, in particular those dealing with continuo playing, cf. Frederick T. Arnold, *The Art of Accompaniment from a Thorough-Bass*, London 1931, vol. 1, pp. 9, 75.

<sup>63</sup> Also stressed by Barton (1978) p. 17 et passim.

DE SYMPHONICÆ MELOD. PARTIBUS. 217

dantia ad veros concentus pariendos collocanda sunt. Hinc igitur dilucidè percipitur, quomodo à systematis basi melodia Symphoniaca sursum ascendendo generetur, partesque melodiæ harmoniacum concentum ab unico fundamento habuisse ferantur. In hac, inquam, Trianguli descriptione universalifcantium & melodiæ compositio exprimitur, veræque intervallorum sedes designantur, hoc est, loci primarum concordantiarum & discordantiarum, & quæ ab iis oriuntur, cui cantui concordantiæ simplices, & cui geminatæ convenient. Hujus autem Trianguli descriptionem, & quomodo partibus cantus, hoc est, ipsarum lineis & spatiis comparetur, luculenter hic depinximus.

Ill. 2: Robert Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 217.  
(Photo: Det Kgl. Bibliotek, Filos. 2401)

There seems to be a connection between Fludd and Joan Carles Amat who wrote a short and practical treatise on the *rasgueado* technique.<sup>64</sup> Chapter eight of Amat's

<sup>64</sup> I.e., a technique involving strumming chords on the guitar. Cf. Monica Hall, "The 'Guitarra española' of Joan Carles Amat", *Early Music* 6 (1978) pp. 362-73; and Thomas Christensen, "The Spanish Baroque Guitar and Seventeenth-Century Triadic Theory", *Journal of Music Theory* 36 (1992) pp. 26-28.

*Guitarra española* (Lérida 1596, 1626) contains a table which, he claims, he invented himself.<sup>65</sup> This table can be used for writing an accompaniment for music in several parts. Amat mentions that when challenged by friends he used his table and fitted chords to a five-part composition by Palestrina.<sup>66</sup> It can also be used to harmonise bass patterns such as “vacas, gallardas, pabanillas, sezarillos, &c”.<sup>67</sup> From Amat’s discussion it is apparent that in order to harmonise a piece the bass must first be formed or, in a pre-composed piece, determined and solmised. The author’s explication also infers that it is the lowest note, whether that be in the bass or tenor, that determines the chord to be employed. Fludd’s triangle of consonances is more complex than Amat’s due to the fact that Fludd’s is intended for part-writing rather than for building up chords. It is, however, an open question whether Fludd was inspired by Amat or whether Amat was merely copying Fludd. According to the title page the *Guitarra española* was first printed in 1626; but the dedication is dated 1596 implying that there must have been an earlier edition. Yet, it appears that the chapter with the table was first added in 1626.<sup>68</sup> Perhaps sometime during his visit to Spain, Fludd met Amat who was a physician, guitarist and writer on astrology, medicine and arithmetic. The interesting aspect is Fludd’s conception of the bass and how to build a composition from the bass rather than looking at the tenor – an aspect he may have discussed with the author of the *Guitarra española*.<sup>69</sup>

With the appearance of the numerous treatises around the turn of the century on thorough-bass, Fludd could also have been inspired to combine their emphasis on the bass as the fundamental part with the traditional counterpoint tables. Similarly, the earliest tracts discuss the realisation of a *basso continuo* in terms of four distinct parts, that is, the realisation is conceived in terms of counterpoint.<sup>70</sup> The numbers simply indicate the interval or intervals to be used above the bass line. Instead of indicating the intervals above a given bass line, Fludd chose to place the bass in his counterpoint table. The first English treatise on *continuo* playing did not appear until the late seventeenth century,<sup>71</sup> but Fludd most likely had access to foreign treatises, at least on his six-year journey through Europe.

<sup>65</sup> Joan Carles Amat, *Guitarra española*, Lérida 1596, 1626, p. 30. The discussion of the table: pp. 29-36; the table: on p. 31.

<sup>66</sup> Amat (1596, 1626), p. 30.

<sup>67</sup> Amat (1596, 1626), p. 26.

<sup>68</sup> Neil D. Pennington, *The Spanish Baroque Guitar with a Transcription of De Murcia’s “Passacalles y obras”*, Ann Arbor 1981, vol. 1, pp. 88-89.

<sup>69</sup> Discussions on the subject seem to have been inherent of the time on the continent, too; cf. Johannes Lippius, *Synopsis of New Music (Synopsis musicae novae)* [1612], translated by Benito V. Rivera (Colorado College Music Press Translations 8), Colorado Springs 1977, p. 48; see also Benito V. Rivera, “The Isagoge of Johannes Avianius: An Early Formulation of Triadic Theory”, *Journal of Music Theory* 22 (1978) pp. 43-64.

<sup>70</sup> E.g. Adriano Banchieri, *L’organo suonarino*, Venice 1605/repr. 1611, sig. F8<sup>r</sup>.

<sup>71</sup> Matthew Locke, *Melothesis; or, Certain General Rules for Playing upon a Continued-Bass*, London 1673.

### The Circle of Transposition

The sixth book of *De templo musicae* deals with instruments, *De instrumentis musicis vulgariter notis* (*On Musical Instruments Commonly Known*).<sup>72</sup> One of the lessons is concerned with the “method of transferring a composition with its parts from one key into any other” (“De ratione transferendi cantilenam cum suis partibus ab una clave ad quamlibet”),<sup>73</sup> or, in other words, transposition. Fludd elaborates further explaining that a piece in G written for the lute can be transposed into A or even B and refers the reader to consult the *Doctrina sphaera* (Ill. 3). The circle includes all steps of the scale, diatonic as well as chromatic (G, A<sup>b</sup>, A<sup>#</sup> [i.e. A<sup>♯</sup>], B<sup>b</sup>, B<sup>#</sup> [i.e. B<sup>♯</sup>], C<sup>fa</sup>, D<sup>fa</sup><sup>b</sup>, D<sup>fa</sup><sup>#</sup> [i.e. D<sup>♯</sup>], E<sup>b</sup>, E<sup>#</sup> [i.e. E<sup>♯</sup>], F<sup>b</sup> [i.e. F<sup>♯</sup>] and F<sup>#</sup>) as can be seen in the “claves” section. Thus in order to transpose a piece from G into A, Fludd continues, it is necessary to use the G ring, substituting the symbols of the lute tablature (the string and the fret) in that ring with those found in the A ring.<sup>74</sup> Though Godwin has argued that the illustration at first sight seems “a most unusual thing for its time, since it considers all keys, equally valid”<sup>75</sup> Fludd’s recognition of transposing a composition to all twelve steps of the scale was not completely foreign, especially not for instrumentalists such as lutenists and organists. The transposition of music for the lute was in use long before the discussion evolved in theory. This is particularly evident from Adrian Le Roy’s book on how to arrange polyphonic music for the lute. The author explains that for practical reasons one can choose to transpose the composition to the tonality that sounds best on the instrument and that which is easier to play:

In the presente song giuen for example of Transposition of the seconde Tune [i.e. mode 2], [...], we haue to consider the loste Tune of the eight, of the .F. belowe, whiche happeneth often in our plaine ordinarie Lutes, whiche be but of eleven strynges, and might easely be remedied by setting of the song one note or two higher, but it would be harder for the hande, and the grace of the plaie would bee woorsser.<sup>76</sup>

One of the reasons why such transpositions are possible is because the lute uses equal temperament. The recognition of equal temperament also means that any composition can be transposed upwards or downwards by any interval, since transposition in equal temperament does not change the intervallic structure within a composition.

A simpler version of the circle of transposition can be found in Amat’s *Guitarra española*. In chapter two the author deals with chords and argues that there are 24 different ones divided into two categories depending on whether the third above

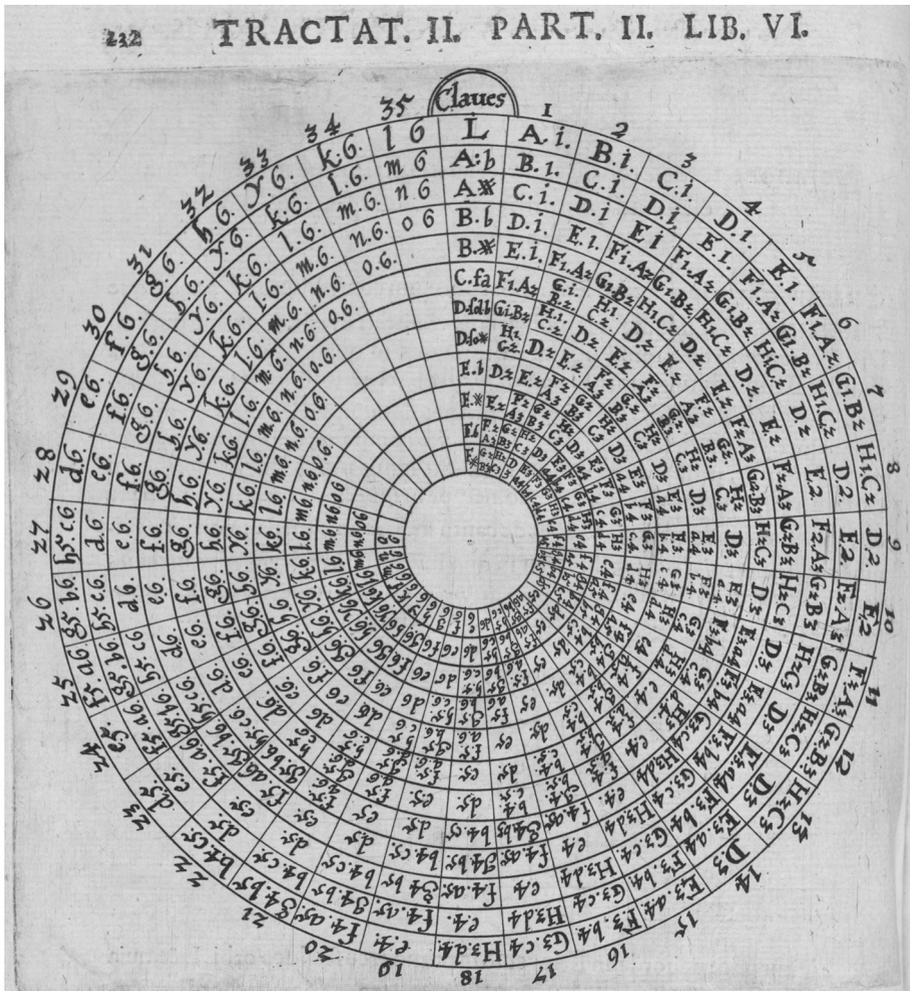
<sup>72</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, pp. 226-44.

<sup>73</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 231.

<sup>74</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 231.

<sup>75</sup> Godwin, “Robert Fludd on the Lute and Pandora” (1973) p. 19.

<sup>76</sup> Apparently only a translation of Le Roy’s book has survived, done by F[rancis] K[inw]e[lmersh], *A Briefe and Plaine Instruction to Sett All Musicke of Eight Divers Tunnes for the Lute*, London 1574, sig. 1r<sup>v</sup>.



Ill. 3: Robert Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 232.

The twelve concentric rings correspond to the twelve notes of the octave; the numbers (1-6) in the rings denote the strings of the lute, and the letters (a-h, y, k-o) give the positions on the strings. (Photo: Det Kgl. Bibliotek, Filos. 2401)

the root is major or minor.<sup>77</sup> In chapter five where the diagram appears he explains that he distinguishes between the chords by numbering them from one to twelve. The major chords have the letter “n” (*naturales*) added and the minor chords have “b” (*b mollados*) added; he then demonstrates briefly the transposition of music to all twelve steps of the scale. Amat’s circle, showing the 24 major and minor chords, has been split into two halves – the upper half of the circle has

<sup>77</sup> Amat (1596, 1626) p. 4.

the major chords and the lower half the minor chords. That Amat and Fludd also have a similar conception as regards transposition lends support to the assumption that they most likely knew each other's work.

### Conclusion

It becomes evident that in some instances Fludd is conservative but at the same time other sections reveal him as innovative. Scholars' dismissal of Fludd's music theoretical work as "completely antiquated in comparison to other, similar treatises of the period" and that Fludd must have been "a man of a disordered imagination" must now be revised.<sup>78</sup> The first four books of *De templo musicae* are written in the medieval-Boethian tradition. This was the usual approach towards the theory and history of music, even in the late Renaissance, and can be found in many other treatises of the period. Thus Thomas Morley (1597) and Thomas Ravenscroft (1614) are among those who utilised the same sources as Fludd. In his list of "Authors whose authorities be either cited or used in this booke" Thomas Morley mentions the medieval treatise, "Author Quatuor Principal", and the famous theorists "Francho" and "Robertus de Haulo" (i.e. Robertus de Handlo).<sup>79</sup> Taking a closer look at Morley's treatise, it becomes evident that he copied details he could only have found in *Lansdowne 763*, which he must have had access to or perhaps even possessed.<sup>80</sup> Also Ravenscroft quotes numerous times from medieval manuscripts such as the *Quatuor principalia musicae* and Johannes de Muris' *Libellus de cantus mensurabilis* (c. 1340) in his exposition of the rather complex proportional system.<sup>81</sup> Morley, too, deals with the proportional system and mensuration theory, providing puzzles for the student to solve.<sup>82</sup> That Fludd chose to expound on rhythm and musical intervals – the two triangles depicted in the middle tower and the concepts symbolised in the first tower (Apollo and Saturn) – is just as likely due to the Renaissance interpretation that all the arts were based on numbers.<sup>83</sup>

In addition, Fludd's deliberate avoidance of any detail from the *Quatuor principalia musicae* (c. 1370) and Beurhusius' *Erotematum* (1580) which could be linked with aspects of traditional modal theory is in accordance with other contemporary English theorists. Morley, who is one of the very few in England to deal with modal theory, has relegated the discussion to an appendix which apparently only was included because some colleagues suggested so.<sup>84</sup> All intricate theoretical topics concerned with the art of composing have been completely avoided in

<sup>78</sup> Ammann (1967) p. 206, and Ashbee (1980) p. 663 (cf. footnote 8).

<sup>79</sup> Morley (1597) last unnumbered page.

<sup>80</sup> Thus Morley (1597) has copied the Torkesey triangle (p. 33) and mentions Lionel Power (last fol. verso), both found in *Lansdowne 763*, fols. 89<sup>v</sup>, 104<sup>v</sup>.

<sup>81</sup> Ravenscroft (1614) pp. 1, 3, 5, 8, refers to a manuscript by Dunstable which is, in fact, the *Quatuor principalia musicae*.

<sup>82</sup> Morley (1597) pp. 9-55.

<sup>83</sup> Godwin (1979) p. 76; Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 13, also deals with rhythmical and musical proportions.

<sup>84</sup> Morley (1597) sig. ¶ 1<sup>r</sup>.

Fludd's *De templo musicae*, and composition is instead dealt with from a practical point of view. It is precisely Fludd's section on composition that is the most intriguing and innovative: his emphasis on the bass as the first part to be composed and to be used in order to determine which intervals to employ in the upper parts, is the first clear sign of change in compositional procedures expressed by an English music theorist.<sup>85</sup>

However, the changing conception of the bass was also emphasised by other English composers and theorists. For Thomas Campion (not before 1613), too, the bass is the fundamental part of a composition, since it contains the "Aire [...], expressing how any man at first sight may view in it all the other parts in their originall essence".<sup>86</sup> But Campion proceeds a step further and recognises that the lowest sounding note is not necessarily the harmonic fundament, that is, the real bass-line:

Moreover, if the Base shall use a sharpe, as in F. sharpe; then must we take the sixt of necessity, but the eight to the Base may not be used, so that exception is to be taken against our rule of Counterpoint: To which I answere thus, first, such Bases are not true Bases, for where a sixt is to be taken, either in F. sharpe, or in E. sharpe, or in B. or in A. the true Base is a third lower, F. sharpe in D. E in C. B. in G. A. in F.<sup>87</sup>

This together with the notion of octave equivalency – that is, he does not have to indicate the compound intervals – leads Campion to propose a new counterpoint table which is much simpler than any previous ones. It contains two rows and three columns giving the combinations of third, fifth and octave above a bass. Hence Fludd's triangle has been reduced to a diagram only consisting of three numbers; the major and minor sixths have instead been included in his rule of the "true Base". Also John Coprario (c. 1610-14) explains that when one wishes to use "chords [i.e. intervals] [...] in Contrapoint", one must look at the bass, which is the first part to be composed, add the cantus, and then fill in the inner parts.<sup>88</sup>

The new approach meant that Fludd had to redefine the cadence from a melodic formula between two parts to a specific intervallic progression in the bass part. According to most theorists of the time, the cadence was defined as two parts progressing from an imperfect to a perfect consonance usually placed in the cantus and tenor parts; the remaining parts, altus and bassus, were adjusted to the cantus

<sup>85</sup> M.M. Kastendieck postulates that Campion was the first English theorist to insist on the bass as the foundation of the other parts and thus the 'creator' of the "system of modern contrapuntal harmonic technique", cf. Kastendieck's introduction to Walter R. Davis (ed.), *The Works of Thomas Campion*, London 1959, p. 321. Bukofzer, too, advances this idea, cf. Manfred Bukofzer (ed.), *John Coprario's 'Rules How to Compose'*, Los Angeles 1952, p. xix.

<sup>86</sup> Thomas Campion, *A New Way of Making Fowre Parts in Counter-point*, London c. 1613, sig. B6<sup>v</sup>.

<sup>87</sup> Campion (c. 1613) sigs. C4<sup>v</sup>-C5<sup>f</sup>. This has led scholars to believe that Campion recognised the inversional relationship between triads; however, Campion's statement is made because of a contrapuntal rule to avoid parallel octaves.

<sup>88</sup> John Coprario, *Rules How to Compose*, US-SM, MS EL. 6863 (c. 1610-14), fols. 4<sup>v</sup>-9<sup>f</sup>.

and tenor. Thus the leap of a fourth or a fifth in the bass part was seen as a consequence of avoiding parallel perfect consonances.<sup>89</sup> Since Fludd considers everything in relation to the bass, also his discussion of the cadence – and thus his implied definition – is viewed in this context: “Concerning the bass. First rule. The penultimate note of the bass usually ascends by a fourth or descends by a fifth to the final note” (“De Basi. Regula I. Basis penultima notula solet ut plurimum ascendendo distare ab ultima per quatuor intervalla, descendendo vero per quinque”).<sup>90</sup> Campion and Coprario, who knew each other, agree with Fludd, though they are more explicit in their statements:

The Base intends a close as often as it riseth a fift, third or second, and then immediately either falls a fift, or riseth a fourth. In like manner if the Base falls a fourth or second: and after falls a fift, the Base insinuates a close.<sup>91</sup>

Fludd was presumably not inspired by Campion’s or Coprario’s treatises, since he most probable had completed the *Utriusque cosmi [...] historia* by 1610; likewise, neither Campion nor Coprario would seem to have been able to consult Fludd’s work which first appeared in print in 1618. On this basis it is tempting to suggest that the new ideas put forward by Fludd were indeed inherent in English music practice at the time.<sup>92</sup>

It is interesting to compare Fludd’s *De templo musicae* with other contemporary English treatises, that is Morley’s *Plaine and Easie Introduction* (1597) and Dowland’s translation from 1609 of the rather conservative *Micrologus* written by Ornithoparchus (Leipzig 1517). In this context it becomes obvious that where Morley tends to agree with the twelve-mode system and Dowland apparently with the eight-mode system, Fludd proposes a compositional framework which is simple and easy to comprehend, and without any of the complex problems inherent in the modal systems. Fludd’s ideas were most likely instigated by what he experienced as being practised among musicians and composers at the time when the modal systems at least in England had merely become straitjackets and analytical tools. Thus Fludd’s discussions could be seen as a synthesis of music theory and the art of composing: he seeks to bring music theory in accordance with the music practice (compositional practice) as he saw it.<sup>93</sup>

<sup>89</sup> Beurhusius (1580) sig. G8<sup>r</sup>.

<sup>90</sup> Fludd, *Utriusque cosmi [...] historia*, vol. 1, tract. II, p. 213. Note that Fludd’s “ut plurimum” could be due to the Phrygian cadence in which the bass descends a semitone.

<sup>91</sup> Campion (c. 1613) sig. D2<sup>r</sup>. Cf. Coprario (c. 1610-14) fol. 4<sup>r</sup>. The statement is also in accordance with those made in treatises on basso continuo, cf. Arnold (1931) pp. 69, 76, 86, 102, et passim.

<sup>92</sup> Barton (1978) pp. 166-69, argues in favour of a connection between Fludd and Campion through the use of Fludd’s inventions in masques; there is, however, no evidence suggesting that Fludd’s machines were ever used in masques.

<sup>93</sup> “Therefore, I say, as he [i.e. Fludd] indulges more in practice, I [indulge] in theory. Certainly, for him the pictures are appropriate, for me theorems” (“Propterea, inquam, quod ille praxi magis indulget, ego Theoria; ipsi quidem picturae sunt commodae, mihi theoremata”); Johannes Kepler, *Apologia adversus demonstrationem [...] R. de Fluctibus*, Frankfurt 1622; quoted from Max Caspar (ed.), *Johannes Kepler: Gesammelte Werke*, Munich 1940, vol. 6, p. 396.

## RESUMÉ

I 1617-26 udgav Robert Fludd (1574-1637) sit omfattende værk *Utriusque cosmi [...] historia*, som skabte debat blandt flere af samtidens fremtrædende filosoffer (f.eks. Marin Mersenne og Johannes Kepler). Musik, det vil sige *musica mundana*, spillede en overordentlig vigtig rolle i Fludds forståelse af universets opbygning, og netop dette emne har ofte været behandlet af videnskabshistorikere. Derimod har Fludds praktiske del *De templo musicae* sjældent været genstand for et nærmere studium; oftest er den blevet karakteriseret som værende meget fantasifuld og yderst konservativ i forhold til andre samtidige traktater.

Det viser sig dog, at Fludd ikke bare mere eller mindre har sammenskrevet sin tekst fra et bestemt engelsk middelalderhåndskrift (hvilket ikke var usædvanligt blandt engelske musikteoretikere) men også har anvendt Beurhusius' *Erotematum* (1580) og sandsynligvis kendt til Amats *Guitarra española* (1596).

Det er tydeligt ved en sammenligning af disse kilder med *De templo musicae*, at forfatteren meget bevidst har undgået enhver detalje, som kunne forbindes med dele af den traditionelle kompositionslære og modalteori. Dermed kan Fludd, sandsynligvis som en af de allerførste, uden problemer gøre rede for sin nye og ganske revolutionerende kompositionslære: man begynder med at skrive bassen for derefter at tilføje de øvrige stemmer. Kadencen må således defineres som en bestemt basprogression og ikke som en kontrapunktisk bevægelse mellem to stemmer som foreskrevet af den traditionelle lære. Fludds tilgang til musikteori og -praksis kan derfor ikke betragtes som konservativ, men må ses som et vigtigt led i forståelsen af den musikteoretiske udvikling i England i begyndelsen af 1600-tallet.